

# REVISION RECORD FOR THE STATE OF CALIFORNIA

## SUPPLEMENT

July 1, 2021

### 2019 Title 24, Part 2, Vol. 1 California Building Code

#### General Information:

1. The date of this supplement is for identification purposes only. See the History Note Appendix on the backside or accompanying page.
2. This supplement is issued by the California Building Standards Commission in order to provide new and/or replacement pages containing recently adopted provisions for California Code of Regulations, Title 24, Part 2, Volume 1, the 2019 *California Building Code*. Instructions are provided below.
3. Health and Safety Code Section 18938.5 establishes that only building standards in effect at the time of the application for a building permit may be applied to the project plans and construction. This rule applies to both adoptions of building standards for Title 24 by the California Building Standards Commission and local adoptions and ordinances imposing building standards. The new building standards provided with the enclosed blue supplement pages must not be enforced before the effective date.
4. Not all code text on the enclosed blue supplement pages is a new building standard. New, amended, or repealed building standards are identified by margin symbols. An explanation of margin symbols is provided in the code before the table of contents.
5. You may wish to retain the superseded material with this revision record so that the prior wording of any section can be easily ascertained.

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# PREFACE

This document is Part 2 of thirteen parts of the official triennial compilation and publication of the adoptions, amendments and repeal of administrative regulations to *California Code of Regulations, Title 24*, also referred to as the *California Building Standards Code*. This part is known as the *California Building Code*.

The *California Building Standards Code* is published in its entirety every three years by order of the California legislature, with supplements published in intervening years. The California legislature delegated authority to various state agencies, boards, commissions and departments to create building regulations to implement the State's statutes. These building regulations, or standards, have the same force of law, and take effect 180 days after their publication unless otherwise stipulated. The *California Building Standards Code* applies to occupancies in the State of California as annotated.

A city, county, or city and county may establish more restrictive building standards reasonably necessary because of local climatic, geological or topographical conditions. Findings of the local condition(s) and the adopted local building standard(s) must generally be filed with the California Building Standards Commission (or other filing if indicated) to become effective, and may not be effective sooner than the effective date of this edition of the *California Building Standards Code*. Local building standards that were adopted and applicable to previous editions of the *California Building Standards Code* do not apply to this edition without appropriate adoption and the required filing.

Should you find publication (e.g., typographical) errors or inconsistencies in this code or wish to offer comments toward improving its format, please address your comments to:

California Building Standards Commission  
2525 Natomas Park Drive, Suite 130  
Sacramento, CA 95833–2936  
Phone: (916) 263–0916  
Email: [cbsc@dgs.ca.gov](mailto:cbsc@dgs.ca.gov)  
Web page: [www.dgs.ca.gov/bsc](http://www.dgs.ca.gov/bsc)

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This collaborative effort included the assistance of the Commission's Code Advisory Committees and many other volunteers who worked tirelessly to assist the Commission in the production of this Code.

*Governor Edmund G. Brown Jr.*

*Members of the California Building Standards Commission*

*Secretary Marybel Batjer – Chair*

*Steven Winkel – Vice-Chair*

*James Barthman*

*Larry Booth*

*Erick Mikiten*

*Elley Klausbruckner*

*Rajesh Patel*

*Juvilyn Alegre*

*Peter Santillan*

*Kent Sasaki*

*Mia Marvelli – Executive Director*

*Michael L. Nearman – Deputy Executive Director*

For questions on California state agency amendments, please refer to the contact list on page iv.

# CALIFORNIA CODE OF REGULATIONS, TITLE 24

## California Agency Information Contact List

The following state agencies may propose building standards for publication in Title 24. Request notice of such activity with each agency of interest. See Sections 1.2 through 1.14 of the California Building Code (Part 2 of Title 24) for more detailed information on the regulatory jurisdiction of each state agency.

### **Board of State and Community Corrections**

www.bscc.ca.gov..... (916) 445-5073  
Local Adult and Juvenile  
Detention Facility Standards

### **California Building Standards Commission**

www.dgs.ca.gov/bsc..... (916) 263-0916  
State Buildings including UC and  
CSU Buildings, Parking Lot and Walkway Lighting,  
Green Building Standards for Non-residential Buildings

### **California Energy Commission**

www.energy.ca.gov..... **Energy Hotline** (800) 772-3300  
Building Efficiency Standards  
Appliance Efficiency Standards  
Compliance Manual/Forms

### **California State Lands Commission**

www.slc.ca.gov..... (562) 499-6312  
Marine Oil Terminal Standards

### **California State Library**

www.library.ca.gov..... (916) 323-9843

### **Department of Consumer Affairs:**

#### **Acupuncture Board**

www.acupuncture.ca.gov..... (916) 515-5200  
Office Standards

#### **Board of Pharmacy**

www.pharmacy.ca.gov..... (916) 518-3100  
Pharmacy Standards

#### **Bureau of Barbering and Cosmetology**

www.barbercosmo.ca.gov..... (800) 952-5210  
Barber and Beauty Shop,  
and College Standards

#### **Bureau of Household Goods and Services**

www.bhgs.dca.ca.gov..... (916) 999-2041  
Insulation Testing Standards

#### **Structural Pest Control Board**

www.pestboard.ca.gov..... (800) 737-8188  
Structural Standards

#### **Veterinary Medical Board**

www.vmb.ca.gov..... (916) 515-5220  
Veterinary Hospital Standards

### **Department of Food and Agriculture**

www.cdffa.ca.gov  
Meat & Poultry Packing Plant Standards  
Rendering & Collection Center Standards..... (916) 900-5004  
Dairy Standards..... (916) 900-5008

### **Department of Housing and Community Development**

www.hcd.ca.gov..... (800) 952-8356 |  
Residential—Hotels, Motels, Apartments,  
Single-Family Dwellings; and  
Permanent Structures in Mobilehome &  
Special Occupancy Parks  
(916) 445-3338  
Factory-Built Housing, Manufactured Housing &  
Commercial Modular  
Mobilehome—Permits & Inspections  
Northern Region—(916) 255-2501  
Southern Region—(951) 782-4420  
(800) 952-8356 |  
Employee Housing Standards

### **Department of Public Health**

www.dph.ca.gov..... (916) 449-5661  
Organized Camps Standards  
Public Swimming Pools Standards

### **Division of the State Architect**

www.dgs.ca.gov/dsa..... (916) 445-8100

#### **Access Compliance**

#### **Fire and Life Safety**

#### **Structural Safety**

Public Schools Standards  
Essential Services Building Standards  
Community College Standards

#### **State Historical Building Safety Board**

Historical Rehabilitation, Preservation,  
Restoration or Relocation Standards

### **Office of Statewide Health Planning and Development**

www.oshpd.ca.gov..... (916) 440-8300 |  
Hospital Standards  
Skilled Nursing Facility Standards &  
Clinic Standards

### **Office of the State Fire Marshal**

osfm.fire.ca.gov..... (916) 568-3800  
Code Development and Analysis  
Fire Safety Standards

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## CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE CHAPTER 1 – SCOPE AND ADMINISTRATION

(Matrix Adoption Tables are nonregulatory, intended only as an aid to the code user.  
See Chapter 1 for state agency authority and building applications.)

Adopting agency	BSC	BSC- CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC	
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4									5
Adopt entire chapter																							
Adopt entire chapter as amended (amended sections listed below)																							
Adopt only those sections that are listed below	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	
Chapter / Section																							
Division I – <i>California Administration</i>																							
1.1	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X	X	X
1.2	X		X																				
1.2.3							X																
1.3			X												X								
1.4			X																	X			
1.5 (Reserved)			X																				
1.6			X																				
1.7			X														X						
1.8			X	X	X	X																	
1.9			X																				
1.9.1 – 1.9.1.8							X																
1.9.2								X	X														
1.9.2.1								X															
1.9.2.2									X														
1.10			X																				
1.10.1										X	X												
1.10.2												X											
1.10.3													X										
1.10.3.12				X	X																		
1.10.4														X									
1.10.5 – 1.10.5.3															X								
1.11			X																				
1.12			X																		X		
1.13 (Reserved)																							
1.14																						X	
Division II – <i>Scope and Administration</i>																							
101.1 – 101.4.5							X			X	X	X	X	X	X								
101.4.7										X	X	X		X	X								
102.1							X	X	X	X	X	X	X	X	X								
102.2 – 102.4							X	X	X	X	X	X	X	X	X								
102.4.1							X	X															
102.4.3							X	X	X	X	X	X	X	X									
102.4.4							X	X	X	X	X	X	X	X									
102.5							X	X	X	X	X	X	X	X									
102.6 – 104.1										X	X	X	X	X									
104.2 – 104.4										X	X	X	X	X									
104.5 – 104.8										X	X	X	X	X									
104.9								X	X	X	X	X	X	X									
104.10								X	X	X	X	X	X	X									
104.11							X	X	X	X	X	X	X	X									

(continued)

**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE  
CHAPTER 1 – SCOPE AND ADMINISTRATION—continued**

Adopting agency	BSC	BSC- CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4								
Adopt entire chapter																						
Adopt entire chapter as amended (amended sections listed below)																						
Adopt only those sections that are listed below	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X
Chapter / Section																						
Division II – <i>Scope and Administration</i> -cont'd																						
104.11.1 – 104.11.2										X	X	X	X	X	X							
104.11.3										X	X	X		X	X							
104.11.4										X				X								
105.1										X	X	X	X	X	X							
105.1.1 – 105.2										X	X	X	X	X	X							
105.2 Building: 1-13				X	X																	
105.2.1 – 105.2.2			X							X	X	X	X	X	X							
105.2.3										X	X	X	X	X	X							
105.3 – 105.3.1			X							X	X	X	X	X	X							
105.3.2										X	X	X		X	X							
105.4			X							X	X	X	X	X	X							
105.5										X	X	X	X	X	X							
105.6 – 105.7			X							X	X	X	X	X	X							
106.1			X					X	X	X	X	X	X	X	X							
106.1.1								X	X	X	X		X	X								
106.2 – 106.3			X							X	X	X	X	X	X							
107.1			X	X	X					X	X	X	X	X	X							
107.2			X							X	X	X	X	X	X							
107.2.1			X	X	X					X	X	X		X								
107.2.3			X	X	X																	
107.2.4			X	X	X																	
107.2.5			X	X	X			X	X													
107.2.6			X	X	X																	
107.2.6.1				X	X																	
107.2.7			X																			
107.3			X							X	X	X	X	X	X							
107.3.4.1										X	X	X		X	X							
107.4			X																			
107.5			X							X	X	X	X	X	X							
108.1 – 108.4			X							X	X	X	X	X	X							
109										X	X	X	X	X	X							
110.1 – 110.3			X							X	X	X	X	X	X							
110.3.1 – 110.3.3				X	X					X	X	X	X	X	X							
110.3.4 – 110.3.7			X	X	X					X	X	X	X	X	X							
110.3.4.1				X																		
110.3.6								X	X													
110.3.9 – 110.3.11			X	X	X					X	X	X	X	X	X							
110.3.10.1				X	X																	
110.3.11.1				X	X																	
110.3.11.2				X	X																	

(continued)

**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE  
CHAPTER 1 – SCOPE AND ADMINISTRATION—continued**

Adopting agency	BSC	BSC- CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC	
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4									5
Adopt entire chapter																							
Adopt entire chapter as amended (amended sections listed below)																							
Adopt only those sections that are listed below	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X				X	X	X	X
Chapter / Section																							
Division II – <i>Scope and Administration-cont'd</i>																							
110.3.12			X	X	X			X	X														
110.4 – 110.6			X							X	X	X	X	X	X								
111.1			X							X	X	X	X	X	X								
111.2			X				X			X	X	X	X	X	X								
111.3 – 111.4			X							X	X	X	X	X	X								
112			X							X	X	X	X	X	X								
113										X	X	X	X	X	X								
114.1 – 114.2			X							X	X	X	X	X	X								
114.2 – 114.3										X	X	X	X	X	X								
115 - 116			X							X	X	X	X	X	X								

The state agency does not adopt sections identified by the following symbol: †

The Office of the State Fire Marshal's adoption of this chapter or individual sections is applicable to structures regulated by other state agencies pursuant to Section 1.11.





**1.1.7.2 Specific provisions.** *Where a specific provision varies from a general provision, the specific provision shall apply.*

**1.1.7.3 Conflicts.** *When the requirements of this code conflict with the requirements of any other part of the California Building Standards Code, Title 24, the most restrictive requirements shall prevail.*

**1.1.7.3.1 Detached one- and two-family dwellings.** *Detached one- and two-family dwellings, lodging houses, live/work units, townhouses not more than three stories above grade plane in height with a separate means of egress, and their accessory structures, may be designed and constructed in accordance with this code or the California Residential Code, but not both, unless the proposed structure(s) or element(s) exceed the design limitations established in the California Residential Code, and the code user is specifically directed by the California Residential Code to use this code.*

**1.1.8 City, county, or city and county amendments, additions or deletions.** *The provisions of this code do not limit the authority of city, county, or city and county governments to establish more restrictive and reasonably necessary differences to the provisions contained in this code pursuant to complying with Section 1.1.8.1. The effective date of amendments, additions or deletions to this code by a city, county, or city and county filed pursuant to Section 1.1.8.1 shall be the date filed. However, in no case shall the amendments, additions or deletions to this code be effective any sooner than the effective date of this code.*

*Local modifications shall comply with Health and Safety Code Section 18941.5 for Building Standards Law, Health and Safety Code Section 17958 for State Housing Law or Health and Safety Code Section 13869.7 for Fire Protection Districts.*

**1.1.8.1 Findings and filings.**

1. *The city, county, or city and county shall make express findings for each amendment, addition or deletion based upon climatic, topographical or geological conditions.*

**Exception:** *Hazardous building ordinances and programs mitigating unreinforced masonry buildings.*

2. *The city, county, or city and county shall file the amendments, additions or deletions expressly marked and identified as to the applicable findings. Cities, counties, cities and counties, and fire departments shall file the amendments, additions or deletions, and the findings with the California Building Standards Commission at 2525 Natomas Park Drive, Suite 130, Sacramento, CA 95833.*

3. *Findings prepared by fire protection districts shall be ratified by the local city, county or city and county and filed with the California Department of Housing and Community Development, Division of Codes and Standards, P.O. Box 278180, Sacramento, CA 95827 or 9342 Tech Center Drive, Suite 500, Sacramento, CA 95826.*

**1.1.8.2 Locally adopted energy standards—California Energy Code, Part 6.**

*In addition to the provisions of Section 1.1.8.1 of this part, the provisions of this section shall apply to a city, county, and cities and counties adopting local energy standards applicable to buildings and structures subject to the California Energy Code, Part 6.*

*Applicable provisions of Public Resources Code Section 25402.1(h)(2) and applicable provisions of Section 10-106, Chapter 10 of the California Administrative Code, Part 1 apply to locally adopted energy standards amending the California Energy Code, Part 6.*

**1.1.9 Effective date of this code.** *Only those standards approved by the California Building Standards Commission that are effective at the time an application for building permit is submitted shall apply to the plans and specifications for, and to the construction performed under, that permit. For the effective dates of the provisions contained in this code, see the History Note page of this code.*

**Exceptions:**

(1) **[HCD 1 & HCD 2]** *Retroactive permits issued in accordance with Health and Safety Code Section 17958.12.*

(2) **(HCD 1 & HCD 2)** *Plans approved by the Department of Housing and Community Development or a Department-approved design approval agency for factory-built housing as defined by Health and Safety Code Section 19971. Approved plans, pursuant to the California Code of Regulations, Title 25, Division 1, Chapter 3, Subchapter 1, Article 3, Section 3048 remain valid for a period of 36 months from the date of plan approval.*

**1.1.10 Availability of codes.** *At least one complete copy each of Titles 8, 19, 20, 24 and 25 with all revisions shall be maintained in the office of the building official responsible for the administration and enforcement of this code. Each state department concerned and each city, county, or city and county shall have an up-to-date copy of the code available for public inspection. See Health and Safety Code Section 18942(e)(1) and (2).*

**1.1.11 Format.** *This part fundamentally adopts the International Building Code by reference on a chapter-by-chapter basis. When a specific chapter of the International Building Code is not printed in the code and is marked “Reserved”, such chapter of the International Building Code is not adopted as a portion of this code. When a specific chapter of the International Building Code is marked “Not adopted by the State of California” but appears in the code, it may be available for adoption by local ordinance.*

**Note:** *Matrix Adoption Tables at the front of each chapter may aid the code user in determining which chapter or sections within a chapter are applicable to buildings under the authority of a specific state agency, but they are not to be considered regulatory.*

**1.1.12 Validity.** *If any chapter, section, subsection, sentence, clause or phrase of this code is for any reason held to be unconstitutional, contrary to statute, exceeding the authority of the state as stipulated by statutes or otherwise inoperative, such decision shall not affect the validity of the remaining portion of this code.*

## SECTION 1.2 BUILDING STANDARDS COMMISSION

**1.2.1 BSC.** *Specific scope of application of the agency responsible for enforcement, the enforcement agency and the specific authority to adopt and enforce such provisions of this code, unless otherwise stated.*

### 1. State buildings for all occupancies.

**Application**—State buildings (all occupancies), including buildings constructed by the Trustees of the California State University (CSU) and the Regents of the University of California (UC) where no state agency has the authority to adopt building standards applicable to such buildings.

**Enforcing agency**—State or local agency specified by the applicable provisions of law.

**Authority cited**—Health and Safety Code Section 18934.5.

**Reference**—Health and Safety Code, Division 13, Part 2.5, commencing with Section 18901.

### 2. University of California, California State Universities and California Community Colleges.

**Application**—Standards for lighting for parking lots and primary campus walkways at the University of California, California State Universities and California Community Colleges.

**Enforcing agency**—State or local agency specified by the applicable provisions of law.

**Authority cited**—Government Code Section 14617.

**Reference**—Government Code Section 14617.

### 3. Existing state-owned buildings, including those owned by the University of California and by the California State University.

**Application**—Building seismic retrofit standards including abating falling hazards of structural and nonstructural components and strengthening of building structures. See also Division of the State Architect.

**Enforcing agency**—State or local agency specified by the applicable provisions of law.

**Authority cited**—Health and Safety Code Section 16600.

**Reference**—Health and Safety Code Sections 16600 through 16604.

### 4. Unreinforced masonry-bearing wall buildings.

**Application**—Minimum seismic strengthening standards for buildings specified in Appendix Chapter A1 of the California Existing Building Code, except for buildings subject to building standards adopted pursuant to Health and Safety Code (commencing with Section 17910).

**Enforcing agency**—State or local agency specified by the applicable provisions of law.

**Authority cited**—Health and Safety Code Section 18934.7.

**Reference**—Health and Safety Code, Division 13, Part 2.5, commencing with Section 18901.

**1.2.1.1 State building.** For purposes of this code, a “state building” is a structure for which a state agency or state entity has authority to construct, alter, enlarge, replace, repair or demolish.

**1.2.1.2 Enforcement.** [CSU, UC, Judicial Council and California Department of Corrections and Rehabilitation] State agencies or state entities authorized to construct state buildings may appoint a building official who is responsible to the agency for enforcement of the provisions of the California Building Standards Code.

**Exception:** State buildings regulated by other sections of this code remain the enforcement responsibility of the designated entities.

### 1.2.1.3 Enforcement. Reserved for DGS.

**1.2.1.4 Adopting agency identification.** The provisions of this code applicable to buildings identified in this section will be identified in the Matrix Adoption Tables under the acronym **BSC**.

**1.2.2 BSC-CG.** *Specific scope of application of the agency responsible for enforcement, the enforcement agency and the specific authority to adopt and enforce such provisions of this code, unless otherwise stated.*

### 1. Green buildings standards for nonresidential occupancies.

**Application**—All occupancies where no state agency has the authority to adopt green building standards applicable to those occupancies.

**Enforcing agency**—State or local agency specified by the applicable provisions of law.

**Authority cited**—Health and Safety Code Sections 18930.5(a), 18938, and 18940.5.

**Reference**—Health and Safety Code, Division 13, Part 2.5, commencing with Section 18901.

### 2. Graywater systems for nonresidential occupancies.

**Application**—The construction, installation, and alteration of graywater systems for indoor and outdoor uses in nonresidential occupancies.

**Enforcing agency**—State or local agency specified by the applicable provisions of law.

**Authority cited**—Health and Safety Code Section 18941.8.

**Reference**—Health and Safety Code Section 18941.8.

**1.2.2.1 Adopting agency identification.** The provisions of this code applicable to buildings identified in this section will be identified in the Matrix Adoption Tables under the acronym **BSC-CG**.

**1.2.3 Alternative materials, design and methods of construction and equipment.** The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material, design or method of construction shall be approved where the building official

4. *New common use areas serving new covered multifamily dwellings.*
5. *Where any portion of a building's exterior is preserved, but the interior of the building is removed, including all structural portions of floors and ceilings, the building is considered a new building for determining the application of Chapter 11A.*

*“HCD 1-AC” building standards generally do not apply to public use areas or public accommodations such as hotels and motels, and public housing. Public use areas, public accommodations and public housing, as defined in Chapter 2, are subject to the Division of the State Architect (DSA-AC) in Chapter 11B, and are referenced in Section 1.9.1.*

*Newly constructed covered multifamily dwellings, which can also be defined as public housing, shall be subject to the requirements of Chapter 11A and Chapter 11B.*

**Enforcing agency**—*Local building department or the Department of Housing and Community Development.*

**Authority cited**—*Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.5, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17922.14, 17926, 17927, 17928, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1 through 18873.5, 18938.3, 18944.11 and 19990; and Government Code Section 12955.1.*

**Reference**—*Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; Civil Code Sections 1101.4, 1101.5 and 1954.201; and Government Code Sections 12955.1 and 12955.1.1.*

#### **1.8.2.1.3 Permanent buildings in mobilehome parks and special occupancy parks.**

**Application**—*Permanent buildings, and permanent accessory buildings or structures, constructed within mobilehome parks and special occupancy parks that are under the control and ownership of the park operator. Sections of this code which pertain to applications listed in this section are identified using the abbreviation “HCD 2.”*

**Enforcing agency**—*The Department of Housing and Community Development, local building department or other local agency that has assumed responsibility for the enforcement of Health and Safety Code, Division 13, Part 2.1 commencing with Section 18200 for mobilehome parks and Health and Safety Code, Division 13, Part 2.3 commencing with Section 18860 for special occupancy parks.*

**Authority cited**—*Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.5, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17922.14, 17926, 17927, 17928, 18300, 18552, 18554, 18620,*

*18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1 through 18873.5, 18938.3, 18944.11 and 19990; and Government Code Section 12955.1.*

**Reference**—*Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; Civil Code Sections 1101.4, 1101.5 and 1954.201; and Government Code Sections 12955.1 and 12955.1.1.*

### **SECTION 1.8.3 LOCAL ENFORCING AGENCY**

**1.8.3.1 Duties and powers.** *The building department of every city, county, or city and county, shall enforce all the provisions of law, this code, and the other rules and regulations promulgated by the Department of Housing and Community Development pertaining to the installation, erection, construction, reconstruction, movement, enlargement, conversion, alteration, repair, removal, demolition or arrangement of apartments, condominiums, hotels, motels, lodging houses and dwellings, including accessory buildings, facilities and uses thereto.*

*The provisions regulating the erection and construction of dwellings and appurtenant structures shall not apply to existing structures as to which construction is commenced or approved prior to the effective date of these regulations. Requirements relating to use, maintenance and occupancy shall apply to all dwellings and appurtenant structures approved for construction or constructed before or after the effective date of this code.*

*For additional information regarding the use and occupancy of existing buildings and appurtenant structures, see California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 1, commencing with Article 1, Section 1.*

*For additional requirements regarding additions, alterations or repairs to existing buildings and appurtenant structures, see the California Existing Building Code.*

**1.8.3.2 Laws, rules and regulations.** *Other than the building standards contained in this code, and notwithstanding other provisions of law, the statutory authority and location of the laws, rules and regulations to be enforced by local enforcing agencies are listed by statute in Sections 1.8.3.2.1 through 1.8.3.2.5 below:*

**1.8.3.2.1 State Housing Law.** *Refer to the State Housing Law, California Health and Safety Code, Division 13, Part 1.5, commencing with Section 17910 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 1, commencing with Section 1, for the erection, construction, reconstruction, movement, enlargement, conversion, alteration, repair, removal, demolition or arrangement of apartments, condominiums, hotels, motels, lodging houses and dwellings, including accessory buildings, facilities and uses thereto.*

**1.8.3.2.2 Mobilehome Parks Act.** *Refer to the Mobilehome Parks Act, California Health and Safety Code, Division 13, Part 2.1, commencing with Section 18200 and*

California Code of Regulations, Title 25, Division 1, Chapter 2, commencing with Section 1000 for mobilehome park administrative and enforcement authority, permits, plans, fees, violations, inspections and penalties both within and outside mobilehome parks.

**Exception:** Mobilehome parks where the Department of Housing and Community Development is the enforcing agency.

**1.8.3.2.3 Special Occupancy Parks Act.** Refer to the Special Occupancy Parks Act, California Health and Safety Code, Division 13, Part 2.3, commencing with Section 18860 and California Code of Regulations, Title 25, Division 1, Chapter 2.2, commencing with Section 2000 for special occupancy park administrative and enforcement authority, permits, fees, violations, inspections and penalties both within and outside of special occupancy parks.

**Exception:** Special occupancy parks where the Department of Housing and Community Development is the enforcing agency.

**1.8.3.2.4 Employee Housing Act.** Refer to the Employee Housing Act, California Health and Safety Code, Division 13, Part 1, commencing with Section 17000 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 3, commencing with Section 600 for employee housing administrative and enforcement authority, permits, fees, violations, inspections and penalties.

**1.8.3.2.5 Factory-Built Housing Law.** Refer to the Factory-Built Housing Law, California Health and Safety Code, Division 13, Part 6 commencing with Section 19960 and California Code of Regulations, Title 25, Division 1, Chapter 3, Subchapter 1, commencing with Section 3000 for factory-built housing administrative and enforcement authority, permits, fees, violations, inspections and penalties.

## SECTION 1.8.4 PERMITS, FEES, APPLICATIONS AND INSPECTIONS

**1.8.4.1 Permits.** A written construction permit shall be obtained from the enforcing agency prior to the erection, construction, reconstruction, installation, moving or alteration of any building or structure.

### Exceptions:

1. Work exempt from permits as specified in Chapter 1, Division II, Scope and Administration, Section 105.2.
2. Changes, alterations or repairs of a minor nature not affecting structural features, egress, sanitation, safety or accessibility as determined by the enforcing agency.
3. Retroactive permits issued in accordance with Health and Safety Code Section 17958.12.

Exemptions from permit requirements shall not be deemed to grant authorization for any work to be done in any manner in violation of other provisions of law or this code.

**1.8.4.2 Fees.** Subject to other provisions of law, the governing body of any city, county, or city and county, may pre-

scribe fees to defray the cost of enforcement of rules and regulations promulgated by the Department of Housing and Community Development. The amount of the fees shall not exceed the amount reasonably necessary to administer or process permits, certificates, forms or other documents, or to defray the costs of enforcement. For additional information, see the State Housing Law, Health and Safety Code, Division 13, Part 1.5, Section 17951 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 1, Article 3, commencing with Section 6.

**1.8.4.3 Plan review and time limitations.** Subject to other provisions of law, provisions related to plan checking, prohibition of excessive delays and contracting with or employment of private parties to perform plan checking are set forth in the State Housing Law, Health and Safety Code Section 17960.1, and for employee housing, in Health and Safety Code Section 17021.

**1.8.4.3.1 Retention of plans.** The building department of every city, county, or city and county shall maintain an official copy, microfilm, electronic or other type of photographic copy of the plans of every building, during the life of the building, for which the department issued a building permit.

### Exceptions:

1. Single or multiple dwellings not more than two stories and basement in height.
2. Garages and other structures appurtenant to buildings listed in Exception 1.
3. Farm or ranch buildings appurtenant to buildings listed in Exception 1.
4. Any one-story building where the span between bearing walls does not exceed 25 feet (7620 mm), except a steel frame or concrete building.

All plans for common interest developments as defined in Section 4100 of the California Civil Code shall be retained. For additional information regarding plan retention and reproduction of plans by an enforcing agency, see Health and Safety Code Sections 19850 through 19852.

**1.8.4.4 Inspections.** Construction or work for which a permit is required shall be subject to inspection by the building official and such construction or work shall remain accessible and exposed for inspection purposes until approved. Approval as a result of an inspection shall not be construed to be an approval of a violation of the provisions of this code or other regulations of the Department of Housing and Community Development. Required inspections are listed in Chapter 1, Division II, Scope and Administration, Sections 110.3.1, 110.3.2, 110.3.3, 110.3.4, 110.3.4.1, 110.3.5, 110.3.6, 110.3.7, 110.3.9, 110.3.10, 110.3.11, 110.3.11.1 and 110.3.11.2.

## SECTION 1.8.5 RIGHT OF ENTRY FOR ENFORCEMENT

**1.8.5.1 General.** Subject to other provisions of law, officers and agents of the enforcing agency may enter and inspect public and private properties to secure compliance with the

rules and regulations promulgated by the Department of Housing and Community Development. For limitations and additional information regarding enforcement, see the following:

1. For applications subject to the State Housing Law as referenced in Section 1.8.3.2.1 of this code, refer to Health and Safety Code, Division 13, Part 1.5, commencing with Section 17910 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 1, commencing with Section 1.
2. For applications subject to the Mobilehome Parks Act as referenced in Section 1.8.3.2.2 of this code, refer to Health and Safety Code, Division 13, Part 2.1, commencing with Section 18200 and California Code of Regulations, Title 25, Division 1, Chapter 2, commencing with Section 1000.
3. For applications subject to the Special Occupancy Parks Act as referenced in Section 1.8.3.2.3 of this code, refer to Health and Safety Code, Division 13, Part 2.3, commencing with Section 18860 and California Code of Regulations, Title 25, Division 1, Chapter 2.2, commencing with Section 2000.
4. For applications subject to the Employee Housing Act as referenced in Section 1.8.3.2.4 of this code, refer to Health and Safety Code, Division 13, Part 1, commencing with Section 17000 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 3, commencing with Section 600.
5. For applications subject to the Factory-Built Housing Law as referenced in Section 1.8.3.2.5 of this code, refer to Health and Safety Code, Division 13, Part 6, commencing with Section 19960 and California Code of Regulations, Title 25, Division 1, Chapter 3, Subchapter 1, commencing with Section 3000.

### **SECTION 1.8.6 LOCAL MODIFICATION BY ORDINANCE OR REGULATION**

**1.8.6.1 General.** Subject to other provisions of law, a city, county, or city and county may make changes to the provisions adopted by the Department of Housing and Community Development. If any city, county, or city and county does not amend, add or repeal by local ordinances or regulations the provisions published in this code or other regulations promulgated by the Department of Housing and Community Development, those provisions shall be applicable and shall become effective 180 days after publication by the California Building Standards Commission. Amendments, additions and deletions to this code adopted by a city, county, or city and county pursuant to California Health and Safety Code Sections 17958.5, 17958.7 and 18941.5, together with all applicable portions of this code, shall also become effective 180 days after publication of the California Building Standards Code by the California Building Standards Commission.

**1.8.6.2 Findings, filings and rejections of local modifications.** Prior to making any modifications or establishing more restrictive building standards, the governing body shall make

express findings and filings, as required by California Health and Safety Code Section 17958.7, showing that such modifications are reasonably necessary due to local climatic, geological or topographical conditions. No modification shall become effective or operative unless the following requirements are met:

1. The express findings shall be made available as a public record.
2. A copy of the modification and express finding, each document marked to cross-reference the other, shall be filed with the California Building Standards Commission for a city, county, or city and county and with the Department of Housing and Community Development for fire protection districts.
3. The California Building Standards Commission has not rejected the modification or change.

Nothing in this section shall limit the authority of fire protection districts pursuant to California Health and Safety Code Section 13869.7(a).

### **SECTION 1.8.7 ALTERNATE MATERIALS, DESIGNS, TESTS AND METHODS OF CONSTRUCTION**

**1.8.7.1 General.** The provisions of this code, as adopted by the Department of Housing and Community Development, are not intended to prevent the use of any alternate material, appliance, installation, device, arrangement, design or method of construction not specifically prescribed by this code. Consideration and approval of alternates shall comply with Section 1.8.7.2 for local building departments and Section 1.8.7.3 for the Department of Housing and Community Development.

**1.8.7.2 Local building departments.** The building department of any city, county, or city and county may approve alternates for use in the erection, construction, reconstruction, movement, enlargement, conversion, alteration, repair, removal, demolition or arrangement of apartments, condominiums, hotels, motels, lodging houses, dwellings, or accessory structures, except for the following:

1. Structures located in mobilehome parks as defined in California Health and Safety Code Section 18214.
2. Structures located in special occupancy parks as defined in California Health and Safety Code Section 18862.43.
3. Factory-built housing as defined in California Health and Safety Code Section 19971.

**1.8.7.2.1 Approval of alternates.** The consideration and approval of alternates by a local building department shall comply with the following procedures and limitations:

1. The approval shall be granted on a case-by-case basis.
2. Evidence shall be submitted to substantiate claims that the proposed alternate, in performance, safety and protection of life and health, conforms to, or is

at least equivalent to, the standards contained in this code and other rules and regulations promulgated by the Department of Housing and Community Development.

3. The local building department may require tests performed by an approved testing agency at the expense of the owner or owner's agent as proof of compliance.
4. If the proposed alternate is related to accessibility in covered multifamily dwellings or in facilities serving covered multifamily dwellings as defined in Chapter 2, the proposed alternate must also meet the threshold set for equivalent facilitation as defined in Chapter 2.

For additional information regarding approval of alternates by a building department pursuant to the State Housing Law, see California Health and Safety Code Section 17951(e) and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 1.

**1.8.7.3 Department of Housing and Community Development.** The Department of Housing and Community Development may approve alternates for use in the erection, construction, reconstruction, movement, enlargement, conversion, alteration, repair, removal or demolition of apartments, condominiums, hotels, motels, lodging houses, dwellings or an accessory thereto and permanent buildings in mobilehome parks and special occupancy parks. The consideration and approval of alternates shall comply with the following:

1. The department may require tests at the expense of the owner or owner's agent to substantiate compliance with the California Building Standards Code.
2. The approved alternate shall, for its intended purpose, be at least equivalent in performance and safety to the materials, designs, tests or methods of construction prescribed by this code.

**SECTION 1.8.8  
APPEALS BOARD**

**1.8.8.1 General.** Every city, county, or city and county shall establish a process to hear and decide appeals of orders, decisions and determinations made by the enforcing agency relative to the application and interpretation of this code and other regulations governing construction, use, maintenance and change of occupancy. The governing body of any city, county, or city and county may establish a local appeals board and a housing appeals board to serve this purpose. Members of the appeals board(s) shall not be employees of the enforcing agency and shall be knowledgeable in the applicable building codes, regulations and ordinances as determined by the governing body of the city, county, or city and county.

Where no such appeals boards or agencies have been established, the governing body of the city, county, or city and county shall serve as the local appeals board or housing appeals board as specified in California Health and Safety Code Sections 17920.5 and 17920.6.

**1.8.8.2 Definitions.** The following terms shall for the purposes of this section have the meaning shown.

**HOUSING APPEALS BOARD.** The board or agency of a city, county, or city and county which is authorized by the governing body of the city, county, or city and county to hear appeals regarding the requirements of the city, county, or city and county relating to the use, maintenance and change of occupancy of buildings and structures, including requirements governing alteration, additions, repair, demolition and moving. In any area in which there is no such board or agency, "Housing appeals board" means the local appeals board having jurisdiction over the area.

**LOCAL APPEALS BOARD.** The board or agency of a city, county, or city and county which is authorized by the governing body of the city, county, or city and county to hear appeals regarding the building requirements of the city, county, or city and county. In any area in which there is no such board or agency, "Local appeals board" means the governing body of the city, county, or city and county having jurisdiction over the area.

**1.8.8.3 Appeals.** Except as otherwise provided in law, any person, firm or corporation adversely affected by a decision, order or determination by a city, county, or city and county relating to the application of building standards published in the California Building Standards Code, or any other applicable rule or regulation adopted by the Department of Housing and Community Development, or any lawfully enacted ordinance by a city, county, or city and county, may appeal the issue for resolution to the local appeals board or housing appeals board as appropriate.

The local appeals board shall hear appeals relating to new building construction and the housing appeals board shall hear appeals relating to existing buildings.

**SECTION 1.8.9  
UNSAFE BUILDINGS OR STRUCTURES**

**1.8.9.1 Authority to enforce.** Subject to other provisions of law, the administration, enforcement, actions, proceedings, abatement, violations and penalties for unsafe buildings and structures are contained in the following statutes and regulations:

1. For applications subject to the State Housing Law as referenced in Section 1.8.3.2.1 of this code, refer to Health and Safety Code, Division 13, Part 1.5, commencing with Section 17910 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 1, commencing with Section 1. For enforcement related to accessory dwelling units, see Section 17980.12 operative until January 1, 2035.
2. For applications subject to the Mobilehome Parks Act as referenced in Section 1.8.3.2.2 of this code, refer to Health and Safety Code, Division 13, Part 2.1, commencing with Section 18200 and California Code of Regulations, Title 25, Division 1, Chapter 2, commencing with Section 1000.
3. For applications subject to the Special Occupancy Parks Act as referenced in Section 1.8.3.2.3 of this

code, refer to Health and Safety Code, Division 13, Part 2.3, commencing with Section 18860 and California Code of Regulations, Title 25, Division 1, Chapter 2.2, commencing with Section 2000.

4. For applications subject to the Employee Housing Act as referenced in Section 1.8.3.2.4 of this code, refer to Health and Safety Code, Division 13, Part 1, commencing with Section 17000 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 3, commencing with Section 600.
5. For applications subject to the Factory-Built Housing Law as referenced in Section 1.8.3.2.5 of this code, refer to Health and Safety Code, Division 13, Part 6, commencing with Section 19960 and California Code of Regulations, Title 25, Division 1, Chapter 3, Subchapter 1, commencing with Section 3000.

**1.8.9.2 Actions and proceedings.** Subject to other provisions of law, punishments, penalties and fines for violations of building standards are contained in the following statutes and regulations:

1. For applications subject to the State Housing Law as referenced in Section 1.8.3.2.1 of this code, refer to Health and Safety Code, Division 13, Part 1.5, commencing with Section 17910 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 1, commencing with Section 1.
2. For applications subject to the Mobilehome Parks Act as referenced in Section 1.8.3.2.2 of this code, refer to Health and Safety Code, Division 13, Part 2.1, commencing with Section 18200 and California Code of Regulations, Title 25, Division 1, Chapter 2, commencing with Section 1000.
3. For applications subject to the Special Occupancy Parks Act as referenced in Section 1.8.3.2.3 of this code, refer to Health and Safety Code, Division 13, Part 2.3, commencing with Section 18860 and California Code of Regulations, Title 25, Division 1, Chapter 2.2, commencing with Section 2000.
4. For applications subject to the Employee Housing Act as referenced in Section 1.8.3.2.4 of this code, refer to Health and Safety Code, Division 13, Part 1, commencing with Section 17000 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 3, commencing with Section 600.
5. For applications subject to the Factory-Built Housing Law as referenced in Section 1.8.3.2.5 of this code, refer to Health and Safety Code, Division 13, Part 6, commencing with Section 19960 and California Code of Regulations, Title 25, Division 1, Chapter 3, Subchapter 1, commencing with Section 3000.

### **SECTION 1.8.10 OTHER BUILDING REGULATIONS**

**1.8.10.1 Existing structures.** Notwithstanding other provisions of law, the replacement, retention, and extension of original materials and the use of original methods of construction for

any existing building or accessory structure, or portions thereof, shall be permitted in accordance with the provisions of this code and the California Existing Building Code, as adopted by the Department of Housing and Community Development. For additional information, see California Health and Safety Code, Sections 17912, 17920.3, 17922 and 17958.8.

**1.8.10.2 Moved structures.** Subject to the requirements of California Health and Safety Code Sections 17922, 17922.3 and 17958.9, local ordinances or regulations relating to a moved residential building or accessory structure thereto, shall permit the replacement, retention, and extension of original materials and the use of original methods of construction so long as the structure does not become or continue to be a substandard building.

## **SECTION 1.9 DIVISION OF THE STATE ARCHITECT**

### **1.9.1 Division of the State Architect—Access Compliance.**

**General.** The purpose of this code is to ensure that barrier-free design is incorporated in all buildings, facilities, site work and other improvements to which this code applies in compliance with state law to ensure that these improvements are accessible to and usable by persons with disabilities. Additions, alterations and structural repairs in all buildings and facilities shall comply with these provisions for new buildings, except as otherwise provided and specified herein.

The provisions of these regulations shall apply to any portable buildings leased or owned by a school district, and shall also apply to temporary and emergency buildings and facilities. Temporary buildings and facilities are not of permanent construction but are extensively used or are essential for public use for a period of time. Examples of temporary buildings or facilities covered include, but are not limited to: reviewing stands, temporary classrooms, bleacher areas, exhibit areas, temporary banking facilities, temporary health screening services or temporary safe pedestrian passageways around a construction site.

In addition, to incorporate standards at least as restrictive as those required by the federal government for barrier-free design under (1) Title III (Public Accommodations and Commercial Facilities), Subpart D (New Construction and Alteration) (see 28 C.F.R., Part 36), and (2) Title II (Public Entities), Section 35.151 (New Construction and Alterations) (see 28 C.F.R., Part 35) both from the Americans with Disabilities Act of 1990, 2004 Americans with Disabilities Act Accessibility Guidelines, as adopted by the U.S. Department of Justice (see 36 C.F.R. Part 1191, Appendices B and D), and (3) under the Fair Housing Amendments Act of 1988. Some of these regulations may be more stringent than state law in order to meet the federal requirement.

**1.9.1.1 Application.** See Government Code commencing with Section 4450.

Publicly funded buildings, structures, sidewalks, curbs and related facilities shall be accessible to and usable by persons with disabilities as follows:

*1.9.1.1.1 All buildings, structures, sidewalks, curbs and related facilities constructed in the state by the use of state, county or municipal funds, or the funds of any political subdivision of the state. For public housing see Section 1.9.1.3.*

*1.9.1.1.2 All buildings, structures and facilities that are leased, rented, contracted, sublet or hired by any municipal, county or state division of government, or by a special district. For public housing see Section 1.9.1.3.*

*1.9.1.1.3 All existing publicly funded buildings and facilities when alterations, structural repairs or additions are made to such buildings or facilities. For detailed requirements on existing buildings, see Chapter 11B, Division 2, Section 11B-202. For public housing see Section 1.9.1.3.*

*1.9.1.1.4 With respect to buildings, structures, sidewalks, curbs and related facilities not requiring a building permit, building standards published in the California Building Standards Code relating to access for persons with disabilities and other regulations adopted pursuant to Government Code Section 4450, and in effect at the time construction is commenced, shall be applicable.*

**1.9.1.2 Application.** See Health and Safety Code commencing with Section 19952.

All privately funded public accommodations, as defined, and commercial facilities, as defined, shall be accessible to persons with disabilities as follows:

**Exception:** Certain types of privately funded multistory buildings do not require installation of an elevator to provide access above and below the first floor. See Chapter 11B.

*1.9.1.2.1 Any building, structure, facility, complex or improved area, or portions thereof, which are used by the general public.*

*1.9.1.2.2 Any sanitary facilities which are made available for the public, clients or employees in such accommodations or facilities.*

*1.9.1.2.3 Any curb or sidewalk intended for public use that is constructed in this state with private funds.*

*1.9.1.2.4 All existing privately funded public accommodations when alterations, structural repairs or additions are made to such public accommodations as set forth under Chapter 11B.*

**1.9.1.3 Application—Public housing.** See Government Code Section 12955.1(c) and the definition for public housing in Chapter 2.

**1.9.1.4 Enforcing agency.**

*1.9.1.4.1 The director of the Department of General Services where state funds are utilized for any project or where funds of counties, municipalities or other political subdivisions are utilized for the construction of elementary, secondary or community college projects.*

*1.9.1.4.2 The governing bodies where funds of counties, municipalities or other political subdivisions are utilized except as otherwise provided above.*

*1.9.1.4.3 The building department of every city, county or city and county within the territorial area of its city, county or city and county, where private funds are utilized. “Building department” means the department, bureau or officer charged with the enforcement of laws or ordinances regulating the erection or construction, or both the erection and construction, of buildings.*

*1.9.1.5 Special conditions for persons with disabilities requiring appeals action ratification. Whenever reference is made in these regulations to this section, the findings and determinations required to be rendered by the local enforcing agency shall be subject to ratification through an appeals process.*

**1.9.1.6 Authority cited—**Government Code Section 4450.

**1.9.1.7 Reference cited—**Government Code Sections 4450 through 4461 and 12955.1(c) and Health and Safety Code Sections 18949.1, 19952 through 19959.

**1.9.1.8 Adopting agency identification.** The provisions of this code applicable to buildings identified in this Subsection 1.9.1 will be identified in the Matrix Adoption Tables under the acronym DSA-AC.

**1.9.2 Division of the State Architect—Structural Safety.**

**1.9.2.1 DSA-SS Division of the State Architect-Structural Safety.**

**Application—**Public elementary and secondary schools, community colleges and state-owned or state-leased essential services buildings.

**Enforcing agency—**The Division of the State Architect—Structural Safety (DSA-SS) has been delegated the responsibility and authority by the Department of General Services to review and approve the design and observe the construction of public elementary and secondary schools, community colleges and state-owned or state-leased essential services buildings.

**Authority cited—**Education Code Sections 17310 and 81142 and Health and Safety Code Section 16022.

**Reference—**Education Code Sections 17280 through 17317, and 81130 through 81147 and Health and Safety Code Sections 16000 through 16023.

**1.9.2.1.1 Applicable administrative standards.**

**1. Title 24, Part 1, California Code of Regulations:**

1.1. Sections 4-301 through 4-355, Group 1, and Sections 4-401 through 4-435, Group 2, Chapter 4 for public elementary and secondary schools and community colleges.

1.2. Sections 4-201 through 4-249, Chapter 4, for state-owned or state-leased essential services buildings.



**2. Title 24, Part 2, California Code of Regulations:** [applies to public elementary and secondary schools, community colleges and state-owned or state-leased essential services building(s)]:

- 2.1. Sections 1.1 and 1.9.2.1 of Chapter 1, Division I.
- 2.2. Sections 102.1, 102.2, 102.3, 102.4, 102.5, 104.9, 104.10, 104.11, 106.1, 107.2.5 and 110.3.6 of Chapter 1, Division II.

**1.9.2.1.2 Applicable building standards.** California Building Standards Code, Title 24, Parts 2, 3, 4, 5, 6, 9, 10, 11 and 12, California Code of Regulations, for school buildings, community colleges and state-owned or state-leased essential service buildings.

The provisions of Title 24, Part 2, as adopted and amended by the Division of the State Architect—Structural Safety, shall apply to the applications listed in Section 1.9.2.1.

The Division of the State Architect—Structural Safety adopts the following building standards in Title 24, Part 2:

Chapters 2 through 10, 12, 14, 15, 16A, 17A, 18A, 19A, 20, 21A, 22A, 23, 24, 25, 26, 30, 31, 32, 33, and 35.

**1.9.2.1.3 Amendments.** Division of the State Architect—Structural Safety amendments in this code appear preceded with the acronym [DSA-SS].

**Exception:** Chapters 16A, 17A, 18A, 19A, 21A, and 22A—Amendments appearing in these chapters without an acronym have been co-adopted by DSA-SS and OSHPD.

**1.9.2.1.4 Reference to other chapters.** Where reference is made within this code to sections in Chapters 16, 17, 18, 19, 21, and 22, the respective sections in Chapters 16A, 17A, 18A, 19A, 21A, and 22A shall apply instead.

**1.9.2.2 DSA-SS/CC Division of the State Architect-Structural Safety/Community Colleges**

**Application—**Community Colleges. The Division of the State Architect has been delegated the authority by the Department of General Services to promulgate alternate building standards for application to community colleges, which a community college may elect to use in lieu of standards promulgated by DSA-SS in accordance with Section 1.9.2.1.

**Enforcing agency—**Division of the State Architect-Structural Safety/Community Colleges (DSA-SS/CC)

The Division of the State Architect has been delegated the authority by the Department of General Services to review and approve the design and oversee construction of community colleges electing to use the alternative building standards as provided in this section.

**Authority cited—**Education Code Section 81053.

**Reference—**Education Code Sections 81052, 81053, and 81130 through 81147.

**1.9.2.2.1 Applicable administrative standards.**

**1. Title 24, Part 1, California Code of Regulations:**

- 1.1. Sections 4-301 through 4-355, Group 1, and Sections 4-401 through 4-435, Group 2, Chapter 4.

**2. Title 24, Part 2, California Code of Regulations:**

- 2.1. Sections 1.1 and 1.9.2 of Chapter 1, Division I.
- 2.2. Sections 102.1, 102.2, 102.3, 102.4, 102.5, 104.9, 104.10, 104.11, 106.1, 107.2.5 and 110.3.6 of Chapter 1, Division II.

**1.9.2.2.2 Applicable building standards.** California Building Standards Code, Title 24, Parts 2, 3, 4, 5, 6, 9, 10, 11, and 12, California Code of Regulations.

The Division of the State Architect-Structural Safety/Community Colleges [DSA-SS/CC] adopts the following building standards in Title 24, Part 2:

Chapters 2 through 10, 12, 14, 15, 16, 17A, 18A, 19, 20, 21, 22, 23, 24, 25, 26, 30, 31, 32, 33, and 35.

**1.9.2.2.3 Amendments.** Division of the State Architect—Structural Safety/Community Colleges amendments in this code appear preceded with the acronym [DSA-SS/CC].

**Exception:** Chapters 17A, and 18A—Amendments appearing in these chapters without an acronym have been co-adopted by DSA-SS, DSA-SS/CC, and OSHPD.

**1.9.2.2.4 Reference to other chapters.** Where reference is made within this code to sections in Chapters 17 and 18, the respective sections in Chapters 17A and 18A shall apply instead.

## SECTION 1.10

### OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT

**1.10.1 OSHPD 1 and OSHPD 1R.** Specific scope of application of the agency responsible for enforcement, enforcement agency and the specific authority to adopt and enforce such provisions of this code, unless otherwise stated.

**Application—**[OSHPD 1] General acute care hospital buildings. [OSHPD 1R] Nonconforming hospital SPC or freestanding buildings that have been removed from acute-care service.

**Enforcing agency—**Office of Statewide Health Planning and Development (OSHPD). The office shall enforce the Division of the State Architect-Access Compliance regulations and the regulations of the Office of the State Fire Marshal for the above stated facility types.

**1.10.1.1 Applicable administrative standards.**

1. Title 24, Part 1, California Code of Regulations: Chapters 6 and 7.
2. Title 24, Part 2, California Code of Regulations: Sections 1.1 and 1.10, Chapter 1, Division I, and as

indicated in the adoption matrix for Chapter 1, Division II.

**1.10.1.2 Applicable building standards.** California Building Standards Code, Title 24, Parts 2, 3, 4, 5, 6, 9, 10 and 11.

The provisions of Title 24, Part 2, as adopted and amended by OSHPD, shall apply to the applications listed in Section 1.10.1.

OSHPD 1 adopts the following building standards in Title 24, Part 2:

Chapters 2 through 10, 12, 14, 15, 16A, 17A, 18A, 19A, 20, 21A, 22A, 23, 24, 25, 26, 30, 31, 32, 33, 35, and Appendix L.

OSHPD 1R adopts the following building standards in Title 24, Part 2:

Chapters 2 through 10, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 30, 31, 32, 33 and 35.

**1.10.1.3 Identification of amendments.** For applications listed in Section 1.10.1, amendments appear in this code preceded with the acronym [OSHPD 1], unless the entire chapter is applicable. For nonconforming hospital buildings removed from acute-care service, amendments are preceded with the acronym [OSHPD 1R].

**1.10.1.4 Reference to other chapters.** Where reference is made within this code to sections in Chapters 16, 17, 18, 19, 21, and 22, the respective sections in Chapters 16A, 17A, 18A, 19A, 21A and 22A shall apply instead for hospital buildings under OSHPD 1.

**Authority**—Health and Safety Code Sections 127010, 127015, 1275 and 129850.

**References**—Health and Safety Code Sections 19958, 127010, 127015, 129680, 1275 and 129675 through 130070.

**1.10.2 OSHPD 2.** Specific scope of application of the agency responsible for enforcement, enforcement agency and the specific authority to adopt and enforce such provisions of this code, unless otherwise stated.

**Application**—Skilled nursing facility and intermediate care facility buildings.

**Enforcing agency**—Office of Statewide Health Planning and Development (OSHPD). The office shall also enforce the Division of the State Architect—Access Compliance regulations and the regulations of the Office of the State Fire Marshal for the above-stated facility type.

**1.10.2.1 Applicable administrative standards.**

1. Title 24, Part 1, California Code of Regulations: Chapter 7.
2. Title 24, Part 2, California Code of Regulations: Sections 1.1 and 1.10, Chapter 1, Division I, and as indicated in the adoption matrix for Chapter 1, Division II.

**1.10.2.2 Applicable building standards.** California Building Standards Code, Title 24, Parts 2, 3, 4, 5, 6, 9, 10 and 11.

The provisions of Title 24, Part 2, as adopted and amended by OSHPD, shall apply to the applications listed in Section 1.10.2.

OSHPD 2 adopts the following building standards in Title 24, Part 2:

Chapters 2 through 10, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 30, 31, 32, 33 and 35.

**1.10.2.3 Identification of amendments.** For applications listed in Section 1.10.2, amendments appear in this code preceded with the acronym [OSHPD 2].

**Authority**—Health and Safety Code Sections 127010, 127015, 1275 and 129850.

**References**—Health and Safety Code Sections 127010, 127015, 1275 and 129680.

**1.10.3 OSHPD 3.** Specific scope of application of the agency responsible for enforcement, enforcement agency and the specific authority to adopt and enforce such provisions of this code, unless otherwise stated.

**Application**—Licensed clinics and any freestanding building under a hospital license where outpatient clinical services are provided.

**Enforcing agency**—Local building department.

**1.10.3.1 Applicable administrative standards.**

1. Title 24, Part 1, California Code of Regulations: Chapter 7.
2. Title 24, Part 2, California Code of Regulations: Sections 1.1 and 1.10, Chapter 1, Division I, and as indicated in the adoption matrix for Chapter 1, Division II.

**1.10.3.2 Applicable building standards.** California Building Standards Code, Title 24, Parts 2, 3, 4, 5, 6, 9, 10 and 11.

The provisions of Title 24, Part 2, as adopted and amended by OSHPD, shall apply to the applications listed in Section 1.10.3.

OSHPD 3 adopts the following building standards in Title 24, Part 2:

Chapter 12.

**1.10.3.3 Identification of amendments.** For applications listed in Section 1.10.3, amendments appear in this code without the acronym [OSHPD 3]. Adoptions are shown in the adoption matrix.

**Authority**—Health and Safety Code Sections 127010, 127015 and 1226.

**References**—Health and Safety Code Sections 127010, 127015, 129885 and 1226, Government Code Section 54350 and State Constitution Article 11, Section 7.

## SECTION 104 DUTIES AND POWERS OF BUILDING OFFICIAL

**[A] 104.1 General.** The building official is hereby authorized and directed to enforce the provisions of this code. The building official shall have the authority to render interpretations of this code and to adopt policies and procedures in order to clarify the application of its provisions. Such interpretations, policies and procedures shall be in compliance with the intent and purpose of this code. Such policies and procedures shall not have the effect of waiving requirements specifically provided for in this code.

**[A] 104.2 Applications and permits.** The building official shall receive applications, review construction documents and issue permits for the erection, and alteration, demolition and moving of buildings and structures, inspect the premises for which such permits have been issued and enforce compliance with the provisions of this code.

**[A] 104.2.1 Determination of substantially improved or substantially damaged existing buildings and structures in flood hazard areas.** For applications for reconstruction, rehabilitation, repair, alteration, addition or other improvement of existing buildings or structures located in flood hazard areas, the building official shall determine if the proposed work constitutes substantial improvement or repair of substantial damage. Where the building official determines that the proposed work constitutes substantial improvement or repair of substantial damage, and where required by this code, the building official shall require the building to meet the requirements of Section 1612.

**[A] 104.3 Notices and orders.** The building official shall issue necessary notices or orders to ensure compliance with this code.

**[A] 104.4 Inspections.** The building official shall make the required inspections, or the building official shall have the authority to accept reports of inspection by approved agencies or individuals. Reports of such inspections shall be in writing and be certified by a responsible officer of such approved agency or by the responsible individual. The building official is authorized to engage such expert opinion as deemed necessary to report on unusual technical issues that arise, subject to the approval of the appointing authority.

**[A] 104.5 Identification.** The building official shall carry proper identification when inspecting structures or premises in the performance of duties under this code.

**[A] 104.6 Right of entry.** Where it is necessary to make an inspection to enforce the provisions of this code, or where the building official has reasonable cause to believe that there exists in a structure or on a premises a condition that is contrary to or in violation of this code that makes the structure or premises unsafe, dangerous or hazardous, the building official is authorized to enter the structure or premises at reasonable times to inspect or to perform the duties imposed by this code, provided that if such structure or premises be occupied that credentials be presented to the occupant and entry requested. If such structure or premises is unoccupied, the building official shall first make a reasonable effort to locate the owner or other person having charge or control of the structure or premises and request entry. If entry is refused, the

building official shall have recourse to the remedies provided by law to secure entry.

**[A] 104.7 Department records.** The building official shall keep official records of applications received, permits and certificates issued, fees collected, reports of inspections, and notices and orders issued. Such records shall be retained in the official records for the period required for retention of public records.

**[A] 104.8 Liability.** The building official, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be civilly or criminally rendered liable personally and is hereby relieved from personal liability for any damage accruing to persons or property as a result of any act or by reason of an act or omission in the discharge of official duties.

**[A] 104.8.1 Legal defense.** Any suit or criminal complaint instituted against an officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by legal representatives of the jurisdiction until the final termination of the proceedings. The building official or any subordinate shall not be liable for cost in any action, suit or proceeding that is instituted in pursuance of the provisions of this code.

**[A] 104.9 Approved materials and equipment.** Materials, equipment and devices approved by the building official shall be constructed and installed in accordance with such approval.

**[A] 104.9.1 Used materials and equipment.** Materials that are reused shall comply with the requirements of this code for new materials. Used equipment and devices shall not be reused unless approved by the building official.

**[A] 104.10 Modifications.** Where there are practical difficulties involved in carrying out the provisions of this code, the building official shall have the authority to grant modifications for individual cases, upon application of the owner or the owner's authorized agent, provided that the building official shall first find that special individual reason makes the strict letter of this code impractical, the modification is in compliance with the intent and purpose of this code and that such modification does not lessen health, accessibility, life and fire safety or structural requirements. The details of action granting modifications shall be recorded and entered in the files of the department of building safety.

**[A] 104.10.1 Flood hazard areas.** The building official shall not grant modifications to any provision required in flood hazard areas as established by Section 1612.3 unless a determination has been made that:

1. A showing of good and sufficient cause that the unique characteristics of the size, configuration or topography of the site render the elevation standards of Section 1612 inappropiate.
2. A determination that failure to grant the variance would result in exceptional hardship by rendering the lot undevelopable.

3. A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, cause fraud on or victimization of the public, or conflict with existing laws or ordinances.
4. A determination that the variance is the minimum necessary to afford relief, considering the flood hazard.
5. Submission to the applicant of written notice specifying the difference between the design flood elevation and the elevation to which the building is to be built, stating that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced floor elevation, and stating that construction below the design flood elevation increases risks to life and property.

**[A] 104.11 Alternative materials, design and methods of construction and equipment.** The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material, design or method of construction shall be approved where the building official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, not less than the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety. Where the alternative material, design or method of construction is not approved, the building official shall respond in writing, stating the reasons why the alternative was not approved. *[DSA-SS, DSA-SS/CC & OSHPD 1, 1R, 2, 4 & 5] Alternative system shall satisfy ASCE 7 Section 1.3, unless more restrictive requirements are established by this code for an equivalent system.*

*[DSA-SS, DSA-SS/CC] Alternative systems shall also satisfy the California Administrative Code, Section 4-304.*

*[OSHPD 1, 1R, 2, 4 & 5] Alternative systems shall also satisfy the California Administrative Code, Section 7-104.*

**[A] 104.11.1 Research reports.** Supporting data, where necessary to assist in the approval of materials or assemblies not specifically provided for in this code, shall consist of valid research reports from approved sources.

**[A] 104.11.2 Tests.** Whenever there is insufficient evidence of compliance with the provisions of this code, or evidence that a material or method does not conform to the requirements of this code, or in order to substantiate claims for alternative materials or methods, the building official shall have the authority to require tests as evidence of compliance to be made without expense to the jurisdiction. Test methods shall be as specified in this code or by other recognized test standards. In the absence of recognized and accepted test methods, the building official shall approve the testing procedures. Tests shall be performed by an approved agency. Reports of such tests shall be retained by the building official for the period required for retention of public records.

**104.11.3 Peer review.** *[OSHPD 1, 1R, 2, 4 & 5] When peer review is required for new or existing buildings, it shall be performed pursuant to Section 1617A.1.41.*

**104.11.4 Earthquake monitoring instruments.** *[OSHPD 1 & 4] The enforcement agency may require earthquake monitoring instruments for any building that receives approval of an alternative system for the Lateral Force Resisting System (LFRS). There shall be a sufficient number of instruments to characterize the response of the building during an earthquake and shall include at least one tri-axial free field instrument or equivalent. A proposal for instrumentation and equipment specifications shall be forwarded to the enforcement agency for review and approval.*

*The instruments shall be interconnected for common start and common timing. Each instrument shall be located so that access is maintained at all times and is unobstructed by room contents. A sign stating "MAIN-TAIN CLEAR ACCESS TO THIS INSTRUMENT" shall be posted in a conspicuous location.*

*The Owner of the building shall be responsible for the implementation of the instrumentation program. Maintenance and service of the instruments shall be in accordance with Appendix L, Section 1.101.3 of Part 2, Volume 2 of the California Building Code.*

## SECTION 105 PERMITS

**[A] 105.1 Required.** Any owner or owner's authorized agent who intends to construct, enlarge, alter, repair, move, demolish or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be performed, shall first make application to the building official and obtain the required permit.

**[A] 105.1.1 Annual permit.** Instead of an individual permit for each alteration to an already approved electrical, gas, mechanical or plumbing installation, the building official is authorized to issue an annual permit upon application therefor to any person, firm or corporation regularly employing one or more qualified tradespersons in the building, structure or on the premises owned or operated by the applicant for the permit.

**[A] 105.1.2 Annual permit records.** The person to whom an annual permit is issued shall keep a detailed record of alterations made under such annual permit. The building official shall have access to such records at all times or such records shall be filed with the building official as designated.

**[A] 105.2 Work exempt from permit.** Exemptions from permit requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordi-

[A] **110.3 Required inspections.** The building official, upon notification, shall make the inspections set forth in Sections 110.3.1 through 110.3.11.

[A] **110.3.1 Footing and foundation inspection.** Footing and foundation inspections shall be made after excavations for footings are complete and any required reinforcing steel is in place. For concrete foundations, any required forms shall be in place prior to inspection. Materials for the foundation shall be on the job, except where concrete is ready mixed in accordance with ASTM C94, the concrete need not be on the job.

[A] **110.3.2 Concrete slab and under-floor inspection.** Concrete slab and under-floor inspections shall be made after in-slab or under-floor reinforcing steel and building service equipment, conduit, piping accessories and other ancillary equipment items are in place, but before any concrete is placed or floor sheathing installed, including the subfloor.

[A] **110.3.3 Lowest floor elevation.** In flood hazard areas, upon placement of the lowest floor, including the basement, and prior to further vertical construction, the elevation certification required in Section 1612.4 shall be submitted to the building official.

[A] **110.3.4 Frame inspection.** Framing inspections shall be made after the roof deck or sheathing, all framing, fire-blocking and bracing are in place and pipes, chimneys and vents to be concealed are complete and the rough electrical, plumbing, heating wires, pipes and ducts are approved.

**110.3.4.1 [HCD 1] Moisture content verification.** *Moisture content of framing members shall be verified in accordance with the California Green Building Standards Code (CALGreen), Chapter 4, Division 4.5.*

[A] **110.3.5 Lath, gypsum board and gypsum panel product inspection.** Lath, gypsum board and gypsum panel product inspections shall be made after lathing, gypsum board and gypsum panel products, interior and exterior, are in place, but before any plastering is applied or gypsum board and gypsum panel product joints and fasteners are taped and finished.

**Exception:** Gypsum board and gypsum panel products that are not part of a fire-resistance-rated assembly or a shear assembly.

[A] **110.3.6 Weather-exposed balcony and walking surface waterproofing.** Where balconies or other elevated walking surfaces are exposed to water from direct or blowing rain, snow or irrigation, and the structural framing is protected by an impervious moisture barrier, all elements of the impervious moisture barrier system shall not be concealed until inspected and approved.

**Exception:** Where special inspections are provided in accordance with Section 1705.1.1, Item 3.

[A] **110.3.7 Fire- and smoke-resistant penetrations.** Protection of joints and penetrations in fire-resistance-rated assemblies, smoke barriers and smoke partitions shall not be concealed from view until inspected and approved.

[A] **110.3.8 Energy efficiency inspections.** Inspections shall be made to determine compliance with Chapter 13 and shall include, but not be limited to, inspections for:

envelope insulation *R*- and *U*-values, fenestration *U*-value, duct system *R*-value, and HVAC and water-heating equipment efficiency.

[A] **110.3.9 Other inspections.** In addition to the inspections specified in Sections 110.3.1 through 110.3.8, the building official is authorized to make or require other inspections of any construction work to ascertain compliance with the provisions of this code and other laws that are enforced by the department of building safety.

[A] **110.3.10 Special inspections.** For special inspections, see Chapter 17.

[A] **110.3.11 Final inspection.** The final inspection shall be made after all work required by the building permit is completed.

[A] **110.3.11.1 Flood hazard documentation.** If located in a flood hazard area, documentation of the elevation of the lowest floor as required in Section 1612.4 shall be submitted to the building official prior to the final inspection.

**110.3.11.2 [HCD 1] Operation and maintenance manual.** *At the time of final inspection, a manual, compact disc, web-based reference or other media acceptable to the enforcing agency shall be placed in the building in accordance with the California Green Building Standards Code (CALGreen), Chapter 4, Division 4.4.*

**110.3.12 Type IV-A, IV-B and IV-C connection protection inspection.** *In buildings of Type IV-A, IV-B and IV-C construction, where connection fire-resistance ratings are provided by wood cover calculated to meet the requirements of Section 2304.10.1.2, inspection of the wood cover shall be made after the cover is installed, but before any other coverings or finishes are installed.*

[A] **110.4 Inspection agencies.** The building official is authorized to accept reports of approved inspection agencies, provided that such agencies satisfy the requirements as to qualifications and reliability.

[A] **110.5 Inspection requests.** It shall be the duty of the holder of the building permit or their duly authorized agent to notify the building official when work is ready for inspection. It shall be the duty of the permit holder to provide access to and means for inspections of such work that are required by this code.

[A] **110.6 Approval required.** Work shall not be done beyond the point indicated in each successive inspection without first obtaining the approval of the building official. The building official, upon notification, shall make the requested inspections and shall either indicate the portion of the construction that is satisfactory as completed, or notify the permit holder or his or her agent wherein the same fails to comply with this code. Any portions that do not comply shall be corrected and such portion shall not be covered or concealed until authorized by the building official.

## SECTION 111 CERTIFICATE OF OCCUPANCY

[A] **111.1 Change of occupancy.** A building or structure shall not be used or occupied, and a change of occupancy of a build-

ing or structure or portion thereof shall not be made, until the building official has issued a certificate of occupancy therefor as provided herein. Issuance of a certificate of occupancy shall not be construed as an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction.

**Exception:** Certificates of occupancy are not required for work exempt from permits in accordance with Section 105.2.

**[A] 111.2 Certificate issued.** After the building official inspects the building or structure and does not find violations of the provisions of this code or other laws that are enforced by the department of building safety, the building official shall issue a certificate of occupancy that contains the following:

1. The building permit number.
2. The address of the structure.
3. The name and address of the owner or the owner’s authorized agent.
4. A description of that portion of the structure for which the certificate is issued.
5. A statement that the described portion of the structure has been inspected for compliance with the requirements of this code for the occupancy and division of occupancy and the use for which the proposed occupancy is classified.
6. The name of the building official.
7. The edition of the code under which the permit was issued.
8. The use and occupancy, in accordance with the provisions of Chapter 3.
9. The type of construction as defined in Chapter 6.
10. The design occupant load.
11. If an automatic sprinkler system is provided, whether the sprinkler system is required.
12. Any special stipulations and conditions of the building permit.

**[A] 111.3 Temporary occupancy.** The building official is authorized to issue a temporary certificate of occupancy before the completion of the entire work covered by the permit, provided that such portion or portions shall be occupied safely. The building official shall set a time period during which the temporary certificate of occupancy is valid.

**[A] 111.4 Revocation.** The building official is authorized to, in writing, suspend or revoke a certificate of occupancy or completion issued under the provisions of this code wherever the certificate is issued in error, or on the basis of incorrect information supplied, or where it is determined that the building or structure or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.

## SECTION 112 SERVICE UTILITIES

**[A] 112.1 Connection of service utilities.** A person shall not make connections from a utility, source of energy, fuel or power to any building or system that is regulated by this code for which a permit is required, until released by the building official.

**[A] 112.2 Temporary connection.** The building official shall have the authority to authorize the temporary connection of the building or system to the utility, source of energy, fuel or power.

**[A] 112.3 Authority to disconnect service utilities.** The building official shall have the authority to authorize disconnection of utility service to the building, structure or system regulated by this code and the referenced codes and standards set forth in Section 101.4 in case of emergency where necessary to eliminate an immediate hazard to life or property or where such utility connection has been made without the approval required by Section 112.1 or 112.2. The building official shall notify the serving utility, and wherever possible the owner and occupant of the building, structure or service system of the decision to disconnect prior to taking such action. If not notified prior to disconnecting, the owner or occupant of the building, structure or service system shall be notified in writing, as soon as practical thereafter.

## SECTION 113 BOARD OF APPEALS

**[A] 113.1 General.** In order to hear and decide appeals of orders, decisions or determinations made by the building official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The board of appeals shall be appointed by the applicable governing authority and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business.

**[A] 113.2 Limitations on authority.** An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The board shall not have authority to waive requirements of this code.

**[A] 113.3 Qualifications.** The board of appeals shall consist of members who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction.

## SECTION 114 VIOLATIONS

**[A] 114.1 Unlawful acts.** It shall be unlawful for any person, firm or corporation to erect, construct, alter, extend, repair, move, remove, demolish or occupy any building, structure or equipment regulated by this code, or cause same to be done, in conflict with or in violation of any of the provisions of this code.

**[A] 114.2 Notice of violation.** The building official is authorized to serve a notice of violation or order on the person responsible for the erection, construction, alteration, extension, repair, moving, removal, demolition or occupancy of a building or structure in violation of the provisions of this code, or in violation of a permit or certificate issued under the provisions of this code. Such order shall direct the discontinuance of the illegal action or condition and the abatement of the violation.

# CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE

## CHAPTER 2 – DEFINITIONS

(Matrix Adoption Tables are nonregulatory, intended only as an aid to the code user.  
See Chapter 1 for state agency authority and building applications.)

Adopting agency	BSC	BSC-CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4								
Adopt entire chapter	X																					
Adopt entire chapter as amended (amended sections listed below)			X	X	X	X		X	X	X	X	X	X	X								
Adopt only those sections that are listed below							X								X	X						
Chapter / Section																						
201.3			X	X	X	X																
201.4			X																			
202			X	X	X	X																
Access Aisle							X															
Accessibility				X	X	X	X															
Accessibility Function Button							X															
Accessible				X	X	X	X															
Accessible Element							X															
Accessible Means of Egress							X															
Accessible Route				X	X	X	X															
Accessible Space				X	X	X	X															
Accessible Unit				†	†	†																
Accessory Dwelling Unit				X	X																	
Active Earthquake Fault								X	X	X					X							
Active Equipment/Component								X	X	X	X	X			X	X						
Adaptable							X															
Adaptable Dwelling Unit						X																
Addition (2nd paragraph only)							X															
Adjusted Construction Cost							X															
Administrative Authority							X															
Adult Changing Facility							X															
Aged Home or Institution			X																			
Aisle (2nd paragraph only)							X															
Alteration							X															
Alternative System										X	X	X			X	X						
Amusement Attraction							X															
Amusement Ride							X															
Amusement Ride Seat							X															
ANSI							X															
Approved (with notes)			X	X	X	X																
Approved (2nd paragraph only) (w/o notes)							X															
Approved Agency				X	X			X	X													
Approved Listing Agency				X	X																	
Approved Testing Agency				X	X		X			X	X	X			X	X						
Area of Refuge							X															
Area of Sport Activity							X															
Assembly Area							X															
Assistive Device						X																
Assistive Listening System (ALS)							X															
Automatic Door				X	X	X	X															
Automatic Teller Machine (ATM)							X															
Auxiliary Area																						
Backwash																						
Base								X	X	X				X								
Bather																						
Bathroom						X	X															
Bedridden Person			X																			
Blended Transition							X															

(continued)

**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE  
CHAPTER 2 – DEFINITIONS—continued**

Adopting agency	BSC	BSC- CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4								
Adopt entire chapter	X																					
Adopt entire chapter as amended (amended sections listed below)			X	X	X	X		X	X	X	X	X	X	X								
Adopt only those sections that are listed below							X								X	X						
Chapter / Section																						
Boarding Pier							X															
Boat Launch Ramp							X															
Boat Slip							X															
Bottle-Filling Station							X															
Building			X																			
Building (with exception)				X	X	X																
Building (w/o notes)							X															
Building Entrance on an Accessible Route						X																
Building, Existing				X	X																	
Building Official							X															
Care and Supervision			X																			
Care Suite			X																			
Carriage Unit						X																
Catastrophically Injured			X																			
Catch Pool							X															
CCR							X															
CDF Director			X																			
Cell			X																			
Cell Complex			X																			
Cell Tiers			X																			
Cellular Concrete				X	X																	
Central Control Building			X																			
Characters				X	X	X	X															
Charter School			X																			
Child-Care Center			X																			
Child or Children			X																			
Children's Use							X															
Chronically Ill			X																			
Circulation Path							X															
Clean Pool Water																	X					
Clear							X															
Clear Floor Space						X	X															
Clear Pool Water																	X					
Clinic, Outpatient			X																			
Closed-Circuit Telephone							X															
Commercial Facilities							X															
Commercial Place of Public Amusement							X															
Common Use				†	†	†	X															
Common Use Areas				†		X																
Community Care Facility			X																			
Community Correctional Reentry Centers			X																			
Comply With							X															
Concrete, Cellular				X	X	X																

(continued)



**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE  
CHAPTER 2 – DEFINITIONS—continued**

Adopting agency	BSC	BSC- CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4								
Adopt entire chapter	X																					
Adopt entire chapter as amended (amended sections listed below)			X	X	X	X		X	X	X	X	X	X	X								
Adopt only those sections that are listed below							X								X	X						
Chapter / Section																						
<i>Congregate Living Health Facility (CLHF)</i>			X																			
<i>Congregate Residence</i>			X			X																
<i>Control Room</i>			X																			
<i>Correctional Hospitals</i>			X																			
<i>Correctional Medical or Mental Health Housing Suite</i>			X																			
<i>Correctional Mental Health Facilities</i>			X																			
<i>Correctional Nursing Facilities</i>			X																			
<i>Correctional Treatment Centers</i>			X																			
<i>Corrosion Resistant</i>																	X					
<i>Courthouse Holding Facility</i>			X																			
<i>Courtroom Dock</i>			X																			
<i>Covered Multifamily Dwellings</i>						X																
<i>Cross Slope</i>						X	X															
<i>Curb Cut</i>				X	X	X	X															
<i>Curb Ramp</i>				X	X	X	X															
<i>Custody Station</i>			X																			
<i>Day-Care</i>			X																			
<i>Day-Care Home, Family</i>			X																			
<i>Day-Care Home, Large Family</i>			X																			
<i>Day-Care Home, Small Family</i>			X																			
<i>Day Room</i>			X																			
<i>Deck</i>																	X					
<i>Department</i>				X	X																	
<i>Designated Public Transportation</i>							X															
<i>Destination-Oriented Elevator</i>							X															
<i>Detached Single-Family Dwelling</i>				X	X																	
<i>Detectable Warning</i>				X	X	X	X															
<i>Detention Elevator</i>			X																			
<i>Detention Program Suite</i>			X																			
<i>Detention Treatment Room</i>			X																			
<i>Detoxification Facilities</i>			X																			
<i>Directional Sign</i>				X	X		X															
<i>Disability</i>							X															
<i>Distance from Active Earthquake Fault</i>								X	X	X				X								
<i>District Agricultural Associations</i>							X															
<i>Dormitory</i>			X				X															
<i>Dormitory</i>			X																			
<i>Drain</i>																	X					
<i>Drive Aisle</i>							X															
<i>Drive-up Electric Vehicle Charging Station</i>							X															
<i>Driveway</i>							X															
<i>Dwelling Unit</i>						X																

(continued)

**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE  
CHAPTER 2 – DEFINITIONS—continued**

Adopting agency	BSC	BSC- CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4								
Adopt entire chapter	X																					
Adopt entire chapter as amended (amended sections listed below)			X	X	X	X		X	X	X	X	X	X	X								
Adopt only those sections that are listed below							X								X	X						
Chapter / Section																						
<i>Effective Particle Size</i>																X						
<i>Efficiency Dwelling Unit</i>				X																		
<i>Electric Vehicle</i>			X																			
<i>Electric Vehicle (EV)</i>							X															
<i>Electric Vehicle (EV) Charger</i>							X															
<i>Electric Vehicle Charging Space (EV Space)</i>							X															
<i>Electric Vehicle Charging Station (EVCS)</i>							X															
<i>Electric Vehicle (EV) Connector</i>							X															
<i>Element</i>							X															
<i>Elevated Play Component</i>							X															
<i>Elevator, Passenger</i>				X	X		X															
<i>Employee Work Area</i>							X															
<i>Enforcement</i>				X	X																	
<i>Enforcement Agent</i>								X	X	X	X			X	X							
<i>Enforcing Agency</i>			X	X	X		X			X	X	X	X	X	X		X					
<i>Entrance</i>				X	X	X	X															
<i>Equipment</i>										X		X		X	X							
<i>Equipment Area</i>																X						
<i>Equivalent Facilitation</i>						X	X															
<i>Existing Building or Facility</i>							X															
<i>Exit</i>							X															
<i>Exterior Covering</i>			X																			
<i>Facility</i>							X															
<i>Family</i>				X																		
<i>Fire Appliance</i>			X																			
<i>Fire Hazard Severity Zones</i>			X																			
<i>Fire Protection Plan</i>			X																			
<i>Fire-Retardant Treated Wood</i>			X																			
<i>Fire-Smoke Barrier</i>			X																			
<i>Fireworks</i>			X																			
<i>Freestanding Acute Psychiatric Building (APB)</i>															X							
<i>Freestanding Skilled Nursing Building (SNB)</i>											X											
<i>Full-Time Care</i>			X																			
<i>Functional Area</i>							X															
<i>Gangway</i>							X															
<i>Gas Detection System</i>			X																			
<i>General Acute Care Building (GAC Building)</i>										X												
<i>Golf Car Passage</i>							X															
<i>Grab Bar</i>						X	X															
<i>Grade (Adjacent Ground Elevation)</i>						X	X															
<i>Grade Break</i>							X															
<i>Ground Floor</i>						X	X															

(continued)

**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE**  
**CHAPTER 2 – DEFINITIONS—continued**

Adopting agency	BSC	BSC -CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4								
Adopt entire chapter	X																					
Adopt entire chapter as amended (amended sections listed below)			X	X	X	X		X	X	X	X	X	X	X								
Adopt only those sections that are listed below							X								X	X						
Chapter / Section																						
Ground Level Play Component							X															
Group Home			X																			
Guard (or Guardrail)				X	X	X	X															
Hall Call Console							X															
Handrail							X															
Handwashing Fixture										X		X	X	X	X							
Hazardous Substance			X																			
Health Care Provider							X															
High-Rise Building			X																			
High-Rise Building Access			X																			
Historic Buildings							X															
Holding Facility			X																			
Hospitals and Psychiatric Hospitals			X																			
Hotel or Motel				X	X																	
Housing at a Place of Education						X	X															
Housing Pod			X																			
Housing Unit			X																			
HPM			X																			
If, If... Then							X															
Ignition-Resistant Material			X																			
Infant			X																			
Inlet																						X
Intake and Release Areas			X																			
Intended to be occupied as a Residence				†	†	†																
International Symbol of Accessibility						X	X															
Irregular Structure								X	X	X				X								
Key Station							X															
Kick Plate				X	X	X	X															
Kitchen or Kitchenette							X															
Labeled				X	X																	
Laboratory			X																			
Laboratory Suite			X																			
Ladder																						X
Lavatory						X	X															
Level Area						X																
Licensing Agency										X	X	X	X	X	X							
Lift, Platform (Wheelchair)						X																
Liquid Tight Floor			X																			
Listed			X	X	X																	
Listing Agency				X	X																	
Live/Work Unit				X																		
Lobby			X	X	X																	

(continued)

**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE  
CHAPTER 2 – DEFINITIONS—continued**

Adopting agency	BSC	BSC- CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4								
Adopt entire chapter	X																					
Adopt entire chapter as amended (amended sections listed below)			X	X	X	X		X	X	X	X	X	X	X	X							
Adopt only those sections that are listed below							X								X	X						
Chapter / Section																						
Local Agency Very High Fire Hazard Severity Zone			X																			
Lodging House				X		X																
Log Wall Construction			X																			
Mail Boxes							X															
Major Structural Alterations, Additions or Repairs										X				X								
Marked Crossing				X	X	X	X															
Mass Timber	X		X	X	X			X	X													
May							X															
Mechanical-Access Parking Garage			X																			
Medical Pool																X						
Mezzanine							X															
Minor Structural Alteration, Additions or Repairs										X				X								
Monolithic										X	X	X	X	X	X							
Monolithic Ceiling										X	X	X	X	X	X							
Motel				X	X																	
Motion Picture and Television Production Studio Sound Stage, Approved Production Facilities and Production Locations			X																			
Multi-bedroom Housing Unit							X															
Multilevel Assembly Seating				†	†	†																
Multistory Dwelling Unit						X																
Multistory Unit				†	†	†																
Newly Constructed						X																
Next Generation Attenuation West 2 (NGA W2)								X	X	X				X								
NFPA							X															
Non-General Acute Care Building (Non-GAC Building)											X											
Nonambulatory Persons			X																			
Noncombustible			X																			
Noncombustible Protection (for Mass Timber)			X																			
Nonpatient-care Suite			X																			
Normal				X	X																	
Nosing							X															
NPC 1, NPC 2, NPC 3/NPC 3R, NPC 4 and NPC 5										X												
Nursing Homes			X																			
Occupant Load							X															
Occupiable Space							X															
Open Riser				X	X	X	X															
Operable Part				X	X	X	X															
Organized Camps			X																			
Overflow System																X						

(continued)

**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE  
CHAPTER 2 – DEFINITIONS—continued**

Adopting agency	BSC	BSC-CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4								
Adopt entire chapter	X																					
Adopt entire chapter as amended (amended sections listed below)			X	X	X	X		X	X	X	X	X	X	X								
Adopt only those sections that are listed below							X								X	X						
Chapter / Section																						
Passage Door						X																
Passenger Elevator				X	X		X															
Passive Solar Energy Collector				X	X																	
Path of Travel							X															
Pedestrian						X	X															
Pedestrian Way				X	X	X	X															
Peer Review										X	X	X		X	X							
Periodic Special Inspection								X	X													
Permanent							X															
Permanent Portable Building			X																			
Permit							X															
Persons with Disabilities						X																
Persons with Intellectual Disabilities, Profoundly or Severely			X																			
Pictogram				X	X	X	X															
Place of Public Accommodation				X	X	X	X															
Platform							X															
Platform (Wheelchair) Lift				X	X	X	X															
Play Area							X															
Play Component							X															
Point-of-Sale Device							X															
Pool																					X	
Pool User																					X	
Pool Volume																					X	
Powder Room				X	X	X	X															
Power-Assisted Door							X															
Primary Entry						X																
Primary-Entry Level						X																
Private Building or Facility							X															
Private Pool																					X	
Professional Office of a Health Care Provider							X															
Project Inspector								X	X													
Protective Social Care Facility			X																			
Public Building or Facility							X															
Public Entity						X	X															
Public Entrance							X															
Public Housing						X	X															
Public Pool																					X	
Public Use							X															
Public-Use Areas						X	X															
Public Way							X															
Puzzle Room			X																			
Qualified Historic Building or Facility							X															
Quality Assurance (QA)								X	X	X	X	X		X	X							

(continued)

**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE  
CHAPTER 2 – DEFINITIONS—continued**

Adopting agency	BSC	BSC- CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4								
Adopt entire chapter	X																					
Adopt entire chapter as amended (amended sections listed below)			X	X	X	X		X	X	X	X	X	X	X								
Adopt only those sections that are listed below							X								X	X						
Chapter / Section																						
Quality Control (QC)								X	X	X	X	X		X	X							
Raftertail			X																			
Ramp							X															
Reasonable Portion							X															
Recessed Steps																X						
Recessed Treads																X						
Recirculation System																X						
Recommend				X	X		X															
Relocatable Building (Public School)			X																			
Remodeling							X															
Removed from Acute Care Service										X												
Repair							X															
Residential Care Facility for the Chronically Ill (RCF/CI)			X																			
Residential Care Facility for the Elderly (RCFE)			X																			
Residential Dwelling Unit							X															
Residential Facility (RF)			X																			
Restraint			X																			
Restricted Area										X		X	X	X	X							
Restricted Entrance							X															
Retrofit								X	X	X				X								
Riser				X	X	X	X															
Roof Eave			X																			
Roof Eave Soffit			X																			
Rugged Equipment								X	X													
Running Slope				X	X	X	X															
Sanitary Facility				X		X																
Secure Interview Rooms			X																			
Self-Service Storage				†	†	†	X															
Service Entrance							X															
Shall							X															
Shallow Pool																X						
Shopping Center (or Shopping Mall)							X															
Should				X	X		X															
Sidewalk				X	X	X	X															
Sign						X	X															
Significant Loss of Function								X	X	X				X								
Single-Accommodation Sanitary Facility						X																
Sink						X	X															

(continued)

**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE  
CHAPTER 2 – DEFINITIONS—continued**

Adopting agency	BSC	BSC -CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4								
Adopt entire chapter	X																					
Adopt entire chapter as amended (amended sections listed below)			X	X	X	X		X	X	X	X	X	X	X								
Adopt only those sections that are listed below							X								X	X						
Chapter / Section																						
Site							X															
Site Development						X																
Sleeping Accommodations				X	X	X	X															
Slip Resistant																X						
Slope						X																
Small Management Yard			X																			
Soft Contained Play Structure							X															
Space				X	X	X	X															
SPC 1, SPC 2, SPC 3, SPC 4D and SPC 5										X												
SPC Building										X	X											
Special Inspection								X	X													
Special Amusement Area			X																			
Specified Public Transportation							X															
Stage							X															
Stair							X															
Stairs																X						
Stairway							X															
State-Owned/Leased Building			X																			
State Responsibility Area			X																			
Step																X						
Steps, Recessed Steps, Ladders and Recessed Treads																X						
Story (2nd paragraph only)							X															
Structural Frame							X															
Structure							X															
Sub-Component										X	X	X		X	X							
Surface Mounted Component										X	X	X		X	X							
Tactile				X	X	X	X															
Tactile Sign				X	X	X	X															
Technically Infeasible							X															
Teeing Ground							X															
Temporary							X															
Temporary Holding Cell, Room or Area.			X												X							

(continued)

**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE  
CHAPTER 2 – DEFINITIONS—continued**

Adopting agency	BSC	BSC -CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4								
Adopt entire chapter	X																					
Adopt entire chapter as amended (amended sections listed below)			X	X	X	X		X	X	X	X	X	X	X								
Adopt only those sections that are listed below							X								X	X						
<i>Chapter / Section</i>																						
<i>Temporary Holding Facility</i>			X																			
<i>Tenable Environment</i>			X																			
<i>Terminally Ill</i>			X																			
<i>Testing Agency</i>				X	X																	
<i>Text Telephone</i>						X	X															
<i>Torque-Controlled Post-Installed Anchor</i>								X	X	X	X		X	X								
<i>Transfer Device</i>							X															
<i>Transient Lodging</i>				X	X	X	X															
<i>Transit Boarding Platform</i>							X															
<i>Transition Plate</i>							X															
<i>Tread</i>				X	X	X																
<i>Treatment of Water</i>																	X					
<i>TTY</i>						X	X															
<i>Turnover Time</i>																	X					
<i>Type A Unit</i>				†	†	†																
<i>Type B Unit</i>				†	†	†																
<i>Uniformity Coefficient</i>																	X					
<i>Unreasonable Hardship</i>				X	X	X	X															
<i>Use Zone</i>							X															
<i>Valuation Threshold</i>							X															
<i>Variable Message Signs (VMS)</i>							X															
<i>Variable Message Sign (VMS) Characters</i>							X															
<i>Vehicular or Pedestrian Arrival Points</i>						X																
<i>Vehicular Way</i>						X	X															
<i>Waiting Room</i>			X																			
<i>Walk</i>						X	X															
<i>Wall, Load-Bearing</i>	X			X	X			X	X													
<i>Waterline</i>																	X					
<i>Wet Bar</i>							X															
<i>Wheelchair</i>						X	X															
<i>Wheelchair Space</i>							X															
<i>Wildfire</i>			X																			
<i>Wildfire Exposure</i>			X																			
<i>Wildland-Urban Interface Fire Area</i>			X																			
<i>Winery Caves</i>			X																			
<i>Work Area Equipment</i>							X															
<i>Workstation (2nd paragraph only)</i>							X															

The state agency does not adopt sections identified by the following symbol: †  
The Office of the State Fire Marshal's adoption of this chapter or individual sections is applicable to structures regulated by other state agencies pursuant to Section 1.11.



# CHAPTER 2

## DEFINITIONS

### User notes:

**About this chapter:** Codes, by their very nature, are technical documents. Every word, term and punctuation mark can add to or change the meaning of a technical requirement. It is necessary to maintain a consensus on the specific meaning of each term contained in the code. Chapter 2 performs this function by stating clearly what specific terms mean for the purpose of the code.

**Code development reminder:** Code change proposals to sections preceded by the designation [A] or [BS] will be considered by one of the code development committees meeting during the 2019 (Group B) Code Development Cycle. See explanation on page iv.

### SECTION 201 GENERAL

**201.1 Scope.** Unless otherwise expressly stated, the following words and terms shall, for the purposes of this code, have the meanings shown in this chapter.

**201.2 Interchangeability.** Words used in the present tense include the future; words stated in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular.

**201.3 Terms defined in other codes.** Where terms are not defined in this code and are defined in the *California Energy Code*, *California Existing Building Code*, *California Fire Code*, *California Green Building Standards Code*, *California Electrical Code*, *California Mechanical Code* or *California Plumbing Code*, such terms shall have the meanings ascribed to them as in those codes.

**201.4 Terms not defined.** Where terms are not defined through the methods authorized by this section, such terms shall have ordinarily accepted meanings such as the context implies.

*For applications listed in Section 1.11 regulated by the Office of the State Fire Marshal, where terms are not defined through the methods authorized by this section, such terms shall have ordinarily accepted meanings such as the context implies. Webster's Third New International Dictionary of the English Language, Unabridged, shall be considered as providing ordinarily accepted meanings.*

### SECTION 202 DEFINITIONS

**[BG] 24-HOUR BASIS.** The actual time that a person is an occupant within a facility for the purpose of receiving care. It shall not include a facility that is open for 24 hours and is capable of providing care to someone visiting the facility during any segment of the 24 hours.

**[BS] AAC MASONRY.** Masonry made of autoclaved aerated concrete (AAC) units, manufactured without internal reinforcement and bonded together using thin- or thick-bed mortar.

**ACCESS AISLE.** [DSA-AC] An accessible pedestrian space adjacent to or between parking spaces that provides clearances in compliance with this code.

**ACCESSIBILITY.** [DSA-AC & HCD 1-AC] The combination of various elements in a building, facility, site, or area, or portion thereof which allows access, circulation and the

*full use of the building and facilities by persons with disabilities in compliance with this code.*

**ACCESSIBILITY FUNCTION BUTTON.** [DSA-AC] A button on an elevator hall call console in a destination-oriented elevator system that when pressed will activate a series of visual and verbal prompts and announcements providing instruction regarding hall call console operation and direction to an assigned elevator.

**ACCESSIBLE.** [DSA-AC & HCD 1-AC] A site, building, facility, or portion thereof that is approachable and usable by persons with disabilities in compliance with this code.

**ACCESSIBLE ELEMENT.** [DSA-AC] An element specified by the regulations adopted by the Division of the State Architect-Access Compliance.

**[BE] ACCESSIBLE MEANS OF EGRESS.** A continuous and unobstructed way of egress travel from any accessible point in a building or facility to a public way.

**ACCESSIBLE ROUTE.** [DSA-AC & HCD 1-AC] A continuous unobstructed path connecting accessible elements and spaces of an accessible site, building or facility that can be negotiated by a person with a disability using a wheelchair, and that is also safe for and usable by persons with other disabilities. Interior accessible routes may include corridors, hallways, floors, ramps, elevators and lifts. Exterior accessible routes may include parking access aisles, curb ramps, crosswalks at vehicular ways, walks, ramps and lifts.

**ACCESSIBLE SPACE.** [DSA-AC & HCD 1-AC] A space that complies with the accessibility provisions of this code.

**[BE] ACCESSIBLE UNIT.** A dwelling unit or sleeping unit that complies with this code and the provisions for Accessible units in ICC A117.1.

**ACCESSORY DWELLING UNIT.** [HCD 1 & HCD 2] An attached or detached residential dwelling unit that provides complete independent living facilities for one or more persons and is located on a lot with a proposed or existing primary residence. Accessory dwelling units shall include permanent provisions for living, sleeping, eating, cooking, and sanitation on the same parcel as the single-family or multifamily dwelling is or will be situated. (See Government Code Section 65852.2)

**[BS] ACCREDITATION BODY.** An approved, third-party organization that is independent of the grading and inspection agencies, and the lumber mills, and that initially accredits and subsequently monitors, on a continuing basis, the competency and performance of a grading or inspection agency related to carrying out specific tasks.

## DEFINITIONS

**ACTIVE EARTHQUAKE FAULT.** [DSA-SS, DSA-SS/CC, OSHPD 1 & 4] A fault that has been the source of earthquakes or is recognized as a potential source of earthquakes, including those that have exhibited surface displacement within Holocene time (about 11,000 years) as determined by California Geological Survey (CGS) under the Alquist-Priolo Earthquake Fault Zoning Act, those included as type A or type B faults for the U.S. Geological Survey (USGS) National Seismic Hazard Maps, and faults considered to have been active in Holocene time by any authoritative source, federal, state or local governmental agency.

**ACTIVE EQUIPMENT/COMPONENT.** [DSA-SS, DSA-SS/CC & OSHPD 1, 1R, 2, 4 & 5] Equipment/Component containing moving or rotating parts, electrical parts such as switches or relays, or other internal components that are sensitive to earthquake forces and critical to the function of the equipment.

**ADAPTABLE.** [DSA-AC] Capable of being readily modified and made accessible.

**ADAPTABLE DWELLING UNIT.** [HCD 1-AC] An accessible dwelling unit within a covered multifamily building as designed with elements and spaces allowing the dwelling unit to be adapted or adjusted to accommodate the user. See Chapter 11A, Division IV.

**[A] ADDITION.** An extension or increase in floor area, number of stories or height of a building or structure. [DSA-AC] An expansion, extension or increase in the gross floor area or height of a building or facility.

**[BS] ADHERED MASONRY VENEER.** Veneer secured and supported through the adhesion of an approved bonding material applied to an approved backing.

**ADJUSTED CONSTRUCTION COST.** [DSA-AC] All costs directly related to the construction of a project, including labor, material, equipment, services, utilities, contractor financing, contractor overhead and profit, and construction management costs. The costs shall not be reduced by the value of components, assemblies, building equipment or construction not directly associated with accessibility or usability. The adjusted construction cost shall not include: project management fees and expenses, architectural and engineering fees, testing and inspection fees, and utility connection or service district fees.

**ADMINISTRATIVE AUTHORITY.** [DSA-AC] A governmental agency that adopts or enforces regulations and guidelines for the design, construction or alteration of buildings and facilities.

**[BS] ADOBE CONSTRUCTION.** Construction in which the exterior load-bearing and nonload-bearing walls and partitions are of unfired clay masonry units, and floors, roofs and interior framing are wholly or partly of wood or other approved materials.

**Adobe, stabilized.** Unfired clay masonry units to which admixtures, such as emulsified asphalt, are added during the manufacturing process to limit the units' water absorption so as to increase their durability.

**Adobe, unstabilized.** Unfired clay masonry units that do not meet the definition of "Adobe, stabilized."

**ADULT CHANGING FACILITY.** A facility that is for use by persons with disabilities who need assistance with personal hygiene.

**[F] AEROSOL CONTAINER.** A metal can or plastic container up to a maximum size of 33.8 fluid ounces (1000 ml), or a glass bottle up to a maximum size of 4 fluid ounces (118 ml), designed and intended to dispense an aerosol.

**[F] AEROSOL PRODUCT.** A combination of a container, a propellant and a material that is dispensed. Aerosol products shall be classified by means of the calculation of their chemical heats of combustion and shall be designated Level 1, Level 2 or Level 3.

**Level 1 aerosol products.** Those with a total chemical heat of combustion that is less than or equal to 8,600 British thermal units per pound (Btu/lb) (20 kJ/g).

**Level 2 aerosol products.** Those with a total chemical heat of combustion that is greater than 8,600 Btu/lb (20 kJ/g), but less than or equal to 13,000 Btu/lb (30 kJ/g).

**Level 3 aerosol products.** Those with a total chemical heat of combustion that is greater than 13,000 Btu/lb (30 kJ/g).

**AGED HOME OR INSTITUTION.** A facility used for the housing of persons 65 years of age or older in need of care and supervision. (See definition of "care and supervision")

**[BS] AGGREGATE.** In roofing, crushed stone, crushed slag or water-worn gravel used for surfacing for roof coverings.

**[BG] AGRICULTURAL BUILDING.** A structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products. This structure shall not be a place of human habitation or a place of employment where agricultural products are processed, treated or packaged, nor shall it be a place used by the public.

**[BF] AIR-IMPERMEABLE INSULATION.** An insulation having an air permeance equal to or less than  $0.02 \text{ l/s} \times \text{m}^2$  at 75 pa pressure differential tested in accordance with ASTM E2178 or ASTM E283.

**[BG] AIR-INFLATED STRUCTURE.** A structure that uses air-pressurized membrane beams, arches or other elements to enclose space. Occupants of such a structure do not occupy the pressurized area used to support the structure.

**[BG] AIR-SUPPORTED STRUCTURE.** A structure wherein the shape of the structure is attained by air pressure and occupants of the structure are within the elevated pressure area. Air-supported structures are of two basic types:

**Double skin.** Similar to a single skin, but with an attached liner that is separated from the outer skin and provides an airspace which serves for insulation, acoustic, aesthetic or similar purposes.

**Single skin.** Where there is only the single outer skin and the air pressure is directly against that skin.

**[BE] AISLE.** An unenclosed exit access component that defines and provides a path of egress travel. [DSA-AC] A circulation path between objects such as seats, tables, merchandise, equipment, displays, shelves, desks, etc., that provides clearances in compliance with this code.

**[BE] AISLE ACCESSWAY.** That portion of an exit access that leads to an aisle.

**[F] ALARM NOTIFICATION APPLIANCE.** A fire alarm system component such as a bell, horn, speaker, light or text

minimum operating pressure defined by its listing, discharges water in fine droplets meeting the requirements of NFPA 750 for the purpose of the control, suppression or extinguishment of a fire. Such systems include wet-pipe, dry-pipe and preaction types. The systems are designed as engineered, preengineered, local-application or total-flooding systems.

**AUXILIARY AREA.** *A public dressing, locker, shower or toilet area or building space intended to be used by bathers.*

**[F] AVERAGE AMBIENT SOUND LEVEL.** The root mean square, A-weighted sound pressure level measured over a 24-hour period, or the time any person is present, whichever time period is less.

**[BG] AWNING.** An architectural projection that provides weather protection, identity or decoration and is partially or wholly supported by the building to which it is attached. An awning is comprised of a lightweight frame structure over which a covering is attached.

**[BF] BACKING.** The wall or surface to which the veneer is secured.

**BACKWASH.** *Is the process of thoroughly cleansing the filter media and/or elements and the contents of the filter vessel.*

**[BE] BALANCED DOOR.** A door equipped with double-pivoted hardware so designed as to cause a semicounterbalanced swing action when opening.

**[F] BALED COTTON.** A natural seed fiber wrapped in and secured with industry accepted materials, usually consisting of burlap, woven polypropylene, polyethylene or cotton or sheet polyethylene, and secured with steel, synthetic or wire bands or wire; also includes linters (lint removed from the cottonseed) and motes (residual materials from the ginning process).

**[F] BALED COTTON, DENSELY PACKED.** Cotton made into banded bales with a packing density of not less than 22 pounds per cubic foot (360 kg/m<sup>3</sup>), and dimensions complying with the following: a length of 55 inches (1397 mm), a width of 21 inches (533.4 mm) and a height of 27.6 to 35.4 inches (701 to 899 mm).

**[BS] BALLAST.** In roofing, ballast comes in the form of large stones or paver systems or light-weight interlocking paver systems and is used to provide uplift resistance for roofing systems that are not adhered or mechanically attached to the roof deck.

**[F] BARRICADE.** A structure that consists of a combination of walls, floor and roof, which is designed to withstand the rapid release of energy in an explosion and which is fully confined, partially vented or fully vented; or other effective method of shielding from explosive materials by a natural or artificial barrier.

**Artificial barricade.** An artificial mound or revetment a minimum thickness of 3 feet (914 mm).

**Natural barricade.** Natural features of the ground, such as hills, or timber of sufficient density that the surrounding exposures that require protection cannot be seen from the magazine or building containing explosives when the trees are bare of leaves.

**BASE.** *[DSA-SS, DSA-SS/CC, OSHPD 1 & 4] See ASCE 7.*

**[BS] BASE FLOOD.** The flood having a 1-percent chance of being equaled or exceeded in any given year.

**[BS] BASE FLOOD ELEVATION.** The elevation of the base flood, including wave height, relative to the National Geodetic Vertical Datum (NGVD), North American Vertical Datum (NAVD) or other datum specified on the Flood Insurance Rate Map (FIRM).

**[BS] BASEMENT (for flood loads).** The portion of a building having its floor subgrade (below ground level) on all sides. This definition of “Basement” is limited in application to the provisions of Section 1612.

**[BG] BASEMENT.** A story that is not a story above grade plane (see “Story above grade plane”). This definition of “Basement” does not apply to the provisions of Section 1612 for flood loads.

**BATHER.** *A person using a pool and adjoining deck areas for the purpose of water sports such as diving, swimming, wading or related activities.*

**BATHROOM.** *For the purposes of Chapters 11A and 11B, a room which includes a water closet (toilet), a lavatory, and a bathtub and/or a shower. It does not include single-fixture facilities or those with only a water closet and lavatory. It does include a compartmented bathroom. A compartmented bathroom is one in which the fixtures are distributed among interconnected rooms. A compartmented bathroom is considered a single unit and is subject to the requirements of Chapters 11A and 11B.*

**[BS] BEARING WALL STRUCTURE.** A building or other structure in which vertical loads from floors and roofs are primarily supported by walls.

**[BS] BED JOINT.** The horizontal layer of mortar on which a masonry unit is laid.

**BEDRIDDEN PERSON.** *A person, requiring assistance in turning and repositioning in bed, or being unable to independently transfer to and from bed, except in facilities with appropriate and sufficient care staff, mechanical devices if necessary, and safety precautions as determined in Title 22 regulations, by the Director of Social Services or his or her designated representative. Persons who are unable to independently transfer to and from bed, but who do not need assistance to turn or reposition in bed, shall be considered nonambulatory.*

*The Director of Social Services or his or her designated representative shall make the determination of the bedridden status of persons with developmental disabilities, in consultation with the Director of Developmental Services or his or her designated representative.*

*The Director of Social Services or his or her designated representative shall make the determination of the bedridden status of all other persons with disabilities who are not developmentally disabled.*

**[BE] BLEACHERS.** Tiered seating supported on a dedicated structural system and two or more rows high and is not a building element (see “Grandstand”).

**BLENDED TRANSITION.** *[DSA-AC] A raised pedestrian crossing, depressed corner or similar connection that has a grade of 5 percent or less between a circulation path at the level of the sidewalk or walk and the level of a vehicular way.*

## DEFINITIONS

**[BG] BOARDING HOUSE.** A building arranged or used for lodging for compensation, with or without meals, and not occupied as a single-family unit.

**BOARDING PIER. [DSA-AC]** A portion of a pier where a boat is temporarily secured for the purpose of embarking or disembarking.

**BOAT LAUNCH RAMP. [DSA-AC]** A sloped surface designed for launching and retrieving trailered boats and other water craft to and from a body of water.

**BOAT SLIP. [DSA-AC]** That portion of a pier, main pier, finger pier or float where a boat is moored for the purpose of berthing, embarking or disembarking.

**[F] BOILING POINT.** The temperature at which the vapor pressure of a liquid equals the atmospheric pressure of 14.7 pounds per square inch (psia) (101 kPa) or 760 mm of mercury. Where an accurate boiling point is unavailable for the material in question, or for mixtures which do not have a constant boiling point, for the purposes of this classification, the 20-percent evaporated point of a distillation performed in accordance with ASTM D86 shall be used as the boiling point of the liquid.

**BOTTLE-FILLING STATION.** A fixture that is designed and intended for filling personal use drinking water bottles or containers. Such fixtures can be separate from or integral to a drinking fountain.

**[BS] BRACED WALL LINE.** A straight line through the building plan that represents the location of the lateral resistance provided by the wall bracing.

**[BS] BRACED WALL PANEL.** A full-height section of wall constructed to resist in-plane shear loads through interaction of framing members, sheathing material and anchors. The panel's length meets the requirements of its particular bracing method and contributes toward the total amount of bracing required along its braced wall line.

**[BE] BREAKOUT.** For revolving doors, a process whereby wings or door panels can be pushed open manually for means of egress travel.

### **[BS] BRICK.**

**Calcium silicate (sand lime brick).** A pressed and subsequently autoclaved unit that consists of sand and lime, with or without the inclusion of other materials.

**Clay or shale.** A solid or hollow masonry unit of clay or shale, usually formed into a rectangular prism, then burned or fired in a kiln; brick is a ceramic product.

**Concrete.** A concrete masonry unit made from Portland cement, water, and suitable aggregates, with or without the inclusion of other materials.

**[A] BUILDING.** Any structure utilized or intended for supporting or sheltering any occupancy.

**Exception: [HCD 1, HCD 2 & HCD 1-AC]** For applications listed in Section 1.8.2 regulated by the Department of Housing and Community Development, "Building" shall not include the following:

1. Any mobilehome as defined in Health and Safety Code Section 18008.
2. Any manufactured home as defined in Health and Safety Code Section 18007.

3. Any commercial modular as defined in Health and Safety Code Section 18001.8 or any special purpose commercial modular as defined in Section 18012.5.

4. Any recreational vehicle as defined in Health and Safety Code Section 18010.

5. Any multifamily manufactured home as defined in Health and Safety Code Section 18008.7.

For additional information, see Health and Safety Code Section 18908.

**Note:** Building shall have the same meaning as defined in Health and Safety Code Section 17920 and 18908 for the applications specified in Section 1.11.

**BUILDING AREA.** See "Area, building."

**[BG] BUILDING ELEMENT.** A fundamental component of building construction, listed in Table 601, which may or may not be of fire-resistance-rated construction and is constructed of materials based on the building type of construction.

**BUILDING ENTRANCE ON AN ACCESSIBLE ROUTE. [HCD 1-AC]** An accessible entrance to a building that is connected by an accessible route to public transportation stops, to parking or passenger loading zones, or to public streets or sidewalks, if available.

**BUILDING, EXISTING. [HCD 1 & HCD 2]** A building erected prior to the adoption of this code, or one for which a legal building permit has been issued.

**BUILDING HEIGHT.** See "Height, building."

**[BS] BUILDING-INTEGRATED PHOTOVOLTAIC (BIPV) PRODUCT.** A building product that incorporates photovoltaic modules and functions as a component of the building envelope.

**[BS] BUILDING-INTEGRATED PHOTOVOLTAIC ROOF PANEL (BIPV ROOF PANEL).** A photovoltaic panel that functions as a component of the building envelope.

**[BG] BUILDING LINE.** The line established by law, beyond which a building shall not extend, except as specifically provided by law.

**[A] BUILDING OFFICIAL.** The officer or other designated authority charged with the administration and enforcement of this code, or a duly authorized representative.

**[BS] BUILT-UP ROOF COVERING.** Two or more layers of felt cemented together and surfaced with a cap sheet, mineral aggregate, smooth coating or similar surfacing material.

**[BG] CABLE-RESTRAINED, AIR-SUPPORTED STRUCTURE.** A structure in which the uplift is resisted by cables or webbings which are anchored to either foundations or dead men. Reinforcing cable or webbing is attached by various methods to the membrane or is an integral part of the membrane. This is not a cable-supported structure.

**[BG] CANOPY.** A permanent structure or architectural projection of rigid construction over which a covering is attached that provides weather protection, identity or decoration. A canopy is permitted to be structurally independent or supported by attachment to a building on one or more sides.

**[F] CAPACITOR ENERGY STORAGE SYSTEM.** A stationary, rechargeable energy storage system consisting of

capacitors, chargers, controls and associated electrical equipment designed to provide electrical power to a building or facility. The system is typically used to provide standby or emergency power, an uninterruptable power supply, load shedding, load sharing or similar capabilities.

**Preengineered capacitor energy storage system.** A capacitor energy storage system consisting of capacitors, an energy management system, components and modules that are produced in a factory, designed to constitute the system when assembled and shipped to the job site for assembly.

**Prepackaged capacitor energy storage system.** A capacitor energy storage system consisting of capacitors, an energy management system, components and modules that is factory assembled and then shipped as a complete unit for installation at the job site.

**[F] CARBON DIOXIDE EXTINGUISHING SYSTEMS.** A system supplying carbon dioxide (CO<sub>2</sub>) from a pressurized vessel through fixed pipes and nozzles. The system includes a manual- or automatic-actuating mechanism.

**[F] CARBON MONOXIDE ALARM.** A single- or multiple-station alarm intended to detect carbon monoxide gas and alert occupants by a distinct audible signal. It incorporates a sensor, control components and an alarm notification appliance in a single unit.

**[F] CARBON MONOXIDE DETECTOR.** A device with an integral sensor to detect carbon monoxide gas and transmit an alarm signal to a connected alarm control unit.

**CARE AND SUPERVISION.** *Any one or more of the following activities provided by a person or facility to meet the needs of the clients:*

1. Assistance in dressing, grooming, bathing and other personal hygiene.
2. Assistance with taking medication.
3. Central storing and/or distribution of medications.
4. Arrangement of and assistance with medical and dental care.
5. Maintenance of house rules for the protection of clients.
6. Supervision of client schedules and activities.
7. Maintenance and/or supervision of client cash resources or property.
8. Monitoring food intake or special diets.
9. Providing basic services required by applicable law and regulation to be provided by the licensee in order to obtain and maintain a community-care facility license.

**[BG] CARE SUITE.** In Group I-2 or I-2.1 occupancies, a group of treatment rooms, care recipient sleeping rooms and the support rooms or spaces and circulation space within the suite where staff are in attendance for supervision of all care recipients within the suite, and the suite is in compliance with the requirements of Section 407.4.4.

**CARRIAGE UNIT. [HCD I-AC]** *A dwelling unit with living space on one or more floors immediately above a Group U, private garage or garages. The footprint of the garage or*

*garages is used as the footprint for the remaining floor or floors of the units above and the garage level contains no habitable space.*

**Note:** *Dwelling units located over a common garage shall not be considered carriage units.*

**[BS] CAST STONE.** A building stone manufactured from Portland cement concrete precast and used as a trim, veneer or facing on or in buildings or structures.

**CATASTROPHICALLY INJURED.** *As termed, means a person whose origin of disability was acquired through trauma or nondegenerative neurologic illness, for whom it has been determined by the Department of Health Services Certification and Licensing that active rehabilitation would be beneficial.*

**CATCH POOL. [DSA-AC]** *A pool or designated section of a pool used as a terminus for water slide flumes.*

**CCR. [DSA-AC]** *The California Code of Regulations.*

**CDCR.** *California Department of Corrections and Rehabilitation.*

**CDF DIRECTOR. [SFM]** *(See Chapter 7A, Section 702A for defined term.)*

**[F] CEILING LIMIT.** The maximum concentration of an airborne contaminant to which one may be exposed. The ceiling limits utilized are those published in DOL 29 CFR Part 1910.1000. The ceiling Recommended Exposure Limit (REL-C) concentrations published by the U.S. National Institute for Occupational Safety and Health (NIOSH), Threshold Limit Value—Ceiling (TLV-C) concentrations published by the American Conference of Governmental Industrial Hygienists (ACGIH), Ceiling Workplace Environmental Exposure Level (WEEL-Ceiling) Guides published by the American Industrial Hygiene Association (AIHA), and other approved, consistent measures are allowed as surrogates for hazardous substances not listed in DOL 29 CFR Part 1910.1000.

**[BF] CEILING RADIATION DAMPER.** A listed device installed in a ceiling membrane of a fire-resistance-rated floor/ceiling or roof/ceiling assembly to limit automatically the radiative heat transfer through an air inlet/outlet opening. Ceiling radiation dampers include air terminal units, ceiling dampers and ceiling air diffusers.

**CELL (Detention or correctional facility) [SFM].** *A sleeping or housing unit in a detention or correctional facility for the confinement of not more than two inmates or prisoners.*

**[BG] CELL (Group I-3 occupancy).** A room within a housing unit in a detention or correctional facility used to confine inmates or prisoners.

**[BS] CELL (masonry).** A void space having a gross cross-sectional area greater than 1½ square inches (967 mm<sup>2</sup>).

**CELL COMPLEX.** *A cluster or group of cells or dormitories in a jail, prison or other detention facility, together with rooms used for accessory purposes, all of which open into the cell complex, and are used for functions such as dining, counseling, exercise, classrooms, sick call, visiting, storage, staff offices, control rooms or similar functions, and interconnecting corridors all within the cell complex.*

**[BG] CELL TIER.** Levels of cells vertically stacked above one another within a housing unit.

## DEFINITIONS

**CELL TIERS.** Cells, dormitories and accessory spaces. Cell tiers are located one level above the other, and do not exceed two levels per floor. A cell tier shall not be considered a story or mezzanine. The aggregate area of a tier within a housing pod shall not be greater than one-third of the floor area of that pod when supported by non-rated construction, and shall be no greater than two-thirds of the floor area of the pod when the tier floor and supporting elements meet the fire rating requirements of a floor.

**CELLULAR CONCRETE.** [HCD 1 & HCD 2] A lightweight product consisting of portland cement and selected gas-forming chemicals or foaming agents which create homogeneous voids in the hardened concrete.

**[BS] CEMENT PLASTER.** A mixture of Portland or blended cement, Portland cement or blended cement and hydrated lime, masonry cement or plastic cement and aggregate and other approved materials as specified in this code.

**CENTRAL CONTROL BUILDING.** A secure building within a prison where the fire and life safety systems, communication systems, security systems and exterior lighting systems are monitored and where security operations necessitate the remote locking of required means of egress or at the door with a key to maintain a high security area

**[BF] CERAMIC FIBER BLANKET.** A high-temperature mineral wool insulation material made of alumina-silica ceramic or calcium magnesium silicate soluble fibers and weighing 4 to 10 pounds per cubic foot (pcf) (64 to 160 kg/m<sup>3</sup>).

**[BS] CERTIFICATE OF COMPLIANCE.** A certificate stating that materials and products meet specified standards or that work was done in compliance with approved construction documents.

**[A] CHANGE OF OCCUPANCY.** A change in the use of a building or a portion a building which results in one of the following:

1. A change of occupancy classification.
2. A change from one group to another group within an occupancy classification.
3. Any change in use within a group for which there is a change in application of the requirements of this code.

**CHARACTERS.** Letters, numbers, punctuation marks and typographic symbols.

**CHARTER SCHOOL** A public school providing instruction from kindergarten through 12th grade, established pursuant to Education Code, Title 2, Division 4, Part 26.8, Section 47600, et seq.

**CHILD CARE CENTER.** Any facility of any capacity other than a large or small family day-care home as defined in these regulations in which less than 24-hour-per-day nonmedical supervision is provided for children in a group setting.

**CHILD OR CHILDREN.** A person or persons under the age of 18 years.

**[BG] CHILDREN'S PLAY STRUCTURE.** A structure composed of one or more components, where the user enters a play environment.

**CHILDREN'S USE.** [DSA-AC] Describes spaces and elements specifically designed for use primarily by people 12 years old and younger.

**[M] CHIMNEY.** A primarily vertical structure containing one or more flues, for the purpose of carrying gaseous products of combustion and air from a fuel-burning appliance to the outdoor atmosphere.

**Factory-built chimney.** A listed and labeled chimney composed of factory-made components, assembled in the field in accordance with manufacturer's instructions and the conditions of the listing.

**Masonry chimney.** A field-constructed chimney composed of solid masonry units, bricks, stones, or concrete.

**Metal chimney.** A field-constructed chimney of metal.

### [M] CHIMNEY TYPES.

**High-heat appliance type.** An approved chimney for removing the products of combustion from fuel-burning, high-heat appliances producing combustion gases in excess of 2000°F (1093°C) measured at the appliance flue outlet (see Section 2113.11.3).

**Low-heat appliance type.** An approved chimney for removing the products of combustion from fuel-burning, low-heat appliances producing combustion gases not in excess of 1000°F (538°C) under normal operating conditions, but capable of producing combustion gases of 1400°F (760°C) during intermittent forces firing for periods up to 1 hour. Temperatures shall be measured at the appliance flue outlet.

**Masonry type.** A field-constructed chimney of solid masonry units or stones.

**Medium-heat appliance type.** An approved chimney for removing the products of combustion from fuel-burning, medium-heat appliances producing combustion gases not exceeding 2000°F (1093°C) measured at the appliance flue outlet (see Section 2113.11.2).

**CHRONICALLY ILL.** See "Terminally ill."

**CIRCULATION PATH.** An exterior or interior way of passage from one place to another for pedestrians. [DSA-AC] An exterior or interior way of passage provided for pedestrian travel, including but not limited to, walks, sidewalks, hallways, courtyards, elevators, platform lifts, ramps, stairways and landings.

**[F] CLEAN AGENT.** Electrically nonconducting, volatile or gaseous fire extinguishant that does not leave a residue upon vaporation.

**CLEAN POOL WATER.** Is a pool water that is free of dirt, oils, scum, algae, floating materials or other visible organic and inorganic materials that would sully the water.

**CLEAR.** [DSA-AC] Unobstructed.

**CLEAR FLOOR SPACE.** [DSA-AC & HCD 1-AC] The minimum unobstructed floor or ground space required to accommodate a single, stationary wheelchair and occupant.

**CLEAR POOL WATER.** Pool water that is free from cloudiness and is transparent.

**[BF] CLIMATE ZONE.** A geographical region that has been assigned climatic criteria as specified in Subchapter 1 of the California Energy Code.

ing illness, or both. Terminal illness means the individual has a life expectancy of six months or less as stated in writing by his or her attending physician and surgeon. A “life-threatening illness” means the individual has an illness that can lead to a possibility of a termination of life within five years or less as stated in writing by his or her attending physician and surgeon.

- (C) Services for persons who are catastrophically and severely disabled. A person who is catastrophically and severely disabled means a person whose origin of disability was acquired through trauma or nondegenerative neurologic illness, for whom it has been determined that active rehabilitation would be beneficial and to whom these services are being provided. Services offered by a congregate living health facility to a person who is catastrophically disabled shall include, but not be limited to, speech, physical, and occupational therapy.
- (3) A congregate living health facility license shall specify which of the types of persons described in paragraph (2) to whom a facility is licensed to provide services.
- (4)
- (A) A facility operated by a city and county for the purposes of delivering services under this section may have a capacity of 59 beds.
- (B) A congregate living health facility not operated by a city and county servicing persons who are terminally ill, persons who have been diagnosed with a life-threatening illness, or both, that is located in a county with a population of 500,000 or more persons, or located in a county of the 16th class pursuant to Section 28020 of the Government Code, may have not more than 25 beds for the purpose of serving persons who are terminally ill.
- (C) A congregate living health facility not operated by a city and county servicing persons who are catastrophically and severely disabled, as defined in subparagraph (C) of paragraph (1) that is located in a county of 500,000 or more persons may have not more than 12 beds for the purpose of serving persons who are catastrophically and severely disabled.
- (5) A congregate living health facility shall have a noninstitutional, homelike environment.

**CONGREGATE RESIDENCE.** Any building or portion thereof that contains facilities for living, sleeping and sanitation, as required by this code, and may include facilities for eating and cooking, for occupancy by other than a family. A congregate residence may be a shelter, convent, monastery, dormitory, fraternity or sorority house, but does not include jails, hospitals, nursing homes, hotels or lodging houses.

**[F] CONSTANTLY ATTENDED LOCATION.** A designated location at a facility staffed by trained personnel on a

continuous basis where alarm or supervisory signals are monitored and facilities are provided for notification of the fire department or other emergency services.

**[A] CONSTRUCTION DOCUMENTS.** Written, graphic and pictorial documents prepared or assembled for describing the design, location and physical characteristics of the elements of a project necessary for obtaining a building permit.

**[BG] CONSTRUCTION TYPES.** See Section 602.

**Type I.** See Section 602.2.

**Type II.** See Section 602.2.

**Type III.** See Section 602.3.

**Type IV.** See Section 602.4.

**Type V.** See Section 602.5.

**[BF] CONTINUOUS INSULATION (ci).** Insulating material that is continuous across all structural members without thermal bridges other than fasteners and service openings. It is installed on the interior or exterior, or is integral to any opaque surface of the building envelope.

**[F] CONTROL AREA.** Spaces within a building where quantities of hazardous materials not exceeding the maximum allowable quantities per control area are stored, dispensed, used or handled. See the definition of “Outdoor control area” in the *California Fire Code*.

**CONTROL ROOM.** A room that has staff that provides direct supervision of one or more cell tiers, pods, dormitories, housing units, sally ports, central holding areas, individual holding cells within central holding areas, as well as any number of courtroom holding cells and arraignment docks, and may have fire and personal alarm annunciation, ability to open and close doors, communicate with Central Control and monitor activities inside the area of control and the space immediately outside the Control Room’s zone of influence.

**[BS] CONTROLLED LOW-STRENGTH MATERIAL.** A self-compacted, cementitious material used primarily as a backfill in place of compacted fill.

**[BS] CONVENTIONAL LIGHT-FRAME CONSTRUCTION.** Construction whose primary structural elements are formed by a system of repetitive wood-framing members. See Section 2308 for conventional light-frame construction provisions.

**[BG] CORNICE.** A projecting horizontal molded element located at or near the top of an architectural feature.

**CORRECTIONAL HOSPITALS.** Facilities that provide care and treatment for medical, psychiatric, obstetrical, or surgical treatment of care recipients that are incapable of self-preservation within a detention facility such as a prison or jail.

**CORRECTIONAL MEDICAL OR MENTAL HEALTH HOUSING SUITE.** Within a state prison, correctional treatment facility, local detention facility, or juvenile facility, a correctional medical or mental health housing suite shall be a group of patient rooms or cells and support spaces, including nurses’ stations, located around shared circulation.

**CORRECTIONAL MENTAL HEALTH FACILITIES.** Facilities that provide care and treatment for psychiatric treatment of care recipients that are incapable of self-preservation within a detention facility such as a prison or jail.

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**CORRECTIONAL NURSING FACILITIES.** *Facilities that provide care, including both intermediate care facilities and skilled nursing facilities, where any of the persons are incapable of self-preservation or classified as non-ambulatory or bedridden within a detention facility such as a prison or jail.*

**CORRECTIONAL TREATMENT CENTERS.** *Facilities that provide emergency and acute care and treatment for medical, psychiatric, obstetrical, or surgical treatment of care recipients that are incapable of self-preservation within a detention facility such as a prison or jail.*

**[BE] CORRIDOR.** An enclosed exit access component that defines and provides a path of egress travel.

**CORRIDOR, OPEN-ENDED.** See “Open-ended corridor.”

**[BF] CORRIDOR DAMPER.** A listed device intended for use where air ducts penetrate or terminate at horizontal openings in the ceilings of fire-resistance-rated corridors, where the corridor ceiling is permitted to be constructed as required for the corridor walls.

**[BS] CORROSION RESISTANCE.** The ability of a material to withstand deterioration of its surface or its properties when exposed to its environment.

**CORROSION RESISTANT.** *Capable of maintaining original surface characteristics under the prolonged influence of the use environment.*

**[F] CORROSIVE.** A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the point of contact. A chemical shall be considered corrosive if, when tested on the intact skin of albino rabbits by the method described in DOTn 49 CFR, Part 173.137, such chemical destroys or changes irreversibly the structure of the tissue at the point of contact following an exposure period of 4 hours. This term does not refer to action on inanimate surfaces.

**[BG] COURT.** An open, uncovered space, unobstructed to the sky, bounded on three or more sides by exterior building walls or other enclosing devices.

**COURTHOUSE HOLDING FACILITY [SFM].** *A room, cell, cell complex or building for the confinement of persons for the purpose of a court appearance for a period not to exceed 12 hours.*

**COURTROOM DOCK.** *An area within a courtroom where persons may be restrained and are awaiting court proceedings.*

**[BG] COVERED MALL BUILDING.** A single building enclosing a number of tenants and occupants, such as retail stores, drinking and dining establishments, entertainment and amusement facilities, passenger transportation terminals, offices and other similar uses wherein two or more tenants have a main entrance into one or more malls. Anchor buildings shall not be considered as a part of the covered mall building. The term “covered mall building” shall include open mall buildings as defined below.

**Mall.** A roofed or covered common pedestrian area within a covered mall building that serves as access for two or more tenants and not to exceed three levels that are open to each other. The term “mall” shall include open malls as defined below.

**Open mall.** An unroofed common pedestrian way serving a number of tenants not exceeding three levels. Circulation at levels above grade shall be permitted to include open exterior balconies leading to exits discharging at grade.

**Open mall building.** Several structures housing a number of tenants, such as retail stores, drinking and dining establishments, entertainment and amusement facilities, offices, and other similar uses, wherein two or more tenants have a main entrance into one or more open malls. Anchor buildings are not considered as a part of the open mall building.

**COVERED MULTIFAMILY DWELLINGS. [HCD 1-AC]** *“Covered multifamily dwellings” means either of the following:*

1. *Buildings that consist of at least four condominium dwelling units or at least three apartment dwelling units if the buildings have at least one elevator.*
2. *The ground floor dwelling units in buildings that consist of at least four condominium dwelling units or at least three apartment dwelling units if the building does not have an elevator.*

*Covered multifamily dwellings include dwellings listed in Section 1102A.1. For purposes of this definition, dwelling units within a single structure separated by firewalls do not constitute separate buildings.*

**[BS] CRIPPLE WALL.** A framed stud wall extending from the top of the foundation to the underside of floor framing for the lowest occupied floor level.

**[F] CRITICAL CIRCUIT.** A circuit that requires continuous operation to ensure safety of the structure and occupants.

**[BS] CROSS-LAMINATED TIMBER.** A prefabricated engineered wood product consisting of not less than three layers of solid-sawn lumber or structural composite lumber where the adjacent layers are cross oriented and bonded with structural adhesive to form a solid wood element.

**CROSS SLOPE.** *The slope that is perpendicular to the direction of travel.*

**[F] CRYOGENIC FLUID.** A liquid having a boiling point lower than -150°F (-101°C) at 14.7 pounds per square inch atmosphere (psia) (an absolute pressure of 101 kPa).

**CURB CUT.** *An interruption of a curb at a pedestrian way, which separates surfaces that are substantially at the same elevation.*

**CURB RAMP.** *A sloping prepared surface, intended for pedestrian traffic, which provides access between a walk or sidewalk and a surface located above or below an adjacent curb face.* | |

**[BG] CUSTODIAL CARE.** Assistance with day-to-day living tasks; such as assistance with cooking, taking medication, bathing, using toilet facilities and other tasks of daily living. Custodial care includes persons receiving care who have the ability to respond to emergency situations and evacuate at a slower rate and/or who have mental and psychiatric complications.

**CUSTODY STATION.** *A desk or platform staffed by one or more custody officers whose purpose is to supervise those in custody.*



**[BS] DALLE GLASS.** A decorative composite glazing material made of individual pieces of glass that are embedded in a cast matrix of concrete or epoxy.

**DAMPER.** See “Ceiling radiation damper,” “Combination fire/smoke damper,” “Corridor damper,” “Fire damper” and “Smoke damper.”

**[BS] DANGEROUS.** Any building, structure or portion thereof that meets any of the conditions described below shall be deemed dangerous:

1. The building or structure has collapsed, has partially collapsed, has moved off its foundation or lacks the necessary support of the ground.
2. There exists a significant risk of collapse, detachment or dislodgment of any portion, member, appurtenance or ornamentation of the building or structure under service loads.

**[F] DAY BOX.** A portable magazine designed to hold explosive materials constructed in accordance with the requirements for a Type 3 magazine as defined and classified in Chapter 56 of the *California Fire Code*.

**DAY-CARE.** For the purposes of these regulations, means the care of persons during any period of a 24-hour day where permanent sleeping accommodations are not provided.

*Note:* “Daycare” shall not be construed to preclude the use of cots or mats for napping purposes, provided all employees, attendants and staff personnel are awake and on duty in the area where napping occurs.

**DAY-CARE HOME, FAMILY.** A home that regularly provides care, protection and supervision for 14 or fewer children, in the provider’s own home, for periods of less than 24 hours per day, while the parents or guardians are away, and is either a large family day-care home or a small family day-care home.

**DAY-CARE HOME, LARGE FAMILY.** A provider’s own home which is licensed to provide day care for periods less than 24 hours per day for nine to 14 persons, including children under the age of 10 years who reside at the home.

**DAY-CARE HOME, SMALL FAMILY.** A home which provides family day-care to eight or fewer children, including children under the age of 10 years who reside at the home, in the provider’s own home, for periods of less than 24 hours per day. Small family day-care homes are exempted from state fire and life safety regulations other than those state and local standards applicable to Group R-3 occupancies. (See *Health and Safety Code, Section 13143 (b).*)

**DAY ROOM.** A room which is adjacent to a cell, or cell tier, or dormitory and which is used as a dining, exercise or other activity room for inmates.

**[BS] DEAD LOAD.** The weight of materials of construction incorporated into the building, including but not limited to walls, floors, roofs, ceilings, stairways, built-in partitions, finishes, cladding and other similarly incorporated architectural and structural items, and the weight of fixed service equipment, such as cranes, plumbing stacks and risers, electrical feeders, heating, ventilating and air-conditioning systems and automatic sprinkler systems.

**DECK.** Is an area surrounding a pool which is specifically constructed or installed for use by bathers.

**[BS] DECORATIVE GLASS.** A carved, leaded or Dalle glass or glazing material whose purpose is decorative or artistic, not functional; whose coloring, texture or other design qualities or components cannot be removed without destroying the glazing material and whose surface, or assembly into which it is incorporated, is divided into segments.

**[F] DECORATIVE MATERIALS.** All materials applied over the building interior finish for decorative, acoustical or other effect including, but not limited to, curtains, draperies, fabrics and streamers; and all other materials utilized for decorative effect including, but not limited to, bulletin boards, artwork, posters, photographs, batting, cloth, cotton, hay, stalks, straw, vines, leaves, trees, moss and similar items, foam plastics and materials containing foam plastics. Decorative materials do not include wall coverings, ceiling coverings, floor coverings, ordinary window shades, interior finish and materials 0.025 inch (0.64 mm) or less in thickness applied directly to and adhering tightly to a substrate.

**[BS] DEEP FOUNDATION.** A deep foundation is a foundation element that does not satisfy the definition of a shallow foundation.

**[BE] DEFEND-IN-PLACE.** A method of emergency response that engages building components and trained staff to provide occupant safety during an emergency. Emergency response involves remaining in place, relocating within the building, or both, without evacuating the building.

**[A] DEFERRED SUBMITTAL.** Those portions of the design that are not submitted at the time of the application and that are to be submitted to the building official within a specified period.

**[F] DEFLAGRATION.** An exothermic reaction, such as the extremely rapid oxidation of a flammable dust or vapor in air, in which the reaction progresses through the unburned material at a rate less than the velocity of sound. A deflagration can have an explosive effect.

**[BF] DELAYED-ACTION CLOSER.** A self-closing device that incorporates a delay prior to the initiation of closing. Delayed-action closers are mechanical devices with an adjustable delay.

**[F] DELUGE SYSTEM.** A sprinkler system employing open sprinklers attached to a piping system connected to a water supply through a valve that is opened by the operation of a detection system installed in the same areas as the sprinklers. When this valve opens, water flows into the piping system and discharges from all sprinklers attached thereto.

**DEPARTMENT.** [HCD 1 & HCD 2] The Department of Housing and Community Development.

**[BS] DESIGN DISPLACEMENT.** See Section 1905.1.1.

**[BS] DESIGN EARTHQUAKE GROUND MOTION.** The earthquake ground motion that buildings and structures are specifically proportioned to resist in Section 1613.

**[BS] DESIGN FLOOD.** The flood associated with the greater of the following two areas:

1. Area with a flood plain subject to a 1-percent or greater chance of flooding in any year.

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2. Area designated as a flood hazard area on a community's flood hazard map, or otherwise legally designated.

**[BS] DESIGN FLOOD ELEVATION.** The elevation of the "design flood," including wave height, relative to the datum specified on the community's legally designated flood hazard map. In areas designated as Zone AO, the design flood elevation shall be the elevation of the highest existing grade of the building's perimeter plus the depth number (in feet) specified on the flood hazard map. In areas designated as Zone AO where a depth number is not specified on the map, the depth number shall be taken as being equal to 2 feet (610 mm).

**DESIGN PROFESSIONAL, REGISTERED.** See "Registered design professional."

**DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE, REGISTERED.** See "Registered design professional in responsible charge."

**[BS] DESIGN STRENGTH.** The product of the nominal strength and a resistance factor (or strength reduction factor).

**DESIGNATED PUBLIC TRANSPORTATION. [DSA-AC]** *Transportation provided by a public entity (other than public school transportation) by bus, rail, or other conveyance (other than transportation by aircraft or intercity or commuter rail transportation) that provides the general public with general or special service, including charter service, on a regular and continuing basis.*

**[BS] DESIGNATED SEISMIC SYSTEM.** Those nonstructural components that require design in accordance with Chapter 13 of ASCE 7 and for which the component importance factor,  $I_p$ , is greater than 1 in accordance with Section 13.1.3 of ASCE 7.

**DESTINATION-ORIENTED ELEVATOR. [DSA-AC]** *Destination-oriented elevators are operated by the user selecting a destination floor at a hall call console located at or near an elevator landing. The destination-oriented elevator system then assigns an elevator car which transports the user to the selected destination floor. Destination-oriented elevators do not provide floor selection within elevator cars.*

**[F] DETACHED BUILDING.** A separate single-story building, without a basement or crawl space, used for the storage or use of hazardous materials and located an approved distance from all structures.

**DETACHED SINGLE-FAMILY DWELLING. [HCD 1 & HCD 2]** *Any single-family dwelling which is separated (detached) from adjacent buildings.*

**[BS] DETAILED PLAIN CONCRETE STRUCTURAL WALL.** See Section 1905.1.1.

**DETECTABLE WARNING.** *A standardized surface feature built in or applied to walking surfaces or other elements to warn persons with visual impairments of hazards on a circulation path.*

**[F] DETECTOR, HEAT.** A fire detector that senses heat—either abnormally high temperature or rate of rise, or both.

**DETENTION ELEVATOR. [SFM]** *Detention elevator shall mean an elevator which moves in-custody individuals within a secure and restrained environment.*

**DETENTION PROGRAM SUITE.** *Within a state prison, correctional treatment facility, local detention facility, or juvenile facility, a detention program suite shall be a group of program related spaces, not classified as group F uses, located around shared circulation.*

**DETENTION TREATMENT ROOM. [SFM]** *Detention treatment room shall mean a lockable room or rooms within Group I-3 occupancies used for recreational therapy, group rooms, interdisciplinary treatment team rooms, and interview rooms not classified solely as a Group I-2 occupancy.*

**[F] DETONATION.** An exothermic reaction characterized by the presence of a shock wave in the material which establishes and maintains the reaction. The reaction zone progresses through the material at a rate greater than the velocity of sound. The principal heating mechanism is one of shock compression. Detonations have an explosive effect.

**[BG] DETOXIFICATION FACILITIES.** Facilities that provide treatment for substance abuse, serving care recipients who are incapable of self-preservation or classified as non-ambulatory or who are harmful to themselves or others.

**[BS] DIAPHRAGM.** A horizontal or sloped system acting to transmit lateral forces to vertical elements of the lateral force-resisting system. When the term "diaphragm" is used, it shall include horizontal bracing systems.

**Diaphragm, blocked.** In light-frame construction, a diaphragm in which all sheathing edges not occurring on a framing member are supported on and fastened to blocking.

**Diaphragm boundary.** In light-frame construction, a location where shear is transferred into or out of the diaphragm sheathing. Transfer is either to a boundary element or to another force-resisting element.

**Diaphragm chord.** A diaphragm boundary element perpendicular to the applied load that is assumed to take axial stresses due to the diaphragm moment.

**Diaphragm, unblocked.** A diaphragm that has edge nailing at supporting members only. Blocking between supporting structural members at panel edges is not included. Diaphragm panels are field nailed to supporting members.

### **[BS] DIMENSIONS (for Chapter 21).**

**Nominal.** The specified dimension plus an allowance for the joints with which the units are to be laid. Nominal dimensions are usually stated in whole numbers. Thickness is given first, followed by height and then length.

**Specified.** Dimensions specified for the manufacture or construction of a unit, joint or element.

**[BE] DIRECT ACCESS.** A path of travel from a space to an immediately adjacent space through an opening in the common wall between the two spaces.

**DIRECTIONAL SIGN. [DSA-AC, HCD 1 & HCD 2]** *A publicly displayed notice which indicates by use of words or symbols a recommended direction or route of travel.*

**DISABILITY. [DSA-AC]** *Disability is (1) a physical or mental impairment that limits one or more of the major life activities of an individual, (2) a record of such an impairment, or (3) being regarded as having such an impairment.*

**[F] DISPENSING.** The pouring or transferring of any material from a container, tank or similar vessel, whereby vapors, dusts, fumes, mists or gases are liberated to the atmosphere.

***DISTANCE FROM AN ACTIVE EARTHQUAKE FAULT.*** **[DSA-SS, DSA-SS/CC, OSHPD 1 & 4]** Distance measured from the nearest point of the building to the closest edge of an Alquist-Priolo Earthquake fault zone for an active fault, if such a map exists, or to the closest mapped splay of the fault.

***DISTRICT AGRICULTURAL ASSOCIATIONS.*** Those associations regulated by the California Food and Agricultural Code, Division 3, Part 3.

**DOOR, BALANCED.** See “Balanced door.”

**DOOR, LOW-ENERGY POWER-OPERATED.** See “Low-energy power-operated door.”

**DOOR, POWER-ASSISTED.** See “Power-assisted door.”

**DOOR, POWER-OPERATED.** See “Power-operated door.”

**DOORWAY, EXIT ACCESS.** See “Exit access doorway.”

**[BG] DORMITORY.** A space in a building where group sleeping accommodations are provided in one room, or in a series of closely associated rooms, for persons not members of the same family group, under joint occupancy and single management, as in college dormitories or fraternity houses. **[SFM]** For Group I-3 occupancies “Dormitory” is an area occupied by no less than three inmates.

**[BF] DRAFTSTOP.** A material, device or construction installed to restrict the movement of air within open spaces of concealed areas of building components such as crawl spaces, floor/ceiling assemblies, roof/ceiling assemblies and attics.

**DRAG STRUT.** See “Collector.”

***DRAIN.*** A fitting or fixture, usually at or near the bottom of a pool, through which water leaves the pool normally to the recirculation pump.

**[BS] DRILLED SHAFT.** A cast-in-place deep foundation element, also referred to as a caisson, drilled pier or bored pile, constructed by drilling a hole (with or without permanent casing or drilling fluid) into soil or rock and filling it with fluid concrete after the drilling equipment is removed.

**Socketed drilled shaft.** A drilled shaft with a permanent pipe or tube casing that extends down to bedrock and an uncased socket drilled into the bedrock.

***DRIVE AISLE.*** A vehicular way provided within a parking facility that connects vehicular entrances, parking stalls, electric vehicle charging stations, passenger loading zones, and vehicular exits.

***DRIVE-UP ELECTRIC VEHICLE CHARGING STATION.*** An electric vehicle charging station in which use is limited to 30 minutes maximum and is provided at a location where the electric vehicle approaches in the forward direction, stops in the vehicle space, charges the vehicle, and proceeds forward to depart the vehicle space. The arrangement of a drive-up electric vehicle charger and its associated vehicle space is similar to a gasoline filling station island.

***DRIVEWAY.*** A vehicular way providing access between a public way and a building, parking facility, or other off-street area. A driveway may provide access to drive aisles in a parking facility.

**[F] DRY-CHEMICAL EXTINGUISHING AGENT.** A powder composed of small particles, usually of sodium bicarbonate, potassium bicarbonate, urea-potassium-based bicarbonate, potassium chloride or monoammonium phosphate, with added particulate material supplemented by special treatment to provide resistance to packing, resistance to moisture absorption (caking) and the proper flow capabilities.

**[BS] DRY FLOODPROOFING.** A combination of design modifications that results in a building or structure, including the attendant utilities and equipment and sanitary facilities, being water tight with walls substantially impermeable to the passage of water and with structural components having the capacity to resist loads as identified in ASCE 7.

**[A] DWELLING.** A building that contains one or two dwelling units used, intended or designed to be used, rented, leased, let or hired out to be occupied for living purposes.

**[A] DWELLING UNIT.** A single unit providing complete, independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation. **[HCD 1-AC]** For the purposes of Chapter 11A, a single unit of residence for a family of one or more persons. Examples of dwelling units covered by Chapter 11A include condominiums, an apartment unit within an apartment building, and other types of dwellings in which sleeping accommodations are provided but toileting or cooking facilities are shared by occupants of more than one room or portion of the dwelling. Examples of the latter include dormitory rooms and sleeping accommodations in shelters intended for occupancy as residences for homeless persons.

**DWELLING UNIT OR SLEEPING UNIT, MULTI-STORY.** See “Multistory unit.”

***EFFECTIVE PARTICLE SIZE.*** The theoretical size of a sieve in mm that will pass 10 percent by weight of sand.

***EFFICIENCY DWELLING UNIT.*** **[HCD 1]** A dwelling unit constructed in accordance with Health and Safety Code Section 17958.1 or the California Building Code Section 1207.4.

**[BE] EGRESS COURT.** A court or yard which provides access to a public way for one or more exits.

***ELECTRIC VEHICLE (EV).*** **[DSA-AC & SFM]** An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, electric motorcycles, and the like, primarily powered by an electric motor that draws current from a rechargeable storage battery, fuel cell, photovoltaic array, or other source of electric current. Plug-in hybrid electric vehicles (PHEV) are considered electric vehicles. For the purpose of this code, off-road, self-propelled electric vehicles, such as industrial trucks, hoists, lifts, transports, golf carts, airline ground support equipment, tractors, boats, and the like, are not included.

***ELECTRIC VEHICLE (EV) CHARGER.*** Off-board charging equipment used to charge an electric vehicle.

***ELECTRIC VEHICLE CHARGING SPACE (EV Space).*** A space intended for charging electric vehicles.

***ELECTRIC VEHICLE CHARGING STATION (EVCS).*** One or more electric vehicle charging spaces served by an electric vehicle charger or other charging equipment. Where a multiport electric vehicle charger can simultaneously charge more than one vehicle, the number of electric vehicle

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charging stations shall be considered equivalent to the number of electric vehicles that can be simultaneously charged.

**ELECTRIC VEHICLE (EV) CONNECTOR.** A device that, when electrically coupled (conductive or inductive) to an electric vehicle inlet, establishes an electrical connection to the electric vehicle for the purpose of power transfer and information exchange. This device is part of the electric vehicle coupler.

**[BF] ELECTRICAL CIRCUIT PROTECTIVE SYSTEM.** A specific construction of devices, materials, or coatings installed as a fire-resistive barrier system applied to electrical system components, such as cable trays, conduits and other raceways, open run cables and conductors, cables, and conductors.

**ELEMENT.** [DSA-AC] An architectural or mechanical component of a building, facility, space or site.

**ELEVATED PLAY COMPONENT.** [DSA-AC] A play component that is approached above or below grade and that is part of a composite play structure consisting of two or more play components attached or functionally linked to create an integrated unit providing more than one play activity.

**[F] ELEVATOR GROUP.** A grouping of elevators in a building located adjacent or directly across from one another that responds to common hall call buttons.

**ELEVATOR, PASSENGER.** [HCD 1 & HCD 2] See “PASSENGER ELEVATOR.” [DSA-AC] An elevator used primarily to carry passengers.

**[F] EMERGENCY ALARM SYSTEM.** A system to provide indication and warning of emergency situations involving hazardous materials.

**[F] EMERGENCY CONTROL STATION.** An approved location on the premises where signals from emergency equipment are received and which is staffed by trained personnel.

**[BE] EMERGENCY ESCAPE AND RESCUE OPENING.** An operable window, door or other similar device that provides for a means of escape and access for rescue in the event of an emergency.

**[F] EMERGENCY POWER SYSTEM.** A source of automatic electric power of a required capacity and duration to operate required life safety, fire alarm, detection and ventilation systems in the event of a failure of the primary power. Emergency power systems are required for electrical loads where interruption of the primary power could result in loss of human life or serious injuries.

**[F] EMERGENCY VOICE/ALARM COMMUNICATIONS.** Dedicated manual or automatic facilities for originating and distributing voice instructions, as well as alert and evacuation signals pertaining to a fire emergency, to the occupants of a building.

**[BE] EMPLOYEE WORK AREA.** All or any portion of a space used only by employees and only for work. Corridors, toilet rooms, kitchenettes and break rooms are not employee work areas.

**ENFORCEMENT.** [HCD 1 & HCD 2] The applicable section of the Health and Safety Code is repeated here for clarity and reads as follows:

**Section 17920.** “Enforcement” means diligent effort to secure compliance, including review of plans and permit applications, response to complaints, citation of violations, and other legal process. Except as otherwise provided in this part, “enforcement” may, but need not, include inspections of existing buildings on which no complaint or permit application has been filed, and effort to secure compliance as to these existing buildings.

**ENFORCEMENT AGENT.** [DSA-SS, DSA-SS/CC & OSHPD 1, 1R, 2, 4 & 5] That individual within the agency or organization charged with responsibility for agency or organization compliance with the requirements of this Code. Used interchangeably with Building Official and Code Official.

**ENFORCING AGENCY.** [DSA-AC, HCD 1 & HCD 2] The designated department or agency as specified by statute or regulation.

**[BS] ENGINEERED WOOD RIM BOARD.** A full-depth structural composite lumber, wood structural panel, structural glued laminated timber or prefabricated wood I-joist member designed to transfer horizontal (shear) and vertical (compression) loads, provide attachment for diaphragm sheathing, siding and exterior deck ledgers, and provide lateral support at the ends of floor or roof joists or rafters.

**ENTRANCE.** Any access point to a building or portion of a building or facility used for the purpose of entering. An entrance includes the approach walk, the vertical access leading to the entrance platform, the entrance platform itself, vestibule if provided, the entry door or gate, and the hardware of the entry door or gate.

**ENTRANCE, PUBLIC.** See “Public entrance.”

**ENTRANCE, RESTRICTED.** See “Restricted entrance.”

**ENTRANCE, SERVICE.** See “Service entrance.”

**EQUIPMENT.** [DSA-SS & DSA-SS/CC] Equipment as used in this part and all applicable parts of the California Building Standards Code shall be classified as fixed equipment, mobile or movable equipment. <

- (1) **FIXED EQUIPMENT** includes items that are permanently affixed to the building or permanently connected to a service distribution system that is designed and installed for the specific use of the equipment.
- (2) **MOVABLE EQUIPMENT** means equipment, with or without wheels or rollers, that typically remains in one fixed location during its service life or use, but is required to be periodically moved to facilitate cleaning or maintenance.
- (3) **MOBILE EQUIPMENT** means equipment, with or without wheels or rollers, that is typically used in a different location than where it is stored and moved from one location in the structure to another during ordinary use. Mobile equipment includes items that require floor space or electrical and/or mechanical connections but are portable, such as wheeled items, portable items, office-type furnishings, and diagnostic or monitoring equipment.

**EQUIPMENT.** [OSHPD 1, 2, 4 & 5] Equipment as used in this part and all applicable parts of the California Building

*Standards Code shall be classified as fixed equipment, mobile, movable, countertop, interim, temporary or other equipment.*

- (1) **COUNTERTOP EQUIPMENT** means equipment that typically remains on countertop, work bench, shelf or support other than the floor during its service life.
- (2) **ESSENTIAL EQUIPMENT** means equipment that failure of which will significantly impair operations during or after a disaster. The facility shall determine which equipment is essential. Essential equipment shall also include equipment that is required to provide the eight basic services of the hospital as defined in Section 1224.3.
- (3) **FIXED EQUIPMENT** means equipment that is directly attached to the building or directly connected to a service distribution system/utility and that typically remains in one fixed location during its service life or use.
- (4) **INTERIM EQUIPMENT** means temporary equipment that will be in use greater than 180 days but only for the duration of the construction project that it is related to.
- (5) **MOBILE EQUIPMENT** means equipment, with or without wheels or rollers, that is typically used in a different location than where it is stored and moved from one location in the building to another during ordinary use.
- (6) **MOVABLE EQUIPMENT** means equipment that is directly attached to the building and/or directly connected to a service distribution system/utility, with or without wheels or rollers, that typically remains in one fixed location during its service life or use, but is required to be periodically moved to facilitate cleaning or maintenance.
- (7) **OTHER EQUIPMENT** means equipment that is not directly connected to a building service distribution system, with or without wheels or rollers, and is typically used at a single location during its service life.
- (8) **TEMPORARY EQUIPMENT** means fixed, movable, countertop, or other equipment that is used during replacement, maintenance, or repair for a time of service as defined in Section 108.

**EQUIPMENT AREA.** An area used for pool recirculation and purification equipment and related piping appurtenances.

**[BG] EQUIPMENT PLATFORM.** An unoccupied, elevated platform used exclusively for mechanical systems or industrial process equipment, including the associated elevated walkways, stairways, alternating tread devices and ladders necessary to access the platform (see Section 505.3).

**EQUIVALENT FACILITATION.** The use of designs, products or technologies as alternatives to those prescribed, resulting in substantially equivalent or greater accessibility and usability.

*Note:* In determining equivalent facilitation, consideration shall be given to means that provide for the maximum independence of persons with disabilities while presenting the least risk of harm, injury or other hazard to such persons or others.

**[BS] ESSENTIAL FACILITIES.** Buildings and other structures that are intended to remain operational in the event of extreme environmental loading from flood, wind, snow or earthquakes.

**[F] EXHAUSTED ENCLOSURE.** An appliance or piece of equipment that consists of a top, a back and two sides providing a means of local exhaust for capturing gases, fumes, vapors and mists. Such enclosures include laboratory hoods, exhaust fume hoods and similar appliances and equipment used to locally retain and exhaust the gases, fumes, vapors and mists that could be released. Rooms or areas provided with general ventilation, in themselves, are not exhausted enclosures.

**[A] EXISTING BUILDING.** A building erected prior to the date of adoption of the appropriate code, or one for which a legal building permit has been issued.

**EXISTING BUILDING OR FACILITY. [DSA-AC]** A facility in existence on any given date, without regard to whether the facility may also be considered newly constructed or altered under this code.

**[BS] EXISTING STRUCTURE.** A structure erected prior to the date of adoption of the appropriate code, or one for which a legal building permit has been issued.

**[BE] EXIT.** That portion of a means of egress system between the exit access and the exit discharge or public way. Exit components include exterior exit doors at the level of exit discharge, interior exit stairways and ramps, exit passageways, exterior exit stairways and ramps and horizontal exits.

**[BE] EXIT ACCESS.** That portion of a means of egress system that leads from any occupied portion of a building or structure to an exit.

**[BE] EXIT ACCESS DOORWAY.** A door or access point along the path of egress travel from an occupied room, area or space where the path of egress enters an intervening room, corridor, exit access stairway or ramp.

**[BE] EXIT ACCESS RAMP.** A ramp within the exit access portion of the means of egress system.

**[BE] EXIT ACCESS STAIRWAY.** A stairway within the exit access portion of the means of egress system.

**[BE] EXIT DISCHARGE.** That portion of a means of egress system between the termination of an exit and a public way.

**[BE] EXIT DISCHARGE, LEVEL OF.** The story at the point at which an exit terminates and an exit discharge begins.

**EXIT, HORIZONTAL.** See "Horizontal exit."

**[BE] EXIT PASSAGEWAY.** An exit component that is separated from other interior spaces of a building or structure by fire-resistance-rated construction and opening protectives, and provides for a protected path of egress travel in a horizontal direction to an exit or to the exit discharge.

**[BF] EXPANDED VINYL WALL COVERING.** Wall covering consisting of a woven textile backing, an expanded vinyl base coat layer and a nonexpanded vinyl skin coat. The expanded base coat layer is a homogeneous vinyl layer that contains a blowing agent. During processing, the blowing agent decomposes, causing this layer to expand by forming closed cells. The total thickness of the wall covering is approximately 0.055 inch to 0.070 inch (1.4 mm to 1.78 mm).

## DEFINITIONS

**[F] EXPLOSION.** An effect produced by the sudden violent expansion of gases, which may be accompanied by a shock wave or disruption, or both, of enclosing materials or structures. An explosion could result from any of the following:

1. Chemical changes such as rapid oxidation, deflagration or detonation, decomposition of molecules and run-away polymerization (usually detonations).
2. Physical changes such as pressure tank ruptures.
3. Atomic changes (nuclear fission or fusion).

**[F] EXPLOSIVE.** A chemical compound, mixture or device, the primary or common purpose of which is to function by explosion. The term includes, but is not limited to: dynamite, black powder, pellet powder, initiating explosives, detonators, safety fuses, squibs, detonating cord, igniter cord, and igniters.

The term “explosive” includes any material determined to be within the scope of USC Title 18: Chapter 40 and also includes any material classified as an explosive other than consumer fireworks, 1.4G by the hazardous materials regulations of DOTn 49 CFR Parts 100-185.

**High explosive.** Explosive material, such as dynamite, which can be caused to detonate by means of a No. 8 test blasting cap when unconfined.

**Low explosive.** Explosive material that will burn or deflagrate when ignited. It is characterized by a rate of reaction that is less than the speed of sound. Examples of low explosives include, but are not limited to: black powder; safety fuse; igniters; igniter cord; fuse lighters; fireworks; and propellants, 1.3C.

**Mass-detonating explosives.** Division 1.1, 1.2 and 1.5 explosives alone or in combination, or loaded into various types of ammunition or containers, most of which can be expected to explode virtually instantaneously when a small portion is subjected to fire, severe concussion, impact, the impulse of an initiating agent or the effect of a considerable discharge of energy from without. Materials that react in this manner represent a mass explosion hazard. Such an explosive will normally cause severe structural damage to adjacent objects. Explosive propagation could occur immediately to other items of ammunition and explosives stored sufficiently close to and not adequately protected from the initially exploding pile with a time interval short enough so that two or more quantities must be considered as one for quantity-distance purposes.

**UN/DOTn Class 1 explosives.** The former classification system used by DOTn included the terms “high” and “low” explosives as defined herein. The following terms further define explosives under the current system applied by DOTn for all explosive materials defined as hazard Class 1 materials. Compatibility group letters are used in concert with the division to specify further limitations on each division noted (i.e., the letter G identifies the material as a pyrotechnic substance or article containing a pyrotechnic substance and similar materials).

**Division 1.1.** Explosives that have a mass explosion hazard. A mass explosion is one which affects almost the entire load instantaneously.

**Division 1.2.** Explosives that have a projection hazard but not a mass explosion hazard.

**Division 1.3.** Explosives that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard.

**Division 1.4.** Explosives that pose a minor explosion hazard. The explosive effects are largely confined to the package and no projection of fragments of appreciable size or range is to be expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package.

**Division 1.5.** Very insensitive explosives. This division is comprised of substances that have a mass explosion hazard, but that are so insensitive there is very little probability of initiation or of transition from burning to detonation under normal conditions of transport.

**Division 1.6.** Extremely insensitive articles which do not have a mass explosion hazard. This division is comprised of articles that contain only extremely insensitive detonating substances and which demonstrate a negligible probability of accidental initiation or propagation.

**EXTERIOR COVERING. [SFM]** (See Chapter 7A, Section 702A for defined term.)

**[BE] EXTERIOR EXIT RAMP.** An exit component that serves to meet one or more means of egress design requirements, such as required number of exits or exit access travel distance, and is open to yards, courts or public ways.

**[BE] EXTERIOR EXIT STAIRWAY.** An exit component that serves to meet one or more means of egress design requirements, such as required number of exits or exit access travel distance, and is open to yards, courts or public ways.

**[BF] EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS).** EIFS are nonstructural, nonload-bearing, exterior wall cladding systems that consist of an insulation board attached either adhesively or mechanically, or both, to the substrate; an integrally reinforced base coat and a textured protective finish coat.

**[BF] EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS) WITH DRAINAGE.** An EIFS that incorporates a means of drainage applied over a water-resistive barrier.

**[BF] EXTERIOR SURFACES.** Weather-exposed surfaces.

**[BF] EXTERIOR WALL.** A wall, bearing or nonbearing, that is used as an enclosing wall for a building, other than a fire wall, and that has a slope of 60 degrees (1.05 rad) or greater with the horizontal plane.

**[BF] EXTERIOR WALL COVERING.** A material or assembly of materials applied on the exterior side of exterior walls for the purpose of providing a weather-resisting barrier, insulation or for aesthetics, including but not limited to, veneers, siding, exterior insulation and finish systems, architectural trim and embellishments such as cornices, soffits, facias, gutters and leaders.

**[BF] EXTERIOR WALL ENVELOPE.** A system or assembly of exterior wall components, including exterior wall finish materials, that provides protection of the building structural members, including framing and sheathing materials, and conditioned interior space, from the detrimental effects of the exterior environment.

**[BF] F RATING.** The time period that the through-penetration firestop system limits the spread of fire through the penetration when tested in accordance with ASTM E814 or UL 1479.

**[BF] FABRIC PARTITION.** A partition consisting of a finished surface made of fabric, without a continuous rigid backing, that is directly attached to a framing system in which the vertical framing members are spaced greater than 4 feet (1219 mm) on center.

**[BS] FABRICATED ITEM.** Structural, load-bearing or lateral load-resisting members or assemblies consisting of materials assembled prior to installation in a building or structure, or subjected to operations such as heat treatment, thermal cutting, cold working or reforming after manufacture and prior to installation in a building or structure. Materials produced in accordance with standards referenced by this code, such as rolled structural steel shapes, steel reinforcing bars, masonry units and wood structural panels, or in accordance with a referenced standard that provides requirements for quality control done under the supervision of a third-party quality control agency, are not “fabricated items.”

**[F] FABRICATION AREA.** An area within a semiconductor fabrication facility and related research and development areas in which there are processes using hazardous production materials. Such areas are allowed to include ancillary rooms or areas such as dressing rooms and offices that are directly related to the fabrication area processes.

**[A] FACILITY.** All or any portion of buildings, structures, site improvements, elements and pedestrian or vehicular routes located on a site. *[DSA-AC] All or any portion of buildings, structures, site improvements, elements, and pedestrian routes or vehicular ways located on a site.*

**[BS] FACTORED LOAD.** The product of a nominal load and a load factor.

**FAMILY [HCD 1].** *An individual or two or more persons who are related by blood or marriage; or otherwise live together in a dwelling unit.*

**[BS] FENESTRATION.** Products classified as either vertical fenestration or skylights and sloped glazing, installed in such a manner as to preserve the weather-resistant barrier of the wall or roof in which they are installed. Fenestration includes products with glass or other transparent or translucent materials.

**[BS] FENESTRATION, VERTICAL.** Windows that are fixed or movable, opaque doors, glazed doors, glazed block and combination opaque and glazed doors installed in a wall at less than 15 degrees from the vertical.

**[BS] FIBER-CEMENT (BACKER BOARD, SIDING, SOFFIT, TRIM AND UNDERLAYMENT) PRODUCTS.** Manufactured thin section composites of hydraulic cementitious matrices and discrete nonasbestos fibers.

**[BF] FIBER-REINFORCED POLYMER.** A polymeric composite material consisting of reinforcement fibers, such as glass, impregnated with a fiber-binding polymer which is then molded and hardened. Fiber-reinforced polymers are permitted to contain cores laminated between fiber-reinforced polymer facings.

**[BS] FIBERBOARD.** A fibrous, homogeneous panel made from lignocellulosic fibers (usually wood or cane) and having a density of less than 31 pounds per cubic foot (pcf) (497 kg/m<sup>3</sup>) but more than 10 pcf (160 kg/m<sup>3</sup>).

**FIELD NAILING.** See “Nailing, field.”

**FIRE ALARM BOX, MANUAL.** See “Manual fire alarm box.”

**[F] FIRE ALARM CONTROL UNIT.** A system component that receives inputs from automatic and manual fire alarm devices and may be capable of supplying power to detection devices and transponders or off-premises transmitters. The control unit may be capable of providing a transfer of power to the notification appliances and transfer of condition to relays or devices.

**[F] FIRE ALARM SIGNAL.** A signal initiated by a fire alarm-initiating device such as a manual fire alarm box, automatic fire detector, waterflow switch or other device whose activation is indicative of the presence of a fire or fire signature.

**[F] FIRE ALARM SYSTEM.** A system or portion of a combination system consisting of components and circuits arranged to monitor and annunciate the status of fire alarm or supervisory signal-initiating devices and to initiate the appropriate response to those signals.

**FIRE APPLIANCE.** *[SFM] The apparatus or equipment provided or installed for use in the event of an emergency.*

**[BF] FIRE AREA.** The aggregate floor area enclosed and bounded by fire walls, fire barriers, exterior walls or horizontal assemblies of a building. Areas of the building not provided with surrounding walls shall be included in the fire area if such areas are included within the horizontal projection of the roof or floor next above.

**[BF] FIRE BARRIER.** A fire-resistance-rated wall assembly of materials designed to restrict the spread of fire in which continuity is maintained.

**[F] FIRE COMMAND CENTER.** The principal attended or unattended location where the status of detection, alarm communications and control systems is displayed, and from which the systems can be manually controlled.

**[BF] FIRE DAMPER.** A listed device installed in ducts and air transfer openings designed to close automatically upon detection of heat and resist the passage of flame. Fire dampers are classified for use in either static systems that will automatically shut down in the event of a fire, or in dynamic systems that continue to operate during a fire. A dynamic fire damper is tested and rated for closure under elevated temperature airflow.

**[F] FIRE DETECTOR, AUTOMATIC.** A device designed to detect the presence of a fire signature and to initiate action.

**[BF] FIRE DOOR.** The door component of a fire door assembly.

**[BF] FIRE DOOR ASSEMBLY.** Any combination of a fire door, frame, hardware and other accessories that together provide a specific degree of fire protection to the opening.

**FIRE DOOR ASSEMBLY, FLOOR.** See “Floor fire door assembly.”

**[BF] FIRE EXIT HARDWARE.** Panic hardware that is listed for use on fire door assemblies.

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**FIRE HAZARD SEVERITY ZONES. [SFM]** (See Chapter 7A, Section 702A for defined term.)

**[F] FIRE LANE.** A road or other passageway developed to allow the passage of fire apparatus. A fire lane is not necessarily intended for vehicular traffic other than fire apparatus.

**[BF] FIRE PARTITION.** A vertical assembly of materials designed to restrict the spread of fire in which openings are protected.

**FIRE PROTECTION PLAN. [SFM]** (See Chapter 7A, Section 702A for defined term.)

**[BF] FIRE PROTECTION RATING.** The period of time that an opening protective will maintain the ability to confine a fire as determined by tests specified in Section 716. Ratings are stated in hours or minutes.

**[F] FIRE PROTECTION SYSTEM.** Approved devices, equipment and systems or combinations of systems used to detect a fire, activate an alarm, extinguish or control a fire, control or manage smoke and products of a fire or any combination thereof.

**[BF] FIRE-RATED GLAZING.** Glazing with either a fire protection rating or a fire-resistance rating.

**[BF] FIRE RESISTANCE.** That property of materials or their assemblies that prevents or retards the passage of excessive heat, hot gases or flames under conditions of use.

**[BF] FIRE-RESISTANCE RATING.** The period of time a building element, component or assembly maintains the ability to confine a fire, continues to perform a given structural function, or both, as determined by the tests, or the methods based on tests, prescribed in Section 703.

**[BF] FIRE-RESISTANT JOINT SYSTEM.** An assemblage of specific materials or products that are designed, tested and fire-resistance rated in accordance with either ASTM E1966 or UL 2079 to resist for a prescribed period of time the passage of fire through joints made in or between fire-resistance-rated assemblies.

**FIRE-RETARDANT TREATED WOOD. [SFM]** See Section 2303.2.

**[F] FIRE SAFETY FUNCTIONS.** Building and fire control functions that are intended to increase the level of life safety for occupants or to control the spread of harmful effects of fire.

**[BF] FIRE SEPARATION DISTANCE.** The distance measured from the building face to one of the following:

1. The closest interior lot line.
2. To the centerline of a street, an alley or public way.
3. To an imaginary line between two buildings on the lot.

The distance shall be measured at right angles from the face of the wall.

**FIRE-SMOKE BARRIER. [SFM]** A fire-resistance-rated wall assembly of materials designed to restrict the spread of fire in which continuity is maintained in accordance with Section 707 and that is designed and constructed to restrict the movement of smoke in accordance with Section 710.

**[BF] FIRE WALL.** A fire-resistance-rated wall having protected openings, which restricts the spread of fire and extends continuously from the foundation to or through the roof, with sufficient structural stability under fire conditions to allow

collapse of construction on either side without collapse of the wall.

**[BF] FIRE WINDOW ASSEMBLY.** A window constructed and glazed to give protection against the passage of fire.

**[BF] FIREBLOCKING.** Building materials, or materials approved for use as fireblocking, installed to resist the free passage of flame to other areas of the building through concealed spaces.

**[M] FIREPLACE.** A hearth and fire chamber or similar prepared place in which a fire may be made and which is built in conjunction with a chimney.

**[BS] FIREPLACE THROAT.** The opening between the top of the firebox and the smoke chamber.

**FIRESTOP, MEMBRANE-PENETRATION.** See “Membrane-penetration firestop.”

**FIRESTOP, PENETRATION.** See “Penetration firestop.”

**FIRESTOP SYSTEM, THROUGH-PENETRATION.** See “Through-penetration firestop system.”

**[F] FIREWORKS.** Any composition or device for the purpose of producing a visible or audible effect for entertainment purposes by combustion, deflagration or detonation that meets the definition of 1.4G fireworks or 1.3G fireworks.

**Fireworks, 1.3G.** Large fireworks devices, which are explosive materials, intended for use in fireworks displays and designed to produce audible or visible effects by combustion, deflagration or detonation. Such 1.3G fireworks include, but are not limited to, firecrackers containing more than 130 milligrams (2 grains) of explosive composition, aerial shells containing more than 40 grams of pyrotechnic composition, and other display pieces which exceed the limits for classification as 1.4G fireworks. Such 1.3G fireworks are also described as fireworks, UN0335 by the DOTn.

*Note:* Fireworks shall have the same meaning as defined in Health and Safety Code Section 12511 and 12512 which has been reprinted as follows:

12511. “Fireworks” means any device containing chemical elements and chemical compounds capable of burning independently of the oxygen of the atmosphere and producing audible, visual, mechanical, or thermal effects which are useful as pyrotechnic devices or for entertainment.

The term “fireworks” includes, but is not limited to, devices designated by the manufacturer as fireworks, torpedoes, skyrockets, roman candles, rockets, Daygo bombs, sparklers, party poppers, paper caps, chasers, fountains, smoke sparks, aerial bombs, and fireworks kits.

12512. “Fireworks kit” means any assembly of materials or explosive substances, which is designed and intended by the seller to be assembled by the person receiving such material or explosive substance and when so assembled would come within the definition of fireworks in Section 12511.

**Fireworks, 1.4G.** Small fireworks devices containing restricted amounts of pyrotechnic composition designed primarily to produce visible or audible effects by combustion or deflagration that complies with the construction,



chemical composition and labeling regulations of the DOTn for fireworks, UN0336, and the U.S. Consumer Product Safety Commission (CPSC) as set forth in CPSC 16 CFR: Parts 1500 and 1507.

**[BG] FIXED BASE OPERATOR (FBO).** A commercial business granted the right by the airport sponsor to operate on an airport and provide aeronautical services, such as fueling, hangaring, tie-down and parking, aircraft rental, aircraft maintenance and flight instruction.

**[BE] FIXED SEATING.** Furniture or fixture designed and installed for the use of sitting and secured in place including bench-type seats and seats with or without backs or armrests.

**[BF] FLAME SPREAD.** The propagation of flame over a surface.

**[BF] FLAME SPREAD INDEX.** A comparative measure, expressed as a dimensionless number, derived from visual measurements of the spread of flame versus time for a material tested in accordance with ASTM E84 or UL 723.

**[F] FLAMMABLE GAS.** A material that is a gas at 68°F (20°C) or less at 14.7 pounds per square inch atmosphere (psia) (101 kPa) of pressure [a material that has a boiling point of 68°F (20°C) or less at 14.7 psia (101 kPa)], which also meets one of the following:

1. Is ignitable at 14.7 psia (101 kPa) when in a mixture of 13 percent or less by volume with air.
2. Has a flammable range at 14.7 psia (101 kPa) with air of at least 12 percent, regardless of the lower limit.

The limits specified shall be determined at 14.7 psi (101 kPa) of pressure and a temperature of 68°F (20°C) in accordance with ASTM E681.

**[F] FLAMMABLE LIQUEFIED GAS.** A liquefied compressed gas which, under a charged pressure, is partially liquid at a temperature of 68°F (20°C) and which is flammable.

**[F] FLAMMABLE LIQUID.** A liquid having a closed cup flash point below 100°F (38°C). Flammable liquids are further categorized into a group known as Class I liquids. The Class I category is subdivided as follows:

**Class IA.** Liquids having a flash point below 73°F (23°C) and a boiling point below 100°F (38°C).

**Class IB.** Liquids having a flash point below 73°F (23°C) and a boiling point at or above 100°F (38°C).

**Class IC.** Liquids having a flash point at or above 73°F (23°C) and below 100°F (38°C). The category of flammable liquids does not include compressed gases or cryogenic fluids.

**[F] FLAMMABLE MATERIAL.** A material capable of being readily ignited from common sources of heat or at a temperature of 600°F (316°C) or less.

**[F] FLAMMABLE SOLID.** A solid, other than a blasting agent or explosive, that is capable of causing fire through friction, absorption or moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which has an ignition temperature below 212°F (100°C) or which burns so vigorously and persistently when ignited as to create a serious hazard. A chemical shall be considered a flammable solid as determined in accordance with the test method of CPSC 16 CFR; Part 1500.44, if it ignites and burns

with a self-sustained flame at a rate greater than 0.1 inch (2.5 mm) per second along its major axis.

**[F] FLAMMABLE VAPORS OR FUMES.** The concentration of flammable constituents in air that exceeds 25 percent of their lower flammable limit (LFL).

**[F] FLASH POINT.** The minimum temperature in degrees Fahrenheit at which a liquid will give off sufficient vapors to form an ignitable mixture with air near the surface or in the container, but will not sustain combustion. The flash point of a liquid shall be determined by appropriate test procedure and apparatus as specified in ASTM D56, ASTM D93 or ASTM D3278.

**[BE] FLIGHT.** A continuous run of rectangular treads, winders or combination thereof from one landing to another.

**[BS] FLOOD or FLOODING.** A general and temporary condition of partial or complete inundation of normally dry land from:

1. The overflow of inland or tidal waters.
2. The unusual and rapid accumulation or runoff of surface waters from any source.

**[BS] FLOOD DAMAGE-RESISTANT MATERIALS.** Any construction material capable of withstanding direct and prolonged contact with floodwaters without sustaining any damage that requires more than cosmetic repair.

**FLOOD, DESIGN.** See “Design flood.”

**FLOOD ELEVATION, DESIGN.** See “Design flood elevation.”

**[BS] FLOOD HAZARD AREA.** The greater of the following two areas:

1. The area within a flood plain subject to a 1-percent or greater chance of flooding in any year.
2. The area designated as a flood hazard area on a community’s flood hazard map, or otherwise legally designated.

**FLOOD HAZARD AREAS, SPECIAL.** See “Special flood hazard area.”

**[BS] FLOOD INSURANCE RATE MAP (FIRM).** An official map of a community on which the Federal Emergency Management Agency (FEMA) has delineated both the special flood hazard areas and the risk premium zones applicable to the community.

**[BS] FLOOD INSURANCE STUDY.** The official report provided by the Federal Emergency Management Agency containing the Flood Insurance Rate Map (FIRM), the Flood Boundary and Floodway Map (FBFM), the water surface elevation of the base flood and supporting technical data.

**[BS] FLOODWAY.** The channel of the river, creek or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.

**[BE] FLOOR AREA, GROSS.** The floor area within the inside perimeter of the exterior walls of the building under consideration, exclusive of vent shafts and courts, without deduction for corridors, stairways, ramps, closets, the thickness of interior walls, columns or other features. The floor area of a building, or portion thereof, not provided with surrounding exterior walls shall be the usable area under the horizontal pro-

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jection of the roof or floor above. The gross floor area shall not include shafts with no openings or interior courts.

**[BE] FLOOR AREA, NET.** The actual occupied area not including unoccupied accessory areas such as corridors, stairways, ramps, toilet rooms, mechanical rooms and closets.

**[BF] FLOOR FIRE DOOR ASSEMBLY.** A combination of a fire door, a frame, hardware and other accessories installed in a horizontal plane, which together provide a specific degree of fire protection to a through-opening in a fire-resistance-rated floor (see Section 712.1.13.1).

**[F] FOAM-EXTINGUISHING SYSTEM.** A special system discharging a foam made from concentrates, either mechanically or chemically, over the area to be protected.

**[BF] FOAM PLASTIC INSULATION.** A plastic that is intentionally expanded by the use of a foaming agent to produce a reduced-density plastic containing voids consisting of open or closed cells distributed throughout the plastic for thermal insulating or acoustical purposes and that has a density less than 20 pounds per cubic foot (pcf) (320 kg/m<sup>3</sup>).

**[BE] FOLDING AND TELESCOPIC SEATING.** Tiered seating having an overall shape and size that is capable of being reduced for purposes of moving or storing and is not a building element.

**[BG] FOOD COURT.** A public seating area located in the mall that serves adjacent food preparation tenant spaces.

**[BS] FOUNDATION PIER (for Chapter 21).** An isolated vertical foundation member whose horizontal dimension measured at right angles to its thickness does not exceed three times its thickness and whose height is equal to or less than four times its thickness.

**[BS] FRAME STRUCTURE.** A building or other structure in which vertical loads from floors and roofs are primarily supported by columns.

**FREESTANDING ACUTE PSYCHIATRIC BUILDING (APB).** *[OSHPD 5] A freestanding building, as defined in the California Administrative Code Section 7-111, that provides 24-hour inpatient Acute Psychiatric Services as defined in the Health and Safety Code (H&SC) Section 1250(b) or as special services in accordance with H&SC Section 1255(a)(5) of a general acute care hospital defined in H&SC Section 1250(a) and all structures, equipment and services required for their operation or access/egress.*

**FREESTANDING SKILLED NURSING BUILDING (SNB).** *[OSHPD 2] A freestanding building, as defined in the California Administrative Code Section 7-111, that provides skilled nursing and/or intermediate care as defined in the Health and Safety Code Section 1250(c) or (d), and all structures, equipment and services required for their operation or access/egress.*

**[F] FUEL CELL POWER SYSTEM, STATIONARY.** A stationary energy-generation system that converts the chemical energy of a fuel and oxidant to electric energy (DC or AC electricity) by an electrochemical process.

**Field-fabricated fuel cell power system.** A stationary fuel cell power system that is assembled at the job site and is not a preengineered or prepackaged factory-assembled fuel cell power system.

**Preengineered fuel cell power system.** A stationary fuel cell power system consisting of components and modules

that are produced in a factory and shipped to the job site for assembly.

**Prepackaged fuel cell power system.** A stationary fuel cell power system that is factory assembled as a single, complete unit and shipped as a complete unit for installation at the job site.

**FULL-TIME CARE.** *Shall mean the establishment and routine care of persons on an hourly, daily, weekly, monthly, yearly or permanent basis, whether for 24-hours per day or less, and where sleeping accommodations are provided.*

**FUNCTIONAL AREA.** *[DSA-AC] A room, space or area intended or designated for a group of related activities or processes.*

**[BS] GABLE.** The triangular portion of a wall beneath the end of a dual-slope, pitched, or mono-slope roof or portion thereof and above the top plates of the story or level of the ceiling below.

**[BE] GAMING.** To deal, operate, carry on, conduct, maintain or expose for play any game played with cards, dice, equipment or any mechanical, electromechanical or electronic device or machine for money, property, checks, credit or any representative of value except where occurring at private home or operated by a charitable or educational organization.

**[BE] GAMING AREA.** Single or multiple areas of a building or facility where gaming machines or tables are present and gaming occurs, including but not limited to, primary casino gaming areas, VIP gaming areas, high-roller gaming areas, bar tops, lobbies, dedicated rooms or spaces such as in retail or restaurant establishments, sports books and tournament areas.

**[BE] GAMING MACHINE TYPE.** Categorization of gaming machines per type of game played on them, including, but not limited to, slot machines, video poker and video keno.

**[BE] GAMING TABLE TYPE.** Categorization of gaming tables per the type of game played on them, including, but not limited to, baccarat, bingo, blackjack/21, craps, pai gow, poker, roulette.

**GANGWAY.** *[DSA-AC] A variable-sloped pedestrian walkway that links a fixed structure or land with a floating structure. Gangways that connect to vessels are not addressed by this code.*

**[F] GAS CABINET.** A fully enclosed, ventilated noncombustible enclosure used to provide an isolated environment for compressed gas cylinders in storage or use. Doors and access ports for exchanging cylinders and accessing pressure-regulating controls are allowed to be included.

**GAS DETECTION SYSTEM.** *A system or portion of a combination system that utilizes one or more stationary sensors to detect the presence of a specified gas at a specified concentration and initiate one or more responses required by this code, such as notifying a responsible person, activating an alarm signal, or activating or deactivating equipment. A self-contained gas detection and alarm device is not classified as a gas detection system.*

**[F] GAS DETECTION SYSTEM.** A system or portion of a combination system that utilizes one or more stationary sensors to detect the presence of a specified gas at a specified concentration and initiate one or more responses required by this code, such as notifying a responsible person, activating

an alarm signal, or activating or deactivating equipment. A self-contained gas detection and alarm device is not classified as a gas detection system.

**[F] GAS ROOM.** A separately ventilated, fully enclosed room in which only compressed gases and associated equipment and supplies are stored or used.

**[F] GASEOUS HYDROGEN SYSTEM.** An assembly of piping, devices and apparatus designed to generate, store, contain, distribute or transport a nontoxic, gaseous hydrogen-containing mixture having not less than 95-percent hydrogen gas by volume and not more than 1-percent oxygen by volume. Gaseous hydrogen systems consist of items such as compressed gas containers, reactors and appurtenances, including pressure regulators, pressure relief devices, manifolds, pumps, compressors and interconnecting piping and tubing and controls.

**GENERAL ACUTE CARE BUILDING (GAC Building).** *[OSHPD 1] Hospital buildings as defined in the California Administrative Code Section 7-111 and all structures, equipment and services required for their continuous operation or access/egress.*

**[BF] GLASS FIBERBOARD.** Fibrous glass roof insulation consisting of inorganic glass fibers formed into rigid boards using a binder. The board has a top surface faced with asphalt and kraft reinforced with glass fiber.

**GOLF CAR PASSAGE.** *[DSA-AC] A continuous passage on which a motorized golf car can operate.*

**GRAB BAR.** *[DSA-AC & HCD 1-AC] A bar for the purpose of being grasped by the hand for support.*

**GRADE (Adjacent Ground Elevation).** *[DSA-AC & HCD 1-AC] The lowest point of elevation of the finished surface of the ground, paving or sidewalk within the area between the building and the property line or, when the property line is more than 5 feet (1524 mm) from the building, between the building and a line 5 feet (1524 mm) from the building. See Health and Safety Code Section 19955.3(d).*

**GRADE BREAK.** *[DSA-AC] The line where two surface planes with different slopes meet.*

**[BS] GRADE (LUMBER).** The classification of lumber in regard to strength and utility in accordance with American Softwood Lumber Standard DOC PS 20 and the grading rules of an approved lumber rules-writing agency.

**[BE] GRADE FLOOR OPENING.** A window or other opening located such that the sill height of the opening is not more than 44 inches (1118 mm) above or below the finished ground level adjacent to the opening.

**[BG] GRADE PLANE.** A reference plane representing the average of finished ground level adjoining the building at exterior walls. Where the finished ground level slopes away from the exterior walls, the reference plane shall be established by the lowest points within the area between the building and the lot line or, where the lot line is more than 6 feet (1829 mm) from the building, between the building and a point 6 feet (1829 mm) from the building.

**GRADE PLANE, STORY ABOVE.** See “Story above grade plane.”

**[BE] GRANDSTAND.** Tiered seating supported on a dedicated structural system and two or more rows high and is not a building element (see “Bleachers”).

**[BG] GREENHOUSE.** A structure or thermally isolated area of a building that maintains a specialized sunlit environment used for and essential to the cultivation, protection or maintenance of plants.

**[BG] GROSS LEASABLE AREA.** The total floor area designed for tenant occupancy and exclusive use. The area of tenant occupancy is measured from the centerlines of joint partitions to the outside of the tenant walls. All tenant areas, including areas used for storage, shall be included in calculating gross leasable area.

**GROUND FLOOR.** *The floor of a building with a building entrance on an accessible route. A building may have one or more ground floors.*

**GROUND LEVEL PLAY COMPONENT.** *[DSA-AC] A play component that is approached and exited at the ground level.*

**GROUP HOME.** *A facility that provides 24-hour care and supervision to children, provides services specified in this chapter to a specific client group, and maintains a structured environment, with such services provided at least in part by staff employed by the licensee. The care and supervision provided by a group home shall be nonmedical except as permitted by Welfare and Institutions Code Section 17736(b). Since small-family and foster family homes, by definition, care for six or fewer children only, any facility providing 24-hour care for seven or more children must be licensed as a group home.*

**[BG] GROUP HOME.** *Group Home means a facility which provides 24-hour care and supervision to children, provides services specified in this chapter to a specific client group, and maintains a structured environment, with such services provided at least in part by staff employed by the licensee. The care and supervision provided by a group home shall be nonmedical except as permitted by Welfare and Institutions Code Section 17736(b). Since small family and foster family homes, by definition, care for six or fewer children only, any facility providing 24-hour care for seven or more children must be licensed as a group home.*

**[BE] GUARD [DSA-AC, HCD 1, HCD 2 & HCD 1-AC] OR GUARDRAIL.** A building component or a system of building components located at or near the open sides of elevated walking surfaces that minimizes the possibility of a fall from the walking surface to a lower level.

**[BG] GUESTROOM.** A room used or intended to be used by one or more guests for living or sleeping purposes.

**[BS] GYPSUM BOARD.** The generic name for a family of sheet products consisting of a noncombustible core primarily of gypsum with paper surfacing. Gypsum wallboard, gypsum sheathing, gypsum base for gypsum veneer plaster, exterior gypsum soffit board, predecorated gypsum board and water-resistant gypsum backing board complying with the standards listed in Tables 2506.2, 2507.2 and Chapter 35 are types of gypsum board.

**[BS] GYPSUM PANEL PRODUCT.** The general name for a family of sheet products consisting essentially of gypsum.

**[BS] GYPSUM PLASTER.** A mixture of calcined gypsum or calcined gypsum and lime and aggregate and other approved materials as specified in this code.

## DEFINITIONS

**[BS] GYPSUM VENEER PLASTER.** Gypsum plaster applied to an approved base in one or more coats normally not exceeding  $\frac{1}{4}$  inch (6.4 mm) in total thickness.

**[BG] HABITABLE SPACE.** A space in a building for living, sleeping, eating or cooking. Bathrooms, toilet rooms, closets, halls, storage or utility spaces and similar areas are not considered habitable spaces.

**HALL CALL CONSOLE.** *[DSA-AC]* An elevator call user interface exclusive to a destination-oriented elevator system that requires the user to select a destination floor prior to entering the elevator car.

**[F] HALOGENATED EXTINGUISHING SYSTEM.** A fire-extinguishing system using one or more atoms of an element from the halogen chemical series: fluorine, chlorine, bromine and iodine.

**[F] HANDLING.** The deliberate transport by any means to a point of storage or use.

**[BE] HANDRAIL.** A horizontal or sloping rail intended for grasping by the hand for guidance or support.

**HANDWASHING FIXTURE.** Refer to the California Plumbing Code, Section 210.0.

**HANDWASHING FIXTURE.** *[OSHPD 1, 2, 3, 4 & 5]* A lavatory provided in patient rooms, nurse stations and other patient care areas intended for staff hygiene and infection control. These special-use lavatories are an element of a handwashing station as defined in Section 1224.3. Refer to the California Plumbing Code Section 210.0 definition for additional requirements associated with handwashing fixtures.

**[BS] HARDBOARD.** A fibrous-felted, homogeneous panel made from lignocellulosic fibers consolidated under heat and pressure in a hot press to a density not less than 31 pcf (497 kg/m<sup>3</sup>).

**HARDWARE.** See “Fire exit hardware” and “Panic hardware.”

**[F] HAZARDOUS MATERIALS.** Those chemicals or substances that are physical hazards or health hazards as classified in Section 307 and the California Fire Code, whether the materials are in usable or waste condition.

**[F] HAZARDOUS PRODUCTION MATERIAL (HPM).** A solid, liquid or gas associated with semiconductor manufacturing that has a degree-of-hazard rating in health, flammability or instability of Class 3 or 4 as ranked by California Electrical Code and which is used directly in research, laboratory or production processes which have as their end product materials that are not hazardous.

**HAZARDOUS SUBSTANCE.** *[SFM]* Hazardous Substance is a substance which, by reason of being explosive, flammable, toxic, poisonous, corrosive, oxidizing, irritant or otherwise harmful, is likely to cause injury.

**[BS] HEAD JOINT.** Vertical mortar joint placed between masonry units within the wythe at the time the masonry units are laid.

**HEALTH CARE PROVIDER.** *[DSA-AC]* See “Professional Office of a Health Care Provider”

**[F] HEALTH HAZARD.** A classification of a chemical for which there is statistically significant evidence that acute or chronic health effects are capable of occurring in exposed

persons. The term “health hazard” includes chemicals that are toxic or highly toxic, and corrosive.

**HEAT DETECTOR.** See “Detector, heat.”

**[BG] HEIGHT, BUILDING.** The vertical distance from grade plane to the average height of the highest roof surface.

**[BS] HELICAL PILE.** Manufactured steel deep foundation element consisting of a central shaft and one or more helical bearing plates. A helical pile is installed by rotating it into the ground. Each helical bearing plate is formed into a screw thread with a uniform defined pitch.

**[F] HELIPAD.** A structural surface that is used for the landing, taking off, taxiing and parking of helicopters.

**[F] HELIPORT.** An area of land or water or a structural surface that is used, or intended for use, for the landing and taking off of helicopters, and any appurtenant areas that are used, or intended for use, for heliport buildings or other heliport facilities.

**[F] HELISTOP.** The same as “heliport,” except that no fueling, defueling, maintenance, repairs or storage of helicopters is permitted.

**[F] HIGHLY TOXIC.** A material which produces a lethal dose or lethal concentration that falls within any of the following categories:

1. A chemical that has a median lethal dose (LD<sub>50</sub>) of 50 milligrams or less per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.
2. A chemical that has a median lethal dose (LD<sub>50</sub>) of 200 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each.
3. A chemical that has a median lethal concentration (LC<sub>50</sub>) in air of 200 parts per million by volume or less of gas or vapor, or 2 milligrams per liter or less of mist, fume or dust, when administered by continuous inhalation for 1 hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

Mixtures of these materials with ordinary materials, such as water, might not warrant classification as highly toxic. While this system is basically simple in application, any hazard evaluation that is required for the precise categorization of this type of material shall be performed by experienced, technically competent persons.

**[BF] HIGH-PRESSURE DECORATIVE EXTERIOR-GRADE COMPACT LAMINATE (HPL).** Panels consisting of layers of cellulose fibrous material impregnated with thermosetting resins and bonded together by a high-pressure process to form a homogeneous nonporous core suitable for exterior use.

**[BF] HIGH-PRESSURE DECORATIVE EXTERIOR-GRADE COMPACT LAMINATE (HPL) SYSTEM.** An exterior wall covering fabricated using HPL in a specific assembly including joints, seams, attachments, substrate, framing and other details as appropriate to a particular design.

**HIGH-RISE BUILDING.** *In other than Group I-2 occupancies “high-rise buildings” as used in this code:*

**[BS] MASONRY.** A built-up construction or combination of building units or materials of clay, shale, concrete, glass, gypsum, stone or other approved units bonded together with or without mortar or grout or other accepted methods of joining.

**Glass unit masonry.** Masonry composed of glass units bonded by mortar.

**Plain masonry.** Masonry in which the tensile resistance of the masonry is taken into consideration and the effects of stresses in reinforcement are neglected.

**Reinforced masonry.** Masonry construction in which reinforcement acting in conjunction with the masonry is used to resist forces.

**Solid masonry.** Masonry consisting of solid masonry units laid contiguously with the joints between the units filled with mortar.

**Unreinforced (plain) masonry.** Masonry in which the tensile resistance of masonry is taken into consideration and the resistance of the reinforcing steel, if present, is neglected.

**[BS] MASONRY UNIT.** Brick, tile, stone, glass block or concrete block conforming to the requirements specified in Section 2103.

**Hollow.** A masonry unit whose net cross-sectional area in any plane parallel to the load-bearing surface is less than 75 percent of its gross cross-sectional area measured in the same plane.

**Solid.** A masonry unit whose net cross-sectional area in every plane parallel to the load-bearing surface is 75 percent or more of its gross cross-sectional area measured in the same plane.

**MASS TIMBER.** *Structural elements of Type IV construction primarily of solid, built-up, panelized or engineered wood products that meet minimum cross section dimensions of Type IV construction.*

**[BF] MASTIC FIRE-RESISTANT COATINGS.** Liquid mixture applied to a substrate by brush, roller, spray or trowel that provides fire-resistant protection of a substrate when exposed to flame or intense heat.

**MAY.** *[DSA-AC] May denotes an option or alternative.*

**[BE] MEANS OF EGRESS.** A continuous and unobstructed path of vertical and horizontal egress travel from any occupied portion of a building or structure to a public way. A means of egress consists of three separate and distinct parts: the exit access, the exit and the exit discharge.

**MECHANICAL-ACCESS ENCLOSED PARKING GARAGE.** *An enclosed parking garage which employs parking machines, lifts, elevators or other mechanical devices for vehicle moving from and to street level and in which public occupancy in the garage is prohibited in all areas except the vehicle access bay.*

**[BG] MECHANICAL-ACCESS OPEN PARKING GARAGES.** Open parking garages employing parking machines, lifts, elevators or other mechanical devices for vehicles moving from and to street level and in which public occupancy is prohibited above the street level.

**[BF] MECHANICAL EQUIPMENT SCREEN.** A rooftop structure, not covered by a roof, used to aesthetically conceal plumbing, electrical or mechanical equipment from view.

**[BG] MEDICAL CARE.** Care involving medical or surgical procedures, nursing or for psychiatric purposes.

**MEDICAL POOL.** *A special-purpose pool used by a state-recognized medical institution engaged in the healing arts under the direct supervision of licensed medical personnel for treatment of the infirm.*

**[BG] MEMBRANE-COVERED CABLE STRUCTURE.** A nonpressurized structure in which a mast and cable system provides support and tension to the membrane weather barrier and the membrane imparts stability to the structure.

**[BG] MEMBRANE-COVERED FRAME STRUCTURE.** A nonpressurized building wherein the structure is composed of a rigid framework to support a tensioned membrane which provides the weather barrier.

**[BF] MEMBRANE PENETRATION.** A breach in one side of a floor-ceiling, roof-ceiling or wall assembly to accommodate an item installed into or passing through the breach.

**[BF] MEMBRANE-PENETRATION FIRESTOP.** A material, device or construction installed to resist for a prescribed time period the passage of flame and heat through openings in a protective membrane in order to accommodate cables, cable trays, conduit, tubing, pipes or similar items.

**[BF] MEMBRANE-PENETRATION FIRESTOP SYSTEM.** An assemblage consisting of a fire-resistance-rated floor-ceiling, roof-ceiling or wall assembly, one or more penetrating items installed into or passing through the breach in one side of the assembly and the materials or devices, or both, installed to resist the spread of fire into the assembly for a prescribed period of time.

**[BE] MERCHANDISE PAD.** A merchandise pad is an area for display of merchandise surrounded by aisles, permanent fixtures or walls. Merchandise pads contain elements such as nonfixed and moveable fixtures, cases, racks, counters and partitions as indicated in Section 105.2 from which customers browse or shop.

**[BF] METAL COMPOSITE MATERIAL (MCM).** A factory-manufactured panel consisting of metal skins bonded to both faces of a solid plastic core.

**[BF] METAL COMPOSITE MATERIAL (MCM) SYSTEM.** An exterior wall covering fabricated using MCM in a specific assembly including joints, seams, attachments, substrate, framing and other details as appropriate to a particular design.

**[BS] METAL ROOF PANEL.** An interlocking metal sheet having a minimum installed weather exposure of 3 square feet (0.279 m<sup>2</sup>) per sheet.

**[BS] METAL ROOF SHINGLE.** An interlocking metal sheet having an installed weather exposure less than 3 square feet (0.279 m<sup>2</sup>) per sheet.

**[BG] MEZZANINE.** An intermediate level or levels between the floor and ceiling of any story and in accordance with Section 505. *[DSA-AC] An intermediate level or levels between the floor and ceiling of any story with an aggregate floor area of not more than one-third of the area of the room or space in which the level or levels are located. Mezzanines have sufficient elevation that space for human occupancy can be provided on the floor below.*

## DEFINITIONS

**[BS] MICROPILE.** A micropile is a bored, grouted-in-place deep foundation element that develops its load-carrying capacity by means of a bond zone in soil, bedrock or a combination of soil and bedrock.

**[BF] MINERAL BOARD.** A rigid felted thermal insulation board consisting of either felted mineral fiber or cellular beads of expanded aggregate formed into flat rectangular units.

**[BF] MINERAL FIBER.** Insulation composed principally of fibers manufactured from rock, slag or glass, with or without binders.

**[BF] MINERAL WOOL.** Synthetic vitreous fiber insulation made by melting predominately igneous rock or furnace slag, and other inorganic materials, and then physically forming the melt into fibers.

**MINOR STRUCTURAL ALTERATIONS, ADDITIONS, OR REPAIRS.** *[OSHPD 1 & 4] Refer to Chapter 2 of the California Existing Building Code.*

**[BS] MODIFIED BITUMEN ROOF COVERING.** One or more layers of polymer-modified asphalt sheets. The sheet materials shall be fully adhered or mechanically attached to the substrate or held in place with an approved ballast layer.

**MONOLITHIC.** *[OSHPD 1, 1R, 2, 3, 4 & 5] (See Chapter 12, Section 1224.3 for defined term.)*

**MONOLITHIC CEILING.** *[OSHPD 1, 1R, 2, 3, 4 & 5] (See Chapter 12, Section 1224.3 for defined term.)*

**[BS] MORTAR.** A mixture consisting of cementitious materials, fine aggregates, water, with or without admixtures, that is used to construct unit masonry assemblies.

**[BS] MORTAR, SURFACE-BONDING.** A mixture to bond concrete masonry units that contains hydraulic cement, glass fiber reinforcement with or without inorganic fillers or organic modifiers and water.

**MOTEL.** *[HCD 1 & HCD 2] See "Hotel" or "Motel."*

**MOTION PICTURE AND TELEVISION PRODUCTION STUDIO SOUND STAGES, APPROVED PRODUCTION FACILITIES AND PRODUCTION LOCATIONS.** *See Chapter 48, California Fire Code.*

**MULTI-BEDROOM HOUSING UNIT.** *[DSA-AC] A housing unit, intended for use by students at a place of education, with a kitchen and/or toilet and bathing rooms within the unit, such as an apartment or dormitory. Multi-bedroom housing units are separate from one another and from common use spaces within a building.*

**[BE] MULTILEVEL ASSEMBLY SEATING.** Seating that is arranged in distinct levels where each level is comprised of either multiple rows, or a single row of box seats accessed from a separate level.

**[F] MULTIPLE-STATION ALARM DEVICE.** Two or more single-station alarm devices that can be interconnected such that actuation of one causes all integral or separate audible alarms to operate. A multiple-station alarm device can consist of one single-station alarm device having connections to other detectors or to a manual fire alarm box.

**[F] MULTIPLE-STATION SMOKE ALARM.** Two or more single-station alarm devices that are capable of inter-

connection such that actuation of one causes the appropriate alarm signal to operate in all interconnected alarms.

**MULTISTORY DWELLING UNIT.** *[HCD 1-AC] A dwelling unit with finished living space located on one floor and the floor or floors immediately above or below it.*

**[BE] MULTISTORY UNIT.** A dwelling unit or sleeping unit with habitable space located on more than one story.

**[BS] NAILING, BOUNDARY.** A special nailing pattern required by design at the boundaries of diaphragms.

**[BS] NAILING, EDGE.** A special nailing pattern required by design at the edges of each panel within the assembly of a diaphragm or shear wall.

**[BS] NAILING, FIELD.** Nailing required between the sheathing panels and framing members at locations other than boundary nailing and edge nailing.

**[BS] NATURALLY DURABLE WOOD.** The heartwood of the following species except for the occasional piece with corner sapwood, provided 90 percent or more of the width of each side on which it occurs is heartwood.

**Decay resistant.** Redwood, cedar, black locust and black walnut.

**Termite resistant.** Redwood, Alaska yellow cedar, Eastern red cedar and Western red cedar.

**NEWLY CONSTRUCTED.** *[HCD 1-AC] A building that has never before been used or occupied for any purpose.*

**NEXT GENERATION ATTENUATION WEST 2 (NGA WEST 2).** *[DSA-SS, DSA-SS/CC & OSHPD 1 & 4] Attenuation relations used for the 2014 United States Geological Survey (USGS) seismic hazards maps (for the Western United States) or their equivalent as determined by the enforcement agency.*

**NFPA.** *[DSA-AC] The National Fire Protection Association.*

**[BS] NOMINAL LOADS.** The magnitudes of the loads specified in Chapter 16 (dead, live, soil, wind, snow, rain, flood and earthquake).

**[BS] NOMINAL SIZE (LUMBER).** The commercial size designation of width and depth, in standard sawn lumber and glued-laminated lumber grades; somewhat larger than the standard net size of dressed lumber, in accordance with DOCPS 20 for sawn lumber and with the ANSI/AWC NDS for glued-laminated lumber.

**NON-GENERAL ACUTE CARE BUILDING (Non-GAC Building).** *[OSHPD 1R] A non-freestanding SPC building, which is removed from general acute care services in accordance with the Section 309A of the California Existing Building Code that remains under OSHPD jurisdiction as part of an OSHPD I Hospital building.*

**NONAMBULATORY PERSONS.** *Persons unable to leave a building unassisted under emergency conditions. It includes, but is not limited to, persons who depend on mechanical aids such as crutches, walkers and wheelchairs and any person who is unable to physically and mentally respond to a sensory signal approved by the state fire marshal or an oral instruction relating to fire danger.*

*The determination of ambulatory or nonambulatory status of persons with developmental disabilities shall be made by the Director of Social Services or his or her designated rep-*

representative, in consultation with the director of Developmental Services or his or her designated representative. The determination of ambulatory or nonambulatory status of all other disabled persons placed after January 1, 1984, who are not developmentally disabled shall be made by the Director of Social Services or his or her designated representative.

**NONCOMBUSTIBLE. [SFM]** Noncombustible as applied to building construction material means a material which, in the form in which it is used, is either one of the following:

1. Material of which no part will ignite and burn when subjected to fire. Any material passing ASTM E136 shall be considered noncombustible.
2. Material having a structural base of noncombustible material as defined in Item 1 above, with a surfacing material not over  $\frac{1}{8}$  inch (3.2 mm) thick which has a flame-spread index of 50 or less.

“Noncombustible” does not apply to surface finish materials. Material required to be noncombustible for reduced clearances to flues, heating appliances or other sources of high temperature shall refer to material conforming to Item 1. No material shall be classed as noncombustible which is subject to increase in combustibility or flame-spread index, beyond the limits herein established, through the effects of age, moisture or other atmospheric condition.

**[BG] NONCOMBUSTIBLE MEMBRANE STRUCTURE.** A membrane structure in which the membrane and all component parts of the structure are noncombustible.

**NONCOMBUSTIBLE PROTECTION (FOR MASS TIMBER).** Noncombustible material, in accordance with Section 703.5, designed to increase the fire-resistance rating and delay the combustion of mass timber.

**NONPATIENT-CARE SUITE.** In Group I-2 or I-2.1 occupancies, a group of rooms or spaces within a suite for use as administrative, business and professional offices.

**[BS] NONSTRUCTURAL CONCRETE.** Any element made of plain or reinforced concrete that is not part of a structural system required to transfer either gravity or lateral loads to the ground.

**NORMAL. [HCD 1 & HCD 2]** Conforming to a pattern or standard regarded as usual or typical.

**[F] NORMAL TEMPERATURE AND PRESSURE (NTP).** A temperature of 70°F (21°C) and a pressure of 1 atmosphere [14.7 psia (101 kPa)].

**[BE] NOSING.** The leading edge of treads of stairs and of landings at the top of stairway flights.

**NOTIFICATION ZONE.** See “Zone, notification.”

**NPC 1, NPC 2, NPC 3/NPC 3R, NPC 4, and NPC 5. [OSHPD 1]** Building nonstructural performance categories for Hospital Buildings defined in Table 11.1 of California Administrative Code (Part 1, Title 24 CCR), Chapter 6.

**[F] NUISANCE ALARM.** An alarm caused by mechanical failure, malfunction, improper installation or lack of proper maintenance, or an alarm activated by a cause that cannot be determined.

**[BG] NURSING HOMES.** Facilities that provide care, including both intermediate care facilities and skilled nursing

facilities where any of the persons are incapable of self-preservation or classified as nonambulatory or bedridden.

**[BE] OCCUPANT LOAD.** The number of persons for which the means of egress of a building or portion thereof is designed.

**[BG] OCCUPIABLE SPACE.** A room or enclosed space designed for human occupancy in which individuals congregate for amusement, educational or similar purposes or in which occupants are engaged at labor, and which is equipped with means of egress and light and ventilation facilities meeting the requirements of this code.

**[BG] OPEN PARKING GARAGE.** A structure or portion of a structure with the openings as described in Section 406.5.2 on two or more sides that is used for the parking or storage of private motor vehicles as described in Section 406.5.3.

**OPEN RISER.** The space between two adjacent stair treads not closed by a riser.

**[F] OPEN SYSTEM.** The use of a solid or liquid hazardous material involving a vessel or system that is continuously open to the atmosphere during normal operations and where vapors are liberated, or the product is exposed to the atmosphere during normal operations. Examples of open systems for solids and liquids include dispensing from or into open beakers or containers, dip tank and plating tank operations.

**[BE] OPEN-AIR ASSEMBLY SEATING.** Seating served by means of egress that is not subject to smoke accumulation within or under a structure and is open to the atmosphere.

**[BE] OPEN-ENDED CORRIDOR.** An interior corridor that is open on each end and connects to an exterior stairway or ramp at each end with no intervening doors or separation from the corridor.

**[BF] OPENING PROTECTIVE.** A fire door assembly, fire shutter assembly, fire window assembly or glass-block assembly in a fire-resistance-rated wall or partition.

**OPERABLE PART.** A component of an element used to insert or withdraw objects, or to activate, deactivate, or adjust the element.

**[F] OPERATING BUILDING.** A building occupied in conjunction with the manufacture, transportation or use of explosive materials. Operating buildings are separated from one another with the use of intraplant or intraline distances.

**[BS] ORDINARY PRECAST STRUCTURAL WALL.** See Section 1905.1.1.

**[BS] ORDINARY REINFORCED CONCRETE STRUCTURAL WALL.** See Section 1905.1.1.

**[BS] ORDINARY STRUCTURAL PLAIN CONCRETE WALL.** See Section 1905.1.1.

**[F] ORGANIC PEROXIDE.** An organic compound that contains the bivalent -O-O- structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms have been replaced by an organic radical. Organic peroxides can pose an explosion hazard (detonation or deflagration) or they can be shock sensitive. They can also decompose into various unstable compounds over an extended period of time.

**Class I.** Those formulations that are capable of deflagration but not detonation.

## DEFINITIONS

**Class II.** Those formulations that burn very rapidly and that pose a moderate reactivity hazard.

**Class III.** Those formulations that burn rapidly and that pose a moderate reactivity hazard.

**Class IV.** Those formulations that burn in the same manner as ordinary combustibles and that pose a minimal reactivity hazard.

**Class V.** Those formulations that burn with less intensity than ordinary combustibles or do not sustain combustion and that pose no reactivity hazard.

**Unclassified detonable.** Organic peroxides that are capable of detonation. These peroxides pose an extremely high explosion hazard through rapid explosive decomposition.

**ORGANIZED CAMPS.** See Section 450, Group C Occupancy.

**[BS] ORTHOGONAL.** To be in two horizontal directions, at 90 degrees (1.57 rad) to each other.

**[BS] OTHER STRUCTURES (for Chapters 16-23).** Structures, other than buildings, for which loads are specified in Chapter 16.

**OUTPATIENT CLINIC.** See “Clinic, outpatient.”

**OVERFLOW SYSTEM.** The system which includes perimeter-type overflow gutters, surface skimmers, surge or collector tanks, other surface water collective system components and their interconnecting piping.

**[A] OWNER.** Any person, agent, operator, entity, firm or corporation having any legal or equitable interest in the property; or recorded in the official records of the state, county or municipality as holding an interest or title to the property; or otherwise having possession or control of the property, including the guardian of the estate of any such person, and the executor or administrator of the estate of such person if ordered to take possession of real property by a court.

**[F] OXIDIZER.** A material that readily yields oxygen or other oxidizing gas, or that readily reacts to promote or initiate combustion of combustible materials and, if heated or contaminated, can result in vigorous self-sustained decomposition.

**Class 4.** An oxidizer that can undergo an explosive reaction due to contamination or exposure to thermal or physical shock and that causes a severe increase in the burning rate of combustible materials with which it comes into contact. Additionally, the oxidizer causes a severe increase in the burning rate and can cause spontaneous ignition of combustibles.

**Class 3.** An oxidizer that causes a severe increase in the burning rate of combustible materials with which it comes in contact.

**Class 2.** An oxidizer that will cause a moderate increase in the burning rate of combustible materials with which it comes in contact.

**Class 1.** An oxidizer that does not moderately increase the burning rate of combustible materials.

**[F] OXIDIZING GAS.** A gas that can support and accelerate combustion of other materials more than air does.

**[BS] PANEL (PART OF A STRUCTURE).** The section of a floor, wall or roof comprised between the supporting frame

of two adjacent rows of columns and girders or column bands of floor or roof construction.

**[BE] PANIC HARDWARE.** A door-latching assembly incorporating a device that releases the latch upon the application of a force in the direction of egress travel. See “Fire exit hardware.”

**[BS] PARTICLEBOARD.** A generic term for a panel primarily composed of cellulose materials (usually wood), generally in the form of discrete pieces or particles, as distinguished from fibers. The cellulosic material is combined with synthetic resin or other suitable bonding system by a process in which the interparticle bond is created by the bonding system under heat and pressure.

**PASSAGE DOOR. [HCD 1-AC]** A door other than an exit door through which persons may traverse.

**PASSENGER ELEVATOR. [DSA-AC]** See “Elevator, Passenger”

**PASSENGER ELEVATOR. [HCD 1 & HCD 2]** An elevator used primarily to carry passengers. For additional information, see California Code of Regulations, Title 8, Division 1, Chapter 4.

**PASSIVE SOLAR ENERGY COLLECTOR. [HCD 1 & HCD 2]** Uses architectural components, rather than mechanical components, to provide heating or cooling for a building interior.

**PATH OF TRAVEL. [DSA-AC]** An identifiable accessible route within an existing site, building or facility by means of which a particular area may be approached, entered and exited, and which connects a particular area with an exterior approach (including sidewalks, streets and parking areas), an entrance to the facility, and other parts of the facility. When alterations, structural repairs or additions are made to existing buildings or facilities, the term “path of travel” also includes the toilet and bathing facilities, telephones, drinking fountains and signs serving the area of work.

**PEDESTRIAN.** An individual who moves in walking areas with or without the use of walking assistive devices such as crutches, leg braces, wheelchairs, white cane, service animal, etc.

**PEDESTRIAN WAY.** A route by which a pedestrian may pass.

**PEER REVIEW. [OSHPD 1, 1R, 2, 4 & 5]** Peer review refers to the procedure contained in California Building Code Section 1617A.1.41.

**[BF] PENETRATION FIRESTOP.** A through-penetration firestop or a membrane-penetration firestop.

**[BG] PENTHOUSE.** An enclosed, unoccupied rooftop structure used for sheltering mechanical and electrical equipment, tanks, elevators and related machinery, and vertical shaft openings.

**[BS] PERFORMANCE CATEGORY.** A designation of wood structural panels as related to the panel performance used in Chapter 23.

**PERIODIC SPECIAL INSPECTION. [DSA-SS, DSA-SS/CC]** Special inspection by the special inspector who is intermittently present where the work to be inspected has been or is being performed and at the completion of the work.



**PRIMARY ENTRY LEVEL. [HCD 1-AC]** *The floor or level of the building on which the primary entry is located.*

**[BG] PRIMARY STRUCTURAL FRAME.** The primary structural frame shall include all of the following structural members:

1. The columns.
2. Structural members having direct connections to the columns, including girders, beams, trusses and spandrels.
3. Members of the floor construction and roof construction having direct connections to the columns.
4. Bracing members that are essential to the vertical stability of the primary structural frame under gravity loading shall be considered part of the primary structural frame whether or not the bracing member carries gravity loads.

**PRIVATE BUILDING OR FACILITY. [DSA-AC]** *A place of public accommodation or a commercial building or facility subject to Chapter 1, Section 1.9.1.2.*

**[BG] PRIVATE GARAGE.** A building or portion of a building in which motor vehicles used by the owner or tenants of the building or buildings on the premises are stored or kept, without provisions for repairing or servicing such vehicles for profit.

**PRIVATE POOL.** *Any constructed pool, permanent or portable, that is intended for noncommercial use as a swimming pool by not more than three owner families and their guests.*

*Note:* A single-family residence is a Group R, Division 3 occupancy.

**PROFESSIONAL OFFICE OF A HEALTH CARE PROVIDER. [DSA-AC]** *A location where a person or entity, regulated by the State to provide professional services related to the physical or mental health of an individual, makes such services available to the public. The facility housing the professional office of a health care provider only includes floor levels housing at least one health care provider, or any floor level designed or intended for use by at least one health care provider.*

**PROJECT INSPECTOR. [DSA-SS, DSA-SS/CC]** *The person approved to provide inspection in accordance with the California Administrative Code, Section 4-333(b). The term “project inspector” is synonymous with “inspector of record.”*

**[BG] PROSCENIUM WALL.** The wall that separates the stage from the auditorium or assembly seating area.

**PROTECTIVE SOCIAL CARE FACILITY. [SFM]** *A facility housing persons, who are referred, placed or caused to be placed in the facility, by any governmental agency and for whom the services, or a portion thereof, are paid for by any governmental agency. These occupancies shall include, but are not limited to, those commonly referred to as “assisted living facilities,” “social rehabilitation facilities,” “certified family care homes,” “out-of-home placement facilities,” and “halfway houses.”*

**PSYCHIATRIC HOSPITALS.** See “Hospitals.”

**PUBLIC BUILDING OR FACILITY. [DSA-AC]** *A building or facility or portion of a building or facility designed, con-*

*structed, or altered by, on behalf of, or for the use of a public entity subject to Chapter 1, Section 1.9.1.1.*

**PUBLIC ENTITY.** *Any state or local government; any department, agency, special-purpose district, or other instrumentality of a state or local government.*

**[BE] PUBLIC ENTRANCE.** An entrance that is not a service entrance or a restricted entrance.

**PUBLIC HOUSING. [DSA-AC & HCD 1-AC]** *Housing facilities constructed or altered by, for, or on behalf of a public entity, or constructed or altered as part of a public entity’s program to provide housing pursuant to United States Code of Federal Regulations, 28 CFR Part 35, Section 35.102(a), including but not limited to the following:*

1. One- or two-family dwelling units or congregate residences;
2. Buildings or complexes with three or more residential dwelling units;
3. Homeless shelters, group homes, halfway houses and similar social service establishments;
4. Transient lodging, such as hotels, motels, hostels and other facilities providing accommodations of a short-term nature of not more than 30 days duration;
5. Housing at a place of education, such as housing on or serving a public school, public college or public university.

*Note:* A public entity’s program to provide housing may include but is not limited to: the allocation of local, state, or federal financial assistance, Community Development Block Grants, Low Income Housing Tax Credits, the California Multifamily Housing Program, loan agreements and housing bonds. Examples that are not considered a public entity’s program to provide housing may include but are not limited to: density bonuses, the receipt of public funds for the installation of energy efficiency features, seismic strengthening, water conservation and fire safety features. For additional information see “Guide to Public Housing Regulated in Chapter 11B of the California Building Code” and the “California Access Compliance Advisory Reference Manual” available on the Division of the State Architect’s website.

**PUBLIC POOL.** *A pool other than a private pool.*

**PUBLIC USE. [DSA-AC]** *Interior or exterior rooms, spaces or elements that are made available to the public. Public use may be provided at a building or facility that is privately or publicly owned. Private interior or exterior rooms, spaces or elements associated with a residential dwelling unit provided by a public housing program or in a public housing facility are not public use areas and shall not be required to be made available to the public.*

**[A] PUBLIC WAY.** A street, alley or other parcel of land open to the outside air leading to a street, that has been deeded, dedicated or otherwise permanently appropriated to the public for public use and which has a clear width and height of not less than 10 feet (3048 mm).

**PUBLIC-USE AREAS.** *Interior or exterior rooms or spaces of a building or facility that are made available to the general*

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public and do not include common use areas. Public use areas may be provided at a building or facility that is privately or publicly owned.

**PUZZLE ROOM.** A puzzle room is a type of special amusement area in which occupants are encouraged to solve a challenge to escape from a room or series of rooms.

**[F] PYROPHORIC.** A chemical with an auto-ignition temperature in air, at or below a temperature of 130°F (54.4°C).

**[F] PYROTECHNIC COMPOSITION.** A chemical mixture that produces visible light displays or sounds through a self-propagating, heat-releasing chemical reaction which is initiated by ignition.

**QUALIFIED HISTORIC BUILDING OR FACILITY.** *[DSA-AC]* A building or facility that is listed in or eligible for listing in the National Register of Historic Places, or designated as historic under an appropriate State or local law. See C.C.R. Title 24, Part 8.

**QUALITY ASSURANCE (QA).** *[DSA-SS, DSA-SS/CC, OSHPD 1R, 1, 2, 4 & 5]* Special inspections and testing provided by an approved agency employed by the Owner. Project specific testing required by approved construction documents shall be performed by the approved agency responsible for Quality Assurance (QA), unless approved otherwise by the building official.

**QUALITY CONTROL (QC).** *[DSA-SS, DSA-SS/CC, OSHPD 1R, 1, 2, 4 & 5]* Inspections and materials/functionality testing provided by the fabricator, erector, manufacturer or other responsible contractor as applicable.

**[BF] RADIANT BARRIER.** A material having a low-emittance surface of 0.1 or less installed in building assemblies.

**RAFTERTAIL.** *[SFM]* (See Chapter 7A, Section 702A for defined term.)

**[BE] RAMP.** A walking surface that has a running slope steeper than one unit vertical in 20 units horizontal (5-percent slope).

**RAMP, EXIT ACCESS.** See “Exit access ramp.”

**RAMP, EXTERIOR EXIT.** See “Exterior exit ramp.”

**RAMP, INTERIOR EXIT.** See “Interior exit ramp.”

**[BG] RAMP-ACCESS OPEN PARKING GARAGES.** Open parking garages employing a series of continuously rising floors or a series of interconnecting ramps between floors permitting the movement of vehicles under their own power from and to the street level.

**REASONABLE PORTION.** *[DSA-AC]* That segment of a building, facility, area, space or condition, which would normally be necessary if the activity therein is to be accessible by persons with disabilities.

**RECESSED STEPS.** A riser/tread or series of risers/treads extending down into the deck with the bottom riser or tread terminating at the pool wall (thus creating a “stairwell”).

**RECESSED TREADS.** A series of vertically spaced cavities in the pool wall creating tread areas for step holes.

**RECIRCULATION SYSTEM.** The interconnected system traversed by the recirculated water from the pool until it is returned to the pool, i.e., from the pool through the collector

or surge tank, recirculation pump, filters, chemical treatment and heater (if provided), and returned to the pool.

**RECOMMEND.** *[DSA-AC, HCD 1 & HCD 2]* Does not require mandatory acceptance, but identifies a suggested action that shall be considered for the purpose of providing a greater degree of accessibility to persons with disabilities.

**[A] RECORD DRAWINGS.** Drawings (“as built”) that document the location of all devices, appliances, wiring sequences, wiring methods and connections of the components of a fire alarm system as installed.

**[BF] REFLECTIVE PLASTIC CORE INSULATION.** An insulation material packaged in rolls, that is less than 1/2 inch (12.7 mm) thick, with not less than one exterior low-emittance surface (0.1 or less) and a core material containing voids or cells.

**[A] REGISTERED DESIGN PROFESSIONAL.** An individual who is registered or licensed to practice their respective design profession as defined by the statutory requirements of the professional registration laws of the state or jurisdiction in which the project is to be constructed.

**[A] REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.** A registered design professional engaged by the owner or the owner’s authorized agent to review and coordinate certain aspects of the project, as determined by the building official, for compatibility with the design of the building or structure, including submittal documents prepared by others, deferred submittal documents and phased submittal documents.

**[BG] RELIGIOUS WORSHIP, PLACE OF.** A building or portion thereof intended for the performance of religious services.

**[A] RELOCATABLE BUILDING.** A partially or completely assembled building constructed and designed to be reused multiple times and transported to different building sites.

**RELOCATABLE BUILDING (PUBLIC SCHOOL).** Any building with an integral floor structure which is capable of being readily moved. (See Education Code Section 17350.) Relocatable buildings that are to be placed on substandard foundations not complying with the requirements of Part 2, Title 24, C.C.R., require a statement from the school district stating that the durability requirements for those foundations may be waived and acknowledging the temporary nature of the foundations.

**REMODELING.** *[DSA-AC]* See “Alteration.”

**REMOVED FROM ACUTE CARE SERVICE [OSHPD 1R].** Buildings that previously provided basic and/or supplemental services, as defined in Section 1224.3 that have been removed from acute care service in compliance with Part 10 California Existing Building Code Chapter 3A through a project approved by OSHPD, and remain under the jurisdiction of OSHPD.

**[A] REPAIR.** The reconstruction or renewal of any part of an existing building for the purpose of its maintenance or to correct damage.

**[BG] REPAIR GARAGE.** A building, structure or portion thereof used for servicing or repairing motor vehicles.

**[BS] REROOFING.** The process of recovering or replacing an existing roof covering. See “Roof recover” and “Roof replacement.”

**[BG] RESIDENTIAL AIRCRAFT HANGAR.** An accessory building less than 2,000 square feet (186 m<sup>2</sup>) and 20 feet (6096 mm) in building height constructed on a one- or two-family property where aircraft are stored. Such use will be considered as a residential accessory use incidental to the dwelling.

**RESIDENTIAL CARE FACILITY FOR THE CHRONICALLY ILL (RCF/CI).** As termed, means a housing arrangement with a maximum capacity of 25 residents that provides a range of services to residents who have chronic, life-threatening illnesses.

**RESIDENTIAL CARE FACILITY FOR THE ELDERLY (RCFE).** As defined in Health and Safety Code Section 1569.2, shall mean a facility with a housing arrangement chosen voluntarily by persons 60 years of age or over, or their authorized representative, where varying levels and intensities of care and supervision, protective supervision or personal care are provided, based on their varying needs, as determined in order to be admitted and to remain in the facility. Persons under 60 years of age with compatible needs, as determined by the Department of Social Services in regulations, may be allowed to be admitted or retained in a residential-care facility for the elderly.

Pursuant to Health and Safety Code Section 13133, regulations of the state fire marshal pertaining to Group R-2.1, Occupancies classified as residential facilities (RF) and residential-care facilities for the elderly (RCFE) shall apply uniformly throughout the state and no city, county, city and county, including a charter city or charter county, or fire protection district shall adopt or enforce any ordinance or local rule or regulation relating to fire and panic safety which is in consistent with these regulations. A city, county, city and county, including a charter city or charter county may pursuant to Health and Safety Code Section 13143.5, or a fire protection district may pursuant to Health and Safety Code Section 13869.7, adopt standards more stringent than those adopted by the state fire marshal that are reasonably necessary to accommodate local climate, geological, or topographical conditions relating to roof coverings for residential-care facilities for the elderly.

**RESIDENTIAL DWELLING UNIT. [DSA-AC]** A unit intended to be used as a residence that is primarily long-term in nature. Residential dwelling units do not include transient lodging, inpatient medical care, licensed long-term care, and detention or correctional facilities.

**RESIDENTIAL FACILITY (RF).** As defined in Section 1502 of the Health and Safety Code, shall mean any family home, group care facility or similar facility determined by the director of Social Services, for 24-hour nonmedical care of persons in need of personal services, supervision, or assistance essential for sustaining the activities of daily living or for the protection of the individual. Such facilities include small family homes and social rehabilitation facilities.

Pursuant to Health and Safety Code Section 13133, regulations of the state fire marshal pertaining to Group R Occupancies classified as residential facilities (RF) and

residential-care facilities for the elderly (RCFE) shall apply uniformly throughout the state and no city, county, city and county, including a charter city or charter county, or fire protection district shall adopt or enforce any ordinance or local rule or regulation relating to fire and panic safety which is in consistent with these regulations. A city, county, city and county, including a charter city or charter county may pursuant to Health and Safety Code Section 13143.5, or a fire protection district may pursuant to Health and Safety Code Section 13869.7, adopt standards more stringent than those adopted by the state fire marshal that are reasonably necessary to accommodate local climate, geological, or topographical conditions relating to roof coverings for residential-care facilities for the elderly.

**[BS] RESISTANCE FACTOR.** A factor that accounts for deviations of the actual strength from the nominal strength and the manner and consequences of failure (also called “strength reduction factor”).

**RESTRAINT. [SFM]** The physical retention of a person within a room, cell or cell block, holding cells, temporary holding cell, rooms or area, holding facility, secure interview rooms, courthouse holding facilities, courtroom docks, or similar buildings or portions thereof by any means, or within the exterior walls of a building by means of locked doors inoperable by the person restrained. Restraint shall also mean the physical binding, strapping or similar restriction of any person in a chair, walker, bed or other contrivance for the purpose of deliberately restricting the free movement of ambulatory persons.

Restraint shall not be construed to include nonambulatory persons nor shall it include the use of bandage material, strip sheeting or other fabrics or materials (soft ties) used to restrain persons in hospital-type beds or wheelchairs to prevent injury, provided an approved method of quick release is maintained.

Facilities employing the use of soft ties, however, shall be classified as a building used to house nonambulatory persons. Restraint shall not be practiced in licensed facilities classified as Group R-2.1, R-3.1 and R-4 occupancies unless constructed as a Group I-3 occupancy. For Group I-3 Occupancies see Section 408.1.1.

**RESTRICTED AREA. [OSHPD 1, 2, 3, 4 & 5]** (See Chapter 12, Section 1224.3 for defined term.)

**[BE] RESTRICTED ENTRANCE.** An entrance that is made available for common use on a controlled basis, but not public use, and that is not a service entrance.

**[BG] RETRACTABLE AWNING.** A retractable awning is a cover with a frame that retracts against a building or other structure to which it is entirely supported.

**RETROFIT. [DSA-SS, DSA-SS/CC, OSHPD 1 & 4]** The construction of any new element or system, or the alteration of any existing element or system required to bring an existing building, or portion thereof, conforming to earlier code requirements, into conformance with standards of the currently effective California Building Standards Code.

**RISER.** The upright part between two adjacent stair treads, between either an upper or lower landing and an adjacent stair tread, or between two adjacent landings.

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**[BS] RISK CATEGORY.** A categorization of buildings and other structures for determination of flood, wind, snow, ice and earthquake loads based on the risk associated with unacceptable performance.

**[BS] RISK-TARGETED MAXIMUM CONSIDERED EARTHQUAKE (MCE<sub>R</sub>) GROUND MOTION RESPONSE ACCELERATIONS.** The most severe earthquake effects considered by this code, determined for the orientation that results in the largest maximum response to horizontal ground motions and with adjustment for targeted risk.

**[BS] ROOF ASSEMBLY (For application to Chapter 15 only).** A system designed to provide weather protection and resistance to design loads. The system consists of a roof covering and roof deck or a single component serving as both the roof covering and the roof deck. A roof assembly can include an underlayment, a thermal barrier, insulation or a vapor retarder.

**[BS] ROOF COATING.** A fluid-applied, adhered coating used for roof maintenance or roof repair, or as a component of a roof covering system or roof assembly.

**[BS] ROOF COVERING.** The covering applied to the roof deck for weather resistance, fire classification or appearance.

**ROOF COVERING SYSTEM.** See “Roof assembly.”

**[BS] ROOF DECK.** The flat or sloped surface constructed on top of the exterior walls of a building or other supports for the purpose of enclosing the story below, or sheltering an area, to protect it from the elements, not including its supporting members or vertical supports.

**ROOF DRAINAGE, POSITIVE.** See “Positive roof drainage.”

**ROOF EAVE. [SFM]** (See Chapter 7A, Section 702A for defined term.)

**ROOF EAVE SOFFIT. [SFM]** (See Chapter 7A, Section 702A for defined term.)

**[BS] ROOF RECOVER.** The process of installing an additional roof covering over a prepared existing roof covering without removing the existing roof covering.

**[BS] ROOF REPAIR.** Reconstruction or renewal of any part of an existing roof for the purposes of its maintenance.

**[BS] ROOF REPLACEMENT.** The process of removing the existing roof covering, repairing any damaged substrate and installing a new roof covering.

**[BG] ROOF VENTILATION.** The natural or mechanical process of supplying conditioned or unconditioned air to, or removing such air from, attics, cathedral ceilings or other enclosed spaces over which a roof assembly is installed.

**[BG] ROOFTOP STRUCTURE.** A structure erected on top of the roof deck or on top of any part of a building.

**RUGGED EQUIPMENT. [DSA-SS, DSA-SS/CC]** Rugged equipment refers to an amplexness of construction that gives such equipment the ability to survive earthquake strong motions without significant loss of function.

**[BS] RUNNING BOND.** The placement of masonry units such that head joints in successive courses are horizontally offset at least one-quarter the unit length.

**RUNNING SLOPE.** The slope that is parallel to the direction of travel. (As differentiated from the definition of “Cross Slope.”)

**[BG] SALLYPORT.** A security vestibule with two or more doors or gates where the intended purpose is to prevent continuous and unobstructed passage by allowing the release of only one door or gate at a time.

**SANITARY FACILITY. [HCD 1 & HCD 1-AC]** Any single water closet, urinal, lavatory, bathtub or shower, or a combination thereof, together with the room or space in which they are housed.

**[BE] SCISSOR STAIRWAY.** Two interlocking stairways providing two separate paths of egress located within one exit enclosure.

**[BS] SCUPPER.** An opening in a wall or parapet that allows water to drain from a roof.

**[BG] SECONDARY MEMBERS.** The following structural members shall be considered secondary members and not part of the primary structural frame:

1. Structural members not having direct connections to the columns.
2. Members of the floor construction and roof construction not having direct connections to the columns.
3. Bracing members other than those that are part of the primary structural frame.

**SECURE INTERVIEW ROOMS.** A lockable room used to hold and interview detainees for further processing.

**[BS] SEISMIC DESIGN CATEGORY.** A classification assigned to a structure based on its risk category and the severity of the design earthquake ground motion at the site.

**[BS] SEISMIC FORCE-RESISTING SYSTEM.** That part of the structural system that has been considered in the design to provide the required resistance to the prescribed seismic forces.

**[BF] SELF-CLOSING.** As applied to a fire door or other opening protective, means equipped with an device that will ensure closing after having been opened.

**[BE] SELF-LUMINOUS.** Illuminated by a self-contained power source, other than batteries, and operated independently of external power sources.

**SELF-PRESERVATION, INCAPABLE OF.** See “Incapable of self-preservation.”

**SELF-SERVICE STORAGE. [DSA-AC]** Building or facility designed and used for the purpose of renting or leasing individual storage spaces to customers for the purpose of storing and removing personal property on a self-service basis.

**[F] SERVICE CORRIDOR.** A fully enclosed passage used for transporting HPM and purposes other than required means of egress.

**[BE] SERVICE ENTRANCE.** An entrance intended primarily for delivery of goods or services.

**[BF] SHAFT.** An enclosed space extending through one or more stories of a building, connecting vertical openings in successive floors, or floors and roof.

**[BF] SHAFT ENCLOSURE.** The walls or construction forming the boundaries of a shaft.

**SHALL. [DSA-AC]** Denotes a mandatory specification or requirement.

**[BS] SHALLOW FOUNDATION.** A shallow foundation is an individual or strip footing, a mat foundation, a slab-on-grade foundation or a similar foundation element.

**SHALLOW POOL.** A pool that has a maximum depth of less than 6 feet (1829 mm).

**[BS] SHEAR WALL (for Chapter 23).** A wall designed to resist lateral forces parallel to the plane of a wall.

**Shear wall, perforated.** A wood structural panel sheathed wall with openings, that has not been specifically designed and detailed for force transfer around openings.

**Shear wall segment, perforated.** A section of shear wall with full-height sheathing that meets the height-to-width ratio limits of Section 4.3.4 of AWC SDPWS.

**[BS] SHINGLE FASHION.** A method of installing roof or wall coverings, water-resistive barriers, flashing or other building components such that upper layers of material are placed overlapping lower layers of material to provide for drainage via gravity and moisture control.

**SHOPPING CENTER (OR SHOPPING MALL). [DSA-AC]** One or more sales or rental establishments or stores. A shopping center may include a series of buildings on a common site, connected by a common pedestrian access route on, above or below the ground floor, that is either under common ownership or common control or developed either as one project or as a series of related projects. For the purposes of this section, “shopping center” or “shopping mall” includes a covered mall building.

**SHOULD. [HCD 1 & HCD 2]** See “Recommend.”

**SIDEWALK.** A surfaced pedestrian way contiguous to a street used by the public. (As differentiated from the definition of “Walk.”)

**SIGN. (HCD 1-AC, DSA-AC)** An element composed of displayed textual, verbal, symbolic, tactile, and/or pictorial information.

**SIGNIFICANT LOSS OF FUNCTION. [DSA-SS, DSA-SS/CC & OSHPD 1 & 4]** Significant loss of function for equipment or components means the equipment or component cannot be restored to its original function by competent technicians after a design earthquake because the equipment or component require parts that are not normally stocked by the owner or not readily available.

**SINGLE-ACCOMMODATION SANITARY FACILITY. [HCD 1-AC]** A room that has not more than one of each type of sanitary fixture, is intended for use by only one person at a time, has no partition around the toilet, and has a door that can be locked on the inside by the room occupant.

**[BS] SINGLE-PLY MEMBRANE.** A roofing membrane that is field applied using one layer of membrane material (either homogeneous or composite) rather than multiple layers.

**[F] SINGLE-STATION SMOKE ALARM.** An assembly incorporating the detector, the control equipment and the alarm-sounding device in one unit, operated from a power supply either in the unit or obtained at the point of installation.

**SINK.** A fixed bowl or basin with running water and drain-pipe, as in a kitchen or laundry, for washing dishes, clothing, etc. (As differentiated from the definition of “Lavatory.”)

**[BG] SITE.** A parcel of land bounded by a lot line or a designated portion of a public right-of-way.

**[BS] SITE CLASS.** A classification assigned to a site based on the types of soils present and their engineering properties as defined in Section 1613.2.2.

**[BS] SITE COEFFICIENTS.** The values of  $F_a$  and  $F_v$  indicated in Tables 1613.2.3(1) and 1613.2.3(2), respectively.

**SITE DEVELOPMENT. [HCD 1-AC]** “On-site” and “off-site” work, including, but not limited to, walks, sidewalks, ramps, curbs, curb ramps, parking facilities, stairs, planting areas, pools, promenades, exterior gathering or assembly areas and raised or depressed paved areas.

**[BG] SITE-FABRICATED STRETCH SYSTEM.** A system, fabricated on site and intended for acoustical, tackable or aesthetic purposes, that is composed of three elements:

1. A frame (constructed of plastic, wood, metal or other material) used to hold fabric in place.
2. A core material (infill, with the correct properties for the application).
3. An outside layer, composed of a textile, fabric or vinyl, that is stretched taut and held in place by tension or mechanical fasteners via the frame.

**[BS] SKYLIGHT, UNIT.** A factory-assembled, glazed fenestration unit, containing one panel of glazing material that allows for natural lighting through an opening in the roof assembly while preserving the weather-resistant barrier of the roof.

**[BS] SKYLIGHTS AND SLOPED GLAZING.** Glass or other transparent or translucent glazing material installed at a slope of 15 degrees (0.26 rad) or more from vertical. Unit skylights, tubular daylighting devices, glazing materials, solariums, sunrooms, roofs and sloped walls are included in this definition.

**SLEEPING ACCOMMODATIONS.** Rooms intended and designed for sleeping.

**[A] SLEEPING UNIT.** A single unit that provides rooms or spaces for one or more persons, includes permanent provisions for sleeping and can include provisions for living, eating and either sanitation or kitchen facilities but not both. Such rooms and spaces that are also part of a dwelling unit are not sleeping units.

**SLIP RESISTANT.** A rough finish that is not abrasive to the bare foot.

**SLOPE. [HCD 1-AC]** The relative steepness of the land between two points and is calculated as follows:

The horizontal distance and elevation change between the two points (e.g., an entrance and a passenger loading zone). The difference in elevation is divided by the distance and the resulting fraction is multiplied by 100 to obtain the percentage of slope.

For example: if a principal entrance is 10 feet (3048 mm) from a passenger loading zone, and the principal entrance is raised 1 foot (305 mm) higher than the passenger loading zone, then the slope is  $\frac{1}{10} \times 100 = 10$  percent.

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**SMALL MANAGEMENT YARD.** *An exterior exercise yard within a Group I-3 prison used for inmate exercise for a maximum of 2 hours per day, constructed in accordance with Section 408.15.*

**[F] SMOKE ALARM.** A single- or multiple-station alarm responsive to smoke. See “Multiple-station smoke alarm” and “Single-station smoke alarm.”

**[BF] SMOKE BARRIER.** A continuous membrane, either vertical or horizontal, such as a wall, floor or ceiling assembly, that is designed and constructed to restrict the movement of smoke.

**[BG] SMOKE COMPARTMENT.** A space within a building enclosed by smoke barriers on all sides, including the top and bottom.

**[BF] SMOKE DAMPER.** A listed device installed in ducts and air transfer openings designed to resist the passage of smoke. The device is installed to operate automatically, controlled by a smoke detection system, and where required, is capable of being positioned from a fire command center.

**[F] SMOKE DETECTOR.** A listed device that senses visible or invisible particles of combustion.

**[BF] SMOKE PARTITION.** A wall assembly that extends from the top of the foundation or floor below to the underside of the floor or roof sheathing, deck or slab above or to the underside of the ceiling above where the ceiling membrane is constructed to limit the transfer of smoke.

**[BF] SMOKE-DEVELOPED INDEX.** A comparative measure, expressed as a dimensionless number, derived from measurements of smoke obscuration versus time for a material tested in accordance with ASTM E84.

**[BF] SMOKEPROOF ENCLOSURE.** An exit stairway or ramp designed and constructed so that the movement of the products of combustion produced by a fire occurring in any part of the building into the enclosure is limited.

**[BE] SMOKE-PROTECTED ASSEMBLY SEATING.** Seating served by means of egress that is not subject to smoke accumulation within or under a structure for a specified design time by means of passive design or by mechanical ventilation.

**[BG] SOFT CONTAINED PLAY EQUIPMENT STRUCTURE.** A children’s play structure containing one or more components where the user enters a play environment that utilizes pliable materials.

**SOFT CONTAINED PLAY STRUCTURE.** *[DSA-AC] A play structure made up of one or more play components where the user enters a fully enclosed play environment that utilizes pliable materials, such as plastic, netting or fabric.*

**[F] SOLID.** A material that has a melting point, decomposes or sublimates at a temperature greater than 68°F (20°C).

**SPACE.** *A definable area, such as, a room, toilet room, hall, assembly area, entrance, storage room, alcove, courtyard, or lobby.*

**SPC 1, SPC 2, SPC 3, SPC 4, SPC 4D and SPC 5.** *[OSHPD 1] Building structural performance categories for Hospital Buildings defined in Table 2.5.3 of California Administrative Code (Part 1, Title 24 CCR), Chapter 6.*

**SPC BUILDING.** *[OSHPD 1 and 1R] Means a structure with an independent vertical and lateral force-resisting system (LFRS) and a distinct building structural performance category assigned by OSHPD.*

**[BG] SPECIAL AMUSEMENT AREA.** A special amusement area is any temporary or permanent building or portion thereof that is occupied for amusement, entertainment or educational purposes and *is arranged in a manner that:*

1. *Makes the means of egress path that is not readily apparent due to visual and audio distractions; or*
2. *Intentionally confounds identification of the means of egress path; or*
3. *Otherwise makes the means of egress path not readily available because of the nature of the attraction or mode of conveyance through the special amusement area, building, structure or portion thereof.*

**[BS] SPECIAL FLOOD HAZARD AREA.** The land area subject to flood hazards and shown on a *Flood Insurance Rate Map* or other flood hazard map as Zone A, AE, A1-30, A99, AR, AO, AH, V, VO, VE or V1-30.

**[BS] SPECIAL INSPECTION.** Inspection of construction requiring the expertise of an approved special inspector in order to ensure compliance with this code and the approved construction documents.

**Continuous special inspection.** Special inspection by the special inspector who is present continuously when and where the work to be inspected is being performed.

**Periodic special inspection.** *[DSA-SS, DSA-SS/CC] Special inspection by the special inspector who is intermittently present where the work has been or is being performed and at the completion of the work.*

**[BS] SPECIAL INSPECTOR.** A qualified person employed or retained by an approved agency and approved by the building official as having the competence necessary to inspect a particular type of construction requiring special inspection.

**[BS] SPECIAL STRUCTURAL WALL.** See Section 1905.1.1.

**[BS] SPECIFIED COMPRESSIVE STRENGTH OF MASONRY,  $f'_m$ .** Minimum compressive strength, expressed as force per unit of net cross-sectional area, required of the masonry used in construction by the approved construction documents, and upon which the project design is based. Whenever the quantity  $f'_m$  is under the radical sign, the square root of numerical value only is intended and the result has units of pounds per square inch (psi) (MPa).

**SPECIFIED PUBLIC TRANSPORTATION.** *[DSA-AC] Transportation by bus, rail, or any other conveyance (other than aircraft) provided by a private entity to the general public, with general or special service (including charter service) on a regular and continuing basis.*

**[BF] SPLICE.** The result of a factory and/or field method of joining or connecting two or more lengths of a fire-resistant joint system into a continuous entity.

**SPORT ACTIVITY, AREA OF.** See “Area of sport activity.”

**[F] SPRAY ROOM.** A room designed to accommodate spraying operations.

out mortar on the bed or head joints, and where both sides of the wall are coated with a surface-bonding mortar.

**Parapet wall.** The part of any wall entirely above the roof line.

**[BS] WALL, LOAD-BEARING.** Any wall meeting either of the following classifications:

1. Any metal or wood stud wall that supports more than 100 pounds per linear foot (1459 N/m) of vertical load in addition to its own weight.
2. Any masonry or concrete or mass timber wall that supports more than 200 pounds per linear foot (2919 N/m) of vertical load in addition to its own weight.

**[BS] WALL, NONLOAD-BEARING.** Any wall that is not a load-bearing wall.

**WATERLINE.** Shall be defined as one of the following:

1. Skimmer systems. The waterline shall be the midpoint of the operating range of the skimmers.
2. Overflow system. The waterline shall be the top edge of the overflow rim.

**[F] WATER-REACTIVE MATERIAL.** A material that explodes; violently reacts; produces flammable, toxic or other hazardous gases; or evolves enough heat to cause autoignition or ignition of combustibles upon exposure to water or moisture. Water-reactive materials are subdivided as follows:

**Class 3.** Materials that react explosively with water without requiring heat or confinement.

**Class 2.** Materials that react violently with water or have the ability to boil water. Materials that produce flammable, toxic or other hazardous gases or evolve enough heat to cause autoignition or ignition of combustibles upon exposure to water or moisture.

**Class 1.** Materials that react with water with some release of energy, but not violently.

**[BF] WATER-RESISTIVE BARRIER.** A material behind an exterior wall covering that is intended to resist liquid water that has penetrated behind the exterior covering from further intruding into the exterior wall assembly.

**[BF] WEATHER-EXPOSED SURFACES.** Surfaces of walls, ceilings, floors, roofs, soffits and similar surfaces exposed to the weather except the following:

1. Ceilings and roof soffits enclosed by walls, fascia, bulkheads or beams that extend not less than 12 inches (305 mm) below such ceiling or roof soffits.
2. Walls or portions of walls beneath an unenclosed roof area, where located a horizontal distance from an open exterior opening equal to not less than twice the height of the opening.
3. Ceiling and roof soffits located a minimum horizontal distance of 10 feet (3048 mm) from the outer edges of the ceiling or roof soffits.

**WET BAR. [DSA-AC]** An area or space with a counter equipped with a sink and running water but without cooking facilities.

**[F] WET-CHEMICAL EXTINGUISHING SYSTEM.** A solution of water and potassium-carbonate-based chemical,

potassium-acetate-based chemical or a combination thereof, forming an extinguishing agent.

**WHEELCHAIR.** A chair mounted on wheels to be propelled by its occupant manually or with the aid of electric power, of a size and configuration conforming to the recognized standard models of the trade.

**[BE] WHEELCHAIR SPACE.** A space for a single wheelchair and its occupant.

**WILDFIRE. [SFM]** (See Chapter 7A, Section 702A for defined term.)

**WILDFIRE EXPOSURE. [SFM]** (See Chapter 7A, Section 702A for defined term.)

**WILDLAND-URBAN INTERFACE FIRE AREA (WUI). [SFM]** (See Chapter 7A, Section 702A for defined term.)

**[BS] WINDBORNE DEBRIS REGION.** Areas within hurricane-prone regions located:

1. Within 1 mile (1.61 km) of the coastal mean high-water line where the basic design wind speed,  $V$ , is 130 mph (58 m/s) or greater; or
2. In areas where the basic design wind speed is 140 mph (63.6 m/s) or greater.

For Risk Category II buildings and structures and Risk Category III buildings and structures, except health care facilities, the windborne debris region shall be based on Figure 1609.3(1). For Risk Category IV buildings and structures and Risk Category III health care facilities, the windborne debris region shall be based on Figure 1609.3(2).

**WINDFORCE-RESISTING SYSTEM, MAIN.** See “Main windforce-resisting system.”

**[BS] WIND SPEED,  $V$ .** Basic design wind speeds.

**[BS] WIND SPEED,  $V_{asd}$ .** Allowable stress design wind speeds.

**[BE] WINDER.** A tread with nonparallel edges.

**WINERY CAVES.** See Section 446.

**[BS] WIRE BACKING.** Horizontal strands of tautened wire attached to surfaces of vertical supports which, when covered with the building paper, provide a backing for cement plaster.

**[F] WIRELESS PROTECTION SYSTEM.** A system or a part of a system that can transmit and receive signals without the aid of wire.

**[BS] WOOD/PLASTIC COMPOSITE.** A composite material made primarily from wood or cellulose-based materials and plastic.

**[BS] WOOD SHEAR PANEL.** A wood floor, roof or wall component sheathed to act as a shear wall or diaphragm.

**[BS] WOOD STRUCTURAL PANEL.** A panel manufactured from veneers, wood strands or wafers or a combination of veneer and wood strands or wafers bonded together with waterproof synthetic resins or other suitable bonding systems. Examples of wood structural panels are:

**Composite panels.** A wood structural panel that is comprised of wood veneer and reconstituted wood-based material and bonded together with waterproof adhesive.

## DEFINITIONS

**Oriented strand board (OSB).** A mat-formed wood structural panel comprised of thin rectangular wood strands arranged in cross-aligned layers with surface layers normally arranged in the long panel direction and bonded with waterproof adhesive.

**Plywood.** A wood structural panel comprised of plies of wood veneer arranged in cross-aligned layers. The plies are bonded with waterproof adhesive that cures on application of heat and pressure.

**WORK AREA EQUIPMENT. [DSA-AC]** *Any machine, instrument, engine, motor, pump, conveyor, or other apparatus used to perform work. As used in this document, this term shall apply only to equipment that is permanently installed or built-in in employee work areas. Work area equipment does not include passenger elevators and other accessible means of vertical transportation.*

**[F] WORKSTATION.** A defined space or an independent principal piece of equipment using HPM within a fabrication area where a specific function, laboratory procedure or research activity occurs. Approved or listed hazardous materials storage cabinets, flammable liquid storage cabinets or gas cabinets serving a workstation are included as part of the workstation. A workstation is allowed to contain ventilation equipment, fire protection devices, detection devices, electrical devices and other processing and scientific equipment.

**[DSA-AC]** *An area defined by equipment and/or work surfaces intended for use by employees only, and generally for one or a small number of employees at a time. Examples include ticket booths; the employee side of grocery store check stands; the bartender area behind a bar; the employee side of snack bars, sales counters and public counters; guardhouses; toll booths; kiosk vending stands; lifeguard stations; maintenance equipment closets; counter and equipment areas in restaurant kitchens; file rooms; storage areas; etc.*

**[BS] WYTHER.** Each continuous, vertical section of a wall, one masonry unit in thickness.

**[BG] YARD.** An open space, other than a court, unobstructed from the ground to the sky, except where specifically provided by this code, on the lot on which a building is situated.

**[F] ZONE.** A defined area within the protected premises. A zone can define an area from which a signal can be received, an area to which a signal can be sent or an area in which a form of control can be executed.

**[F] ZONE, NOTIFICATION.** An area within a building or facility covered by notification appliances which are activated simultaneously.



Training and skill development not in a school or academic program (this shall include, but not be limited to, tutoring centers, martial arts studios, gymnastics and similar uses regardless of the ages served, and where not classified as a Group A occupancy).

### SECTION 305 EDUCATIONAL GROUP E

**305.1 Educational Group E.** Educational Group E occupancy includes, among others, the use of a building or structure, or a portion thereof, by more *than six* persons at any one time for educational purposes through the 12th grade.

**Exception:** *[SFM]* A residence used as a home school for the children who normally reside at the residence. Such residences shall remain classified as Group R-2, or Group R-3 occupancies.

**305.1.1 Accessory to places of religious worship.** Religious educational rooms and religious auditoriums, which are accessory to places of religious worship in accordance with Section 303.1.4 and have occupant loads of less than 100 per room or space, shall be classified as Group A-3 occupancies.

**305.2 Group E, day care facilities.** This group includes buildings and structures or portions thereof occupied by more than *six* children 2 years of age *and older* who receive educational, supervision or personal care services for fewer than 24 hours per day.

**Exception:** *[SFM]* A Day-care facility not otherwise classified as an R-3 occupancy, where occupants are not capable of responding to an emergency situation without physical assistance from the staff shall be classified as Group I-4.

**305.2.1 Within places of religious worship.** Rooms and spaces within places of religious worship providing such day care during religious functions shall be classified as part of the primary occupancy *where not licensed for day-care purposes by the Department of Social Services.*

**305.2.2 Five or fewer children.** A facility having five or fewer children receiving such day care shall be classified as part of the primary occupancy.

**305.2.3 Five or fewer children in a dwelling unit.** A facility such as the above within a dwelling unit and having five or fewer children receiving such day care shall be classified as a Group R-3 occupancy or shall comply with the *California Residential Code.*

### SECTION 306 FACTORY GROUP F

**306.1 Factory Industrial Group F.** Factory Industrial Group F occupancy includes, among others, the use of a building or structure, or a portion thereof, for assembling, disassembling, fabricating, finishing, manufacturing, packaging, repair or processing operations that are not classified as a Group H hazardous or Group S storage occupancy.

**306.2 Moderate-hazard factory industrial, Group F-1.** Factory industrial uses that are not classified as Factory Industrial

F-2 Low Hazard shall be classified as F-1 Moderate Hazard and shall include, but not be limited to, the following:

- Aircraft (manufacturing, not to include repair)
- Appliances
- Athletic equipment
- Automobiles and other motor vehicles
- Bakeries
- Beverages: over 16-percent alcohol content
- Bicycles
- Boats
- Brooms or brushes
- Business machines
- Cameras and photo equipment
- Canvas or similar fabric
- Carpets and rugs (includes cleaning)
- Clothing
- Construction and agricultural machinery
- Disinfectants
- Dry cleaning and dyeing
- Electric generation plants
- Electronics
- Energy storage systems (ESS) in dedicated use buildings* | |
- Engines (including rebuilding)
- Food processing establishments and commercial kitchens not associated with restaurants, cafeterias and similar dining facilities more than 2,500 square feet (232 m<sup>2</sup>) in area.
- Furniture
- Hemp products
- Jute products
- Laundries
- Leather products
- Machinery
- Metals
- Millwork (sash and door)
- [SFM]* Motion picture and television production studio
- Sound Stages, Approved Production Facilities and production locations (without live audiences)*
- Motion pictures and television filming (without spectators)
- Musical instruments
- Optical goods
- Paper mills or products
- Photographic film
- Plastic products
- Printing or publishing
- Recreational vehicles
- Refuse incineration
- Shoes
- Soaps and detergents
- Textiles
- Tobacco
- Trailers
- Upholstering
- Wood; distillation
- Woodworking (cabinet)

**306.3 Low-hazard factory industrial, Group F-2.** Factory industrial uses that involve the fabrication or manufacturing of noncombustible materials that during finishing, packing or processing do not involve a significant fire hazard shall be

**OCCUPANCY CLASSIFICATION AND USE**

classified as F-2 occupancies and shall include, but not be limited to, the following:

- Beverages: up to and including 16-percent alcohol content
- Brick and masonry
- Ceramic products
- Foundries
- Glass products
- Gypsum
- Ice
- Metal products (fabrication and assembly)

**SECTION 307  
HIGH-HAZARD GROUP H**

**[F] 307.1 High-hazard Group H.** High-hazard Group H occupancy includes, among others, the use of a building or structure, or a portion thereof, that involves the manufacturing, processing, generation or storage of materials that constitute a physical or health hazard in quantities in excess of those allowed in control areas complying with Section 414, based on the maximum allowable quantity limits for control areas set forth in Tables 307.1(1) and 307.1(2). Hazardous occupancies are classified in Groups H-1, H-2, H-3, H-4 and H-5 and shall be in accordance with this section, the require-

ments of Section 415 and the *California Fire Code*. Hazardous materials stored, or used on top of roofs or canopies, shall be classified as outdoor storage or use and shall comply with the *California Fire Code*.

**[F] 307.1.1 Uses other than Group H.** An occupancy that stores, uses or handles hazardous materials as described in one or more of the following items shall not be classified as Group H, but shall be classified as the occupancy that it most nearly resembles.

1. Buildings and structures occupied for the application of flammable finishes, provided that such buildings or areas conform to the requirements of Section 416 and the *California Fire Code*.
2. Wholesale and retail sales and storage of flammable and combustible liquids in mercantile occupancies conforming to the *California Fire Code*.
3. Closed piping system containing flammable or combustible liquids or gases utilized for the operation of machinery or equipment.
4. Cleaning establishments that utilize combustible liquid solvents having a flash point of 140°F (60°C) or higher in closed systems employing equipment listed by an approved testing agency,

**TABLE 307.1(1)  
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING A PHYSICAL HAZARD<sup>a, j, m, n, p</sup>**

MATERIAL	CLASS	GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED	STORAGE <sup>b</sup>			USE-CLOSED SYSTEMS <sup>b</sup>			USE-OPEN SYSTEMS <sup>b</sup>	
			Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas cubic feet at NTP	Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas cubic feet at NTP	Solid pounds (cubic feet)	Liquid gallons (pounds)
Combustible dust	NA	H-2	See Note q	NA	NA	See Note q	NA	NA	See Note q	NA
Combustible fiber <sup>d</sup>	Loose Baled <sup>o</sup>	H-3	(100) (1,000)	NA	NA	(100) (1,000)	NA	NA	(20) (200)	NA
Combustible liquid <sup>d, i</sup>	II IIIA IIIB	H-2 or H-3 H-2 or H-3 NA	NA	120 <sup>d, e</sup> 330 <sup>d, e</sup> 13,200 <sup>e, f</sup>	NA	NA	120 <sup>d</sup> 330 <sup>d</sup> 13,200 <sup>f</sup>	NA	NA	30 <sup>d</sup> 80 <sup>d</sup> 3,300 <sup>f</sup>
Cryogenic flammable	NA	H-2	NA	45 <sup>d</sup>	NA	NA	45 <sup>d</sup>	NA	NA	10 <sup>d</sup>
Cryogenic inert	NA	NA	NA	NA	NL	NA	NA	NL	NA	NA
Cryogenic oxidizing	NA	H-3	NA	45 <sup>d</sup>	NA	NA	45 <sup>d</sup>	NA	NA	10 <sup>d</sup>
Explosives	Division 1.1	H-1	1 <sup>e, g</sup>	(1) <sup>e, g</sup>	NA	0.25 <sup>g</sup>	(0.25) <sup>g</sup>	NA	0.25 <sup>g</sup>	(0.25) <sup>g</sup>
	Division 1.2	H-1	1 <sup>e, g</sup>	(1) <sup>e, g</sup>		0.25 <sup>g</sup>	(0.25) <sup>g</sup>		0.25 <sup>g</sup>	(0.25) <sup>g</sup>
	Division 1.3	H-1 or H-2	10 <sup>e, g</sup>	(10) <sup>e, g</sup>		1 <sup>g</sup>	(1) <sup>g</sup>		1 <sup>g</sup>	(1) <sup>g</sup>
	Division 1.4	H-3	50 <sup>e, g</sup>	(50) <sup>e, g</sup>		50 <sup>g</sup>	(50) <sup>g</sup>		NA	NA
	Division 1.4G	H-3	125 <sup>e, l</sup>	NA		NA	NA		NA	NA
	Division 1.5	H-1	1 <sup>e, g</sup>	(1) <sup>e, g</sup>		0.25 <sup>g</sup>	(0.25) <sup>g</sup>		0.25 <sup>g</sup>	(0.25) <sup>g</sup>
Division 1.6	H-1	1 <sup>e, g</sup>	NA	NA	NA	NA	NA			
Flammable gas	Gaseous Liquefied	H-2	NA	NA (150) <sup>d, e</sup>	1,000 <sup>d, e</sup> NA	NA	NA (150) <sup>d, e</sup>	1,000 <sup>d, e</sup> NA	NA	NA
Flammable liquid <sup>d</sup>	IA IB and IC	H-2 or H-3	NA	30 <sup>d, e</sup> 120 <sup>d, e</sup>	NA	NA	30 <sup>d</sup> 120 <sup>d</sup>	NA	NA	10 <sup>d</sup> 30 <sup>d</sup>
Flammable liquid, combination (IA, IB, IC)	NA	H-2 or H-3	NA	120 <sup>d, e, h</sup>	NA	NA	120 <sup>d, h</sup>	NA	NA	30 <sup>d, h</sup>

(continued)

care during religious functions shall be *licensed by the California State Department Health Services as required by Health and Safety Code Division 2 Chapter 3.5.*

**308.5.3 Six or fewer persons receiving care.** A facility having six or fewer persons receiving custodial care shall be *licensed pursuant to Health and Safety Code Division 2 Chapter 3.5 or 3.6.*

**308.5.4 Six or fewer persons receiving care in a dwelling unit.** A facility such as the above within a dwelling unit and having six or fewer persons receiving custodial care shall be classified as a Group R-3 occupancy, *where occupants are not capable of responding to an emergency situation without physical assistance from the staff shall be classified as a Group I-4.*

**SECTION 309  
MERCANTILE GROUP M**

**309.1 Mercantile Group M.** Mercantile Group M occupancy includes, among others, the use of a building or structure or a portion thereof for the display and sale of merchandise, and involves stocks of goods, wares or merchandise incidental to such purposes and accessible to the public. Mercantile occupancies shall include, but not be limited to, the following:

- Department stores
- Drug stores
- Markets
- Greenhouses for display and sale of plants that provide public access.
- Motor fuel-dispensing facilities
- Retail or wholesale stores
- Sales rooms

**309.2 Quantity of hazardous materials.** The aggregate quantity of nonflammable solid and nonflammable or non-combustible liquid hazardous materials stored or displayed in a single control area of a Group M occupancy shall not exceed the quantities in Table 414.2.5(1).

**SECTION 310  
RESIDENTIAL GROUP R**

**310.1 Residential Group R.** Residential Group R includes, among others, the use of a building or structure, or a portion thereof, for sleeping purposes when not classified as an Institutional Group I or when not regulated by the *California Residential Code.*

**310.2 Residential Group R-1.** Residential Group R-1 occupancies containing sleeping units where the occupants are primarily transient in nature, including:

- Boarding houses (transient) with more than 10 occupants
- Congregate *residences* (transient) with more than 10 occupants
- Hotels (transient)
- Motels (transient)
- [HCD 1] Efficiency dwelling units (transient)*

**310.3 Residential Group R-2.** Residential Group R-2 occupancies containing sleeping units or more than two dwelling units where the occupants are primarily permanent in nature, including:

- Apartment houses
- Congregate *residences* (nontransient) with more than 16 occupants
  - Boarding houses (nontransient)
  - Convents
  - Dormitories
  - Fraternities and sororities
  - Monasteries
- Hotels (nontransient)
- Live/work units
- Motels (nontransient)
- Vacation timeshare properties
- [HCD 1] Efficiency dwelling units (transient)*

**310.3.1 Residential Group R-2.1.** Residential Group R-2.1 occupancies shall include buildings, structures or parts thereof housing clients, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment that provides personal care services.

*This occupancy may contain more than six nonambulatory and/or bedridden clients. (See Section 435 Special Provisions for Licensed 24-Hour Care Facilities in a Group R-2.1, R-3.1 or R-4 Occupancy). This group shall include, but not be limited to, the following:*

- Assisted living facilities such as:*
  - Residential care facilities,*
  - Residential care facilities for the elderly (RCFEs),*
  - Adult residential facilities,*
  - Congregate living health facilities,*
  - Group homes,*
  - Residential care facilities for the chronically ill,*
  - Congregate living health facilities for the terminally ill.*

- Social rehabilitation facilities such as:*
  - Halfway houses,*
  - Community correctional centers,*
  - Community treatment programs,*
  - Work furlough programs,*
  - Alcoholism or drug abuse recovery or treatment facilities.*

**310.3.2 Residential Group R-2.2 (CDCR Only).** Residential occupancies operated by CDCR in a community located facility that provides housing and community-based program services for nontransient ambulatory participants in a nonlicensed facility with 24/7 supervision.

**310.4 Residential Group R-3.** Residential Group R-3 occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-2.1, R-2.2, R-3.1, R-4 or I, including:

- Buildings that do not contain more than two dwelling units
- Congregate *residences* (nontransient) with 16 or fewer occupants
  - Boarding houses (nontransient)
  - Convents
  - Dormitories
  - Fraternities and sororities
  - Monasteries

Congregate *residences* (transient) with 10 or fewer occupants  
*[HCD 1] Efficiency dwelling units*  
Boarding houses (transient)

## OCCUPANCY CLASSIFICATION AND USE

*Adult care facilities that provide accommodations for six or fewer clients of any age for less than 24 hours. Licensing categories that may use this classification include Adult Day Programs.*

*Alcoholism or drug abuse recovery homes (ambulatory only)*

*Child care facilities that provide accommodations for six or fewer clients of any age for less than 24 hours.*

*Licensing categories that may use this classification include, but are not limited to:*

*Day-Care Center for Mildly Ill Children,  
Infant Care Center,  
School Age Child Day-Care Center.*

*Family Day-Care Homes that provide accommodations for 14 or fewer children, in the provider's own home for less than 24-hours.*

*Adult care and child care facilities that are within a single family home are permitted to comply with the California Residential Code.*

*Lodging houses (transient) with five or fewer guest rooms and 10 or fewer occupants*

**310.4.1 Residential Group R-3.1.** *This occupancy group may include facilities licensed by a governmental agency for a residentially based 24-hour care facility providing accommodations for six or fewer clients of any age. Clients may be classified as ambulatory, nonambulatory or bedridden. A Group R-3.1 occupancy shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in Section 435 Special Provisions For Licensed 24-Hour Care Facilities in a Group R-2.1, R-3.1 or R-4 Occupancy. This group may include:*

*Adult residential facilities*

*Congregate living health facilities*

*Intermediate care facilities for the developmentally disabled habilitative*

*Intermediate care facilities for the developmentally disabled nursing*

*Nurseries for the full-time care of children under the age of six, but not including "infants" as defined in Chapter 2 Residential care facilities for the elderly*

*Small family homes and residential care facilities for the chronically ill*

**Exception:** *Group Homes licensed by the Department of Social Services which provide nonmedical board, room and care for six or fewer ambulatory children or children two years of age or younger, and which do not have any nonambulatory clients shall not be subject to regulations found in Section 435.*

*Pursuant to Health and Safety Code Section 13143 with respect to these exempted facilities, no city, county or public district shall adopt or enforce any requirement for the prevention of fire or for the protection of life and property against fire and panic unless the requirement would be applicable to a structure regardless of the special occupancy. Nothing shall restrict the application of state or local housing standards to such facilities if the standards are applicable to residential occupancies and are not based on the use of the structure as a facility for ambulatory children.*

*For the purpose of this exception, ambulatory children do not include relatives of the licensee or the licensee's spouse.*

**310.4.2 Lodging houses.** *Owner-occupied lodging houses with five or fewer guest rooms and 10 or fewer total occupants shall be permitted to be constructed in accordance with the California Residential Code.*

**310.5 Residential Group R-4.** *Residential Group R-4 occupancy shall include buildings, structures or portions thereof for more than six ambulatory clients, but not more than 16 persons, excluding staff, who reside on a 24-hour basis in a supervised residential environment and receive custodial care. The persons receiving care are capable of self-preservation. Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code. This occupancy classification may include a maximum six nonambulatory or bedridden clients (see Section 435, Special Provisions for Licensed 24-Hour Care Facilities in a Group R-2.1, R-3.1 or R-4). Group R-4 occupancies shall meet the requirements in Section 420. This group shall include, but not be limited to, the following:*

*Assisted living facilities such as:*

*Residential care facilities,  
Residential care facilities for the elderly (RCFE),  
Adult residential facilities,  
Congregate living health facilities,  
Group homes.*

*Social rehabilitation facilities such as:*

*Halfway houses,  
Community treatment programs,  
Work furlough programs,  
Alcoholism or drug abuse recovery or treatment facilities.*

**310.6 Large family day-care homes.** *See Section 455.*

## SECTION 311 STORAGE GROUP S

**311.1 Storage Group S.** *Storage Group S occupancy includes, among others, the use of a building or structure, or a portion thereof, for storage that is not classified as a hazardous occupancy.*

**311.1.1 Accessory storage spaces.** *A room or space used for storage purposes that is accessory to another occupancy shall be classified as part of that occupancy.*

**311.2 Moderate-hazard storage, Group S-1.** *Storage Group S-1 occupancies are buildings occupied for storage uses that are not classified as Group S-2, including, but not limited to, storage of the following:*

*Aerosol products, Levels 2 and 3  
Aircraft hangar (storage and repair)  
Bags: cloth, burlap and paper  
Bamboos and rattan  
Baskets  
Belting: canvas and leather  
Books and paper in rolls or packs  
Boots and shoes  
Buttons, including cloth covered, pearl or bone  
Cardboard and cardboard boxes  
Clothing, woolen wearing apparel  
Cordage  
Dry boat storage (indoor)*

# CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE

## CHAPTER 4 – SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE

(Matrix Adoption Tables are nonregulatory, intended only as an aid to the code user.

See Chapter 1 for state agency authority and building applications.)

Adopting agency	BSC	BSC- CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4								
Adopt entire chapter	X							X	X	X	X	X										
Adopt entire chapter as amendeded (amended sections listed below)			X	X	X																	
Adopt only those sections that are listed below						X	X					X									X	
Chapter / Section																						
403			X																			
403.1			X																			
403.1.1			X																			
403.2			X																			
403.2.1			X																			
403.2.1.1			X																			
403.3			X																			
403.3.1			X																			
403.3.2			X																			
403.3.2.1			X																			
403.3.3			X																			
403.3.5			X																			
403.4.7			X																			
403.4.7.1			X																			
403.5.3			X																			
403.5.4			X																			
403.6			X																			
403.7			X																			
404.5			X																			
404.6			X																			
404.11			X																			
406.2.1			X	X	X																	
406.2.2				X	X																	
406.2.3						X	X															
406.2.7				X	X	X																
406.3.1			X																			
406.4.1 – 406.6.4.4			X																			
406.8.2			X																			
406.8.5.1			X																			
406.8.5.2			X																			
406.9			X																			
406.9.1			X																			
406.9.2			X																			
406.9.3			X																			
407													X									
407.1			X																			
407.1.1			X																			
407.2			X																			
407.2.1			X																			
407.2.2			X																			
407.2.3			X																			
407.2.5			X																			
407.2.6			X																			
407.3			X																			
407.3.1			X																			
407.3.1.1			X																			

(continued)

**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE**  
**CHAPTER 4 – SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE—**  
**continued**

Adopting agency	BSC	BSC- CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4								
Adopt entire chapter	X							X	X	X	X	X										
Adopt entire chapter as amendeded (amended sections listed below)			X	X	X																	
Adopt only those sections that are listed below						X	X					X									X	
Chapter / Section																						
407.3.2			X																			
407.4			X																			
407.4.1			X																			
407.4.1.1			X																			
407.4.1.2			X																			
407.4.2			X																			
407.4.2.1			X																			
407.4.3			X																			
407.4.4			X																			
407.4.4.2			X																			
407.4.4.3			X																			
407.4.4.3.1			X																			
407.4.4.3.2			X																			
407.4.4.5			X																			
407.4.4.5.1			X																			
407.4.4.5.3			X																			
407.4.4.6.1			X																			
407.4.4.6.2			X																			
407.4.5			X																			
407.5			X																			
407.5.2			X																			
407.6.1			X																			
407.7			X																			
407.10			X																			
407.11			X																			
407.12.1			X																			
407.12.2			X																			
407.12.3			X																			
407.12.4			X																			
407.13			X																			
408.1.2			X																			
408.1.2.1			X																			
408.1.2.2			X																			
408.1.2.3			X																			
408.1.2.4			X																			
408.1.2.5			X																			
408.1.2.6			X																			
408.1.2.7			X																			
408.1.3			X																			
408.2			X																			
408.2.1			X																			
408.3.1.1			X																			
408.3.6			X																			
408.3.6.1			X																			
408.3.6.2			X																			
408.3.6.3			X																			
408.3.6.4			X																			
408.3.8.1			X																			

*(continued)*

**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE**  
**CHAPTER 4 – SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE—**  
**continued**

Adopting agency	BSC	BSC- CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1 R	2	3	4								
Adopt entire chapter	X							X	X	X	X	X										
Adopt entire chapter as amendedd (amended sections listed below)			X	X	X																	
Adopt only those sections that are listed below						X	X						X								X	
Chapter / Section																						
408.3.9			X																			
408.3.10			X																			
408.3.11			X																			
408.3.12			X																			
Table 408.3.13			X																			
408.4			X																			
408.4.3			X																			
408.5.1			X																			
408.6			X																			
408.6.1			X																			
408.8.1			X																			
408.9.1			X																			
408.12			X																			
408.13			X																			
408.14			X																			
408.15			X																			
408.15.1			X																			
408.15.2			X																			
408.15.3			X																			
408.15.3.1			X																			
408.15.3.2			X																			
408.15.4			X																			
408.15.5			X																			
410.2.6			X																			
411.1 – 411.7			X																			
412.2.6							X															
414.1.1			X																			
414.5			X																			
414.5.1			X																			
414.5.4			X																			
415.11.7.1			X																			
415.11.7.1.1			X																			
415.11.7.1.2			X																			
415.11.7.1.3			X																			
415.11.7.1.4			X																			
415.11.7.2			X																			
415.12			X																			
415.12.1			X																			
415.12.1.1			X																			
415.12.1.2			X																			
415.12.1.3			X																			
415.12.1.4			X																			
415.12.1.5			X																			
415.13			X																			

*(continued)*

**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE**  
**CHAPTER 4 – SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE—**  
**continued**

Adopting agency	BSC	BSC- CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4								
Adopt entire chapter	X							X	X	X	X	X										
Adopt entire chapter as amended (amended sections listed below)			X	X	X																	
Adopt only those sections that are listed below						X	X						X								X	
Chapter / Section																						
415.13.1			X																			
415.13.2			X																			
415.13.3			X																			
419.1				X	X																	
419.3				X	X																	
419.6				X	X																	
419.7						X	X															
419.9						X																
420.1			X	X	X																	
420.4			X																			
420.5			X																			
420.6			X																			
420.10.1			X	X	X																	
420.11			X	X																		
420.12			X	X		X																
420.13			X	X																		
420.14			X																			
420.15			X																			
422.1													X									
435			X																			
436			X																			
439			X																			
440			X																			
441			X																			
442			X																			
443			X																			
444			X																			
446			X																			
449			X																			
450			X																			
452			X																			
453			X																			
455			X																			

The state agency does not adopt sections identified with the following symbol: †

The Office of the State Fire Marshal's adoption of this chapter or individual sections is applicable to structures regulated by other state agencies pursuant to Section 1.11.



**402.8.8 Security grilles and doors.** Horizontal sliding or vertical security grilles or doors that are a part of a required means of egress shall conform to the following:

1. Doors and grilles shall remain in the full open position during the period of occupancy by the general public.
2. Doors or grilles shall not be brought to the closed position when there are 10 or more persons occupying spaces served by a single exit or 50 or more persons occupying spaces served by more than one exit.
3. The doors or grilles shall be openable from within without the use of any special knowledge or effort where the space is occupied.
4. Where two or more exits are required, not more than one-half of the exits shall be permitted to include either a horizontal sliding or vertical rolling grille or door.

**SECTION 403  
HIGH-RISE BUILDINGS AND GROUP I-2  
OCCUPANCIES HAVING OCCUPIED  
FLOORS LOCATED MORE THAN 75 FEET  
ABOVE THE LOWEST LEVEL OF FIRE  
DEPARTMENT VEHICLE ACCESS**

**403.1 Applicability.** *New high-rise buildings (see Section 202 for definition of a high-rise), and new Group I-2 occupancies having occupied floors located more than 75 feet above the lowest level of fire department vehicle access shall comply with Sections 403.2 through 403.7.*

**Exception:** The provisions of Sections 403.2 through 403.7 shall not apply to the following buildings and structures:

1. Airport traffic control towers in accordance with Section 412.2.
2. Open parking garages in accordance with Section 406.5.
3. The portion of a building containing a Group A-5 occupancy in accordance with Section 303.6.
4. Special industrial occupancies in accordance with Section 503.1.1.
5. Buildings containing any one of the following:
  - 5.1. A Group H-1 occupancy.
  - 5.2. A Group H-2 occupancy in accordance with Section 415.8, 415.9.2, 415.9.3 or 426.1.
  - 5.3. A Group H-3 occupancy in accordance with Section 415.8.
5. *Buildings such as power plants, lookout towers, steeples, grain houses and similar structures with noncontinuous human occupancy, when so determined by the enforcing agency.*

*For existing high-rise buildings and for existing Group R occupancies, see California Fire Code Chapter 11 and California Existing Building Code.*

*For the purpose of this section, in determining the level from which the highest occupied floor is to be measured, the*

*enforcing agency should exercise reasonable judgment, including consideration of overall accessibility to the building by fire department personnel and vehicular equipment. When a building is located on sloping terrain and there is building access on more than one level, the enforcing agency may select the level that provides the most logical and adequate fire department access.*

**403.2 Construction.** The construction of high-rise buildings shall comply with the provisions of Sections 403.2.1 through 403.2.4.

**403.2.1 Reduction in fire-resistance rating.** The fire-resistance rating reductions listed in Sections 403.2.1.1 and 403.2.1.2 shall be allowed in buildings that have sprinkler control valves equipped with supervisory initiating devices and water-flow initiating devices for each floor.

**Exception:** *Buildings, or portions of buildings, classified as a Group H-1, H-2 or H-3 occupancy.*

**403.2.1.1 Type of construction.** The following reductions in the minimum fire-resistance rating of the building elements in Table 601 shall be permitted as follows:

1. For buildings not greater than 420 feet (128 m) in building height, the fire-resistance rating of the building elements in Type IA construction shall be permitted to be reduced to the minimum fire-resistance ratings for the building elements in Type IB.

**Exception:** The required fire-resistance rating of the *primary structural frame* shall not be reduced.

2. In other than Group F-1, H-2, H-3, H-5, M and S-1 occupancies, the fire-resistance rating of the building elements in Type IB construction shall be permitted to be reduced to the fire-resistance ratings in Type IIA.

**Exception:** *The required fire-resistance rating of the primary structural frame shall not be permitted to be reduced.*

3. The building height and building area limitations of a building containing building elements with reduced fire-resistance ratings shall be permitted to be the same as the building without such reductions.

**403.2.1.2 Shaft enclosures.** For buildings not greater than 420 feet (128 m) in building height, the required fire-resistance rating of the fire barriers enclosing vertical shafts, other than interior exit stairway and elevator hoistway enclosures, is permitted to be reduced to 1 hour where automatic sprinklers are installed within the shafts at the top and at alternate floor levels.

**403.2.2 Seismic considerations.** For seismic considerations, see Chapter 16.

**[BS] 403.2.3 Structural integrity of interior exit stairways and elevator hoistway enclosures.** For high-rise buildings of Risk Category III or IV in accordance with Section 1604.5, and for all buildings that are more than 420 feet (128 m) in building height, enclosures for interior

exit stairways and elevator hoistway enclosures shall comply with Sections 403.2.3.1 through 403.2.3.4.

**[BS] 403.2.3.1 Wall assembly.** The wall assemblies making up the enclosures for interior exit stairways and elevator hoistway enclosures shall meet or exceed Soft Body Impact Classification Level 2 as measured by the test method described in ASTM C1629/C1629M.

**[BS] 403.2.3.2 Wall assembly materials.** The face of the wall assemblies making up the enclosures for interior exit stairways and elevator hoistway enclosures that are not exposed to the interior of the enclosures for interior exit stairways or elevator hoistway enclosure shall be constructed in accordance with one of the following methods:

1. The wall assembly shall incorporate not fewer than two layers of impact-resistant construction board each of which meets or exceeds Hard Body Impact Classification Level 2 as measured by the test method described in ASTM C1629/C1629M.
2. The wall assembly shall incorporate not fewer than one layer of impact-resistant construction material that meets or exceeds Hard Body Impact Classification Level 3 as measured by the test method described in ASTM C1629/C1629M.
3. The wall assembly incorporates multiple layers of any material, tested in tandem, that meets or exceeds Hard Body Impact Classification Level 3 as measured by the test method described in ASTM C1629/C1629M.

**[BS] 403.2.3.3 Concrete and masonry walls.** Concrete or masonry walls shall be deemed to satisfy the requirements of Sections 403.2.3.1 and 403.2.3.2.

**[BS] 403.2.3.4 Other wall assemblies.** Any other wall assembly that provides impact resistance equivalent to that required by Sections 403.2.3.1 and 403.2.3.2 for Hard Body Impact Classification Level 3, as measured by the test method described in ASTM C1629/C1629M, shall be permitted.

**403.2.4 Sprayed fire-resistant materials (SFRM).** The bond strength of the SFRM installed throughout the building shall be in accordance with Table 403.2.4.

**TABLE 403.2.4  
MINIMUM BOND STRENGTH**

HEIGHT OF BUILDING <sup>a</sup>	SFRM MINIMUM BOND STRENGTH
Up to 420 feet	430 psf
Greater than 420 feet	1,000 psf

For SI: 1 foot = 304.8 mm, 1 pound per square foot (psf) = 0.0479 kW/m<sup>2</sup>.

a. Above the lowest level of fire department vehicle access.

**[F] 403.3 Automatic sprinkler system.** Buildings and structures shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 and a secondary water supply where required by Section 403.3.3. *A sprinkler water-flow alarm-initiating device and a control valve with a supervisory signal-initiating device shall be provided at the lateral connection to the riser for each floor.*

**Exception:** An automatic sprinkler system shall not be required in spaces or areas of:

1. Open parking garages in accordance with Section 406.5.
2. Telecommunications equipment buildings used exclusively for telecommunications equipment, associated electrical power distribution equipment, batteries and standby engines, provided that those spaces or areas are equipped throughout with an automatic fire detection system in accordance with Section 907.2 and are separated from the remainder of the building by not less than 1-hour fire barriers constructed in accordance with Section 707 or not less than 2-hour horizontal assemblies constructed in accordance with Section 711, or both.

**[F] 403.3.1 Number of sprinkler system risers and system design.** Each sprinkler system *servicing a floor* in buildings that are more than 420 feet (128 m) in building height shall be *connected to a minimum of two sprinkler risers or combination standpipe system risers located in separate shafts. Each sprinkler system shall be hydraulically designed so that when one connection is shut down, the other connection shall be capable of supplying the sprinkler system design demand.*

**[F] 403.3.1.1 Riser location.** Sprinkler risers shall be placed in interior exit stairways and ramps that are remotely located in accordance with Section 1007.1.

**[F] 403.3.2 Water supply to required fire pumps.** In all buildings *having an occupied floor that is more than 120 feet (36 576 mm) above the lowest level of fire department vehicle access*, required fire pumps shall be supplied by connections to not fewer than two water mains located in different streets. Separate supply piping shall be provided between each connection to the water main and the pumps. Each connection and the supply piping between the connection and the pumps shall be sized to supply the flow and pressure required for the pumps to operate.

**Exception:** Two connections to the same main shall be permitted provided that the main is valved such that an interruption can be isolated so that the water supply will continue without interruption through not fewer than one of the connections.

**403.3.2.1 Fire pumps.** *Redundant fire pump systems shall be required for high-rise buildings having an occupied floor more than 200 feet above the lowest level of fire department vehicle access. Each fire pump system shall be capable of automatically supplying the required demand for the automatic sprinkler and standpipe systems.*

**[F] 403.3.3 Secondary water supply.** An automatic secondary on-site water supply having a *usable capacity of not less than the hydraulically calculated sprinkler demand, including the hose stream requirement*, shall be provided for high-rise buildings *and Group I-2 occupancies having occupied floors located more than 75 ft above the lowest level of fire department vehicle access* assigned to Seismic Design Category C, D, E or F as determined by Section 1613. An additional fire pump shall not be

inches (102 mm and 305 mm) away from the glass and at intervals along the glass not greater than 6 feet (1829 mm). The sprinkler system shall be designed so that the entire surface of the glass is wet upon activation of the sprinkler system without obstruction;

- 1.2. The glass wall shall be installed in a gasketed frame in a manner that the framing system deflects without breaking (loading) the glass before the sprinkler system operates; and
- 1.3. Where glass doors are provided in the glass wall, they shall be either self-closing or automatic-closing.

2. A fire barrier is not required where a glass-block wall assembly complying with Section 2110 and having a  $3/4$ -hour fire protection rating is provided.
3. *In other than Group I and R-2.1 occupancies*, a fire barrier is not required between the atrium and the adjoining spaces of up to three floors of the atrium provided that such spaces are accounted for in the design of the smoke control system.
4. *In other than Group I and R-2.1 occupancies*, a fire barrier is not required between the atrium and the adjoining spaces where the atrium is not required to be provided with a smoke control system.

**[F] 404.7 Standby power.** Equipment required to provide smoke control shall be provided with standby power in accordance with Section 909.11.

**404.8 Interior finish.** The interior finish of walls and ceilings of the atrium shall be not less than Class B. Sprinkler protection shall not result in a reduction in class.

**404.9 Exit access travel distance.** Exit access travel distance for areas open to an atrium shall comply with the requirements of this section.

**404.9.1 Egress not through the atrium.** Where required access to the exits is not through the atrium, exit access travel distance shall comply with Section 1017.

**404.9.2 Exit access travel distance at the level of exit discharge.** Where the path of egress travel is through an atrium space, exit access travel distance at the level of exit discharge shall be determined in accordance with Section 1017.

**404.9.3 Exit access travel distance at other than the level of exit discharge.** Where the path of egress travel is not at the level of exit discharge from the atrium, that portion of the total permitted exit access travel distance that occurs within the atrium shall be not greater than 200 feet (60 960 mm).

**404.10 Interior exit stairways.** Not greater than 50 percent of interior exit stairways are permitted to egress through an atrium on the level of exit discharge in accordance with Section 1028.

**404.11 Group I and R-2.1 occupancy means of egress.** *Required means of egress from sleeping rooms in Group I and R-2.1 occupancies shall not pass through the atrium.*

## SECTION 405 UNDERGROUND BUILDINGS

**405.1 General.** The provisions of Sections 405.2 through 405.9 apply to building spaces having a floor level used for human occupancy more than 30 feet (9144 mm) below the finished floor of the lowest level of exit discharge.

**Exceptions:** The provisions of Section 405 are not applicable to the following buildings or portions of buildings:

1. One- and two-family dwellings, sprinklered in accordance with Section 903.3.1.3.
2. Parking garages provided with automatic sprinkler systems in compliance with Section 405.3.
3. Fixed guideway transit systems.
4. Grandstands, bleachers, stadiums, arenas and similar facilities.
5. Where the lowest story is the only story that would qualify the building as an underground building and has an area not greater than 1,500 square feet (139 m<sup>2</sup>) and has an occupant load less than 10.
6. Pumping stations and other similar mechanical spaces intended only for limited periodic use by service or maintenance personnel.

**405.2 Construction requirements.** The underground portion of the building shall be of Type I construction.

**[F] 405.3 Automatic sprinkler system.** The highest level of exit discharge serving the underground portions of the building and all levels below shall be equipped with an automatic sprinkler system installed in accordance with Section 903.3.1.1. Water-flow switches and control valves shall be supervised in accordance with Section 903.4.

**405.4 Compartmentation.** Compartmentation shall be in accordance with Sections 405.4.1 through 405.4.3.

**405.4.1 Number of compartments.** A building having a floor level more than 60 feet (18 288 mm) below the finished floor of the lowest level of exit discharge shall be divided into not fewer than two compartments of approximately equal size. Such compartmentation shall extend through the highest level of exit discharge serving the underground portions of the building and all levels below.

**Exception:** The lowest story need not be compartmented where the area is not greater than 1,500 square feet (139 m<sup>2</sup>) and has an occupant load of less than 10.

**405.4.2 Smoke barrier penetration.** The compartments shall be separated from each other by a smoke barrier in accordance with Section 709. Penetrations between the two compartments shall be limited to plumbing and electrical piping and conduit that are firestopped in accordance with Section 714. Doorways shall be protected by fire door assemblies that comply with Section 716, automatic-closing by smoke detection in accordance with Section 716.2.6.6 and installed in accordance with NFPA 105 and Section 716.2.2.1. Where provided, each compartment shall have an air supply and an exhaust system independent of the other compartments.

**405.4.3 Elevators.** Where elevators are provided, each compartment shall have direct access to an elevator. Where an elevator serves more than one compartment, an

enclosed elevator lobby shall be provided and shall be separated from each compartment by a smoke barrier in accordance with Section 709. Doorways in the smoke barrier shall be protected by fire door assemblies that comply with Section 716, shall comply with the smoke and draft control assembly requirements of Section 716.2.2.1 with the UL 1784 test conducted without an artificial bottom seal, and shall be automatic-closing by smoke detection in accordance with Section 716.2.6.6.

**405.5 Smoke control system.** A smoke control system shall be provided in accordance with Sections 405.5.1 and 405.5.2.

**405.5.1 Control system.** A smoke control system is required to control the migration of products of combustion in accordance with Section 909 and the provisions of this section. Smoke control shall restrict movement of smoke to the general area of fire origin and maintain means of egress in a usable condition.

**405.5.2 Compartment smoke control system.** Where compartmentation is required, each compartment shall have an independent smoke control system. The system shall be automatically activated and capable of manual operation in accordance with Sections 907.2.17 and 907.2.18.

**[F] 405.6 Fire alarm systems.** A fire alarm system shall be provided where required by Sections 907.2.17 and 907.2.18.

**405.7 Means of egress.** Means of egress shall be in accordance with Sections 405.7.1 and 405.7.2.

**405.7.1 Number of exits.** Each floor level shall be provided with not fewer than two *exits*. Where compartmentation is required by Section 405.4, each compartment shall have not fewer than one *exit* and not fewer than one *exit access* doorway into the adjoining compartment.

**405.7.2 Smokeproof enclosure.** Every required stairway serving floor levels more than 30 feet (9144 mm) below the finished floor of its level of exit discharge shall comply with the requirements for a smokeproof enclosure as provided in Section 1023.11.

**[F] 405.8 Standby and emergency power.** A standby power system complying with Section 2702 shall be provided for the standby power loads specified in Section 405.8.1. An emergency power system complying with Section 2702 shall be provided for the emergency power loads specified in Section 405.8.2.

**[F] 405.8.1 Standby power loads.** The following are classified as standby power loads:

1. Smoke control system.
2. Ventilation and automatic fire detection equipment for smokeproof enclosures.
3. Elevators, as required in Section 3003.

**[F] 405.8.2 Emergency power loads.** The following are classified as emergency power loads:

1. Emergency voice/alarm communications systems.
2. Fire alarm systems.
3. Automatic fire detection systems.
4. Elevator car lighting.

5. Means of egress and exit sign illumination as required by Chapter 10.

6. Fire pumps.

**[F] 405.9 Standpipe system.** The underground building shall be equipped throughout with a standpipe system in accordance with Section 905.

## SECTION 406

### MOTOR-VEHICLE-RELATED OCCUPANCIES

**406.1 General.** All motor-vehicle-related occupancies shall comply with Section 406.2. Private garages and carports shall also comply with Section 406.3. Open public parking garages shall also comply with Sections 406.4 and 406.5. Enclosed public parking garages shall also comply with Sections 406.4 and 406.6. Motor fuel-dispensing facilities shall also comply with Section 406.7. Repair garages shall also comply with Section 406.8.

**406.2 Design.** Private garages and carports, open and enclosed public parking garages, motor fuel-dispensing facilities and repair garages shall comply with Sections 406.2.1 through 406.2.9.

**406.2.1 Automatic garage door openers and vehicular gates.** Automatic garage door openers shall be listed and labeled in accordance with UL 325. Where provided, automatic vehicular gates shall comply with Section 3110. *See Health and Safety Code Sections 19890, 19891 and 19892 for additional provisions for residential garage door openers.*

**406.2.2 Clear height.** The clear height of each floor level in vehicle and pedestrian traffic areas shall be not less than 7 feet (2134 mm). Canopies under which fuels are dispensed shall have a clear height in accordance with Section 406.7.2. *(DSA-AC, HCD 1-AC) The clear height of vehicle and pedestrian areas required to be accessible shall comply with Chapter 11A or 11B, as applicable.*

**Exception:** A lower clear height is permitted for a parking tier in mechanical-access open parking garages where approved by the building official.

**406.2.3 Accessible parking spaces.** Where parking is provided, accessible parking spaces, access aisles and vehicular routes serving accessible parking shall be provided in accordance with *Chapter 11A*.

**406.2.4 Floor surfaces.** Floor surfaces shall be of concrete or similar approved noncombustible and nonabsorbent materials. The area of floor used for the parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway. The surface of vehicle fueling pads in motor fuel-dispensing facilities shall be in accordance with Section 406.7.1.

#### Exceptions:

1. Asphalt parking surfaces shall be permitted at ground level for public parking garages and private carports.

**TABLE 406.5.4  
OPEN PARKING GARAGES AREA AND HEIGHT**

TYPE OF CONSTRUCTION	AREA PER TIER (square feet)	HEIGHT (in tiers)		
		Ramp access	Mechanical access	
			Automatic sprinkler system	
			No	Yes
IA	Unlimited	Unlimited	Unlimited	Unlimited
IB	Unlimited	12 tiers	12 tiers	18 tiers
IIA	50,000	10 tiers	10 tiers	15 tiers
IIB	50,000	8 tiers	8 tiers	12 tiers
IV	50,000	4 tiers	4 tiers	4 tiers

For SI: 1 square foot = 0.0929 m<sup>2</sup>.

width of not less than 30 feet (9144 mm) for the full length of the opening, and standpipes shall be provided in each such tier.

Open parking garages of Type II construction, with all sides open, shall be unlimited in allowable area where the building height does not exceed 75 feet (22 860 mm). For a side to be considered open, the total area of openings along the side shall be not less than 50 percent of the interior area of the side at each tier and such openings shall be equally distributed along the length of the tier. For purposes of calculating the interior area of the side, the height shall not exceed 7 feet (2134 mm). All portions of tiers shall be within 200 feet (60 960 mm) horizontally from such openings or other natural ventilation openings as defined in Section 406.5.2. These openings shall be permitted to be provided in courts with a minimum dimension of 20 feet (6096 mm) for the full width of the openings.

**406.5.6 Fire separation distance.** Exterior walls and openings in exterior walls shall comply with Tables 601 and 602. The distance to an adjacent lot line shall be determined in accordance with Table 602 and Section 705.

**406.5.7 Means of egress.** Where persons other than parking attendants are permitted, open parking garages shall meet the means of egress requirements of Chapter 10. Where persons other than parking attendants are not permitted, there shall be not fewer than two exit stairways. Each exit stairway shall be not less than 36 inches (914 mm) in width. Lifts shall be permitted to be installed for use of employees only, provided that they are completely enclosed by noncombustible materials.

**[F] 406.5.8 Standpipe system.** An open parking garage shall be equipped with a standpipe system as required by Section 905.3.

**406.5.9 Enclosure of vertical openings.** Enclosure shall not be required for vertical openings except as specified in Section 406.5.7.

**406.5.10 Ventilation.** Ventilation, other than the percentage of openings specified in Section 406.5.2, shall not be required.

**406.5.11 Prohibitions.** The following uses and alterations are not permitted:

1. Vehicle repair work.
2. Parking of buses, trucks and similar vehicles.
3. Partial or complete closing of required openings in exterior walls by tarpaulins or any other means.

4. Dispensing of fuel.

**406.6 Enclosed parking garages.** Enclosed parking garages shall comply with Sections 406.2, 406.4 and 406.6.

**406.6.1 Heights and areas.** Enclosed vehicle parking garages and portions thereof that do not meet the definition of open parking garages shall be limited to the allowable heights and areas specified in Sections 504 and 506 as modified by Section 507. Roof parking is permitted.

**406.6.2 Ventilation.** A mechanical ventilation system and exhaust system shall be provided in accordance with Chapters 4 and 5 of the *California Mechanical Code*.

**[F] 406.6.3 Automatic sprinkler system.** An enclosed parking garage shall be equipped with an automatic sprinkler system in accordance with Section 903.2.10.

**406.6.4 Mechanical-access garages.** *Mechanical-access enclosed parking garages shall be in accordance with Sections 406.6.4.1 through 406.6.4.5.*

**406.6.4.1 Separation.** *Mechanical-access enclosed parking garages shall be separated from other occupancies and accessory uses by not less than 2-hour fire barriers constructed in accordance with Section 707 or by not less than 2-hour horizontal assemblies constructed in accordance with Section 711, or both. Refer to Table 508.4 for additional requirements.*

**406.6.4.2 Smoke removal.** *A mechanical smoke removal system, in accordance with Section 910.4, shall be provided for all areas containing a mechanical-access enclosed parking garage.*

**406.6.4.3 Fire control equipment room.** *The fire control equipment, consisting of the fire alarm control unit, mechanical ventilation controls and emergency shut down switch shall be provided in a room located where the equipment is able to be accessed by the fire service from a secured exterior door of a building. The room shall be a minimum of 50 square feet (4.64 m<sup>2</sup>) in size and shall be in a location that is approved by the fire code official.*

**Exception:** *A fire control room shall not be required when there is a fire command center provided in compliance with Section 911 of this code.*

**406.6.4.3.1 Emergency shut down disconnect.** *The mechanical parking system shall be provided with a manually activated emergency shutdown disconnect for use by emergency personnel. The disconnect*

*shall be clearly identified and shall be in a location approved by the fire code official.*

**406.6.4.4 Fire department access doors.** *Access doors shall be provided in accordance with Section 3206.7 of the California Fire Code.*

**406.7 Motor fuel-dispensing facilities.** Motor fuel-dispensing facilities shall comply with the *California Fire Code* and Sections 406.2 and 406.7.

**406.7.1 Vehicle fueling pad.** The vehicle shall be fueled on noncoated concrete or other approved paving material having a resistance not exceeding 1 megohm as determined by the methodology in EN 1081.

**406.7.2 Canopies.** Canopies under which fuels are dispensed shall have a clear, unobstructed height of not less than 13 feet 6 inches (4115 mm) to the lowest projecting element in the vehicle drive-through area. Canopies and their supports over pumps shall be of noncombustible materials, fire-retardant-treated wood complying with Chapter 23, heavy timber complying with Section 2304.11 or construction providing 1-hour fire resistance. Combustible materials used in or on a canopy shall comply with one of the following:

1. Shielded from the pumps by a noncombustible element of the canopy, or heavy timber complying with Section 2304.11.
2. Plastics covered by aluminum facing having a thickness of not less than 0.010 inch (0.30 mm) or corrosion-resistant steel having a base metal thickness of not less than 0.016 inch (0.41 mm). The plastic shall have a flame spread index of 25 or less and a smoke-developed index of 450 or less when tested in the form intended for use in accordance with ASTM E84 or UL 723 and a self-ignition temperature of 650°F (343°C) or greater when tested in accordance with ASTM D1929.
3. Panels constructed of light-transmitting plastic materials shall be permitted to be installed in canopies erected over motor vehicle fuel-dispensing station fuel dispensers, provided that the panels are located not less than 10 feet (3048 mm) from any building on the same lot and face yards or streets not less than 40 feet (12 192 mm) in width on the other sides. The aggregate areas of plastics shall be not greater than 1,000 square feet (93 m<sup>2</sup>). The maximum area of any individual panel shall be not greater than 100 square feet (9.3 m<sup>2</sup>).

**406.7.2.1 Canopies used to support gaseous hydrogen systems.** Canopies that are used to shelter dispensing operations where flammable compressed gases are located on the roof of the canopy shall be in accordance with the following:

1. The canopy shall meet or exceed Type I construction requirements.
2. Operations located under canopies shall be limited to refueling only.
3. The canopy shall be constructed in a manner that prevents the accumulation of hydrogen gas.

**406.8 Repair garages.** Repair garages shall be constructed in accordance with the *California Fire Code* and Sections 406.2 and 406.8. This occupancy shall not include motor fuel-dispensing facilities, as regulated in Section 406.7.

**406.8.1 Ventilation.** Repair garages shall be mechanically ventilated in accordance with the *California Mechanical Code*. The ventilation system shall be controlled at the entrance to the garage.

**[F] 406.8.2 Gas detection system.** Repair garages used for repair of vehicles fueled by nonodorized gases *including but not limited to* hydrogen and nonodorized LNG, shall be provided with a *gas detection system that complies with Section 916. The gas detection system shall be designed to detect leakage of nonodorized gaseous fuel. Where lubrication or chassis service pits are provided in garages used for repairing nonodorized LNG-fueled vehicles, gas sensors shall be provided in such pits.*

**[F] 406.8.2.1 System activation.** Activation of a gas detection alarm shall result in all of the following:

1. Initiation of distinct audible and visual alarm signals in the repair garage, where the ventilation system is interlocked with gas detection.
2. Deactivation of all heating systems located in the repair garage.
3. Activation of the mechanical ventilation system, where the system is interlocked with gas detection.

**[F] 406.8.2.2 Failure of the gas detection system.** Failure of the gas detection system shall automatically deactivate the heating system, activate the mechanical ventilation system where the system is interlocked with the gas detection system, and cause a trouble signal to sound at an approved location.

**[F] 406.8.3 Automatic sprinkler system.** A repair garage shall be equipped with an automatic sprinkler system in accordance with Section 903.2.9.1.

#### **406.9 Electric vehicle. [SFM]**

**406.9.1 Charging.** *In any building or interior area used for charging electric vehicles, electrical equipment shall be installed in accordance with the California Electrical Code.*

**406.9.2 Ventilation.** *Mechanical exhaust ventilation, when required by the California Electrical Code shall be provided at a rate as required by Article 625 or as required by Section 1203 of the California Building Code whichever is greater. The ventilation system shall include both the supply and exhaust equipment and shall be permanently installed and located to intake supply air from the outdoors, and vent the exhaust directly to, the outdoors without conducting the exhaust air through other spaces within the building.*

**Exception:** *Positive pressure ventilation systems shall only be allowed in buildings or areas that have been designed and approved for that application.*

**406.9.3 Electrical interface.** *The electrical supply circuit to electrically powered mechanical ventilation equipment shall be interlocked with the recharging equipment used to supply the vehicle(s) being charged, and shall remain energized during the entire charging cycle. Electric vehi-*

cle recharging equipment shall be marked or labeled in accordance with the California Electrical Code.

**Exceptions:**

1. Exhaust ventilation shall not be required in areas with an approved engineered ventilation system, which maintains a hydrogen gas concentration at less than 25 percent of the lower flammability limit.
2. Mechanical exhaust ventilation for hydrogen shall not be required where the charging equipment utilized is installed and listed for indoor charging of electric vehicles without ventilation.

**SECTION 407  
GROUP I-2 AND GROUP I-2.1**

**407.1 General.** Occupancies in Group I-2 and I-2.1 shall comply with the provisions of Sections 407.1 through 407.13 and other applicable provisions of this code.

**407.1.1 Construction.** Group I-2 occupancies wherein mental health patients are restrained shall be housed in buildings of Type IA or Type IB construction.

**Exception:** Occupancies in Group I-2 wherein mental health patients are restrained are permitted to be housed in one-story buildings of Type IIA, Type IIIA or Type VA construction provided the floor area does not exceed 5,200 square feet (483 m<sup>2</sup>) between fire walls of two-hour fire-resistive construction with openings protected by fire assemblies having a 1½-hour fire protection rating.

**407.2 Corridors continuity and separation.** Corridors in occupancies in Group I-2 and I-2.1 shall be continuous to the exits and shall be separated from other areas in accordance with Section 407.3 except spaces conforming to Sections 407.2.1 through 407.2.6.

**407.2.1 Waiting and similar areas.** Waiting areas and similar spaces constructed as required for corridors shall be permitted to be open to a corridor, only where all of the following criteria are met:

1. The spaces are not occupied as care recipient's sleeping rooms, treatment rooms, incidental uses listed in Table 509, in accordance with Section 509, or hazardous uses.
2. The open space is protected by an automatic *smoke* detection system installed in accordance with Section 907.
3. The corridors onto which the spaces open, in the same smoke compartment, are protected by an automatic *smoke* detection system installed in accordance with Section 907, and the smoke compartment in which the spaces are located is equipped throughout with quick-response sprinklers in accordance with Section 903.3.2.
4. The space is arranged so as not to obstruct access to the required exits.
5. Each space is located to permit direct visual supervision by the facility staff.

**407.2.2 Nurses' stations.** Spaces for care providers', supervisory staff, doctors' and nurses' charting, communi-

cations and related clerical areas shall be permitted to be open to, or located within the corridor, provided the required construction along the perimeter of the corridor is maintained. Construction of nurses' stations or portions of nurses' stations, within the envelope of the corridor is not required to be fire-resistive rated. Nurses' stations in new and existing facilities see the California Code of Regulations, Title 19, Division 1, Chapter 1, Subchapter 1, Article 3, Section 3.11(d) for storage and equipment requirements.

In detention or secure mental health facilities, the provisions above applies to enclosed nurses' stations within the corridor.

**407.2.3 Psychiatric treatment areas.** Areas wherein psychiatric care recipients who are not capable of self-preservation are housed, or group meeting or multipurpose therapeutic spaces other than incidental uses in accordance with Section 509, under continuous supervision by facility staff, shall be permitted to be open to the corridor, where the following criteria are met:

1. Each area does not exceed 1,500 square feet (140 m<sup>2</sup>).
2. The area is located to permit supervision by the facility staff.
3. The area is arranged so as not to obstruct any access to the required exits.
4. The area is equipped with an automatic *smoke* detection system installed in accordance with Section 907.2.
5. Not more than one such space is permitted in any one smoke compartment.
6. The walls and ceilings of the space are constructed as required for corridors.

**407.2.4 Gift shops.** Gift shops and associated storage that are less than 500 square feet (455 m<sup>2</sup>) in area shall be permitted to be open to the corridor where such spaces are constructed as required for corridors.

**407.2.5 Nursing home housing units.** In Group I-2 occupancies, in areas where nursing home residents are housed, shared living spaces, group meeting or multipurpose therapeutic spaces shall be permitted to be open to the corridor, where all of the following criteria are met:

1. The walls and ceilings of the space are constructed as required for corridors.
2. The spaces are not occupied as resident sleeping rooms, treatment rooms, incidental uses in accordance with Section 509, or hazardous uses.
3. The open space is protected by an automatic *smoke* detection system installed in accordance with Section 907.
4. The corridors onto which the spaces open, in the same smoke compartment, are protected by an automatic *smoke* detection system installed in accordance with Section 907, and the smoke compartment in which the spaces are located is equipped throughout with quick-response sprinklers in accordance with Section 903.3.2.
5. The space is arranged so as not to obstruct access to the required exits.

6. *Each space is located to permit direct visual supervision by the facility staff.*

**407.2.6 Nursing home cooking facilities.** In Group I-2 occupancies, rooms or spaces that contain a cooking facility with domestic cooking appliances shall be permitted in fully sprinklered buildings where all of the following criteria are met:

1. The number of care recipients housed in the smoke compartment shall not be greater than 30.
2. The number of care recipients served by the cooking facility shall not be greater than 30.
3. Only one cooking facility area shall be permitted in a smoke compartment.
4. The types of domestic cooking appliances permitted shall be limited to ovens, cooktops, ranges, warmers and microwaves.
5. The space containing the domestic cooking facility shall be arranged so as not to obstruct access to the required exit.
6. Domestic cooking range hoods installed and constructed in accordance with the *California Mechanical Code* shall be provided over cooktops and ranges.
7. Cooktops and ranges shall be protected in accordance with Section 904.13.
8. A shut-off for the fuel and electrical power supply to the cooking equipment shall be provided in a location that is accessible only to staff.
9. A timer shall be provided that automatically deactivates the cooking appliances within a period of not more than 120 minutes.
10. A portable fire extinguisher shall be provided. Installation shall be in accordance with Section 906, and the extinguisher shall be located within a 30-foot (9144 mm) distance of travel from each domestic cooking appliance.

**407.3 Corridor wall construction.** Corridor walls shall be constructed as fire partitions in accordance with Section 708.

**407.3.1 Corridor doors.** In fully sprinklered buildings, corridor doors, other than those in a wall required to be rated by Section 509.4 or for the enclosure of a vertical opening or an exit, shall not have a required fire protection rating and shall not be required to be equipped with self-closing or automatic-closing devices, but shall provide an effective barrier to limit the transfer of smoke and shall be equipped with positive latching. In Group I-2 Occupancies, self-closing or automatic-closing devices are not required on corridor doors to patient sleeping rooms, treatment rooms, and offices located in areas specified in Sections 1224 and 1225, excluding offices specified in Sections 1224.21 and 1225.8. Roller latches are not permitted. Other doors shall conform to Section 716.

**407.3.1.1 Swing of corridor doors.** Corridor doors, other than those equipped with self-closing or automatic-closing devices shall not swing into the required width of corridors.

**Exception:** In detention and/or secure mental health facilities, doors may swing into required width of corridors as long as 44" clear is maintained with any one door open 90 degrees and clear corridor widths required in Chapter 12 can be maintained with doors open 180 degrees.

**407.3.2 Glazing.** In fully sprinklered buildings, fixed fully tempered or laminated glass in wood or metal frames may be used in corridor walls, provided the glazed area does not exceed 25 percent of the areas of the corridor wall of the room. The total area of glass in corridor walls is not limited when the glazing is fixed 1/3-hour fire-protection-rated glazing in approved frames and the size of individual glazed panel does not exceed 1,296 square inches (0.836 m<sup>2</sup>).

**407.4 Means of egress.** Group I-2 and I-2.1 occupancies shall be provided with means of egress complying with Chapter 10 and Sections 407.4.1 through 407.4.4. The fire safety and evacuation plans provided in accordance with Section 1002.2 shall identify the building components necessary to support a defend-in-place emergency response in accordance with Sections 403 and 404 of the *California Fire Code*.

**407.4.1 Direct access to a corridor.** Habitable rooms in Group I-2 and I-2.1 occupancies shall have an exit access door leading directly to a corridor.

**Exceptions:**

1. Rooms with exit doors opening directly to the outside at ground level.
2. Rooms arranged as care suites complying with Section 407.4.4.

**407.4.1.1 Locking devices.** Locking devices that restrict access to a care recipient's room from the corridor and that are operable only by staff from the corridor side shall not restrict the means of egress from the care recipient's room.

**Exceptions:**

1. This section shall not apply to rooms in psychiatric treatment and similar care areas.
2. Locking arrangements in accordance with Section 1010.1.9.7.

**407.4.1.2 Basement exits.** All rooms below grade shall have not less than one exit access that leads directly to an exterior exit door opening directly to an exit discharge at grade plane or the public way.

**407.4.2 Distance of travel.** The distance of travel between any point in a Group I-2 and I-2.1 occupancy sleeping room, not located in a care suite, and an exit access door in that room shall be not greater than 50 feet (15 240 mm).

**407.4.2.1 Two means of egress.** Any sleeping room of more than 1,000 square feet (93 m<sup>2</sup>) shall have no fewer than two exit access doors from the sleeping room located in accordance with Section 1007.1. Any room, other than sleeping rooms, with an area of more than 2,500 square feet (232 m<sup>2</sup>) shall have no fewer than two exit access doors from the room located in accordance with Section 1007.1.

**407.4.3 Reserved.**



**407.4.4 Group I-2 and I-2.1 care suites.** Care suites in Group I-2 and I-2.1 shall comply with Sections 407.4.4.1 through 407.4.4.4 and either Section 407.4.4.5 or 407.4.4.6.

**407.4.4.1 Exit access through care suites.** Exit access from all other portions of a building not classified as a care suite shall not pass through a care suite. In a care suite required to have more than one exit, one exit access is permitted to pass through an adjacent care suite provided that all of the other requirements of Sections 407.4 and 1016.2 are satisfied.

**407.4.4.2 Separation.** Care suites shall be separated from other portions of the building, including other care suites, not less than a one-hour fire barrier complying with Section 707. Each suite of rooms shall be separated from the remainder of the building by not less than a one-hour fire barrier.

**407.4.4.3 Access to corridor.** Movement from habitable rooms shall be in accordance with Sections 407.4.4.3.1, 407.4.4.3.2 and 407.4.4.5.3.

**407.4.4.3.1 One intervening room.** Movement from habitable rooms shall not require passage through more than one intervening room and 100 feet (30 480 mm) distance of travel within the care suite.

**407.4.4.3.2 Two intervening rooms.** Movement from habitable rooms other than sleeping rooms located within a care suite, shall not require passage through more than two intervening rooms and 50 feet (15 240 mm) distance of exit access travel within the care suite.

**Exception:** The distance of travel shall be permitted to be increased to 100 feet (38 100 mm) where an automatic fire sprinkler system is provided throughout the Group I-2 fire area and an automatic smoke detection system is provided throughout the care suite and installed in accordance with NFPA 72.

**407.4.4.4 Doors within care suites.** Doors in care suites serving habitable rooms shall be permitted to comply with one of the following:

1. Manually operated horizontal sliding doors permitted in accordance with Exception 9 to Section 1010.1.2.
2. Power-operated doors permitted in accordance with Exception 7 to Section 1010.1.2.
3. Means of egress doors complying with Section 1010.

**407.4.4.5 Care suites containing sleeping room areas.** Sleeping rooms shall be permitted to be grouped into care suites where one of the following criteria is met:

1. The arrangement of the care suite allows for direct and constant visual supervision into the sleeping rooms by care providers.
2. An automatic smoke detection system is provided in the sleeping rooms and installed in accordance with Section 907.2.6.2.2, Item 1, NFPA 72 and Section 903.2.6.

**407.4.4.5.1 Area.** Care suites containing sleeping rooms shall be not greater than 5,000 square feet (465 m<sup>2</sup>) in area.

**Exceptions:**

1. Care suites containing sleeping rooms shall be permitted to be not greater than 7,500 square feet (696 m<sup>2</sup>) in area where an automatic fire sprinkler system is provided throughout the Group I-2 fire area.
2. Care suites containing sleeping rooms shall be permitted to be not greater than 10,000 square feet (929 m<sup>2</sup>) in area where an automatic fire sprinkler system is provided throughout the Group I-2 fire area and where an automatic smoke detection system is provided throughout the care suite and installed in accordance with Section 907.

**407.4.4.5.2 Exit access.** Any care suite that contains sleeping rooms, of more than 1,000 square feet (93 m<sup>2</sup>) shall have not fewer than two exit access doors from the care suite located in accordance with Section 1007.

**407.4.4.5.3 Travel distance.** The travel distance between any point in a care suite containing sleeping rooms and an exit access door from that care suite shall be not greater than 100 feet (30 480 mm).

**407.4.4.6 Care suites not containing sleeping rooms.** Areas not containing sleeping rooms, but only treatment areas and the associated rooms, spaces or circulation space, shall be permitted to be grouped into care suites and shall conform to the limitations in Sections 407.4.4.6.1 and 407.4.4.6.2.

**407.4.4.6.1 Area.** Care suites of rooms, other than sleeping rooms, shall have an area not greater than 10,000 square feet (929 m<sup>2</sup>).

**407.4.4.6.2 Exit access.** Any room or care suite, other than sleeping rooms, with an area of more than 2,500 square feet (232 m<sup>2</sup>) shall have not fewer than two exit access doors from the room or care suite located in accordance with Section 1007.

**407.4.5 Group I-2 and I-2.1 nonpatient-care suites.** The means of egress provisions for nonpatient-care suites shall be in accordance with the primary use and occupancy of the suite.

**407.4.5.1 Separation.** Nonpatient-care suites shall be separated from other portions of the building, including other suites, by not less than a 1-hour fire barrier complying with Section 707. Each suite of rooms shall be separated from the remainder of the building by not less than a 1-hour fire barrier.

**407.4.5.2 Area.** Nonpatient-care suites of rooms shall have an area not greater than 10,000 square feet (929 m<sup>2</sup>).

**407.4.5.3 Automatic sprinkler system protection.** Nonpatient-care suites shall be located in fully sprinklered buildings.

**407.5 Smoke barriers.** Smoke barriers shall be provided to subdivide every story used by persons receiving care, treatment or sleeping into not fewer than two smoke compartments. Smoke barriers shall be provided to subdivide other stories with

an occupant load of 50 or more persons, *regardless of occupancy or use*, into not fewer than two smoke compartments. The smoke barrier shall be in accordance with Section 709.

**Exceptions:**

1. *This requirement shall not apply to Group I-2.1 less than 10,000 ft<sup>2</sup> (929 m<sup>2</sup>).*
2. *An area in an adjoining occupancy shall be permitted to serve as a smoke compartment for a Group I-2.1 facility if the following criteria are met:*
  - 2.1. *The separating wall and both compartments meet the requirements of 407.5.*
  - 2.2. *The Group I-2.1 is less than 22,500 ft<sup>2</sup> (2100 m<sup>2</sup>).*
  - 2.3. *Access from the Group I-2.1 to the other occupancy is unrestricted.*
3. *This requirement shall not apply to the following:*
  - 3.1. *Any story, not containing a Group I-2 or I-2.1 occupancy, that is located above a story containing a Group I-2 or I-2.1 occupancy.*
  - 3.2. *Areas that do not contain a Group I-2 or I-2.1 occupancy, where such areas are separated from the Group I-2 or I-2.1 occupancy by a horizontal exit in accordance with Section 1025.2.*
  - 3.3. *Any story, not containing a Group I-2 or I-2.1 occupancy, that is located more than one story below a story containing a Group I-2 or I-2.1 occupancy.*
  - 3.4. *Any story housing only mechanical equipment where such story is located below a story containing a Group I-2 or I-2.1 occupancy and is separated from the story above by a horizontal assembly having not less than a 2 hour fire resistance-rating.*

**407.5.1 Smoke compartment size.** Stories shall be divided into smoke compartments with an area of not more than 22,500 square feet (2092 m<sup>2</sup>) in Group I-2 occupancies.

**407.5.2 Exit access travel distance.** The distance of travel from any point in a smoke compartment to a smoke barrier door shall be not greater than 200 feet (60 960 mm).

**407.5.3 Refuge area.** Refuge areas shall be provided within each smoke compartment. The size of the refuge area shall accommodate the occupants and care recipients from the adjoining smoke compartment. Where a smoke compartment is adjoined by two or more smoke compartments, the minimum area of the refuge area shall accommodate the largest occupant load of the adjoining compartments. The size of the refuge area shall provide the following:

1. Not less than 30 net square feet (2.8 m<sup>2</sup>) for each care recipient confined to bed or stretcher.
2. Not less than 6 square feet (0.56 m<sup>2</sup>) for each ambulatory care recipient not confined to bed or stretcher and for other occupants.

Areas or spaces permitted to be included in the calculation of refuge area are corridors, sleeping areas, treatment rooms, lounge or dining areas and other low-hazard areas.

**407.5.4 Independent egress.** A means of egress shall be provided from each smoke compartment created by smoke

barriers without having to return through the smoke compartment from which means of egress originated. Smoke compartments that do not contain an exit shall be provided with direct access to not less than two adjacent smoke compartments.

**407.5.5 Horizontal assemblies.** Horizontal assemblies supporting smoke barriers required by this section shall be designed to resist the movement of smoke. Elevator lobbies shall be in accordance with Section 3006.2.

**407.6 Automatic-closing doors.** Automatic-closing doors with hold-open devices shall comply with Sections 709.5 and 716.2.

**[F] 407.7 Automatic sprinkler system.** *Every facility as specified herein wherein more than six clients or patients are housed or cared for on the premises on a 24-hour per-day-basis shall have installed and maintained in an operable condition in every building or portion thereof where clients or patients are housed, an automatic sprinkler system of a type approved by the state fire marshal. The provisions of this subsection shall apply to every person, firm or corporation establishing, maintaining or operating a hospital, children's home, children's nursery or institution, or a home or institution for the care of aged or persons with dementia or other cognitive impairments, or any institution for persons with mental illness or persons with developmental disabilities and any nursing or convalescent home, and to any state-owned or state-occupied building used for any of the types of facilities specified herein.*

**Exceptions:**

1. *This section shall not apply to homes or institutions for the 24-hour-per-day care of ambulatory children if all of the following conditions are satisfied:*
  - 1.1. *The buildings or portions thereof in which children are housed are not more than two stories in height and are constructed and maintained in accordance with regulations adopted by the state fire marshal.*
  - 1.2. *The buildings or portions thereof housing more than six such children shall have installed and maintained in an operable condition therein, a fire alarm system of a type approved by the state fire marshal. Such system shall be activated by detectors responding to invisible particles of combustion other than heat, except that detectors used in closets, usable under-floor areas, storage rooms, bathrooms, attached garages, attics, plenums, laundry rooms and rooms of similar use, may be heat-responsive devices.*
  - 1.3. *The building or portions thereof do not house persons with mental illness or children with developmental disabilities.*
2. *This section shall not apply to any one-story building or structure of an institution or home for the care of the aged providing 24-hour-per-day care if such building or structure is used or intended to be used for the housing of no more than six ambulatory aged persons. Such buildings or institutions shall have installed and maintained in an operable condition herein a fire alarm system of a type approved by the state fire marshal. Such*

system shall be activated by detectors responding to either visible or invisible particles of combustion other than heat, except that detectors used in closets, usable under-floor areas, storage rooms, bathrooms, attached garages, attics, plenums, laundry rooms and rooms of similar use, may be heat-responsive devices.

- 3. This section shall not apply to occupancies or any alterations thereto conforming to the construction provisions of this exception which were under construction or in existence on March 4, 1972. "Under construction" as used in this exception shall mean that actual work had been performed on the construction site and shall not be construed to mean that the hospital, home, nursery, institution, sanitarium or any portion thereof, was or is in the planning stage. The provisions of this exception shall apply to those buildings or structures having bearing walls and structural flame protected in accordance with the provisions of Column Type 1A of Table 601.

- 4. In detention facilities where inmates are not restrained.

The provisions of this section shall not apply to any facility used to house six or less persons on the premises.

**407.7.1** When a new addition is to be made to an unsprinklered building or structure as permitted by this subsection, such new addition shall be sprinklered as required by this section and shall be separated from the existing building or structures by not less than a two-hour fire-resistive fire barrier.

When a sprinkler system is added to an existing unsprinklered building or structure, the sprinklered area(s) shall be separated from the remainder of the building by not less than a one-hour fire-resistive fire barrier. The provisions of this section do not apply to any facility used to house six or less persons on the premises.

**[F] 407.8 Fire alarm system.** A fire alarm system shall be provided in accordance with Section 907.2.6.

**[F] 407.9 Automatic smoke detection.** Automatic smoke detection shall be provided in accordance with Section 907.2.6.2.2.

**407.10 Secured yards.** Grounds are permitted to be fenced and gates therein are permitted to be equipped with locks, provided that safe dispersal areas having 30 net square feet (2.8 m<sup>2</sup>) for bed and stretcher care recipients and 6 net square feet (0.56 m<sup>2</sup>) for ambulatory care recipients and other occupants are located between the building and the fence. Such provided safe dispersal areas shall be located not less than 50 feet (15 240 mm) from the building they serve. Each safe dispersal area shall have a minimum of two exits. The aggregate clear width of exits from a safe dispersal area shall be determined on the basis of not less than one exit unit of 22 inches (559 mm) for each 500 persons to be accommodated, and no exit shall be less than 44 inches (1118 mm) in width. Gates shall not be installed across corridors or passageways leading to such dispersal areas unless they comply with egress requirements. Keys to gate locks shall be provided in accordance with the California Fire Code.

**[F] 407.11 Electrical systems.** In Group I-2 or I-2.1 occupancies, electrical construction and installation shall be in accordance with the provisions of Chapter 27 and Article 517 of the California Electrical Code.

**407.12 Technology equipment center.** A technology equipment center serving a Group I-2 occupancy shall be separated from other portions of the building by not less than a 1-hour fire barrier constructed in accordance with Section 707 and a 1-hour horizontal assembly constructed in accordance with Section 711 or both.

**407.13 Special Hazards.**

**407.13.1** Storage and handling of flammable, combustible liquids and hazardous materials shall be in accordance with the California Fire Code.

**407.13.2** All exterior openings in a boiler room or room containing central heating equipment, if located below openings in another story, or if less than 10 feet (3048 mm) from other doors or windows of the same building, shall be protected by a fire assembly having a three-fourths-hour fire protection rating.

**407.13.3 Safety padding.** See Sections 308.1 and 408.14.

**407.13.4 Floor surfaces.** Rooms occupied by patients whose personal liberties are restrained shall have non-combustible floor surfaces see Sections 308.1 and 804.4.3.

**SECTION 408  
GROUP I-3**

**408.1 General.** Occupancies in Group I-3 shall comply with the provisions of Sections 408.1 through 408.11 and other applicable provisions of this code (see Section 308.5).

**408.1.2 Construction.** Group I-3 Occupancies shall be housed in buildings of Type IA or Type IB.

**Exception:** Such occupancies may be housed in one-story buildings of Type IIA, Type IIIA or Type VA construction provided the floor area does not exceed 5,200 square feet (483 m<sup>2</sup>) between fire walls of two-hour fire-resistive construction with openings protected by fire assemblies having 1- and 1 1/2-hour fire-protection rating.

**408.1.2.1 Nonbearing walls and partitions interior.** Nonbearing cell or dormitory walls within cell complexes shall be of noncombustible construction.

**408.1.2.2 Intervening spaces.** Common rooms and spaces within Group I-3 occupancies of Type I construction shall be considered an intervening space in accordance with Section 1016.2 when the area is contained within housing units or suites, and not considered a corridor, when they meet any of the following:

- 1. Within prisons and local detention facilities of Type I construction, the exit access within a housing unit may be non-rated provided the required exit occupant load from any dayroom does not exceed 64 persons.
- 2. Within prison, jails, and courthouses: Circulation within any temporary holding suite of Type I construction and an occupant load less than 100.
- 3. Within prisons and local detention facilities, correctional medical or mental health housing suites, of Type I construction and an occupant load less than 100.

4. Within prisons and local detention facilities of Type I construction, detention program housing units or suites having an occupant load less than 100.

**408.1.2.3 Courthouse holding facilities.** Group I-3 courthouse holding facilities shall be considered a separate and distinct building from the remaining courthouse building for the purpose of determining the type of construction where all of the following conditions are met:

1. 2-hour fire barriers in accordance with Section 707 and 2-hour horizontal assemblies in accordance with Section 711 are provided to separate the courthouse holding facility from all other portions of the courthouse building.
2. Any of the structure used to support courthouse holding facilities meets the requirements for the Group I-3 portion of the building.
3. Each courthouse holding facility located above the first story is less than 1,000 square feet in area, and is designed to hold 10 or less in-custody defendants.
4. Courthouse holding facilities located above the first story containing an internal stairway discharging to the main courthouse holding facility at the first story or basement.
5. Additional exits from the courthouse holding facility located above the first story shall be permitted to exit through the courtrooms.
6. The main courthouse holding facility located on the first story or basement has at least one exit directly to the exterior and additional means of egress shall be permitted to pass through a 1-hour corridor or lobby in the courthouse building.

**408.1.2.4 Horizontal building separation for combined Group I-3/Group B occupancy.** A Group B Administration building one story in height shall be permitted to be located above a Group I-3 (or Group I-3/I-2) housing/treatment building that is one story above grade and shall be classified as a separate and distinct building for the purpose of determining the type of construction, and shall be considered a separate fire area, where all of the following conditions are met:

1. A 3-hour floor-ceiling assembly below the administration building is constructed as a horizontal assembly in accordance with Section 711.
2. Interior shafts for stairs, elevators and mechanical systems complete the 3-hour separation between the Group B and Group I-3 (or Group I-3/I-2).
3. The Group I-3 occupancy (or Group I-3/I-2 occupancies, correctional medical and mental health uses) below is minimum Type I-B construction with 2-hour fire resistive rated exterior walls.
4. No unprotected openings are allowed in lower roofs within 10 feet of unprotected windows in the upper floor.
5. The Group B building above is of noncombustible construction and equipped throughout with an

approved automatic sprinkler system in accordance with Section 903.3.1.1.

6. The Group B occupancy building above has all required means of egress capable of discharging directly to the exterior to a safe dispersal area.

**408.1.2.5 Temporary holding area.** In buildings protected with automatic sprinklers, corridor serving temporary holding rooms shall be one hour fire resistance rated when the temporary holding occupant load is greater than 20.

**408.1.2.6 Temporary holding facilities.** Temporary holding facilities with nine or fewer persons under restraint may be classified as Group B when located in a buildings complying with all of the following conditions:

1. The building shall be protected throughout with a monitored automatic sprinkler system installed in accordance with Section 903.3.1.1.
2. The building shall protected with a automatic fire alarm system with notification appliances throughout the holding facility in accordance with Section 907.2.
3. The building shall be constructed of Type I, IIA, IIIA or VA construction.

**408.1.2.7 Secure interview rooms.** Secure Interview Rooms used for law enforcement shall be permitted to locked, and shall not be classified as Group I-3 occupancies where all of the following conditions are met:

1. A monitored automatic sprinkler system shall be provided throughout buildings and portions thereof including secure interview rooms. The automatic sprinkler system shall comply with Section 903.3.1.1.
2. Secure interview rooms shall be located in non-combustible construction.
3. Secure interview rooms have glazed or barred openings with direct, continuous observation from law enforcement personnel who have a means to open the secure interview room.
4. Not more than 6 occupants in secure interview rooms shall be located in the same fire area.
5. An automatic smoke detection system shall be installed within secure interview rooms and mechanical and electrical rooms.

**408.1.3 Security door assemblies in corridors, smoke barriers, and smoke partitions.** Security door assemblies shall be constructed in accordance with NFPA 252 or UL 10C, and where a smoke rating is required UL 1784, are not required to be tested or labeled.

**408.2 Other occupancies.** Buildings or portions of buildings in Group I-3 occupancies where security operations necessitate the locking of required means of egress shall be permitted to be classified as a different occupancy. Occupancies classified as other than Group I-3 shall meet the applicable requirements of this code for that occupancy where provisions are made for the release of occupants at all times.

Means of egress from detention and correctional occupancies that traverse other use areas shall, as a minimum, conform to requirements for detention and correctional occupancies.

**Exception:**

1. It is permissible to exit through a horizontal exit into other contiguous occupancies that do not conform to detention and correctional occupancy egress provisions but that do comply with requirements set forth in the appropriate occupancy, as long as the occupancy is not a Group H use.
2. *Regardless of the provisions of Section 508, laundry areas and kitchens including associated dining areas, where commercial/institutional equipment is used shall be separated from the remainder of the building by construction capable of resisting the passage of smoke.*
3. *For the purpose of occupancy separation only courtroom docks that are directly accessory to courtrooms need not be separated from a courtroom.*

**408.2.1 Correctional medical and mental health uses.** *Where a Group I-3 occupancy occurs in building or portions of buildings, the following Subsections of Sections of 407 shall apply: 407.2.1; 407.2.2; 407.2.3; 407.3.1; 407.3.1.1; 407.4; 407.10.*

**408.3 Means of egress.** Except as modified or as provided for in this section, the means of egress provisions of Chapter 10 shall apply.

**408.3.1 Door width.** Doors to resident sleeping units shall have a clear width of not less than 28 inches (711 mm).

**408.3.1.1 Cell doors shall open outwardly or slide laterally.**

**408.3.2 Sliding doors.** Where doors in a means of egress are of the horizontal-sliding type, the force to slide the door to its fully open position shall be not greater than 50 pounds (220 N) with a perpendicular force against the door of 50 pounds (220 N).

**408.3.3 Guard tower doors.** A hatch or trap door not less than 16 square feet (610 m<sup>2</sup>) in area through the floor and having dimensions of not less than 2 feet (610 mm) in any direction shall be permitted to be used as a portion of the means of egress from guard towers.

**408.3.4 Spiral stairways.** Spiral stairways that conform to the requirements of Section 1011.10 are permitted for access to and between staff locations.

**408.3.5 Ship's ladders.** Ship's ladders shall be permitted for egress from control rooms or elevated facility observation rooms in accordance with Section 1011.15.

**408.3.6 Exit discharge.** Exits are permitted to discharge into a fenced or walled courtyard. Enclosed yards or courts shall be of a size to accommodate all occupants, be located not less than 50 feet (15 240 mm) from the building and have an area of not less than 7 square feet (0.65 m<sup>2</sup>) per person. *A gate shall be provided from the safe dispersal area to allow for the necessary relocation of occupants.*

**408.3.6.1 Exterior fenced enclosures and fenced enclosures utilized for recreational or activity purposes, used for exit termination for more than 20 persons, and**

*which do not provide a safe dispersal area, shall have not less than two exits.*

**408.3.6.2 Fenced enclosure utilized for recreational or activity purposes only, for more than 49 people, and which do not provide a safe dispersal area, shall be provided with not less than two exits.**

**408.3.6.3 Fenced enclosures located on roofs of buildings one or more stories in height shall be provided with not less than two exits regardless of occupant load.**

**408.3.6.4 Fenced enclosures utilized for central control buildings not normally occupied and not accessed by inmates or the general public are permitted to have only one exit from the fenced enclosure. These fenced enclosures shall only be occupied during emergency response conditions by not more than 29 prison staff occupants. Access to the fenced area shall be controlled remotely or at the gate with a key.**

**408.3.7 Sallyports.** A sallyport shall be permitted in a means of egress where there are provisions for continuous and unobstructed passage through the sallyport during an emergency egress condition.

**408.3.8 Interior exit stairway and ramp construction.** One interior exit stairway or ramp in each building shall be permitted to have glazing installed in doors and interior walls at each landing level providing access to the interior exit stairway or ramp, provided that the following conditions are met:

1. The interior exit stairway or ramp shall not serve more than four floor levels.
2. Exit doors shall be not less than <sup>3</sup>/<sub>4</sub>-hour fire door assemblies complying with Section 716.
3. The total area of glazing at each floor level shall not exceed 5,000 square inches (3.2 m<sup>2</sup>) and individual panels of glazing shall not exceed 1,296 square inches (0.84 m<sup>2</sup>).
4. The glazing shall be protected on both sides by an automatic sprinkler system. The sprinkler system shall be designed to wet completely the entire surface of any glazing affected by fire when actuated.
5. The glazing shall be in a gasketed frame and installed in such a manner that the framing system will deflect without breaking (loading) the glass before the sprinkler system operates.
6. Obstructions, such as curtain rods, drapery traverse rods, curtains, drapes or similar materials shall not be installed between the automatic sprinklers and the glazing.

**408.3.8.1** *Where the number and arrangement of exits complies with the requirements of Chapter 10, other stairways which occur within the secure area of the detention facility and are not used for required exiting but are used primarily for the movement of inmates and security staff need not extend to the exterior.*

**408.3.9 Dead-end balconies.** Exit balconies serving cell tiers shall not extend more than 50 feet (15 240 mm) beyond an exit stairway.

**408.3.10 Travel distance.** The travel distance may be increased to 300 feet for portions of Group I-3 occupancies open only to staff or where inmates are escorted at all times by staff.

**408.3.11 Number of exits required.** In temporary holding areas of noncombustible construction, a second means of egress is required when the occupant load is greater than 20.

**408.3.12 Custody station.** Spaces for custody stations, communications and related clerical areas shall be permitted to be open to, or located within the corridor, provided the required construction along the perimeter of the corridor is maintained. Construction of custody stations or portions of custody stations, within the envelope of the corridor, is not required to be fire-resistance rated. These provisions shall also apply to an enclosed custody station within the corridor.

**TABLE 408.3.13  
MAXIMUM FLOOR AREA ALLOWANCES FOR I-3 FACILITIES<sup>c</sup>**

FUNCTION OF SPACE	OCCUPANT LOAD FACTOR
Detention facilities <sup>a,b</sup>	
Housing pod	Number of beds and staff
Refuge area	6 net
Safe disposal area	7 net
Instructional classroom	20 net
Exercise yard or rooms	50 gross
Dorms sleeping area	50 gross
Holding cell	10 ft <sup>2</sup> per person/40 ft <sup>2</sup> minimum
Bench seating	18 inches per person

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

- a. Temporary holding cells, rooms or areas shall be calculated based on policies and procedures approved by the authority having jurisdiction. See 408.3.11 for number of exits required.
- b. Program rooms, day rooms and recreational yards which are dedicated to a housing pod or unit are not factored into the total occupant load of the building. Exiting from individual rooms shall meet the egress requirements of Chapter 10.
- c. Refer to Chapter 10, Section 1004 or elsewhere in the code for specific requirements based on type of detention facility.

**408.4 Locks.** Egress doors are permitted to be locked in accordance with the applicable use condition. Doors from a refuge area to the outside are permitted to be locked with a key in lieu of locking methods described in Section 408.4.1. The keys to unlock the exterior doors shall be available at all times and the locks shall be operable from both sides of the door. *Security hardware may be used on any fire-rated door.*

**408.4.1 Remote release.** Remote release of locks on doors in a means of egress shall be provided with reliable means of operation, remote from the resident living areas, to release locks on all required doors. In Occupancy Condition 3 or 4, the arrangement, accessibility and security of the release mechanisms required for egress shall be such that with the minimum available staff at any time, the lock mechanisms are capable of being released within 2 minutes.

**Exception:** Provisions for remote locking and unlocking of occupied rooms in Occupancy Condition 4 are not required provided that not more than 10 locks are necessary to be unlocked in order to move occupants from one smoke compartment to a refuge area within 3 minutes. The opening of necessary

locks shall be accomplished with not more than two separate keys.

**[F] 408.4.2 Power-operated doors and locks.** Power-operated sliding doors or power-operated locks for swinging doors shall be operable by a manual release mechanism at the door. Emergency power shall be provided for the doors and locks in accordance with Section 2702.

**Exceptions:**

1. Emergency power is not required in facilities with 10 or fewer locks complying with the exception to Section 408.4.1.
2. Emergency power is not required where remote mechanical operating releases are provided.

**408.4.3 Redundant operation.** Remote release, mechanically operated sliding doors or remote release, mechanically operated locks shall be provided with a mechanically operated release mechanism at each door, and shall be provided with a redundant remote release control.

**408.4.4 Relock capability.** Doors remotely unlocked under emergency conditions shall not automatically relock when closed unless specific action is taken at the remote location to enable doors to relock.

**408.5 Protection of vertical openings.** Any vertical opening shall be protected by a shaft enclosure in accordance with Section 713, or shall be in accordance with Section 408.5.1.

**408.5.1 Floor openings.** *The open space in front of a cell tier and connected chases, not exceeding two tiers in height, shall not be considered a vertical shaft and need not meet the fire-resistive shaft enclosure requirements of Section 713.*

**408.5.2 Shaft openings in communicating floor levels.** Where a floor opening is permitted between communicating floor levels of a housing unit in accordance with Section 408.5.1, plumbing chases serving vertically stacked individual cells contained with the housing unit shall be permitted without a shaft enclosure.

**408.6 Smoke barrier.** Occupancies in Group I-3 shall have smoke barriers complying with Sections 408.6 and 709 to divide every story occupied by residents for sleeping, or any other story having an occupant load of 50 or more persons, into not fewer than two smoke compartments.

**Exception:** Spaces having a direct exit to one of the following, provided that the locking arrangement of the doors involved complies with the requirements for doors at the smoke barrier for the use condition involved:

1. A public way.
2. A building separated from the resident housing area by a 2-hour fire-resistance-rated assembly or 50 feet (15 240 mm) of open space.
3. A secured yard or court having a holding space 50 feet (15 240 mm) from the housing area that provides 6 square feet (0.56 m<sup>2</sup>) or more of refuge area per occupant, including residents, staff and visitors.
4. Holding facility.

**408.6.1 Smoke compartments.** The number of residents in any smoke compartment shall be not more than 200.

The distance of travel to a door in a smoke barrier from any room door required as exit access shall be not greater than 150 feet (45 720 mm). The distance of travel to a door in a smoke barrier from any point in a room shall be not greater than 200 feet (60 960 mm).

*Exception: The travel distance may be increased by 50 feet from areas open only to the staff.*

**408.6.2 Refuge area.** Not less than 6 net square feet (0.56 m<sup>2</sup>) per occupant shall be provided on each side of each smoke barrier for the total number of occupants in adjoining smoke compartments. This space shall be readily available wherever the occupants are moved across the smoke barrier in a fire emergency.

**408.6.3 Independent egress.** A means of egress shall be provided from each smoke compartment created by smoke barriers without having to return through the smoke compartment from which means of egress originates.

**408.7 Security glazing.** In occupancies in Group I-3, windows and doors in 1-hour fire barriers constructed in accordance with Section 707, fire partitions constructed in accordance with Section 708 and smoke barriers constructed in accordance with Section 709 shall be permitted to have security glazing installed provided that the following conditions are met.

1. Individual panels of glazing shall not exceed 1,296 square inches (0.84 m<sup>2</sup>).
2. The glazing shall be protected on both sides by an automatic sprinkler system. The sprinkler system shall be designed to, when actuated, wet completely the entire surface of any glazing affected by fire.
3. The glazing shall be in a gasketed frame and installed in such a manner that the framing system will deflect without breaking (loading) the glass before the sprinkler system operates.
4. Obstructions, such as curtain rods, drapery traverse rods, curtains, drapes or similar materials shall not be installed between the automatic sprinklers and the glazing.

**408.8 Subdivision of resident housing areas.** Sleeping areas and any contiguous day room, group activity space or other common spaces where residents are housed shall be separated from other spaces in accordance with Sections 408.8.1 through 408.8.4.

**408.8.1 Occupancy Conditions 3 and 4.** Each sleeping area in Occupancy Conditions 3 and 4 shall be separated from the adjacent common spaces by a smoke-tight partition where the distance of travel from the sleeping area through the common space to the corridor exceeds 50 feet (15 240 mm).

**408.8.2 Occupancy Condition 5.** Each sleeping area in Occupancy Condition 5 shall be separated from adjacent sleeping areas, corridors and common spaces by a smoke-tight partition. Additionally, common spaces shall be separated from the corridor by a smoke-tight partition.

**408.8.3 Openings in room face.** The aggregate area of openings in a solid sleeping room face in Occupancy Conditions 2, 3, 4 and 5 shall not exceed 120 square inches

(0.77 m<sup>2</sup>). The aggregate area shall include all openings including door undercuts, food passes and grilles. Openings shall be not more than 36 inches (914 mm) above the floor. In Occupancy Condition 5, the openings shall be closeable from the room side.

**408.8.4 Smoke-tight doors.** Doors in openings in partitions required to be smoke tight by Section 408.8 shall be substantial doors, of construction that will resist the passage of smoke. Latches and door closures are not required on cell doors.

**408.9 Windowless buildings.** For the purposes of this section, a windowless building or portion of a building is one with nonopenable windows, windows not readily breakable or without windows. Windowless buildings shall be provided with an engineered smoke control system to provide a tenable environment for exiting from the smoke compartment in the area of fire origin in accordance with Section 909 for each windowless smoke compartment.

**408.9.1 Smoke venting.** *The housing portions of windowless buildings containing use conditions 3, 4 or 5 shall be provided with an engineered smoke control system in accordance with Section 909, windows or doors, smoke vents, or equivalent means to provide a tenable environment for exiting from the smoke compartment in the area of fire origin. A tenable environment for egress shall be as defined in NFPA 92. If windows, smoke vents or doors are used to meet this section, at least two windows, smoke vents or doors to the exterior must be provided at or above the highest occupied level in each smoke compartment, and the windows or doors must be operable or readily breakable and arranged to manually vent smoke.*

**Exceptions:**

1. Windowless buildings or portions of a building that meet all of the following requirements:
  - 1.1. Are Type IA or IB construction.
  - 1.2. Are protected with sprinklers throughout in accordance with Section 903.3.1.1.
  - 1.3. Include a fire alarm system with smoke detection in accordance with NFPA 72 in the day-room and/or corridor serving as exit access from the cells, reporting to a 24 hour central control at the institution.
  - 1.4. Include at least one exit from each housing unit direct to the exterior where smoke will not accumulate or to the exterior through a 1-hour-rated corridor serving only that unit.
  - 1.5. The building is divided into at least two smoke compartments per Section 408.6.1.
  - 1.6. As approved by the enforcing agency, an egress analysis shows that inmates can be evacuated within 6 minutes from the smoke compartment of origin 24 hours per day or when inmates are present.
2. No venting or smoke control is required when an engineering analysis shows an acceptable safe egress time compared to the onset of untenable conditions within a windowless building or portion of a window-

less building and approved by the enforcing agency. (See Section 909.4.)

3. Courtroom holding areas and temporary central holding areas in courthouses that they meet all of the following requirements:
  - 3.1. Holding occurs for a duration less than 12 hours.
  - 3.2. The holding areas include no electrical outlets available to the detainees.
  - 3.3. The entire building includes sprinklers throughout in accordance with Section 903.3.1.1.
  - 3.4. The building includes a fire alarm system with smoke detection in accordance with NFPA 72 in the common rooms of holding areas and in the cells of central holding. The fire alarm system shall activate an alert signal on the floor of alarm containing the holding areas, to alert staff.
  - 3.5. As approved by the enforcing agency, an egress analysis shows that detainees can be evacuated within 5 minutes from the holding area of origin, or the facility is provided with gang or electric locks.
4. Courtroom holding areas with less than 20 persons in custody.
5. Windowless buildings or portions of a building that meet all of the following requirements:
  - 5.1. Are Type IA or IB construction.
  - 5.2. Are protected with sprinklers throughout in accordance with Section 903.3.1.1.
  - 5.3. Include a fire alarm system with smoke detection in accordance with NFPA 72 in the day-rooms and corridors serving as exit access from the cells, reporting to a 24-hour central control at the institution.
  - 5.4. Include at least one direct exit from each housing unit through a smoke partition to another smoke compartment. Each housing unit must be its own smoke compartment and can exit through a maximum of one adjacent compartment before reaching a corridor or the exterior.
  - 5.5. As approved by the enforcing agency, an egress analysis shows that inmates can be evacuated within 6 minutes from the smoke compartment of origin 24 hours per day or when inmates are present, or the facility is provided with gang or electric locks.
  - 5.6. Each housing unit includes a pressurization method smoke control system that complies with Section 909.

**[F] 408.10 Fire alarm system.** A fire alarm system shall be provided in accordance with Section 907.2.6.3.

**[F] 408.11 Automatic sprinkler system.** Group I-3 occupancies shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.2.6.

**408.12 Emergency and standby power systems.** Special electrical systems, exit illumination, power installations and alternate on-site electrical supplies shall be provided for

every building or portion of a building housing 10 or more inmates in a detention or correctional facility in accordance with the provisions of the California Electrical Code. There shall be a source of emergency power in all detention facilities capable of providing minimal lighting in all housing units, activity areas, corridors, stairs and central control points, and to maintain fire and life safety, security, communications and alarm systems.

**408.13 Windows.** In security areas within cell complexes sprinklered throughout, the area of glazing in one-hour corridor walls and smoke barrier walls shall not be restricted, provided:

1. All openings are protected by fixed glazing listed and labeled for a fire-protection of at least  $3/4$  hour; or
2. Fixed security glazing set in noncombustible frames. Shall comply with the minimum requirements of one of the following test standards: ASTM F1233-98, Class III glass, or; California Department of Corrections and Rehabilitation, CDCR Appendix H, or H.P. White Laboratory, Inc., HPW-TP- 0500.02, Forced Entry Level III.
3. In lieu of the sizes set forth in CBC, the size and area of glazed assemblies shall conform to the following: Windows required to have a three-fourths-hour fire-resistive rating or windows protected by fixed security glazing, as delineated in Items 1 and 2 above, may have an area not greater than 84 square feet ( $7.8 \text{ m}^2$ ) with neither width nor height exceeding 12 feet (3658 mm).

**408.14 Safety padding.** Padding material used on walls, floors and ceilings in Group I and R-2.1 occupancies shall be of an approved type tested in accordance with the procedures established by State Fire Marshal Standard 12-8-100, Room Fire Test for Wall and Ceiling Materials, California Code of Regulations, Title 24, Part 12.

**408.15 Small management yards.**

**408.15.1 General.** The provisions of Sections 408.15.1 through 408.15.5 shall apply to small management yards. Small management yards may be used by a maximum of two occupants at any one time for a maximum of 2 hours per day.

**408.15.2 Construction.** Small management yards shall be constructed in accordance with all of the following:

1. Constructed of Type IB noncombustible materials.
2. Fence material shall be noncombustible.
3. Have a maximum area of 150 square feet ( $14 \text{ m}^2$ ).
4. Yard area covering shall not exceed 75 square feet ( $7 \text{ m}^2$ ) or a maximum of 50 percent of the fenced enclosure.
5. Electrical lighting or devices of any type shall not be permitted within the yard.

**Exception:** Low voltage devices dedicated for the operation of toilets.

**408.15.3 Fire protection system provisions.**

**408.15.3.1 Automatic sprinkler systems.** An automatic sprinkler system shall be provided in accordance with Section 903.3.1.1.

**Exception:** Small management yards where a distance of 10 feet (3048 mm) is maintained from all



**410.4 Dressing and appurtenant rooms.** Dressing and appurtenant rooms shall comply with Sections 410.4.1 and 410.4.2.

**410.4.1 Separation from stage.** The stage shall be separated from dressing rooms, scene docks, property rooms, workshops, storerooms and compartments appurtenant to the stage and other parts of the building by fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both. The fire-resistance rating shall be not less than 2 hours for stage heights greater than 50 feet (15 240 mm) and not less than 1 hour for stage heights of 50 feet (15 240 mm) or less.

**410.4.2 Separation from each other.** Dressing rooms, scene docks, property rooms, workshops, storerooms and compartments appurtenant to the stage shall be separated from each other by not less than 1-hour fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both.

**410.5 Means of egress.** Except as modified or as provided for in this section, the provisions of Chapter 10 shall apply.

**410.5.1 Arrangement.** Where two or more exits or exit access doorways from the stage are required in accordance with Section 1006.2, not fewer than one exit or exit access doorway shall be provided on each side of a stage.

**410.5.2 Stairway and ramp enclosure.** Exit access stairways and ramps serving a stage or platform are not required to be enclosed. Exit access stairways and ramps serving technical production areas are not required to be enclosed.

**410.5.3 Technical production areas.** Technical production areas shall be provided with means of egress and means of escape in accordance with Sections 410.5.3.1 through 410.5.3.5.

**410.5.3.1 Number of means of egress.** Not fewer than one means of egress shall be provided from technical production areas.

**410.5.3.2 Exit access travel distance.** The exit access travel distance shall be not greater than 300 feet (91 440 mm) for buildings without a sprinkler system and 400 feet (122 mm) for buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

**410.5.3.3 Two means of egress.** Where two means of egress are required, the common path of travel shall be not greater than 100 feet (30 480 mm).

**Exception:** A means of escape to a roof in place of a second means of egress is permitted.

**410.5.3.4 Path of egress travel.** The following exit access components are permitted where serving technical production areas:

1. Stairways.
2. Ramps.
3. Spiral stairways.
4. Catwalks.

5. Alternating tread devices.

6. Permanent ladders.

**410.5.3.5 Width.** The path of egress travel within and from technical support areas shall be not less than 22 inches (559 mm).

**[F] 410.6 Automatic sprinkler system.** Stages shall be equipped with an automatic sprinkler system in accordance with Section 903.3.1.1. Sprinklers shall be installed under the roof and gridiron and under all catwalks and galleries over the stage. Sprinklers shall be installed in dressing rooms, performer lounges, shops and storerooms accessory to such stages.

**Exceptions:**

1. Sprinklers are not required under stage areas less than 4 feet (1219 mm) in clear height that are utilized exclusively for storage of tables and chairs, provided that the concealed space is separated from the adjacent spaces by Type X gypsum board not less than  $\frac{5}{8}$ -inch (15.9 mm) in thickness.
2. Sprinklers are not required for stages 1,000 square feet (93 m<sup>2</sup>) or less in area and 50 feet (15 240 mm) or less in height where curtains, scenery or other combustible hangings are not retractable vertically. Combustible hangings shall be limited to a single main curtain, borders, legs and a single backdrop.
3. Sprinklers are not required within portable orchestra enclosures on stages.

**[F] 410.7 Standpipes.** Standpipe systems shall be provided in accordance with Section 905.

## SECTION 411 SPECIAL AMUSEMENT AREAS

**411.1 General.** Special amusement *areas* having an occupant load of 50 or more shall comply with the requirements for the appropriate Group A occupancy and Sections 411.1 through 411.7. Special amusement *areas* having an occupant load of less than 50 shall comply with the requirements for a Group B occupancy and Sections 411.1 through 411.7.

**Exception:** Special amusement *areas* or portions thereof that are without walls or a roof and constructed to prevent the accumulation of smoke need not comply with this section.

**411.2 Automatic sprinkler system.** *Buildings containing special amusement areas shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. Where the special amusement area is temporary, less than 180 days, the sprinkler water supply shall be of an approved temporary means determined by the authority having jurisdiction.*

**Exception:** *Automatic sprinklers are not required where the total floor area of a temporary special amusement area, less than 180 days, is less than 1,000 square feet (93 m<sup>2</sup>) and the exit access travel distance from any point in the special amusement area to an exit is less than 50 feet (15 240 mm).*

**411.3 Fire alarm system.** Buildings containing special amusement areas shall be equipped with an automatic smoke detection system in accordance with Section 907.2.11.

**411.4 Emergency voice/alarm communications system.** An emergency voice/alarm communications system shall be provided in accordance with Sections 907.2.11 and 907.5.2.2, is permitted to serve as a public address system and shall be audible throughout the entire special amusement area.

**411.5 Puzzle room exiting.** Puzzle room exiting shall comply with one of the following:

1. Exiting in accordance with Chapter 10.
2. An alternative design approved by authority having jurisdiction.

**411.6 Exit marking.** Exit signs shall be installed at the required exit or exit access doorways serving special amusement areas in accordance with this section and Section 1013. Approved directional exit markings shall be provided. Where mirrors, mazes or other designs are utilized that disguise the path of egress travel such that they are not apparent, approved and listed low-level exit signs that comply with Section 1013.5, and directional path markings listed in accordance with UL 1994, shall be provided and located not more than 8 inches (203 mm) above the walking surface and on or near the path of egress travel. Such markings shall become visible in an emergency. The directional exit marking shall be activated by the automatic smoke detection system and the automatic sprinkler system in accordance with Section 907.2.11.

**411.6.1 Photoluminescent exit signs.** Where photoluminescent exit signs are installed, activating light source and viewing distance shall be in accordance with the listing and markings of the signs.

**411.7 Interior finish.** The interior finish in special amusement areas shall be Class A in accordance with Section 803.1.

**SECTION 412  
AIRCRAFT-RELATED OCCUPANCIES**

**412.1 General.** Aircraft-related occupancies shall comply with Sections 412.1 through 412.7 and the *California Fire Code*.

**412.2 Airport traffic control towers.** The provisions of Sections 412.2.1 through 412.2.6 shall apply to airport traffic control towers occupied only for the following uses:

1. Airport traffic control cab.
2. Electrical and mechanical equipment rooms.
3. Airport terminal radar and electronics rooms.
4. Office spaces incidental to the tower operation.
5. Lounges for employees, including sanitary facilities.

**412.2.1 Construction.** The construction of airport traffic control towers shall comply with the provisions of Sections 412.2.1.1 through 412.2.1.3.

**412.2.1.1 Type of construction.** Airport traffic control towers shall be constructed to comply with the height limitations of Table 412.2.1.1.

**TABLE 412.2.1.1  
HEIGHT LIMITATIONS FOR  
AIRPORT TRAFFIC CONTROL TOWERS**

TYPE OF CONSTRUCTION	HEIGHT <sup>a</sup> (feet)
IA	Unlimited
IB	240
IIA	100
IIB	85
IIIA	65

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m<sup>2</sup>.

a. Height to be measured from grade plane to cab floor.

**[BS] 412.2.1.2 Structural integrity of interior exit stairways and elevator hoistway enclosures.** Enclosures for interior exit stairways and elevator hoistway enclosures shall comply with Section 403.2.3 in airport traffic control towers where the control cab is located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.

**412.2.1.3 Sprayed fire-resistant materials (SFRM).** The bond strength of the SFRM installed in airport traffic control towers shall be in accordance with Section 403.2.4 where the control cab is located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.

**412.2.2 Means of egress and evacuation.** The means of egress in airport traffic control towers shall comply with Sections 412.2.2.1 through 412.2.2.3.

**412.2.2.1 Stairways.** Stairways in airport traffic control towers shall be in accordance with Section 1011. Exit stairways shall be smokeproof enclosures complying with one of the alternatives provided in Section 909.20.

**Exception:** Stairways in airport traffic control towers are not required to comply with Section 1011.12.

**412.2.2.2 Exit access.** From observation levels, airport traffic control towers shall be permitted to have a single means of exit access for a distance of travel not greater than 100 feet (30 480 mm). Exit access stairways from the observation level need not be enclosed.

**412.2.2.3 Number of exits.** Not less than one exit stairway shall be permitted for airport traffic control towers of any height provided that the occupant load per floor is not greater than 15 and the area per floor does not exceed 1,500 square feet (140 m<sup>2</sup>).

**412.2.2.3.1 Interior finish.** Where an airport traffic control tower is provided with only one exit stairway, interior wall and ceiling finishes shall be either Class A or Class B.

[F] TABLE 414.5.1  
EXPLOSION CONTROL REQUIREMENTS<sup>a, h</sup>

MATERIAL	CLASS	EXPLOSION CONTROL METHODS	
		Barricade construction	Explosion (deflagration) venting or explosion (deflagration) prevention systems <sup>b</sup>
<b>HAZARD CATEGORY</b>			
Combustible dusts <sup>c</sup>	—	Not Required	Required
Cryogenic flammables	—	Not Required	Required
Explosives	Division 1.1	Required	Not Required
	Division 1.2	Required	Not Required
	Division 1.3	Not Required	Required
	Division 1.4	Not Required	Required
	Division 1.5	Required	Not Required
	Division 1.6	Required	Not Required
Flammable gas	Gaseous	Not Required	Required
	Liquefied	Not Required	Required
Flammable liquid	IA <sup>d</sup>	Not Required	Required
	IB <sup>e</sup>	Not Required	Required
Organic peroxides	U	Required	Not Permitted
	I	Required	Not Permitted
Oxidizer liquids and solids	4	Required	Not Permitted
Pyrophoric gas	—	Not Required	Required
Unstable (reactive)	4	Required	Not Permitted
	3 Detonable	Required	Not Permitted
	3 Nondetonable	Not Required	Required
Water-reactive liquids and solids	3	Not Required	Required
	2 <sup>g</sup>	Not Required	Required
<b>SPECIAL USES</b>			
Acetylene generator rooms	—	Not Required	Required
Energy storage systems <sup>d</sup>	—	Not Required	Required
Grain processing	—	Not Required	Required
Liquefied petroleum gas-distribution facilities	—	Not Required	Required
Where explosion hazards exist <sup>f</sup>	Detonation	Required	Not Permitted
	Deflagration	Not Required	Required

a. See Section 414.1.3.

b. See the *California Fire Code*.

c. As generated during manufacturing or processing.

d. Storage or use.

e. In open use or dispensing.

f. Rooms containing dispensing and use of hazardous materials where an explosive environment can occur because of the characteristics or nature of the hazardous materials or as a result of the dispensing or use process.

g. A method of explosion control shall be provided where Class 2 water-reactive materials can form potentially explosive mixtures.

h. Explosion venting is not required for Group H-5 fabrication areas complying with Section 415.11.1 and the *California Fire Code*.

i. Where explosion control is required in Section 1206 of the *California Fire Code*.

**414.5.4 Hazardous material handling.** *The handling of hazardous materials shall be in accordance with California Fire Code Section 5003.*

[F] **414.6 Outdoor storage, dispensing and use.** The outdoor storage, dispensing and use of hazardous materials shall be in accordance with the *California Fire Code*.

[F] **414.6.1 Weather protection.** Where weather protection is provided for sheltering outdoor hazardous material storage or use areas, such areas shall be considered outdoor storage or use where the weather protection structure complies with Sections 414.6.1.1 through 414.6.1.3.

[F] **414.6.1.1 Walls.** Walls shall not obstruct more than one side of the structure.

**Exception:** Walls shall be permitted to obstruct portions of multiple sides of the structure, provided that the obstructed area is not greater than 25 percent of the structure’s perimeter.

[F] **414.6.1.2 Separation distance.** The distance from the structure to buildings, lot lines, public ways or means of egress to a public way shall be not less than the distance required for an outside hazardous material storage or use area without weather protection.

[F] **414.6.1.3 Noncombustible construction.** The overhead structure shall be of approved noncombustible construction with a maximum area of 1,500 square feet (140 m<sup>2</sup>).

**Exception:** The maximum area is permitted to be increased as provided by Section 506.

## SECTION 415 GROUPS H-1, H-2, H-3, H-4 AND H-5

[F] **415.1 General.** The provisions of Sections 415.1 through 415.11 shall apply to the storage and use of hazardous materials in excess of the maximum allowable quantities per control area listed in Section 307.1.

[F] **415.2 Compliance.** Buildings and structures with an occupancy in Group H shall comply with the applicable provisions of Section 414 and the *California Fire Code*.

[F] **415.3 Automatic fire detection systems.** Group H occupancies shall be provided with an automatic fire detection system in accordance with Section 907.2.

[F] **415.4 Automatic sprinkler system.** Group H occupancies shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.2.5.

[F] **415.5 Emergency alarms.** Emergency alarms for the detection and notification of an emergency condition in Group H occupancies shall be provided as set forth herein.

[F] **415.5.1 Storage.** An approved manual emergency alarm system shall be provided in buildings, rooms or areas used for storage of hazardous materials. Emergency alarm-initiating devices shall be installed outside of each interior exit or exit access door of storage buildings, rooms or areas. Activation of an emergency alarm-initiating device shall sound a local alarm to alert occupants of an emergency situation involving hazardous materials.

[F] **415.5.2 Dispensing, use and handling.** Where hazardous materials having a hazard ranking of 3 or 4 in accordance with NFPA 704 are transported through corridors, interior exit stairways or ramps, or exit passageways, there shall be an emergency telephone system, a local manual alarm station or an approved alarm-initiating device at not more than 150-foot (45 720 mm) intervals and at each exit and exit access doorway throughout the transport route. The signal shall be relayed to an approved central, proprietary or remote station service or constantly attended on-site location and shall initiate a local audible alarm.

[F] **415.5.3 Supervision.** Emergency alarm systems required by Section 415.5.1 or 415.5.2 shall be electrically supervised and monitored by an approved central, proprietary or remote station service or shall initiate an audible and visual signal at a constantly attended on-site location.

[F] **415.5.4 Emergency alarm systems.** Emergency alarm systems required by Section 415.5.1 or 415.5.2 shall be provided with emergency or standby power in accordance with Section 2702.2.

[F] **415.6 Fire separation distance.** Group H occupancies shall be located on property in accordance with the other provisions of this chapter. In Groups H-2 and H-3, not less than 25 percent of the perimeter wall of the occupancy shall be an exterior wall.

### Exceptions:

1. Liquid use, dispensing and mixing rooms having a floor area of not more than 500 square feet (46.5 m<sup>2</sup>) need not be located on the outer perimeter of the building where they are in accordance with the *California Fire Code* and NFPA 30.
2. Liquid storage rooms having a floor area of not more than 1,000 square feet (93 m<sup>2</sup>) need not be located on the outer perimeter where they are in accordance with the *California Fire Code* and NFPA 30.
3. Spray paint booths that comply with the *California Fire Code* need not be located on the outer perimeter.

[F] **415.6.1 Group H occupancy minimum fire separation distance.** Regardless of any other provisions, buildings containing Group H occupancies shall be set back to the minimum fire separation distance as set forth in Sections 415.6.1.1 through 415.6.1.4. Distances shall be measured from the walls enclosing the occupancy to lot lines, including those on a public way. Distances to assumed lot lines established for the purpose of determining exterior wall and opening protection are not to be used to establish the minimum fire separation distance for buildings on sites where explosives are manufactured or used where separation is provided in accordance with the quantity distance tables specified for explosive materials in the *California Fire Code*.

[F] **415.6.1.1 Group H-1.** Group H-1 occupancies shall be set back not less than 75 feet (22 860 mm) and not less than required by the *California Fire Code*.

**Exception:** Fireworks manufacturing buildings separated in accordance with NFPA 1124.

[F] **415.6.1.2 Group H-2.** Group H-2 occupancies shall be set back not less than 30 feet (9144 mm) where the area of the occupancy is greater than 1,000 square feet (93 m<sup>2</sup>) and it is not required to be located in a detached building.

[F] **415.6.1.3 Groups H-2 and H-3.** Group H-2 and H-3 occupancies shall be set back not less than 50 feet (15 240 mm) where a detached building is required (see Table 415.6.2).

[F] **415.6.1.4 Explosive materials.** Group H-2 and H-3 occupancies containing materials with explosive characteristics shall be separated as required by the *California Fire Code*. Where separations are not specified, the distances required shall be determined by a technical report issued in accordance with Section 414.1.3.

[F] **415.6.2 Detached buildings for Group H-1, H-2 or H-3 occupancy.** The storage or use of hazardous materials in excess of those amounts listed in Table 415.6.2 shall be

not less than 3 feet (914 mm) in width and not less than 6 feet 8 inches (2032 mm) in height. When installed, doors shall be capable of opening at least 90 degrees and shall be so mounted that the clear width of the exit way is not less than 32 inches (813 mm).

4. Egress through an adjoining bedroom which exits to the exterior.

**435.8.3.3 Group R-3.1 occupancies housing only one bedridden client.** In Group R-3.1 occupancies housing a bedridden client and not provided with an approved automatic sprinkler system, all of the following shall apply:

1. In Group R-3.1 occupancies housing a bedridden client, a direct exit to the exterior of the residence shall be provided from the client sleeping room.
2. Doors to a bedridden client's sleeping room shall be of a self-closing, positive latching 1<sup>3</sup>/<sub>8</sub> inch solid wood door. Such doors shall be provided with a gasket so installed as to provide a seal where the door meets the jam on both sides and across the top. Doors shall be maintained self-closing or shall be automatic closing by actuation of a smoke alarm in accordance with Section 716.5.9.
3. Group R-3.1 occupancies housing a bedridden client, shall not have a night latch, dead bolt, security chain or any similar locking device installed on any interior door leading from a bedridden client's sleeping room to any interior area such as a corridor, hallway and or general use areas of the residence in accordance with Chapter 10.
4. The exterior exit door to a bedridden client's sleeping room shall be operable from both the interior and exterior of the residence.
5. Every required exit doorway from a bedridden client sleeping room shall be of a size as to permit the installation of a door not less than 3 feet (914 mm) in width and not less than 6 feet 8 inches (2032 mm) in height. When installed in exit doorways, exit doors shall be capable of opening at least 90 degrees and shall be so mounted that the clear width of the exit way is not less than 32 inches (813 mm).

**Note:** A sliding glass door can be used as an exterior exit doorway as long as it is operable from the inside and outside and the clear width of the exit way is not less than 32 inches (813 mm).

**435.8.3.4 Intervening rooms.** A means of exit shall not pass through more than one intervening room. A means of egress shall not pass through kitchens, storerooms, closets, garages or spaces used for similar purposes.

**Exception:** Kitchens which do not form separate rooms by construction.

#### 435.8.4 Corridors.

**435.8.4.1** Unless specified by Section 435.8.4, corridors serving Group R-2.1 and Group R-4 occupancies shall comply with Section 1018.1.

In Group R-2.1 occupancies provided with fire sprinklers throughout and which are required to have rated corridors, door closers need not be installed on doors to client sleeping rooms.

**435.8.4.2** The minimum clear width of a corridor shall be as follows:

1. Group R-2.1 occupancies shall have 60 inches (1524 mm) on floors housing nonambulatory clients and 44 inches (1118 mm) on floors housing only ambulatory clients.
2. Group R-4 occupancies shall have 44 inches (1118 mm) on floors housing clients.

#### Exceptions:

1. Corridors serving an occupant load of 10 or less shall not be less than 36 inches (914 mm) in width.
2. Corridors serving ambulatory persons only and having an occupant load of 49 or less shall not be less than 36 inches (914 mm) in width.

**435.8.4.3** In a Group R-2.1 and Group R-4 occupancies having smoke barriers, cross-corridor doors in corridors 6 feet (1829 mm) or less in width shall have, as a minimum, a door 36 inches (914 mm) in width.

**435.8.5 Changes in level.** In Group R-3.1 occupancies housing nonambulatory clients interior changes in level up to 0.25 inch (6 mm) may be vertical and without edge treatment. Changes in level between 0.25 inch (6 mm) and 0.5 inch (12.7 mm) shall be beveled with a slope no greater than 1 unit vertical in 2 units horizontal (50 percent slope). Changes in level greater than 0.5 inch (12.7 mm) shall be accomplished by means of a ramp.

#### 435.8.6 Stairways.

**435.8.6.1** Group R-2.1 and Group R-4 occupancies housing more than six nonambulatory clients above the first floor shall be provided with two vertical exit enclosures. Stairway enclosures shall be in compliance with Section 1022. Exceptions to Section 1022 shall not apply in facilities licensed as a 24-hour care facility.

**435.8.6.2** Group R-3.1 occupancies may continue to use existing stairways (except for winding and spiral stairways which are not permitted as a required means of egress) provided the stairs have a maximum rise of 8 inches (203 mm) with a minimum run of 9 inches (229 mm). The minimum stairway width may be 30 inches (762 mm).

**435.8.7 Floor separation.** Group R-3.1 occupancies with non-ambulatory clients housed above the first floor shall be provided with a non-fire resistance constructed floor separation at stairs which will prevent smoke migration between floors. Such floor separation shall have equivalent construction of 0.5 inch (12.7 mm) gypsum wallboard on one side of wall framing.

#### Exceptions:

1. Occupancies with at least one exterior exit from floors occupied by clients.

2. Occupancies provided with automatic fire sprinkler systems complying with Chapter 9.

**435.8.7.1 Doors within floor separations.** Doors within such floor separations shall be tight fitting solid wood at least  $1\frac{1}{8}$  inches (35 mm) in thickness. Door glazing shall not exceed 1296 square inches (32 918 mm<sup>2</sup>) with no dimension greater than 54 inches (1372 mm). Such doors shall be positive latching, smoke gasketed and shall be automatic-closing by smoke detection

**435.8.8 Fences and gates.** Grounds of a Residential Care Facility for the Elderly serving Alzheimer clients may be fenced and gates therein equipped with locks, provided safe dispersal areas are located not less than 50 feet (15 240 mm) from the buildings. Dispersal areas shall be sized to provide an area of not less than 3 square feet (0.28 m<sup>2</sup>) per occupant. Gates shall not be installed across corridors or passageways leading to such dispersal areas unless they comply with egress requirements.

**435.8.9 Basement exits.** One exit is required to grade level when the basement is accessible to clients.

**435.8.10 Delayed egress locks.** See Section 1010.1.9.8.

**435.9 Request for alternate means of protection for facilities housing bedridden clients.** Request for alternate means of protection shall apply to Sections 435 through 435.9. Request for approval to use an alternative material, assembly or materials, equipment, method of construction, method of installation of equipment, or means of protection shall be made in writing to the local fire authority having jurisdiction by the facility, client or the client's authorized representative. Sufficient evidence shall be submitted to substantiate the need for an alternate means of protection.

The facility, client or the client's representative or the local fire authority having jurisdiction may request a written opinion from the State Fire Marshal concerning the interpretation of the regulations promulgated by the State Fire Marshal for a particular factual dispute. The State Fire Marshal shall issue the written opinion within 45 days following the request. Approval of a request for use of an alternative material, assembly or materials, equipment, method of construction, method of installation of equipment, or means of protection made pursuant to this section shall be limited to Group R-3.1 occupancies housing a bedridden client. Approvals made by the local fire authority having jurisdiction and the written opinion by the State Fire Marshal shall be applicable only to the requesting facility and shall not be construed as establishing any precedent for any future request by that facility or any other facility.

**435.10 Temporarily bedridden clients.** Clients who become temporarily bedridden as defined in Health and Safety Code Section 1569.72, as enforced by the Department of Social Services, may continue to be housed on any story in Group R-2.1, R-3.1 or R-4 occupancies classified as Residential Care Facilities for the Elderly (RCFE). Every Residential Care Facility for the Elderly (RCFE) admitting or retaining a bedridden resident shall, within 48 hours of the resident's

admission or retention in the facility, notify the local fire authority with jurisdiction of the estimated length of time the resident will retain his or her bedridden status in the facility.

**435.11 Group R-2.1, R-3.1, R-4. [SFM]** Buildings housing protective social care need not be of 1-hour fire-resistive construction when not more than two stories in height. In no case shall individual floor areas exceed 3,000 square feet (279 m<sup>2</sup>). The fire-resistive protection of the exterior walls shall not be less than 1 hour where such walls are located within 5 feet (1524 mm) of the property line. Openings within such walls are not permitted. Openings in exterior nonrated walls need not be protected.

## SECTION 436 GROUP I-4 [SFM]

**436.1 Group I-4 special provisions.** Rooms classified as Group I-4 shall not be located above or below the first story.

### Exceptions:

1. Basements or stories having floor levels located within 4 feet (1219 mm), measured vertically, from adjacent ground level at the level of exit discharge, provided the basement or story has exterior exit doors at that level.
2. In buildings equipped with an automatic sprinkler system throughout, rooms used for kindergarten, first- and second-grade children or for day-care purposes may be located on the second story, provided there are at least two exterior exit doors, or other egress systems complying with Section 1017 with two exits, for the exclusive use of such occupants. Egress systems for the exclusive use of such occupants shall be maintained until exit discharge at grade is attained.
3. Group I-4 child-care facilities may be located above the first story in buildings of Type I construction and in Types II-A and III-A construction, subject to the limitation of Section 503 when:
  - 3.1. Group I-4 childcare facilities with children under the age of seven or containing more than 12 children per story shall not be located above the fourth floor; and
  - 3.2. The entire story in which the Group I-4 child-care facility is located is equipped with an approved manual fire alarm and smoke-detection system. (See the Fire Code.) Actuation of an initiating device shall sound an audible alarm throughout the entire story. When a building fire alarm system is required by other provisions of this code or the Fire Code, the alarm system shall be connected to the building alarm system. An approved alarm signal shall sound at an approved location in the Group I-4 child-care facility to indicate a fire alarm or sprinkler flow condition in other portions of the building; and

sound an audible alarm throughout the entire story.

When a building fire alarm system is required by other provisions of this code, the alarm system shall be interconnected and sound the day-care fire alarm system; and

- 3.3. The day-care facility, if more than 1,000 square feet (92.9 m<sup>2</sup>) in area, is divided into at least two compartments of approximately the same size by a smoke barrier in accordance with Section 709. In addition to the requirements of Section 508, occupancy separations between daycare and other occupancies shall be constructed as smoke barriers. Door openings in the smoke barrier shall be tight fitting, with gaskets installed as required by Section 716.5.3.1 and shall be automatic closing by actuation of the fire sprinklers, fire alarm or smoke detection system; and
- 3.4. Each compartment formed by the smoke barrier has not less than two exits or exit-access doors, one of which is permitted to pass through the adjoining compartment, and
- 3.5. At least one exit or exit-access door from the day-care facility shall be into a separate means of egress with not less than two paths of exit travel, which are separated in such a manner to provide an atmospheric separation.
- 3.6. The building is equipped with an automatic sprinkler system throughout.

**452.1.5 Special hazards.** School classrooms constructed after January 1, 1990, not equipped with automatic sprinkler systems, which have metal grilles or bars on all their windows and do not have at least two exit doors within 3 feet (914 mm) of each end of the classroom opening to the exterior of the building or to a common hallway used for evacuation purposes, shall have an inside release for the grilles or bars on at least one window farthest from the exit doors. The window or windows with the inside release shall be clearly marked as emergency exits.

**452.1.6 Class I, II or III-A flammable liquids** shall not be placed, stored or used in Group E occupancies, except in approved quantities as necessary in laboratories and classrooms and for operation and maintenance as set forth in the California Fire Code.

## SECTION 453 GROUP L [SFM]

**453.1 Scope.** The provisions of this section shall apply to buildings or structures, or portions thereof, containing one or more Group L laboratory suites as defined in Section 202.

The provisions of this section are optional and may apply to buildings or structures. See Section 304 for Group B Laboratories.

**453.1.1 Technical report.** The enforcing agency may require a technical opinion and report to identify and

develop methods of protection from the hazards presented by the hazardous materials. A qualified person, firm or corporation, approved by the enforcing agency, shall prepare the opinion and report, and shall be provided without charge to the enforcing agency. The opinion and report may include, but is not limited to, the preparation of a hazardous material management plan (HMMP); chemical analysis; recommendations for methods of isolation, separation, containment or protection of hazardous materials or processes, including appropriate engineering controls to be applied; the extent of changes in the hazardous behavior to be anticipated under conditions of exposure to fire or from hazard control procedures; and the limitations or conditions of use necessary to achieve and maintain control of the hazardous materials or operations. The report shall be entered into the files of the code enforcement agencies. Proprietary and trade secret information shall be protected under the laws of the state or jurisdiction having authority.

**453.2 Definitions.** The following terms are defined in Chapter 2:

**LABORATORY SUITE.**

**[F] LIQUID TIGHT FLOOR.**

**453.3 Laboratory suite requirements.**

**453.3.1** The gross floor area of an individual laboratory suite shall not exceed 10,000 sq ft (929 m<sup>2</sup>).

**453.3.2** An individual laboratory suite shall not serve more than a single tenant.

**Exception:** An individual laboratory suite shall have a responsible party or department for all hazardous materials within a suite.

**453.4 Construction**

**453.4.1 Separation of laboratory suites.**

**453.4.1.1** Laboratory suites shall be separated from other occupancies in accordance with Table 508.4.

**453.4.1.2** Laboratory suites shall be separated from other laboratory suites by a fire barrier having a fire-resistance rating of not less than 1-hour.

**453.4.1.3** Laboratory suites shall be separated from control areas by a minimum 2-hour fire-resistance rating in accordance with Sections 707 and 711.

**Exception:** Laboratory suites shall be separated from control areas by a minimum 1-hour fire-resistance rating on floor levels below the 4<sup>th</sup> story.

**453.4.1.4 Horizontal separation.** The floor construction of the laboratory suite and the construction supporting the floor of the laboratory suite shall have a minimum 2-hour fire-resistance rating in accordance with Section 711.

**Exceptions:**

1. The floor construction of the laboratory suite and the construction supporting the floor of the laboratory suite are allowed to be 1-hour fire-resistance rated in buildings of Type IIA, IIIA and VA construction.

2. When an individual laboratory suite occupies more than one story, the intermediate floors contained within the suite shall comply with the requirements of Table 601.

#### 453.4.2 Reserved.

#### 453.4.3 Fire barrier and fire-smoke barrier.

**453.4.3.1 Fire barrier.** A fire barrier having a fire resistance rating of not less than 2-hours shall divide any story containing more than one laboratory suite on the 4<sup>th</sup> story and above.

**453.4.3.1.1** Fire barriers shall be continuous from exterior wall to exterior wall,

**453.4.3.1.2** The fire barrier shall divide the floor so that the square footage on each side of the 2-hour fire barrier is not less than 30 percent of the total floor area, and

**453.4.3.1.3** The number of laboratory suites on each side of the 2-hour fire barrier shall not be less than 25 percent of the total number of laboratory suites on the floor.

**453.4.3.2 Fire-smoke barrier.** Any story containing a Group I occupancy on the 11<sup>th</sup> story and above shall be subdivided by a fire-smoke barrier constructed as a fire barrier having a fire-resistance rating of not less than 2 hours and shall also comply with the smoke barrier requirements of Section 709.

The 2-hour fire-smoke barrier shall be in accordance with Sections 453.4.3 through 453.4.3.2.3.

**453.4.3.2.1** A minimum of one door opening shall be provided in the 2-hour fire-smoke barrier for emergency access.

**453.4.3.2.2** Each side of the 2-hour fire-smoke barrier shall be designed as a separate smoke zone designed in accordance with Section 909.6.

**453.4.3.2.3** The area on each side of the 2-hour fire-smoke barrier shall be served by a minimum of one exit enclosure in accordance with Section 1022.

**453.4.4 Emergency response equipment area.** When required by the fire code official, an area for emergency response equipment shall be provided on each floor in an approved location. The area shall be a minimum of 50 square feet (4.6 m<sup>2</sup>), for spill mitigation supplies per California Fire Code 5001.3.3.4 in a location approved by the fire code official, and identified with signage.

**Exception:** The area size for spill mitigation supplies may be reduced by the fire code official when adequate supplies are provided.

**453.4.5 Liquid tight floor.** All portions of the laboratory suite where hazardous materials may be stored, dispensed, handled or used shall be provided with a liquid tight floor. The intersections of such floors shall have an integral coved base that extends upward onto the wall not less than 2 inches. Where the floor is designed to provide spill control or secondary containment the floor shall be designed in accordance with California Fire Code Section 5004.2.

**453.4.6 Secondary power systems.** A legally required standby power system shall have an automatic transfer time of not more than 10 seconds.

**453.4.6.1 Required systems.** Standby power shall be provided for all electrically operated equipment, systems and connected control circuits including:

1. Mechanical ventilation systems. See Section 453.4.7.2.
2. Temperature control systems required to prevent unsafe process excursions or chemical reactions.
3. Treatment systems and scrubbers.
4. Emergency Responder Radio Coverage (ERRCS). See Section 510 of the California Fire Code.
5. Electrically operated systems required elsewhere in this code and the California Fire Code.

#### 453.4.7 Ventilation.

**453.4.7.1 Compatibility.** Incompatible materials shall not be conveyed in the same duct system. Combined products in mechanical exhaust ducts shall not create a physical hazard or reaction that could degrade the duct material. The building official may require a technical report in accordance with Section 453.7.1.

**453.4.7.2 Fire dampers, smoke dampers and combination fire/smoke dampers.** Fire dampers, smoke dampers or fire/smoke dampers shall not be permitted in mechanical exhaust duct systems used to maintain a safe laboratory environment. When the exhaust duct penetrates the laboratory suite boundary the exhaust duct shall be located within a horizontal or vertical assembly having a fire resistance rating equal to the fire barrier.

#### 453.4.7.3 Reserved.

#### 453.4.7.4 Laboratory suite exhaust air.

**453.4.7.4.1** Exhaust air from laboratory suites shall not be recirculated.

**453.4.7.4.2** Laboratory suite exhaust air shall be independently ducted to a point outside the building or an approved roof top structure.

**Exception:** Exhaust ducts serving separate laboratory suites may be connected to a common duct within a fire rated vertical shaft when the sub-duct extends vertically upward at least 22 inches.

**453.4.7.4.3** Laboratory suite exhaust ducts shall not penetrate the fire barriers required by Section 453.4.1.

**Exception:** Where the exhaust duct is enclosed in a rated shaft in accordance with Section 713.

**453.4.7.5 Ventilation rates.** Mechanical exhaust ventilation systems shall provide a minimum ventilation rate not less than 1 cubic feet per minute per square foot [0.00508 m<sup>3</sup>/(s·m<sup>2</sup>)] of floor area, or 6 air exchanges per hour, whichever is greater. Systems shall operate continuously at the designed ventilation rate

**Exception:** Refer to California Fire Code Section 5001.3 Performance-based design alternatives, as approved by the Fire Code Official.



**453.4.7.6 Reserved.**

**453.4.7.7 Mechanical ventilation system balancing.** Mechanical ventilation systems shall be designed and balanced such that during normal and emergency conditions the door opening forces comply with the requirements of Sections 1010.1.3 and Chapter 11B as applicable. Emergency conditions shall include: supply fan shutdown or failure, closing of smoke dampers or combination fire/smoke dampers, or emergency power.

**453.5 Fire protection systems. See Chapter 9.**

**453.6 Means of egress.**

**453.6.1 Access to exits.** Every room of a laboratory suite containing hazardous materials and having a floor area of 500 square feet (19 m<sup>2</sup>) or more shall have access to not less than two separate exits or exit-access doorways in accordance with Section 1006.2.

**453.6.2 Door swing.** All exit and exit-access doors serving areas with hazardous materials shall swing in the direction of exit travel, regardless of the occupant load served.

**453.6.3 Panic hardware.** Exit and exit access doors from areas with hazardous materials shall not be provided with a latch or lock unless it is panic hardware or fire exit hardware.

**453.6.4 Buildings more than four stories.** A minimum of one exit shall be provided to serve the floor on each side of the 2-hour fire barrier and shall comply with the provisions of Chapter 10.

**453.6.5 Reserved.**

**453.7 Hazardous materials.**

**453.7.1 Multiple hazards.** When a hazardous material has multiple hazards, all hazards shall be addressed and controlled in accordance with the provisions of this code and the California Fire Code.

**453.7.2 Percentage of maximum allowable quantities.** The percentage of the maximum allowable quantity of hazardous materials per laboratory suite permitted for each story level within a building shall be in accordance with Table 453.7.2.1.

**453.7.3 Handling and transportation.** The handling and transportation of hazardous materials shall be in accordance with Section 5003.10 of the California Fire Code.

**453.8 Elevators and elevator lobbies on the 11<sup>th</sup> story and above.** Any story containing a Group L occupancy on the 11<sup>th</sup> story and above shall be provided with elevators and elevator lobbies in accordance with Sections 453.8.1 through 453.8.3.

**453.8.1.** An elevator that serves every story of the building shall be provided on each side of the 2-hour fire-smoke barrier.

**453.8.2.** An elevator lobby shall be provided on each side of the 2-hour fire-smoke barrier at each floor in accordance with Section 3006.

**453.8.3.** The elevator and its associated elevator lobbies and elevator machine rooms shall be pressurized in accordance with Section 909.6.

**453.9 Existing Group L and Group H-8 occupancies, additions, alterations, or repairs.** See California Fire Code Chapter 11, Section 1116 and California Existing Building Code.

**TABLE 453.7.2.1  
HAZARDOUS MATERIALS QUANTITY PER LABORATORY SUITE**

STORY		PERCENTAGE OF MAXIMUM ALLOWABLE QUANTITY PER LABORATORY SUITE <sup>a, b</sup>	NUMBER OF LAB SUITES PER FLOOR BASED ON CONSTRUCTION TYPE				
			Type IA	Type IB	Type IIA, IIIA, IV	Type IIB, IIIB, VA	Type VB
Above grade plane	Above 20	0	NP	NP	NP	NP	NP
	15 to 20	25	4	NP	NP	NP	NP
	11, 12, 13, 14	50	8	NP	NP	NP	NP
	7, 8, 9, 10	50	16	NP	NP	NP	NP
	6	75	20	20	NP	NP	NP
	4, 5	75	20	20	20	NP	NP
	3	100	UL	UL	UL	UL	NP
	1, 2	100	UL	UL	UL	UL	UL
Below grade plane	1	75 <sup>c</sup>	10	10	10	10	10
	2	50 <sup>d</sup>	5	5	5	5	5
	3 and below	0	NP	NP	NP	NP	NP

UL = Unlimited, NP= Not permitted

- a. Percentages shall be of the maximum allowable quantity per laboratory suite shown in Tables 307.1(1) and 307.1(2). Allowable hazardous material increases for buildings equipped throughout with an automatic sprinkler system shall not be applicable to Group L occupancies.
- b. When an individual laboratory suite occupies more than one story, the more restrictive percentage of the maximum allowable quantity per laboratory suite shall apply.
- c. The total aggregate quantity of flammable liquids on the first story below grade shall be limited to the maximum total aggregate quantity for Group B occupancy control areas.
- d. The total aggregate quantity of flammable liquids on the second story level below grade shall be limited to a maximum total aggregate quantity for Group B occupancy control areas.

**SECTION 454**  
**Reserved**

**SECTION 455**  
**LARGE FAMILY DAY-CARE HOMES [SFM]**

**455.1 Large family day-care homes.**

**455.2.** For purposes of clarification, Health and Safety Code Section 1597.46 is repeated.

(a) A city, county, or city and county shall not prohibit large family day care homes on lots zoned for single-family dwellings, but shall do one of the following:

(1) Classify these homes as a permitted use of residential property for zoning purposes.

(2) Grant a nondiscretionary permit to use a lot zoned for a single-family dwelling to any large family day-care home that complies with local ordinances prescribing reasonable standards, restrictions and requirements concerning spacing and concentration, traffic control, parking and noise control relating to such homes, and complies with subdivision (d) and any regulations adopted by the state fire marshal pursuant to that subdivision. Any noise standards shall be consistent with local noise ordinances implementing the noise element of the general plan and shall take into consideration the noise level generated by children. The permit issued pursuant to this paragraph shall be granted by the zoning administrator, if any, or if there is no zoning administrator by the person or persons designated by the planning agency to grant such permits, upon the certification without a hearing.

(3) Require any large family day-care home to apply for a permit to use a lot zoned for single-family dwellings. The zoning administrator, if any, or if there is no zoning administrator, the person or persons designated by the planning agency to handle the use permits shall review and decide the applications. The use permit shall be granted if the large family day care home complies with local ordinances, if any, prescribing reasonable standards, restrictions and requirements concerning spacing and concentration, traffic control, parking and noise control relating to such homes, and complies with subdivision (d) and any regulations adopted by the state fire marshal pursuant to that subdivision.

Any noise standards shall be consistent with local noise ordinances implementing the noise element of the general plan and shall take into consideration the noise levels generated by children.

The local government shall process any required permit as economically as possible, and fees charged for review shall not exceed the costs of the review and permit process. Not less than 10 days prior to the date on which the decision will be made on the application, the zoning administrator or person designated to handle such use permits shall give notice of the proposed use by mail or delivery to all owners shown on the last

equalized assessment roll as owning real property within a 100-foot radius of the exterior boundaries of the proposed large family day care home. No hearing on the application for a permit issued pursuant to this paragraph shall be held before a decision is made unless a hearing is requested by the applicant or other affected person. The applicant or other affected person may appeal the decision. The appellant shall pay the cost, if any of the appeal.

(b) A large family day-care home shall not be subject to the provisions of Division 13 (commencing with Section 21000) of the Public Resources Code.

(c) Use of a single-family dwelling for the purposes of a large family day-care home shall not constitute a change of occupancy for purposes of Part 1.5 (commencing with Section 17910) of Division 13 (State Housing Law), or for purposes of local building and fire codes.

(d) Large family day-care homes shall be considered as single-family residences for the purposes of the State Uniform Building Standards Code and local building and fire codes, except with respect to any additional standards specifically designed to promote the fire and life safety of the children in these homes adopted by the State Fire Marshal pursuant to this subdivision.

**455.3 Smoke alarms.** Large family day-care homes shall be equipped with State Fire Marshal approved and listed single station residential type smoke alarms. The number and placement of smoke alarms shall be determined by the enforcement authority.

**455.4 Fire extinguishers.** Large and small family day-care homes shall be equipped with a portable fire extinguisher having a minimum 2A10BC rating.

**455.5 Fire alarm devices.** See Section 907.2.6.4.

**455.6 Compliance.** Every large-family day-care home shall comply with the provisions for Group R-3 occupancies and, if appropriate, Section 436.1. For the purposes of Section 436.1, the first story shall be designated as the floor used for residential occupancy nearest to the street level which provides primary access to the building.

Enforcement of the provisions shall be in accordance with the Health and Safety Code Sections 13145 and 13146. No city, county, city and county, or district shall adopt or enforce any building ordinance or local rule or regulation relating to the subject of fire and life safety in large-family day-care homes which is inconsistent with those standards adopted by the State Fire Marshal, except to the extent the building ordinance or local rule or regulation applies to single-family residences in which day care is not provided.

**455.7 Special hazards.** Every unenclosed gas-fired water heater or furnace which is within the area used for child care in a large family day-care home shall be protected in such a way as to prevent children from making contact with those appliances.

**Exception:** This does not apply to kitchen stoves or ovens.

**455.8 Exiting.** See Section 1006.2.2.7.

## CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE CHAPTER 5 – GENERAL BUILDING HEIGHTS AND AREAS

(Matrix Adoption Tables are nonregulatory, intended only as an aid to the code user.  
See Chapter 1 for state agency authority and building applications.)

Adopting Agency	BSC	BSC -CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4								
Adopt entire chapter	X							X	X	X	X	X										
Adopt entire chapter as amendeded (amended sections listed below)			X	X	X																	
Adopt only those sections that are listed below																						
Chapter / Section																						
503.1, <i>Exception 1</i>			X	X																		
Figure 5-1			X																			
Table 504.3			X																			
Table 504.4			X																			
Table 506.2			X																			
506.2.3			X																			
506.2.4			X																			
508.2.4			X																			
508.3.3			X																			
Table 508.4			X																			
508.4.4.1			X																			
Table 509			X																			
509.3			X																			
509.4.1.1			X																			
510.10			X																			

The state agency does not adopt sections identified with the following symbol: †  
The Office of the State Fire Marshal's adoption of this chapter or individual sections is applicable to structures regulated by other state agencies pursuant to Section 1.11.



**TABLE 504.3  
ALLOWABLE BUILDING HEIGHT IN FEET ABOVE GRADE PLANE<sup>a, i</sup>**

OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION											
		TYPE I		TYPE II		TYPE III		TYPE IV				TYPE V	
		A	B	A	B	A	B	A	B	C	HT	A	B
B, F, M, S, U	NS <sup>b</sup>	UL	160	65	55	65	55	65	65	65	65	50	40
	S	UL	180	85	75	85	75	270	180	85	85	70	60
A, E	NS <sup>b</sup>	UL	160	65	55	65	55	65	65	65	65	50	40
	S (without area increase)	UL	180	85	75	85	75	270	180	85	85	70	60
	S (with area increase)	UL	160	65	55	65	55	250	160	65	65	50	40
H-1, H-2, H-3, H-5, L	NS <sup>c, d</sup>	UL	160	65	55	65	55	120	90	85	65	50	40
	S (without area increase)		65	50	40								
	S (with area increase)	UL	160	65	55	65	55	65	65	65	50	40	
H-4	NS <sup>c, d</sup>	UL	160	65	55	65	55	65	65	65	65	50	40
	S (without area increase)	UL	180	85	75	85	75	140	100	85	85	70	60
	S (with area increase)	UL	160	65	55	65	55	120	80	65	65	50	40
I-3	NS <sup>d, e</sup>	UL	160	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
	S (without area increase)	UL	180	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
	S (with area increase)	UL	160	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
I-2, I-2.1	NS <sup>d, e, f</sup>	UL	160	65	55	65	NP	NP	NP	NP	65	50	NP
	S (without area increase)	UL	180	85				NP	NP	NP			
	S (with area increase)	UL	160	65	NP	NP	NP						
I-4	NS <sup>d, g</sup>	UL	160	65	55	65	55	65	65	65	65	50	40
	S (without area increase)	UL	180	85	75	85	75	180	120	85	85	70	60
	S (with area increase)	UL	160	65	55	65	55	160	100	65	65	50	50
R-1 <sup>h</sup>	NS <sup>d</sup>	UL	160	65	55	65	55	65	65	65	65	50	40
	S13D	60	60	60	60	60	60	60	60	60	60	50	40
	S13R	60	60	60	55	60	55	60	60	60	60	50	40
	S (without area increase)	UL	180	85	75	85	75	270	180	85	85	70	60
	S (with area increase)	UL	160	65	55	65	55	250	160	65	65	50	40
R-2 <sup>h</sup>	NS <sup>d</sup>	UL	160	65	55	65	55	65	65	65	65	50	40
	S13R	60	60	60	55	60	55	60	60	60	60	50	40
	S (without area increase)	UL	180	85	75	85	75	270	180	85	85	70	60
	S (with area increase)	UL	160	65	55	65	55	250	160	65	65	60 <sup>j</sup>	40
R-2.1 <sup>h</sup>	NS <sup>d</sup>	UL	160	65	55	65	55	65	NP	NP	NP	50	40
	S13D	60	60	60	55	60	55	60	NP	NP	NP	50	40
	S13R	60	60	60	55	60	55	60	NP	NP	NP	50	40
	S	UL	160	65	55	65	55	270	NP	NP	NP	50	40
R-2.2 <sup>h</sup>	NS <sup>d</sup>	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
	S (without area increase)	UL	180	85	NP	85	NP	270	180	85	85	70	NP
	S (with area increase)	UL	160	65	NP	65	NP	250	160	65	65	60 <sup>j</sup>	NP
R-3, R-3.1 <sup>h</sup>	NS <sup>d</sup>	UL	160	65	55	65	55	65	65	65	65	50	40
	S13D	60	60	60	60	60	60	60	60	60	60	50	40
	S13R	60	60	60	55	60	55	60	60	60	60	60	60
	S	UL	160	65	55	65	55	270	180	85	85	70	60
R-4 <sup>h</sup>	NS <sup>d</sup>	UL	160	65	55	65	55	65	65	65	65	50	40
	S13D	60	60	60	55	60	55	60	60	60	60	50	40
	S13R	60	60	60	55	60	55	60	60	60	60	50	40
	S	UL	160	65	55	65	55	270	180	85	85	70	60

For SI: 1 foot = 304.8 mm.

UL = Unlimited; NP = Not Permitted; NS = Buildings not equipped throughout with an automatic sprinkler system; S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2; S13D = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.3.

- a. See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.
- b. See Section 903.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.
- c. New Group H and all Group L occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.5.
- d. The NS value is only for use in evaluation of existing building height in accordance with the *California Existing Building Code*.
- e. New Group I-3 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6.
- f. New and existing Group I-2 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6 and Section 1103.5 of the *California Fire Code*.
- g. For new Group I-4 occupancies, see Exceptions 2 and 3 of Section 903.2.6.
- h. New Group R occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.8.
- i. In other than Group A, E, H, I, L, and R occupancies, high-rise buildings, and other applications listed in Section 1.11 regulated by the Office of the State Fire Marshal, the S increases for height and stories in Tables 504.3 and 504.4 are permitted in addition to the S area increase in accordance with Table 506.2.
- j. For Group R-2 buildings of Type VA construction equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, S area increase is permitted in addition to the height and story increase provided the height shall not exceed 60 feet and 4 stories.

**504.1.2 Special provisions.** The special provisions of Section 510 permit the use of special conditions that are exempt from, or modify, the specific requirements of this chapter regarding the allowable heights of buildings based on the occupancy classification and type of construction, provided the special condition complies with the provisions specified in Section 510.

**504.2 Mixed occupancy.** In a building containing mixed occupancies in accordance with Section 508, no individual occupancy shall exceed the height and number of *story* limits specified in this section for the applicable occupancies.

**504.3 Height in feet.** The maximum height, in feet, of a building shall not exceed the limits specified in Table 504.3.

**Exception:** Towers, spires, steeples and other roof structures shall be constructed of materials consistent with the required type of construction of the building except where other construction is permitted by Section 1510.2.4. Such structures shall not be used for habitation or storage. The structures shall be unlimited in height where of noncombustible materials and shall not extend more than 20 feet (6096 mm) above the allowable building height where of combustible materials (see Chapter 15 for additional requirements).

**504.4 Number of stories.** The maximum number of stories of a building shall not exceed the limits specified in Table 504.4.

**SECTION 505  
MEZZANINES AND EQUIPMENT PLATFORMS**

**505.1 General.** Mezzanines shall comply with Section 505.2. Equipment platforms shall comply with Section 505.3.

**505.2 Mezzanines.** A mezzanine or mezzanines in compliance with Section 505.2 shall be considered a portion of the story below. Such mezzanines shall not contribute to either the building area or number of stories as regulated by Section 503.1. The area of the mezzanine shall be included in determining the fire area. The clear height above and below the mezzanine floor construction shall be not less than 7 feet (2134 mm).

**505.2.1 Area limitation.** The aggregate area of a mezzanine or mezzanines within a room shall be not greater than one-third of the floor area of that room or space in which they are located. The enclosed portion of a room shall not be included in a determination of the floor area of the room in which the mezzanine is located. In determining the allowable mezzanine area, the area of the mezzanine shall not be included in the floor area of the room.

**Exceptions:**

1. The aggregate area of mezzanines in buildings and structures of Type I or II construction for special industrial occupancies in accordance with Section 503.1.1 shall be not greater than two-thirds of the floor area of the room.
2. The aggregate area of mezzanines in buildings and structures of Type I or II construction shall be not greater than one-half of the floor area of the room in buildings and structures equipped throughout with an approved automatic sprinkler

system in accordance with Section 903.3.1.1 and an approved emergency voice/alarm communication system in accordance with Section 907.5.2.2.

3. The aggregate area of a mezzanine within a dwelling unit that is located in a building equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 shall not be greater than one-half of the floor area of the room, provided that:
  - 3.1. Except for enclosed closets and bathrooms, the mezzanine shall be open to the room in which such mezzanine is located;
  - 3.2. The opening to the room shall be unobstructed except for walls not more than 42 inches (1067 mm) in height, columns and posts; and
  - 3.3. Exceptions to Section 505.2.3 shall not be permitted.

- 3.1. Except for enclosed closets and bathrooms, the mezzanine shall be open to the room in which such mezzanine is located;
- 3.2. The opening to the room shall be unobstructed except for walls not more than 42 inches (1067 mm) in height, columns and posts; and
- 3.3. Exceptions to Section 505.2.3 shall not be permitted.

**505.2.1.1 Aggregate area of mezzanines and equipment platforms.** Where a room contains both a mezzanine and an equipment platform, the aggregate area of the two raised floor levels shall be not greater than two-thirds of the floor area of that room or space in which they are located. The area of the mezzanine shall not exceed the area determined in accordance with Section 505.2.1.

**505.2.2 Means of egress.** The means of egress for mezzanines shall comply with the applicable provisions of Chapter 10.

**505.2.3 Openness.** A mezzanine shall be open and unobstructed to the room in which such mezzanine is located except for walls not more than 42 inches (1067 mm) in height, columns and posts.

**Exceptions:**

1. Mezzanines or portions thereof are not required to be open to the room in which the mezzanines are located, provided that the occupant load of the aggregate area of the enclosed space is not greater than 10.
2. A mezzanine having two or more exits or access to exits is not required to be open to the room in which the mezzanine is located.
3. Mezzanines or portions thereof are not required to be open to the room in which the mezzanines are located, provided that the aggregate floor area of the enclosed space is not greater than 10 percent of the mezzanine area.
4. In industrial facilities, mezzanines used for control equipment are permitted to be glazed on all sides.
5. In occupancies other than Groups H and I, which are no more than two stories above grade plane and equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, a mezzanine having two or more exits or access to exits shall not be required to be open to the room in which the mezzanine is located.

**TABLE 504.4**  
**ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE<sup>a, b, n</sup>**

OCCUPANCY CLASSIFICATION	TYPE OF CONSTRUCTION												
	SEE FOOTNOTES	TYPE I		TYPE II		TYPE III		TYPE IV				TYPE V	
		A	B	A	B	A	B	A	B	C	HT	A	B
A-1	NS	UL	5	3	2	3	2	3	3	3	3	2	1
	<i>S (without area increase)</i>	UL	6	4	3	4	3	9	6	4	4	3	2
	<i>S (with area increase)</i>	UL	5	3	2	3	2	8	5	3	3	2	1
A-2	NS	UL	11	3	2	3	2	3	3	3	3	2	1
	<i>S (without area increase)</i>	UL	12	4	3	4	3	18	12	6	4	3	2
	<i>S (with area increase)</i>	UL	11	3	2	3	2	17	11	5	3	2	1
A-3	NS	UL	11	3	2	3	2	3	3	3	3	2	1
	<i>S (without area increase)</i>	UL	12	4	3	4	3	18	12	6	4	3	2
	<i>S (with area increase)</i>	UL	11	3	2	3	2	17	11	5	3	2	1
A-4	NS	UL	11	3	2	3	2	3	3	3	3	2	1
	<i>S (without area increase)</i>	UL	12	4	3	4	3	18	12	6	4	3	2
	<i>S (with area increase)</i>	UL	11	3	2	3	2	17	11	5	3	2	1
A-5	NS	UL	UL	UL	UL	UL	UL	1	1	1	UL	UL	UL
	S	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL
B	NS	UL	11	5	3	5	3	5	5	5	5	3	2
	S	UL	12	6	4	6	4	18	12	9	6	4	3
E	NS	UL	5	3	2	3	2	3	3	3	3	1	1
	<i>S (without area increase)</i>	UL	6	4	3	4	3	9	6	4	4	2	2
	<i>S (with area increase)</i>	UL	5	3	2	3	2	8	7	3	3	1	1
F-1	NS	UL	11	4	2	3	2	3	3	3	4	2	1
	S	UL	12	5	3	4	3	10	7	5	5	3	2
F-2	NS	UL	11	5	3	4	3	5	5	5	5	3	2
	S	UL	12	6	4	5	4	12	8	6	6	4	3
H-1	NS <sup>c, d</sup>	1	1	1	1	1	1	NP	NP	NP	1	1	NP
	S							1	1	1			
H-2	NS <sup>c, d</sup>	20	3	2	1	2	1	1	1	1	2	1	1
	S							2	2	2			
H-3	NS <sup>c, d</sup>	20	6	4	2	4	2	3	3	3	4	2	1
	S							4	4	4			
H-4	NS <sup>c, d</sup>	20	7	5	3	5	3	5	5	5	5	3	2
	<i>S (without area increase)</i>	20	8	6	4	6	4	8	7	6	6	4	3
	<i>S (with area increase)</i>	20	7	5	3	5	3	7	6	5	5	3	2
H-5	NS <sup>c, d</sup>	4	4	3	3	3	3	2	2	2	3	3	2
	S							3	3	3			
I-2, I-2.1 <sup>j, i</sup>	NS <sup>d, f</sup>	UL	4	2				NP	NP	NP			
	<i>S (without area increase)</i>	UL	5	3	1	1	NP	NP	NP	NP	1	1	NP
	<i>S (with area increase)</i>	UL	4	2				NP	NP	NP			
I-3	NS <sup>d, e</sup>	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
	<i>S (without area increase)</i>	UL	3	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
	<i>S (with area increase)</i>	UL	2	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
I-4	NS <sup>d, g</sup>	UL	5	3	2	3	2	3	3	3	3	1	1
	<i>S (without area increase)</i>	UL	6	4	3	4	3	9	6	4	4	2	2
	<i>S (with area increase)</i>	UL	5	3	2	3	2	8	5	3	3	1	1
L	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
	S	20	6	5	3	5	3	8	6	5	5	3	2
M	NS	UL	11	4	2	4	2	4	4	4	4	3	1
	S	UL	12	5	3	5	3	12	8	6	5	4	2

(continued)

**TABLE 504.4—continued**  
**ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE<sup>a, b, n</sup>**

OCCUPANCY CLASSIFICATION	TYPE OF CONSTRUCTION SEE FOOTNOTES	TYPE I		TYPE II		TYPE III		TYPE IV				TYPE V	
		A	B	A	B	A	B	A	B	C	HT	A	B
R-1 <sup>h</sup>	NS <sup>d</sup>	UL	11	4	4	4	4	4	4	4	4	3	2
	S13R	4	4					4	4	4		3	2
	S (without area increase)	UL	12	5	5	5	5	18	12	8	5	4	3
	S (with area increase)	UL	11	4	4	4	4	17	11	7	4	3	2
R-2 <sup>h</sup>	NS <sup>d</sup>	UL	11	4	4	4	4	4	4	4	4	3	2
	S13R	4	4					4	4	4		3	2
	S (without area increase)	UL	12	5	5	5	5	18	12	8	5	4	3
	S (with area increase)	UL	11	4	4	4	4	17	11	7	4	4 <sup>o</sup>	2
R-2.1 <sup>h</sup>	NS <sup>d</sup>	UL	6 <sup>l</sup>	3 <sup>k</sup>	NP	3 <sup>k</sup>	NP	4	NP	NP	NP	3 <sup>k</sup>	NP
	S13R	UL	4 <sup>i</sup>	3 <sup>k</sup>	NP	3 <sup>k</sup>	NP	4	NP	NP	NP	3 <sup>k</sup>	NP
	S	UL	6 <sup>l</sup>	3 <sup>k</sup>	NP	3 <sup>k</sup>	NP	10	NP	NP	NP	3 <sup>k</sup>	NP
R-2.2 <sup>h</sup>	NS <sup>d</sup>	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
	S (without area increase)	UL	12	5	NP	5	NP	18	12	8	5	4	NP
	S (with area increase)	UL	11	4	NP	4	NP	17	11	7	4	4 <sup>o</sup>	NP
R-3, R-3.1 <sup>h</sup>	NS <sup>d</sup>	UL	11	4	4	4	4	4	4	4	4	3	3
	S13D	4	4					4	4	4		3	3
	S13R	4	4					4	4	4		4	4
	S	UL	12	5	5	5	5	18	12	5	5	4	4
R-4 <sup>h</sup>	NS <sup>d</sup>	UL	11 <sup>l</sup>	4 <sup>k</sup>	4 <sup>m</sup>	4 <sup>k</sup>	4 <sup>m</sup>	4 <sup>m</sup>	4 <sup>m</sup>	4 <sup>m</sup>	4 <sup>m</sup>	3 <sup>k</sup>	2 <sup>m</sup>
	S13D	4	4 <sup>l</sup>					4 <sup>m</sup>	4 <sup>m</sup>	4 <sup>m</sup>		3 <sup>k</sup>	2 <sup>m</sup>
	S13R	4	4 <sup>l</sup>					4 <sup>m</sup>	4 <sup>m</sup>	4 <sup>m</sup>		4	3
	S	UL	11 <sup>l</sup>	5	5	5	5	11 <sup>l</sup>	5	5	5	4	3
S-1	NS	UL	11	4	2	3	2	4	4	4	4	3	1
	S	UL	12	5	3	4	3	10	7	5	5	4	2
S-2 <sup>i</sup>	NS	UL	11	5	3	4	3	4	4	4	5	4	2
	S	UL	12	6	4	5	4	12	8	5	6	5	3
U	NS	UL	5	4	2	3	2	4	4	4	4	2	1
	S	UL	6	5	3	4	3	9	6	5	5	3	2

UL = Unlimited; NP = Not Permitted; NS = Buildings not equipped throughout with an automatic sprinkler system; S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2; S13D = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.3.

- a. See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.
- b. See Section 903.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.
- c. New Group H occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.5.
- d. The NS value is only for use in evaluation of existing building height in accordance with the *California Existing Building Code*.
- e. Group I-3 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6.
- f. New and existing Group I-2 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6 and 1103.5 of the *California Fire Code*.
- g. For new Group I-4 occupancies, see Exceptions 2 and 3 of Section 903.2.6.
- h. New Group R occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.8.
- i. See Sections 407.1.1 and 408.1.2 for specific exceptions to construction type, allowable building areas and allowable heights.
- j. Restraint shall not be permitted in any building except in Group I-3 occupancies constructed for such use (see Section 408.1.2).
- k. Nonambulatory persons shall be limited to the first 2 stories.
- l. Nonambulatory persons shall be limited to the first 5 stories.
- m. Nonambulatory elderly clients are not permitted in buildings of these types of construction. See Sections 435.3.3 and 435.3.4.
- n. In other than Group A, E, H, I, L, and R occupancies, high-rise buildings, and other applications listed in Section 1.11 regulated by the Office of the State Fire Marshal, the S increases for height and stories in Tables 504.3 and 504.4 are permitted in addition to the S area increase in accordance with Table 506.2.
- o. For Group R-2 buildings of Type VA construction equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, S area increase is permitted in addition to the height and story increase provided the height shall not exceed 60 feet and 4 stories.



**505.3 Equipment platforms.** Equipment platforms in buildings shall not be considered as a portion of the floor below. Such equipment platforms shall not contribute to either the building area or the number of stories as regulated by Section 503.1. The area of the equipment platform shall not be included in determining the fire area in accordance with Section 903. Equipment platforms shall not be a part of any mezzanine and such platforms and the walkways, stairways, alternating tread devices and ladders providing access to an equipment platform shall not serve as a part of the means of egress from the building.

**505.3.1 Area limitation.** The aggregate area of all equipment platforms within a room shall be not greater than two-thirds of the area of the room in which they are located. Where an equipment platform is located in the same room as a mezzanine, the area of the mezzanine shall be determined by Section 505.2.1 and the combined aggregate area of the equipment platforms and mezzanines shall be not greater than two-thirds of the room in which they are located. The area of the mezzanine shall not exceed the area determined in accordance with Section 505.2.1.

**505.3.2 Automatic sprinkler system.** Where located in a building that is required to be protected by an automatic sprinkler system, equipment platforms shall be fully protected by sprinklers above and below the platform, where required by the standards referenced in Section 903.3.

**505.3.3 Guards.** Equipment platforms shall have guards where required by Section 1015.2.

**SECTION 506  
BUILDING AREA**

**506.1 General.** The floor area of a building shall be determined based on the type of construction, occupancy classification, whether there is an automatic sprinkler system installed throughout the building and the amount of building frontage on public way or open space.

**506.1.1 Unlimited area buildings.** Unlimited area buildings shall be designed in accordance with Section 507.

**506.1.2 Special provisions.** The special provisions of Section 510 permit the use of special conditions that are exempt from, or modify, the specific requirements of this chapter regarding the allowable areas of buildings based on the occupancy classification and type of construction, provided the special condition complies with the provisions specified in Section 510.

**506.1.3 Basements.** Basements need not be included in the total allowable floor area of a building provided the total area of such basements does not exceed the area permitted for a one-story above grade plane building.

**506.2 Allowable area determination.** The allowable area of a building shall be determined in accordance with the applicable provisions of Sections 506.2.1 through 506.2.4 and Section 506.3.

**506.2.1 Single-occupancy, one-story buildings.** The allowable area of a single-occupancy building with no

more than one story above grade plane shall be determined in accordance with Equation 5-1:

$$A_a = A_t + (NS \times I_f) \tag{Equation 5-1}$$

where:

$A_a$  = Allowable area (square feet).

$A_t$  = Tabular allowable area factor (NS, S1, S13R or S13D value, as applicable) in accordance with Table 506.2.

$NS$  = Tabular allowable area factor in accordance with Table 506.2 for nonsprinklered building (regardless of whether the building is sprinklered).

$I_f$  = Area factor increase due to frontage (percent) as calculated in accordance with Section 506.3.

**506.2.2 Mixed-occupancy, one-story buildings.** The allowable area of a mixed-occupancy building with no more than one story above grade plane shall be determined in accordance with the applicable provisions of Section 508.1 based on Equation 5-1 for each applicable occupancy.

**506.2.2.1 Group H-2 or H-3 mixed occupancies.** For a building containing Group H-2 or H-3 occupancies, the allowable area shall be determined in accordance with Section 508.4.2, with the sprinkler system increase applicable only to the portions of the building not classified as Group H-2 or H-3.

**506.2.3 Single-occupancy, multistory buildings.** The allowable area of a single-occupancy building with more than one story above grade plane shall be determined in accordance with Equation 5-2:

$$A_a = [A_t + (NS \times I_f)] \times S_a \tag{Equation 5-2}$$

where:

$A_a$  = Allowable area (square feet).

$A_t$  = Tabular allowable area factor (NS, S13R, S13D or SM value, as applicable) in accordance with Table 506.2.

$NS$  = Tabular allowable area factor in accordance with Table 506.2 for a nonsprinklered building (regardless of whether the building is sprinklered).

$I_f$  = Area factor increase due to frontage (percent) as calculated in accordance with Section 506.3.

$S_a$  = For other than Group A, E, H, I, L and R occupancies, high-rise buildings, and other applications listed in Section 1.11 regulated by the Office of the State Fire Marshal, actual number of building stories above grade plane, not to exceed three. For Group A, E, H, I, L and R occupancies, high-rise buildings, and other applications listed in Section 1.11 regulated by the Office of the State Fire Marshal, actual number of building stories above grade plane, not to exceed two.

No individual story shall exceed the allowable area ( $A_a$ ) as determined by Equation 5-2 using the value of  $S_a = 1$ .

GENERAL BUILDING HEIGHTS AND AREAS

**TABLE 506.2**  
**ALLOWABLE AREA FACTOR (A<sub>f</sub> = NS, S1, S13R, S13D or SM, as applicable) IN SQUARE FEET<sup>a, b, j</sup>**

OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION											
		TYPE I		TYPE II		TYPE III		TYPE IV				TYPE V	
		A	B	A	B	A	B	A	B	C	HT	A	B
A-1	NS	UL	UL	15,500	8,500	14,000	8,500	45,000	30,000	18,750	15,000	11,500	5,500
	S1	UL	UL	62,000	34,000	56,000	34,000	180,000	120,000	75,000	60,000	46,000	22,000
	SM (without height increase)	UL	UL	46,500	25,500	42,000	25,500	135,000	90,000	56,250	45,000	34,500	16,500
	SM (with height increase)	UL	UL	15,500	8,500	14,000	8,500	45,000	30,000	18,750	15,000	11,500	5,500
A-2	NS	UL	UL	15,500	9,500	14,000	9,500	45,000	30,000	18,750	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	180,000	120,000	75,000	60,000	46,000	24,000
	SM (without height increase)	UL	UL	46,500	28,500	42,000	28,500	135,000	90,000	56,250	45,000	34,500	18,000
	SM (with height increase)	UL	UL	15,500	9,500	14,000	9,500	45,000	30,000	18,750	15,000	11,500	6,000
A-3	NS	UL	UL	15,500	9,500	14,000	9,500	45,000	30,000	18,750	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	180,000	120,000	75,000	60,000	46,000	24,000
	SM (without height increase)	UL	UL	46,500	28,500	42,000	28,500	135,000	90,000	56,250	45,000	34,500	18,000
	SM (with height increase)	UL	UL	15,500	9,500	14,000	9,500	45,000	30,000	18,750	15,000	11,500	6,000
A-4	NS	UL	UL	15,500	9,500	14,000	9,500	45,000	30,000	18,750	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	180,000	120,000	75,000	60,000	46,000	24,000
	SM (without height increase)	UL	UL	46,500	28,500	42,000	28,500	135,000	90,000	56,250	45,000	34,500	18,000
	SM (with height increase)	UL	UL	15,500	9,500	14,000	9,500	45,000	30,000	18,750	15,000	11,500	6,000
A-5	NS	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL
	S1												
	SM												
B	NS	UL	UL	37,500	23,000	28,500	19,000	108,000	72,000	45,000	36,000	18,000	9,000
	S1	UL	UL	150,000	92,000	114,000	76,000	432,000	288,000	180,000	144,000	72,000	36,000
	SM	UL	UL	112,500	69,000	85,500	57,000	324,000	216,000	135,000	108,000	54,000	27,000
E	NS	UL	UL	26,500	14,500	23,500	14,500	76,500	51,000	31,875	25,500	18,500	9,500
	S1	UL	UL	106,000	58,000	94,000	58,000	306,000	204,000	127,500	102,000	74,000	38,000
	SM (without height increase)	UL	UL	79,500	43,500	70,500	43,500	229,500	153,000	95,625	76,500	55,500	28,500
F-1	NS	UL	UL	25,000	15,500	19,000	12,000	100,500	67,000	41,875	33,500	14,000	8,500
	S1	UL	UL	100,000	62,000	76,000	48,000	402,000	268,000	167,500	134,000	56,000	34,000
	SM	UL	UL	75,000	46,500	57,000	36,000	301,500	201,000	125,625	100,500	42,000	25,500
F-2	NS	UL	UL	37,500	23,000	28,500	18,000	151,500	101,000	63,125	50,500	21,000	13,000
	S1	UL	UL	150,000	92,000	114,000	72,000	606,000	404,000	252,500	202,000	84,000	52,000
	SM	UL	UL	112,500	69,000	85,500	54,000	454,500	303,000	189,375	151,500	63,000	39,000
H-1	NS <sup>c</sup>	21,000	16,500	11,000	7,000	9,500	7,000	10,500	10,500	10,500	10,500	7,500	NP
	S1												
H-2	NS <sup>c</sup>	21,000	16,500	11,000	7,000	9,500	7,000	10,500	10,500	10,500	10,500	7,500	3,000
	S1												
	SM												
H-3	NS <sup>c</sup>	UL	60,000	26,500	14,000	17,500	13,000	25,500	25,500	25,500	25,500	10,000	5,000
	S1												
	SM												

(continued)

**TABLE 506.2—continued**  
**ALLOWABLE AREA FACTOR (A<sub>t</sub> = NS, S1, S13R, S13D or SM, as applicable) IN SQUARE FEET<sup>a, b, j</sup>**

OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION											
		TYPE I		TYPE II		TYPE III		TYPE IV				TYPE V	
		A	B	A	B	A	B	A	B	C	HT	A	B
H-4	NS <sup>c, d</sup>	UL	UL	37,500	17,500	28,500	17,500	72,000	54,000	40,500	36,000	18,000	6,500
	S1	UL	UL	150,000	70,000	114,000	70,000	288,000	216,000	162,000	144,000	72,000	26,000
	SM (without height increase)	UL	UL	112,500	52,500	85,500	52,500	216,000	162,000	121,500	108,000	54,000	19,500
	SM (with height increase)	UL	UL	37,500	17,500	28,500	17,500	72,000	54,000	40,500	36,000	18,000	6,500
H-5	NS <sup>c, d</sup>	UL	UL	37,500	23,000	28,500	19,000	72,000	54,000	40,500	36,000	18,000	9,000
	S1	UL	UL	150,000	92,000	114,000	76,000	288,000	216,000	162,000	144,000	72,000	36,000
	SM (without height increase)	UL	UL	112,500	69,000	85,500	57,000	216,000	162,000	121,500	108,000	54,000	27,000
	SM (with height increase)	UL	UL	37,500	23,000	28,500	19,000	72,000	54,000	40,500	36,000	18,000	9,000
I-2, I-2.1	NS <sup>d, f</sup>	UL	UL	15,000	11,000	12,000	NP	NP	NP	NP	12,000	9,500	NP
	S1	UL	UL	60,000	44,000	48,000	NP	NP	NP	NP	48,000	38,000	NP
	SM (without height increase)	UL	UL	45,000	33,000	36,000	NP	NP	NP	NP	36,000	28,500	NP
	SM (with height increase)	UL	UL	15,000	11,000	12,000	NP	NP	NP	NP	12,000	9,500	NP
I-3	NS <sup>d, e</sup>	UL	15,100	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
	S1	UL	45,300	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
	SM (without height increase)	UL	30,200	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
	SM (with height increase)	UL	15,100	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
I-4	NS <sup>d, g</sup>	UL	60,500	26,500	13,000	23,500	13,000	76,500	51,000	25,500	25,500	18,500	9,000
	S1	UL	121,000	106,000	52,000	94,000	52,000	306,000	204,000	102,000	102,000	74,000	36,000
	SM (without height increase)	UL	181,500	79,500	39,000	70,500	39,000	229,500	153,000	76,500	76,500	55,500	27,000
	SM (with height increase)	UL	60,500	26,500	13,000	23,500	13,000	76,500	51,000	25,500	25,500	18,500	9,000
L	NS <sup>e</sup>												
	S1	UL	60,000	37,500	17,500	28,500	17,500	60,000	37,500	36,000	36,000	18,000	6,500
	SM												
M	NS	UL	UL	21,500	12,500	18,500	12,500	61,500	41,000	25,625	20,500	14,000	9,000
	S1	UL	UL	86,000	50,000	74,000	50,000	246,000	164,000	102,500	82,000	56,000	36,000
	SM	UL	UL	64,500	37,500	55,500	37,500	184,500	123,000	76,875	61,500	42,000	27,000
R-1 <sup>h</sup>	NS <sup>d</sup>	UL	UL	24,000	16,000	24,000	16,000	61,500	41,000	25,625	20,500	12,000	7,000
	S13R												
	S1	UL	UL	96,000	64,000	96,000	64,000	246,000	164,000	102,500	82,000	48,000	28,000
	SM (without height increase)	UL	UL	72,000	48,000	72,000	48,000	184,500	123,000	76,875	61,500	36,000	21,000
	SM (with height increase)	UL	UL	24,000	16,000	24,000	16,000	61,500	41,000	25,625	20,500	12,000	7,000
R-2 <sup>h</sup>	NS <sup>d</sup>	UL	UL	24,000	16,000	24,000	16,000	61,500	41,000	25,625	20,500	12,000	7,000
	S13R												
	S1	UL	UL	96,000	64,000	96,000	64,000	246,000	164,000	102,500	82,000	48,000	28,000
	SM (without height increase)	UL	UL	72,000	48,000	72,000	48,000	184,500	123,000	76,875	61,500	36,000	21,000
	SM (with height increase)	UL	UL	24,000	16,000	24,000	16,000	61,500	41,000	25,625	20,500	12,000	7,000
R-2 Type VA construction <sup>k</sup>	NS <sup>d</sup>	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	12,000	NP
	S13R	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	12,000	NP
	S1	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	48,000	NP
	SM (without height increase)	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	36,000	NP
	SM (with height increase)	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	36,000 <sub>j</sub>	NP

(continued)

**TABLE 506.2—continued**  
**ALLOWABLE AREA FACTOR (A<sub>f</sub> = NS, S1, S13R, S13D or SM, as applicable) IN SQUARE FEET<sup>a, b, j</sup>**

OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION											
		TYPE I		TYPE II		TYPE III		TYPE IV				TYPE V	
		A	B	A	B	A	B	A	B	C	HT	A	B
R-2.1 <sup>h</sup>	NS <sup>d</sup>	UL	55,000	19,000	NP	16,500	NP	54,000	NP	NP	NP	10,500	NP
	S13R	UL	55,000	19,000	NP	16,500	NP					10,500	NP
	S1	UL	220,000	76,000	NP	66,000	NP	216,000	NP	NP	NP	42,000	NP
	SM (without height increase)	UL	165,000	57,000	NP	49,500	NP	162,000	NP	NP	NP	31,500	NP
	SM (with height increase)	UL	55,000	19,000	NP	16,500	NP	54,000	NP	NP	NP	10,500	NP
R-2.2 <sup>h</sup>	NS <sup>l</sup>	UL	UL	24,000	NP	24,000	NP	61,500	41,000	25,625	20,500	12,000	NP
	S1	UL	UL	96,000	NP	96,000	NP	246,000	164,000	102,500	82,000	48,000	NP
	SM (without height increase)	UL	UL	72,000	NP	72,000	NP	184,500	123,000	76,875	61,500	36,000	NP
	SM (with height increase)	UL	UL	24,000	NP	24,000	NP	61,500	41,000	25,625	20,500	12,000	NP
R-3, R-3.1 <sup>h</sup>	NS <sup>d</sup>	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL
	S13D												
	S13R												
	S1												
	SM												
R-4 <sup>h</sup>	NS <sup>d</sup>	UL	UL	24,000	16,000	24,000	16,000	61,500	41,000	25,625	20,500	12,000	7,000
	S13D												
	S13R												
	S1	UL	UL	96,000	64,000	96,000	64,000	246,000	164,000	102,500	82,000	48,000	28,000
	SM (without height increase)	UL	UL	72,000	48,000	72,000	48,000	184,500	123,000	76,875	61,500	36,000	21,000
	SM (with height increase)	UL	UL	24,000	16,000	24,000	16,000	61,500	41,000	25,625	20,500	12,000	7,000
S-1	NS	UL	48,000	26,000	17,500	26,000	17,500	76,500	51,000	31,875	25,500	14,000	9,000
	S1	UL	192,000	104,000	70,000	104,000	70,000	306,000	204,000	127,500	102,000	56,000	36,000
	SM	UL	144,000	78,000	52,500	78,000	52,500	229,500	153,000	95,625	76,500	42,000	27,000
S-2	NS	UL	79,000	39,000	26,000	39,000	26,000	115,500	77,000	48,125	38,500	21,000	13,500
	S1	UL	316,000	156,000	104,000	156,000	104,000	462,000	308,000	192,500	154,000	84,000	54,000
	SM	UL	237,000	117,000	78,000	117,000	78,000	346,500	231,000	144,375	115,500	63,000	40,500
U	NS <sup>i</sup>	UL	35,500	19,000	8,500	14,000	8,500	54,000	36,000	22,500	18,000	9,000	5,500
	S1	UL	142,000	76,000	34,000	56,000	34,000	216,000	144,000	90,000	72,000	36,000	22,000
	SM	UL	106,500	57,000	25,500	42,000	25,500	162,000	108,000	67,500	54,000	27,000	16,500

For SI: 1 square foot = 0.0929 m<sup>2</sup>.

UL = Unlimited; NP = Not Permitted; NS = Buildings not equipped throughout with an automatic sprinkler system; S1 = Buildings a maximum of one story above grade plane equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; SM = Buildings two or more stories above grade plane equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2; S13D = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.3.

- a. See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.
- b. See Section 903.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.
- c. New Group H and all Group L occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.5.
- d. The NS value is only for use in evaluation of existing building area in accordance with the *California Existing Building Code*.
- e. Group I-3 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6.
- f. New and existing Group I-2 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6 and Section 1103.5 of the *California Fire Code*.
- g. New Group I-4 occupancies see Exceptions 2 and 3 of Section 903.2.6.
- h. New Group R occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.8.
- i. The maximum allowable area for a single-story nonsprinklered Group U greenhouse is permitted to be 9,000 square feet, or the allowable area shall be permitted to comply with Table C102.1 of Appendix C.
- j. In other than Group A, E, H, I, L, and R occupancies, high-rise buildings, and other applications listed in Section 1.11 regulated by the Office of the State Fire Marshal, the S increases for height and stories in Tables 504.3 and 504.4 are permitted in addition to the S area increase in accordance with Table 506.2.
- k. For Group R-2 buildings of Type VA construction equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, S area increase is permitted in addition to the height and story increase provided the height shall not exceed 60 feet and 4 stories.
- l. The NS value is only for use in evaluation of single-occupancy, multistory buildings per the formula in Section 506.2.3.

**507.8 Group H-2, H-3 and H-4 occupancies.** Group H-2, H-3 and H-4 occupancies shall be permitted in unlimited area buildings containing Group F or S occupancies in accordance with Sections 507.4 and 507.5 and the provisions of Sections 507.8.1 through 507.8.4.

**507.8.1 Allowable area.** The aggregate floor area of Group H occupancies located in an unlimited area building shall not exceed 10 percent of the area of the building nor the area limitations for the Group H occupancies as specified in Section 506 based on the perimeter of each Group H floor area that fronts on a public way or open space.

**507.8.1.1 Located within the building.** The aggregate floor area of Group H occupancies not located at the perimeter of the building shall not exceed 25 percent of the area limitations for the Group H occupancies as specified in Section 506.

**507.8.1.1.1 Liquid use, dispensing and mixing rooms.** Liquid use, dispensing and mixing rooms having a floor area of not more than 500 square feet (46.5 m<sup>2</sup>) need not be located on the outer perimeter of the building where they are in accordance with the *California Fire Code* and NFPA 30.

**507.8.1.1.2 Liquid storage rooms.** Liquid storage rooms having a floor area of not more than 1,000 square feet (93 m<sup>2</sup>) need not be located on the outer perimeter where they are in accordance with the *California Fire Code* and NFPA 30.

**507.8.1.1.3 Spray paint booths.** Spray paint booths that comply with the *California Fire Code* need not be located on the outer perimeter.

**507.8.2 Located on building perimeter.** Except as provided for in Section 507.8.1.1, Group H occupancies shall be located on the perimeter of the building. In Group H-2 and H-3 occupancies, not less than 25 percent of the perimeter of such occupancies shall be an exterior wall.

**507.8.3 Occupancy separations.** Group H occupancies shall be separated from the remainder of the unlimited area building and from each other in accordance with Table 508.4.

**507.8.4 Height limitations.** For two-story, unlimited area buildings, Group H occupancies shall not be located more than one story above grade plane unless permitted based on the allowable height and number of stories and feet as specified in Section 504 based on the type of construction of the unlimited area building.

**507.9 Unlimited mixed occupancy buildings with Group H-5.** The area of a Group B, F, H-5, M or S building not more than two stories above grade plane shall not be limited where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, and is surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width, provided all of the following criteria are met:

1. Buildings containing Group H-5 occupancy shall be of Type I or II construction.

2. Each area used for Group H-5 occupancy shall be separated from other occupancies as required in Sections 415.11 and 508.4.
3. Each area used for Group H-5 occupancy shall not exceed the maximum allowable area permitted for such occupancies in Section 503.1 including modifications of Section 506.

**Exception:** Where the Group H-5 occupancy exceeds the maximum allowable area, the Group H-5 shall be subdivided into areas that are separated by 2-hour fire barriers.

**507.10 Aircraft paint hangar.** The area of a Group H-2 aircraft paint hangar not more than one story above grade plane shall not be limited where such aircraft paint hangar complies with the provisions of Section 412.5 and is surrounded and adjoined by public ways or yards not less in width than one and one-half times the building height.

**507.11 Group E buildings.** The area of a Group E building not more than one story above grade plane, of Type II, IIIA or IV construction, shall not be limited provided all of the following criteria are met:

1. Each classroom shall have not less than two means of egress, with one of the means of egress being a direct exit to the outside of the building complying with Section 1022.
2. The building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
3. The building is surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.

**507.12 Motion picture theaters.** In buildings of Type II construction, the area of a motion picture theater located on the first story above grade plane shall not be limited where the building is provided with an automatic sprinkler system throughout in accordance with Section 903.3.1.1 and is surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.

**507.13 Covered and open mall buildings and anchor buildings.** The area of covered and open mall buildings and anchor buildings not exceeding three stories in height that comply with Section 402 shall not be limited.

## SECTION 508 MIXED USE AND OCCUPANCY

**508.1 General.** Each portion of a building shall be individually classified in accordance with Section 302.1. Where a building contains more than one occupancy group, the building or portion thereof shall comply with the applicable provisions of Section 508.2, 508.3 or 508.4, or a combination of these sections.

### Exceptions:

1. Occupancies separated in accordance with Section 510.
2. Where required by Table 415.6.2, areas of Group H-1, H-2 and H-3 occupancies shall be located in a detached building or structure.

3. Uses within live/work units, complying with Section 419, are not considered separate occupancies.

**508.2 Accessory occupancies.** Accessory occupancies are those occupancies that are ancillary to the main occupancy of the building or portion thereof. Accessory occupancies shall comply with the provisions of Sections 508.2.1 through 508.2.4.

**508.2.1 Occupancy classification.** Accessory occupancies shall be individually classified in accordance with Section 302.1. The requirements of this code shall apply to each portion of the building based on the occupancy classification of that space.

**508.2.2 Allowable building height.** The allowable height and number of stories of the building containing accessory occupancies shall be in accordance with Section 504 for the main occupancy of the building.

**508.2.3 Allowable building area.** The allowable area of the building shall be based on the applicable provisions of Section 506 for the main occupancy of the building. Aggregate accessory occupancies shall not occupy more than 10 percent of the floor area of the story in which they are located and shall not exceed the tabular values for non-sprinklered buildings in Table 506.2 for each such accessory occupancy.

**508.2.4 Separation of occupancies.** No separation is required between accessory occupancies and the main occupancy.

**Exceptions:**

1. Group H-2, H-3, H-4 and H-5 and L occupancies shall be separated from all other occupancies in accordance with Section 508.4.
2. Group R-1, R-2, R-2.1, R-2.2 and R-3 dwelling units and sleeping units shall be separated from other dwelling or sleeping units and from accessory occupancies contiguous to them in accordance with the requirements of Section 420.
3. *Group I-2 and I-2.1 shall be separated from all other occupancies in accordance with Section 508.4. No separation is required between Group B, E, R-2 sleeping units and S-2 occupancies accessory to Group I-2, I-2.1.*
4. *Group I-3 and vehicle sally-ports shall be separated from all other occupancies in accordance with Section 508.4. No separation is required between Group B, E, R-2 sleeping units and S-2 occupancies accessory to Group I-3 of Type I Construction.*

**508.3 Nonseparated occupancies.** Buildings or portions of buildings that comply with the provisions of this section shall be considered as nonseparated occupancies.

**508.3.1 Occupancy classification.** Nonseparated occupancies shall be individually classified in accordance with Section 302.1. The requirements of this code shall apply to each portion of the building based on the occupancy classification of that space. In addition, the most restrictive provisions of Chapter 9 that apply to the nonseparated

occupancies shall apply to the total nonseparated occupancy area.

**508.3.1.1 High-rise buildings.** Where nonseparated occupancies occur in a high-rise building, the most restrictive requirements of Section 403 that apply to the nonseparated occupancies shall apply throughout the high-rise building.

**508.3.2 Allowable building area, height and number of stories.** The allowable building area, height and number of stories of the building or portion thereof shall be based on the most restrictive allowances for the occupancy groups under consideration for the type of construction of the building in accordance with Section 503.1.

**508.3.3 Separation.** No separation is required between nonseparated occupancies.

**Exceptions:**

1. Group H-2, H-3, H-4 and H-5, I-2, I-2.1 and L occupancies shall be separated from all other occupancies in accordance with Section 508.4.
2. Group R-1, R-2, R-2.1, R-2.2 and R-3 dwelling units and sleeping units shall be separated from other dwelling or sleeping units and from other occupancies contiguous to them in accordance with the requirements of Section 420.
3. *Separation is required between Group I-3 and vehicle sally ports.*
4. *Where Group I-3 is not the main occupancy and the area is greater than 10 percent of the floor area, it shall be separated per Table 508.4.*

**508.4 Separated occupancies.** Buildings or portions of buildings that comply with the provisions of this section shall be considered as separated occupancies.

**508.4.1 Occupancy classification.** Separated occupancies shall be individually classified in accordance with Section 302.1. Each separated space shall comply with this code based on the occupancy classification of that portion of the building. The most restrictive provisions of Chapter 9 that apply to the separate occupancies shall apply to the total nonfire-barrier-separated occupancy areas. Occupancy separations that serve to define fire area limits established in Chapter 9 for requiring a fire protection system shall also comply with Section 901.7.

**508.4.2 Allowable building area.** In each story, the building area shall be such that the sum of the ratios of the actual building area of each separated occupancy divided by the allowable building area of each separated occupancy shall not exceed 1.

**508.4.3 Allowable building height and number of stories.** Each separated occupancy shall comply with the building height limitations and story limitations based on the type of construction of the building in accordance with Section 503.1.

**Exception:** Special provisions of Section 510 shall permit occupancies at building heights and number of stories other than provided in Section 503.1.

**TABLE 508.4  
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)<sup>a</sup>**

OCCUPANCY	A, E		I-4, R-2.1		I-2, I-2.1		I-3		R-1 <sup>a</sup> , R-2 <sup>a</sup> , R2-2 <sup>a</sup> , R-3 <sup>a</sup> , R-3.1 <sup>a</sup> , R-4 <sup>a</sup>		F-2, S-2 <sup>b</sup> , U		B <sup>f</sup> , F-1 <sup>g, h</sup> , M, S-1		L		H-1		H-2		H-3, H-4		H-5	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
A, E	N	N	2	2	2	NP	2	NP	1	2	N	1	1	2	2	NP	NP	NP	3	4	2	3	2	NP
I-4, R-2.1	—	—	1 <sup>c</sup>	NP	2	NP	2	NP	1	NP	1	2	1	2	2	NP	NP	NP	4	NP	2	NP	2	NP
I-2, I-2.1	—	—	—	—	N	NP	2	NP	2	NP	2	NP	2	NP	2	NP	NP	NP	4	NP	2	NP	2	NP
I-3	—	—	—	—	—	—	N	NP	2	NP	2	2	2	2	2	NP	NP	NP	4	NP				
R-1 <sup>a</sup> , R-2 <sup>a</sup> , R-2-2 <sup>a</sup> , R-3 <sup>a</sup> , R-3.1 <sup>a</sup> , R-4 <sup>a</sup>	—	—	—	—	—	—	—	—	N	N	1 <sup>c</sup>	2 <sup>c</sup>	1	2	4	NP	NP	NP	3	NP	2	NP	2	NP
F-2, S-2 <sup>b</sup> , U	—	—	—	—	—	—	—	—	—	—	N	N	1	2	1	NP	NP	NP	3	4	2	3	2	NP
B, F-1, M, S-1	—	—	—	—	—	—	—	—	—	—	—	—	N	N	1	NP	NP	NP	2	3	1	2	1	NP
L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	NP	NP	NP	2	NP				
H-1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	NP	NP	NP	NP	NP	NP	NP
H-2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	1	NP	1	NP	
H-3, H-4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1 <sup>d</sup>	NP	1	NP	1 <sup>d</sup>	NP	1	NP
H-5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	—	—	N	NP	

S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

NS = Buildings not equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

N = No separation requirement.

NP = Not Permitted.

a. See Section 420.

b. The required separation from areas used only for private or pleasure vehicles shall be reduced by 1 hour but not to less than 1 hour.

c. See Section 406.3.2 and 406.6.4.

d. Separation is not required between occupancies of the same classification.

e. See Section 422.2 for ambulatory care facilities.

f. Occupancy separations that serve to define fire area limits established in Chapter 9 for requiring fire protection systems shall also comply with Section 707.3.10 and Table 707.3.10 in accordance with Section 901.7.

g. [SFM] Group I and F1 occupancies and Group R-2.1 and F-1 occupancies shall have a 3 hour separation.

h. [SFM] Commercial kitchens not associated with cafeterias and similar dining facilities in Group I-2 and Group R-2.1 shall have a 2-hour separation and shall be protected by an automatic sprinkler system.

**508.4.4 Separation.** Individual occupancies shall be separated from adjacent occupancies in accordance with Table 508.4.

**508.4.4.1 Construction.** Required separations shall be fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both, to completely separate adjacent occupancies. *Mass timber elements serving as fire barriers or horizontal assemblies to separate occupancies in Type IV-B or IV-C construction shall be separated from the interior of the building with an approved thermal barrier consisting of a minimum of 1/2-inch (12.7 mm) gypsum board or a material that is tested in accordance with, and meets the acceptance criteria of, both the Temperature Transmission Fire Test and the Integrity Fire Test of NFPA 275.*

**SECTION 509  
INCIDENTAL USES**

**509.1 General** Incidental uses located within single occupancy or mixed occupancy buildings shall comply with the provisions of this section. Incidental uses are ancillary functions associated with a given occupancy that generally pose a

greater level of risk to that occupancy and are limited to those uses listed in Table 509.

**Exception:** Incidental uses within and serving a dwelling unit are not required to comply with this section.

**509.2 Occupancy classification.** Incidental uses shall not be individually classified in accordance with Section 302.1. Incidental uses shall be included in the building occupancies within which they are located.

**509.3 Area limitations.** *The aggregate floor area of incidental uses shall not occupy more than 10 percent of the building area of the story in which they are located.*

**509.4 Separation and protection.** The incidental uses listed in Table 509 shall be separated from the remainder of the building or equipped with an automatic sprinkler system, or both, in accordance with the provisions of that table.

**509.4.1 Separation.** Where Table 509 specifies a fire-resistance-rated separation, the incidental uses shall be separated from the remainder of the building by a fire barrier constructed in accordance with Section 707 or a horizontal assembly constructed in accordance with Section 711, or both. Construction supporting 1-hour fire barriers or horizontal assemblies used for incidental use separations in buildings of Type IIB, IIIB and VB construction is

[F] TABLE 509  
INCIDENTAL USES

ROOM OR AREA	SEPARATION AND/OR PROTECTION
Furnace room where any piece of equipment is over 400,000 Btu per hour input	1 hour or provide automatic sprinkler system <sup>a</sup>
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower	1 hour or provide automatic sprinkler system <sup>a</sup>
Refrigerant machinery room	1 hour or provide automatic sprinkler system <sup>a</sup>
Hydrogen fuel gas rooms, not classified as Group H	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.
Incinerator rooms	2 hours and provide automatic sprinkler system
Paint shops, not classified as Group H, located in occupancies other than Group F	2 hours; or 1 hour and provide automatic sprinkler system
In Group E occupancies, laboratories and vocational shops not classified as Group H	1 hour or provide automatic sprinkler system
<i>[SFM] Rooms or areas with special hazards such as laboratories, vocational shops and other such areas not classified as Group H, located in Group E occupancies where hazardous materials in quantities not exceeding the maximum allowable quantity are used or stored.</i>	1 hour
In Group I-2 and I-2.1 occupancies, laboratories not classified as Group H	1 hour and provide automatic sprinkler system <sup>a</sup>
In ambulatory care facilities, laboratories not classified as Group H	1 hour or provide automatic sprinkler system
Laundry rooms over 100 square feet	1 hour or provide automatic sprinkler system <sup>a</sup>
In Group I-2, laundry rooms over 100 square feet	1 hour
Group I-3 cells and Group I-2 and I-2.1 patient rooms equipped with padded surfaces	1 hour
In Group I-2, physical plant maintenance shops	1 hour
In ambulatory care facilities or Group I-2 and I-2.1 occupancies, waste and linen collection rooms with containers that have an aggregate volume of 10 cubic feet or greater	1 hour <sup>a</sup>
In other than ambulatory care facilities and Group I-2 and I-2.1 occupancies, waste and linen collection rooms over 100 square feet	1 hour or provide automatic sprinkler system
In ambulatory care facilities or Group I-2 and I-2.1 occupancies, storage rooms greater than 100 square feet	1 hour
Electrical installations and transformers	See Sections 110.26 through 110.34 and Sections 450.8 through 450.48 of the <i>California Electrical Code</i> for protection and separation requirements.

For SI: 1 square foot = 0.0929 m<sup>2</sup>, 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L, 1 cubic foot = 0.0283 m<sup>3</sup>.

a. *[SFM] Fire barrier protection and automatic sprinkler protection required throughout the fire area in I-2 and I-2.1 occupancies as indicated.*

not required to be fire-resistance rated unless required by other sections of this code.

**509.4.1.1 Type IV-B and IV-C construction.** Where Table 509 specifies a fire-resistance-rated separation, mass timber elements serving as fire barriers or a horizontal assembly in Type IV-B or IV-C construction shall be separated from the interior of the incidental use with an approved thermal barrier consisting of a minimum of 1/2 inch (12.7 mm) gypsum board or a material that is tested in accordance with and meets the acceptance criteria of both the Temperature Transmission Fire Test and the Integrity Fire Test of NFPA 275.

**509.4.2 Protection.** Where Table 509 permits an automatic sprinkler system without a fire barrier, the incidental uses shall be separated from the remainder of the building by construction capable of resisting the passage of smoke. The walls shall extend from the top of the foundation or floor assembly below to the underside of the ceiling that is a component of a fire-resistance-rated floor assembly or roof assembly above or to the underside of the floor or roof sheathing, deck or slab above. Doors shall be self- or automatic-closing upon detection of smoke in accordance

with Section 716.2.6.6. Doors shall not have air transfer openings and shall not be undercut in excess of the clearance permitted in accordance with NFPA 80. Walls surrounding the incidental use shall not have air transfer openings unless provided with smoke dampers in accordance with Section 710.8.

**509.4.2.1 Protection limitation.** Where an automatic sprinkler system is provided in accordance with Table 509, only the space occupied by the incidental use need be equipped with such a system.

## SECTION 510 SPECIAL PROVISIONS

**510.1 General.** The provisions in Sections 510.2 through 510.9 shall permit the use of special conditions that are exempt from, or modify, the specific requirements of this chapter regarding the allowable building heights and areas of buildings based on the occupancy classification and type of construction, provided the special condition complies with the provisions specified in this section for such condition and other applicable requirements of this code. The provisions of



Sections 510.2 through 510.8 are to be considered independent and separate from each other.

**510.2 Horizontal building separation allowance.** A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of fire walls, limitation of number of stories and type of construction where all of the following conditions are met:

1. The buildings are separated with a horizontal assembly having a fire-resistance rating of not less than 3 hours. Where vertical offsets are provided as part of a horizontal assembly, the vertical offset and the structure supporting the vertical offset shall have a fire-resistance rating of not less than 3 hours.
2. The building below, including the horizontal assembly, is of Type IA construction.
3. Shaft, stairway, ramp and escalator enclosures through the horizontal assembly shall have not less than a 2-hour fire-resistance rating with opening protectives in accordance with Section 716.

**Exception:** Where the enclosure walls below the horizontal assembly have not less than a 3-hour fire-resistance rating with opening protectives in accordance with Section 716, the enclosure walls extending above the horizontal assembly shall be permitted to have a 1-hour fire-resistance rating, provided:

1. The building above the horizontal assembly is not required to be of Type I construction;
2. The enclosure connects fewer than four stories; and
3. The enclosure opening protectives above the horizontal assembly have a fire protection rating of not less than 1 hour.
4. The building or buildings above the horizontal assembly shall be permitted to have multiple Group A occupancy uses, each with an occupant load of less than 300, or Group B, M, R or S occupancies.
5. The building below the horizontal assembly shall be protected throughout by an approved automatic sprinkler system in accordance with Section 903.3.1.1, and shall be permitted to be any occupancy allowed by this code except Group H.
6. The maximum building height in feet (mm) shall not exceed the limits set forth in Section 504.3 for the building having the smaller allowable height as measured from the grade plane.

**510.3 Group S-2 enclosed parking garage with Group S-2 open parking garage above.** A Group S-2 enclosed parking garage with not more than one story above grade plane and located below a Group S-2 open parking garage shall be classified as a separate and distinct building for the purpose of determining the type of construction where all of the following conditions are met:

1. The allowable area of the building shall be such that the sum of the ratios of the actual area divided by the allowable area for each separate occupancy shall not exceed 1.

2. The Group S-2 enclosed parking garage is of Type I or II construction and is at least equal to the fire-resistance requirements of the Group S-2 open parking garage.
3. The height and the number of tiers of the Group S-2 open parking garage shall be limited as specified in Table 406.5.4.
4. The floor assembly separating the Group S-2 enclosed parking garage and Group S-2 open parking garage shall be protected as required for the floor assembly of the Group S-2 enclosed parking garage. Openings between the Group S-2 enclosed parking garage and Group S-2 open parking garage, except exit openings, shall not be required to be protected.
5. The Group S-2 enclosed parking garage is used exclusively for the parking or storage of private motor vehicles, but shall be permitted to contain an office, waiting room and toilet room having a total area of not more than 1,000 square feet (93 m<sup>2</sup>) and mechanical equipment rooms incidental to the operation of the building.

**510.4 Parking beneath Group R.** Where a maximum one story above grade plane Group S-2 parking garage, enclosed or open, or combination thereof, of Type I construction or open of Type IV construction, with grade entrance, is provided under a building of Group R, the number of stories to be used in determining the minimum type of construction shall be measured from the floor above such a parking area. The floor assembly between the parking garage and the Group R above shall comply with the type of construction required for the parking garage and shall also provide a fire-resistance rating not less than the mixed occupancy separation required in Section 508.4.

**510.5 Group R-1 and R-2 buildings of Type IIIA construction.** The height limitation for buildings of Type IIIA construction in Groups R-1 and R-2 shall be increased to six stories and 75 feet (22 860 mm) where the first floor assembly above the basement has a fire-resistance rating of not less than 3 hours and the floor area is subdivided by 2-hour fire-resistance-rated fire walls into areas of not more than 3,000 square feet (279 m<sup>2</sup>).

**510.6 Group R-1 and R-2 buildings of Type IIA construction.** The height limitation for buildings of Type IIA construction in Groups R-1 and R-2 shall be increased to nine stories and 100 feet (30 480 mm) where the building is separated by not less than 50 feet (15 240 mm) from any other building on the lot and from lot lines, the exits are segregated in an area enclosed by a 2-hour fire-resistance-rated fire wall and the first floor assembly has a fire-resistance rating of not less than 1½ hours.

**510.7 Open parking garage beneath Groups A, I, B, M and R.** Open parking garages constructed under Groups A, I, B, M and R shall not exceed the height and area limitations permitted under Section 406.5. The height and area of the portion of the building above the open parking garage shall not exceed the limitations in Section 503 for the upper occupancy. The height, in both feet and stories, of the portion of the building above the open parking garage shall be measured from grade plane and shall include both the open parking

garage and the portion of the building above the parking garage.

**510.7.1 Fire separation.** Fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711 between the parking occupancy and the upper occupancy shall correspond to the required fire-resistance rating prescribed in Table 508.4 for the uses involved. The type of construction shall apply to each occupancy individually, except that structural members, including main bracing within the open parking structure, which is necessary to support the upper occupancy, shall be protected with the more restrictive fire-resistance-rated assemblies of the groups involved as shown in Table 601. Means of egress for the upper occupancy shall conform to Chapter 10 and shall be separated from the parking occupancy by fire barriers having not less than a 2-hour fire-resistance rating as required by Section 707 with self-closing doors complying with Section 716 or horizontal assemblies having not less than a 2-hour fire-resistance rating as required by Section 711, with self-closing doors complying with Section 716. Means of egress from the open parking garage shall comply with Section 406.5.

**510.8 Group B or M buildings with Group S-2 open parking garage above.** Group B or M occupancies located below a Group S-2 open parking garage of a lesser type of construction shall be considered as a separate and distinct building from the Group S-2 open parking garage for the purpose of determining the type of construction where all of the following conditions are met:

1. The buildings are separated with a horizontal assembly having a fire-resistance rating of not less than 2 hours.
2. The occupancies in the building below the horizontal assembly are limited to Groups B and M.
3. The occupancy above the horizontal assembly is limited to a Group S-2 open parking garage.
4. The building below the horizontal assembly is of Type IA construction.

**Exception:** The building below the horizontal assembly shall be permitted to be of Type IB or II construction, but not less than the type of construction required for the Group S-2 open parking garage above, where the building below is not greater than one story in height above grade plane.

5. The height and area of the building below the horizontal assembly does not exceed the limits set forth in Section 503.
6. The height and area of the Group S-2 open parking garage does not exceed the limits set forth in Section 406.5. The height, in both feet and stories, of the Group S-2 open parking garage shall be measured from grade

plane and shall include the building below the horizontal assembly.

7. Exits serving the Group S-2 open parking garage discharge directly to a street or public way and are separated from the building below the horizontal assembly by 2-hour fire barriers constructed in accordance with Section 707 or 2-hour horizontal assemblies constructed in accordance with Section 711, or both.

**510.9 Multiple buildings above a horizontal assembly.**

Where two or more buildings are provided above the horizontal assembly separating a Group S-2 parking garage or building below from the buildings above in accordance with the special provisions in Section 510.2, 510.3 or 510.8, the buildings above the horizontal assembly shall be regarded as separate and distinct buildings from each other and shall comply with all other provisions of this code as applicable to each separate and distinct building.

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## CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE CHAPTER 6 – TYPES OF CONSTRUCTION

(Matrix Adoption Tables are nonregulatory, intended only as an aid to the code user.

See Chapter 1 for state agency authority and building applications.)

Adopting agency	BSC	BSC -CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4								
Adopt entire chapter	X							X	X	X	X	X		X	X							
Adopt entire chapter as amendeded (amended sections listed below)			X	X	X																	
Adopt only those sections that are listed below																						
Chapter / Section																						
Table 601			X																			
602.1			X																			
Table 602			X																			
603.1.3				X	X																	
604.1 – 604.4.4.4			X																			

The state agency does not adopt sections identified by the following symbol: †

The Office of the State Fire Marshal's adoption of this chapter or individual sections is applicable to structures regulated by other state agencies pursuant to Section 1.11.



# CHAPTER 6

## TYPES OF CONSTRUCTION

**User note:**

**About this chapter:** Chapter 6 establishes five types of construction in which each building must be categorized. This chapter looks at the materials used in the building (combustible or noncombustible) and the extent to which building elements such as building frame, roof, wall and floor can resist fire. Depending on the type of construction, the specific building element and its proximity to a lot line, fire resistance of 1 to 3 hours is specified.

### SECTION 601 GENERAL

**601.1 Scope.** The provisions of this chapter shall control the classification of buildings as to type of construction.

### SECTION 602 CONSTRUCTION CLASSIFICATION

**602.1 General.** Buildings and structures erected or to be erected, altered or extended in height or area shall be classified in one of the five construction types defined in Sections 602.2 through 602.5. The building elements shall have a fire-resistance rating not less than that specified in Table 601 and exterior walls shall have a fire-resistance rating not less than that specified in Table 602. Where required to have a fire-

resistance rating by Table 601, building elements shall comply with the applicable provisions of Section 703.2. The protection of openings, ducts and air transfer openings in building elements shall not be required unless required by other provisions of this code.

**Exception:** Noncombustible structural members supporting solar photovoltaic panels are not required to meet the fire resistance rating for the following:

1. Photovoltaic panel supported by a structure and having no use underneath. Signs may be provided, as determined by the enforcing agency prohibiting any use underneath including storage.
2. Solar photovoltaic (PV) panels supported by noncombustible framing that have sufficient uniformly distrib-

**TABLE 601  
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)**

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV				TYPE V	
	A	B	A	B	A	B	A	B	C	HT	A	B
Primary structural frame <sup>f</sup> (see Section 202)	3 <sup>a,b</sup>	2 <sup>a,b</sup>	1 <sup>b</sup>	0	1 <sup>b</sup>	0	3 <sup>a</sup>	2 <sup>a</sup>	2 <sup>a</sup>	HT	1 <sup>b</sup>	0
Bearing walls												
Exterior <sup>e,f</sup>	3	2	1	0	2	2	3	2	2	2	1	0
Interior	3 <sup>a</sup>	2 <sup>a</sup>	1	0	1	0	3	2	2	1/HT <sup>g</sup>	1	0
Nonbearing walls and partitions	See Table 602											
Exterior	See Table 602											
Nonbearing walls and partitions	See Table 602											
Interior <sup>d</sup>	0	0	0	0	0	0	0	0	0	See Section 2304.11.2	0	0
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	2	2	2	HT	1	0
Roof construction and associated secondary members (see Section 202)	1 <sup>1/2</sup> <sup>b</sup>	1 <sup>b,c</sup>	1 <sup>b,c</sup>	0 <sup>c</sup>	1 <sup>b,c</sup>	0	1 <sup>1/2</sup>	1	1	HT	1 <sup>b,c</sup>	0

For SI: 1 foot = 304.8 mm.

- a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.
- b. 1. Except in Group A, E, F-1, H, I, L, M, R-1, R-2, R-2.1 and S-1 occupancies, high-rise buildings, and other applications listed in Section 1.11 regulated by the Office of the State Fire Marshal, fire protection of structural members in roof construction shall not be required, including protection of primary structural frame members, roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.
- b. 2. For Group A, E, I, L, R-1, R-2, and R-2.1 occupancies, high-rise buildings, and other applications listed in Section 1.11 regulated by the Office of the State Fire Marshal, fire protection of members other than the primary structural frame shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.
- b. 3. One-story portions of Group A and E assembly occupancies the roof-framing system of Type II A or Type III A construction may be of unprotected construction when such roof-framing system is open to the assembly area and does not contain concealed spaces.
- c. In all occupancies, heavy timber complying with Section 2304.11 shall be allowed for roof construction including primary structural frame members where a 1-hour or less fire-resistance rating is required.
- d. Not less than the fire-resistance rating required by other sections of this code.
- e. Not less than the fire-resistance rating based on fire separation distance (see Table 602).
- f. Not less than the fire-resistance rating as referenced in Section 704.10.
- g. Heavy timber bearing walls supporting more than two floors or more than a floor and a roof shall have a fire-resistance rating of not less than 1 hour.

**TYPES OF CONSTRUCTION**

uted and unobstructed openings throughout the top of the array (horizontal plane) to allow heat and gases to escape, as determined by the enforcing agency.

3. Solar photovoltaic panels supported by a structure over parking stalls where the panels constitute the roof and all the following conditions are met (see Figure 5-1):
  - 3.1. The area within the perimeter of the solar photovoltaic array has maximum rectangular dimension of 40 feet by 150 feet.
  - 3.2. The distance between solar photovoltaic array structures is a minimum of 10 feet clear.
  - 3.3. The driveway aisle separating solar photovoltaic array structures has a minimum width of 25 feet clear.
  - 3.4. Solar photovoltaic array structure is used only for parking purposes with no storage.
  - 3.5. Completely open on all sides (other than necessary structural supports) with no interior partitions.

**602.1.1 Minimum requirements.** A building or portion thereof shall not be required to conform to the details of a type of construction higher than that type which meets the minimum requirements based on occupancy even though certain features of such a building actually conform to a higher type of construction.

**602.2 Types I and II.** Types I and II construction are those types of construction in which the building elements listed in Table 601 are of noncombustible materials, except as permitted in Section 603 and elsewhere in this code.

**602.3 Type III.** Type III construction is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of any material permitted by this code. Fire-retardant-treated wood framing and sheathing complying with Section 2303.2 shall be permitted within exterior wall assemblies of a 2-hour rating or less.

**602.4 Type IV.** Type IV construction is that type of construction in which the building elements are mass timber or noncombustible materials and have fire-resistance ratings in accordance with Table 601. Mass timber elements shall meet the fire-resistance rating requirements of this section based on either the fire-resistance rating of the noncombustible protection, the mass timber, or a combination of both and shall be determined in accordance with Section 703.2 or 703.3. The minimum dimensions and permitted materials for building elements shall comply with the provisions of this section and Section 2304.11. Mass timber elements of Types IV-A, IV-B and IV-C construction shall be protected with noncombustible protection applied directly to the mass timber in accordance with Sections 602.4.1 through 602.4.3. The time assigned to the noncombustible protection shall be determined in accordance with Section 703.8 and comply with Section 722.7.

*Cross-laminated timber shall be labeled as conforming to PRG 320-18 as referenced in Section 2303.1.4.*

*Exterior load-bearing walls and nonload-bearing walls shall be mass timber construction, or shall be of noncombustible construction.*

**Exception:** *Exterior load-bearing walls and nonload-bearing walls of Type IV-HT construction in accordance with Section 602.4.4.*

**TABLE 602  
FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE<sup>a, d, g</sup>**

FIRE SEPARATION DISTANCE = X (feet)	TYPE OF CONSTRUCTION	OCCUPANCY GROUP H <sup>o</sup> , L	OCCUPANCY GROUP F-1, M, S-1 <sup>f</sup>	OCCUPANCY GROUP A, B, E, F-2, I, R <sup>l</sup> , S-2, U <sup>h</sup>
X < 5 <sup>b</sup>	All	3	2	1
5 ≤ X < 10	IA, IVA	3	2	1
	Others	2	1	1
10 ≤ X < 30	IA, IB, IVA, IVB,	2	1	1 <sup>c</sup>
	IIB, VB	1	0	0
	Others	1	1	1 <sup>c</sup>
X ≥ 30	All	0	0	0

For SI: 1 foot = 304.8 mm.

- a. Load-bearing exterior walls shall also comply with the fire-resistance rating requirements of Table 601.
- b. See Section 706.1.1 for party walls.
- c. Open parking garages complying with Section 406 shall not be required to have a fire-resistance rating.
- d. The fire-resistance rating of an exterior wall is determined based upon the fire separation distance of the exterior wall and the story in which the wall is located.
- e. For special requirements for Group H occupancies, see Section 415.6.
- f. For special requirements for Group S aircraft hangars, see Section 412.3.1.
- g. Where Table 705.8 permits nonbearing exterior walls with unlimited area of unprotected openings, the required fire-resistance rating for the exterior walls is 0 hours.
- h. For a building containing only a Group U occupancy private garage or carport, the exterior wall shall not be required to have a fire-resistance rating where the fire separation distance is 5 feet (1523 mm) or greater or where equipped throughout with an automatic sprinkler system in accordance with Section 903.3 the fire-resistance rating shall not be required where the fire separation distance is 3 feet or greater.
- i. For a Group R-3 building of Type II-B or Type V-B construction, the exterior wall shall not be required to have a fire-resistance rating where the fire separation distance is 5 feet (1523 mm) or greater or where equipped throughout with an automatic sprinkler system in accordance with Section 903.3 the fire-resistance rating shall not be required where the fire separation distance is 3 feet or greater.

The interior building elements, including nonload-bearing walls and partitions, shall be of mass timber construction or of noncombustible construction.

**Exception:** Interior building elements and nonload-bearing walls and partitions of Type IV-HT construction in accordance with Section 602.4.4.

Combustible concealed spaces are not permitted except as otherwise indicated in Sections 602.4.1 through 602.4.4.

Combustible stud spaces within light frame walls of Type IV-HT construction shall not be considered concealed spaces, but shall comply with Section 718.

In buildings of Type IV-A, Type IV-B, and Type IV-C construction with an occupied floor located more than 75 feet above the lowest level of building access, up to and including 12 stories or 180 feet (54.86 m) above grade plane, mass timber interior exit and elevator hoistway enclosures shall be protected in accordance with Section 602.4.1.2. In buildings greater than 12 stories or 180 feet (54.86 m) above grade plane, interior exit and elevator hoistway enclosures shall be constructed of noncombustible materials.

**602.4.1 Type IV-A.** Building elements in Type IV-A construction shall be protected in accordance with Sections 602.4.1.1 through 602.4.1.6. The required fire-resistance rating of noncombustible elements and protected mass timber elements shall be determined in accordance with Section 703.2 or Section 703.3.

**602.4.1.1 Exterior protection.** The outside face of exterior walls of mass timber construction shall be protected with noncombustible protection with a minimum assigned time of 40 minutes as determined in Section 722.7.1. All components of the exterior wall covering shall be of noncombustible material except water-resistive barriers having a peak heat release rate of less than 150kW/m<sup>2</sup>, a total heat release of less than 20 MJ/m<sup>2</sup> and an effective heat of combustion of less than 18MJ/kg as determined in accordance with ASTM E1354 and having a flame spread index of 25 or less and a smoke-developed index of 450 or less as determined in accordance with ASTM E84 or UL723. The ASTM E1354 test shall be conducted on specimens at the thickness intended for use, in the horizontal orientation and at an incident radiant heat flux of 50 kW/m<sup>2</sup>.

**602.4.1.2 Interior protection.** Interior faces of all mass timber elements, including the inside faces of exterior mass timber walls and mass timber roofs, shall be protected with materials complying with Section 703.5.

**602.4.1.2.1 Protection time.** Noncombustible protection shall contribute a time equal to or greater than times assigned in Table 722.7.1(1), but not less than 80 minutes. The use of materials and their respective protection contributions listed in Table 722.7.1(2) shall be permitted to be used for compliance with Section 722.7.1.

**602.4.1.3 Floors.** The floor assemblies shall contain a noncombustible material not less than one inch in thickness above the mass timber. Floor finishes in accordance with Section 804 shall be permitted on top of the noncombustible material. The underside of floor

assemblies shall be protected in accordance with 602.4.1.2.

**602.4.1.4 Roofs.** The interior surfaces of roof assemblies shall be protected in accordance with Section 602.4.1.2. Roof coverings in accordance with Chapter 15 shall be permitted on the outside surface of the roof assembly.

**602.4.1.5 Concealed spaces.** Concealed spaces shall not contain combustibles other than electrical, mechanical, fire protection, or plumbing materials and equipment permitted in plenums in accordance with Section 602 of the California Mechanical Code, and shall comply with all applicable provisions of Section 718. Combustible construction forming concealed spaces shall be protected in accordance with Section 602.4.1.2.

**602.4.1.6 Shafts.** Shafts shall be permitted in accordance with Sections 713 and Section 718. Both the shaft side and room side of mass timber elements shall be protected in accordance with Section 602.4.1.2.

**602.4.2 Type IV-B.** Building elements in Type IV-B construction shall be protected in accordance with Sections 602.4.2.1 through 602.4.2.6. The required fire-resistance rating of noncombustible elements or mass timber elements shall be determined in accordance with Section 703.2 or Section 703.3.

**602.4.2.1 Exterior protection.** The outside face of exterior walls of mass timber construction shall be protected with noncombustible protection with a minimum assigned time of 40 minutes as determined in Section 722.7.1. All components of the exterior wall covering shall be of noncombustible material except water-resistive barriers having a peak heat release rate of less than 150kW/m<sup>2</sup>, a total heat release of less than 20 MJ/m<sup>2</sup> and an effective heat of combustion of less than 18MJ/kg as determined in accordance with ASTM E1354, and having a flame spread index of 25 or less and a smoke-developed index of 450 or less as determined in accordance with ASTM E84 or UL723. The ASTM E1354 test shall be conducted on specimens at the thickness intended for use, in the horizontal orientation and at an incident radiant heat flux of 50 kW/m<sup>2</sup>.

**602.4.2.2 Interior protection.** Interior faces of all mass timber elements, including the inside face of exterior mass timber walls and mass timber roofs, shall be protected, as required by this section, with materials complying with Section 703.5.

**602.4.2.2.1 Protection time.** Noncombustible protection shall contribute a time equal to or greater than times assigned in Table 722.7.1(1), but not less than 80 minutes. The use of materials and their respective protection contributions listed in Table 722.7.1(2) shall be permitted to be used for compliance with Section 722.7.1.

**602.4.2.2.2 Protected area.** All interior faces of all mass timber elements shall be protected in accordance with Section 602.4.2.2.1, including the inside

face of exterior mass timber walls and mass timber roofs.

**Exceptions:** Unprotected portions of mass timber ceilings and walls complying with Section 602.4.2.2.4 and the following:

1. Unprotected portions of mass timber ceilings, including attached beams, shall be permitted and shall be limited to an area equal to 20 percent of the floor area in any dwelling unit or fire area; or
2. Unprotected portions of mass timber walls, including attached columns, shall be permitted and shall be limited to an area equal to 40 percent of the floor area in any dwelling unit or fire area; or
3. Unprotected portions of both walls and ceilings of mass timber, including attached columns and beams, in any dwelling unit or fire area shall be permitted in accordance with Section 602.4.2.2.3.
4. Mass timber columns and beams which are not an integral portion of walls or ceilings, respectively, shall be permitted to be unprotected without restriction of either aggregate area or separation from one another.

**602.4.2.2.3 Mixed unprotected areas.** In each dwelling unit or fire area, where both portions of ceilings and portions of walls are unprotected, the total allowable unprotected area shall be determined in accordance with Equation 6-1.

$$(U_{tc}/U_{ac}) + (U_{tw}/U_{aw}) \leq 1 \quad \text{(Equation 6-1)}$$

where:

$U_{tc}$  = Total unprotected mass timber ceiling areas.

$U_{ac}$  = Allowable unprotected mass timber ceiling area conforming to Section 602.4.2.2.2, Exception 1.

$U_{tw}$  = Total unprotected mass timber wall areas.

$U_{aw}$  = Allowable unprotected mass timber wall area conforming to Section 602.4.2.2.2, Exception 2.

**602.4.2.2.4 Separation distance between unprotected mass timber elements.** In each dwelling unit or fire area, unprotected portions of mass timber walls and ceilings shall be not less than 15 feet (4572 mm) from unprotected portions of other walls and ceilings, measured horizontally along the ceiling and from other unprotected portions of walls measured horizontally along the floor.

**602.4.2.3 Floors.** The floor assembly shall contain a noncombustible material not less than 1 inch (25.4 mm) in thickness above the mass timber. Floor finishes in accordance with Section 804 shall be permitted on top of the noncombustible material. The underside of floor assemblies shall be protected in accordance with Section 602.4.1.2.

**602.4.2.4 Roofs.** The interior surfaces of roof assemblies shall be protected in accordance with 602.4.2.2 except, in nonoccupiable spaces, they shall be treated as a concealed space with no portion left unprotected. Roof coverings in accordance with Chapter 15 shall be permitted on the outside surface of the roof assembly.

**602.4.2.5 Concealed spaces.** Concealed spaces shall not contain combustibles other than electrical, mechanical, fire protection, or plumbing materials and equipment permitted in plenums in accordance with Section 602 of the California Mechanical Code, and shall comply with all applicable provisions of Section 718. Combustible construction forming concealed spaces shall be protected in accordance with Section 602.4.1.2.

**602.4.2.6 Shafts.** Shafts shall be permitted in accordance with Section 713 and Section 718. Both the shaft side and room side of mass timber elements shall be protected in accordance with Section 602.4.1.2.

**602.4.3 Type IV-C.** Building elements in Type IV-C construction shall be protected in accordance with Sections 602.4.3.1 through 602.4.3.6. The required fire-resistance rating of building elements shall be determined in accordance with Section 703.2 or Section 703.3.

**602.4.3.1 Exterior protection.** The exterior side of walls of combustible construction shall be protected with noncombustible protection with a minimum assigned time of 40 minutes as determined in Section 722.7.1. All components of the exterior wall covering shall be of noncombustible material except water-resistive barriers having a peak heat release rate of less than 150kW/m<sup>2</sup>, a total heat release of less than 20 MJ/m<sup>2</sup> and an effective heat of combustion of less than 18MJ/kg as determined in accordance with ASTM E1354 and having a flame spread index of 25 or less and a smoke-developed index of 450 or less as determined in accordance with ASTM E84 or UL723. The ASTM E1354 test shall be conducted on specimens at the thickness intended for use, in the horizontal orientation and at an incident radiant heat flux of 50 kW/m<sup>2</sup>.

**602.4.3.2 Interior protection.** Mass timber elements are permitted to be unprotected.

**602.4.3.3 Floors.** Floor finishes in accordance with Section 804 shall be permitted on top of the floor construction.

**602.4.3.4 Roofs.** Roof coverings in accordance with Chapter 15 shall be permitted on the outside surface of the roof assembly.

**602.4.3.5 Concealed spaces.** Concealed spaces shall not contain combustibles other than electrical, mechanical, fire protection, or plumbing materials and equipment permitted in plenums in accordance with Section 602 of the California Mechanical Code, and shall comply with all applicable provisions of Section 718. Combustible construction forming concealed spaces shall be protected with noncombustible protection with a minimum assigned time of 40 minutes as determined in Section 722.7.1.



**602.4.3.6 Shafts.** Shafts shall be permitted in accordance with Section 713 and Section 718. Shafts and elevator hoistway and interior exit stairway enclosures shall be protected with noncombustible protection with a minimum assigned time of 40 minutes as determined in Section 722.7.1, on both the inside of the shaft and the outside of the shaft.

**602.4.4 Type IV-HT.** Type IV construction (Heavy Timber, HT) is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of solid wood, laminated heavy timber or structural composite lumber (SCL), without concealed spaces or with concealed spaces complying with Section 602.4.4.4. The minimum dimensions for permitted materials including solid timber, glued-laminated timber, structural composite lumber (SCL) and cross laminated timber (CLT) and details of Type IV construction shall comply with the provisions of this section and Section 2304.11. Exterior walls complying with Section 602.4.4.1 or 602.4.4.2 shall be permitted. Interior walls and partitions not less than one hour fire-resistance rating or heavy timber conforming with Section 2304.11.2.2 shall be permitted.

**602.4.4.1 Fire-retardant-treated wood in exterior walls.** Fire-retardant-treated wood framing and sheathing complying with Section 2303.2 shall be permitted within exterior wall assemblies with a 2-hour rating or less.

**602.4.4.2 Cross-laminated timber in exterior walls.** Cross-laminated timber not less than 4 inches (102 mm) in thickness complying with Section 2303.1.4 shall be permitted within exterior wall assemblies with a 2-hour rating. Heavy timber structural members appurtenant to the CLT exterior wall shall meet the requirements of Table 2304.11 and be a fire-resistance rated as required for the exterior wall. The exterior surface of the cross-laminated timber and heavy timber elements shall be protected by one the following:

1. Fire-retardant-treated wood sheathing complying with Section 2303.2 and not less than  $1\frac{5}{32}$  inch (12 mm) thick;
2. Gypsum board not less than  $\frac{1}{2}$  inch (12.7 mm) thick; or
3. A noncombustible material.

**602.4.4.3 Exterior structural members.** Where a horizontal separation of 20 feet (6096 mm) or more is provided, wood columns and arches conforming to heavy timber sizes complying with Section 2304.11 shall be permitted to be used externally.

**602.4.4.4 Concealed spaces.** Concealed spaces shall not contain combustible materials other than building elements and electrical, mechanical, or plumbing materials and equipment permitted in plenums in accordance with Section 602 of the California Mechanical Code. Concealed spaces shall comply with applicable provisions of Section 718. Concealed spaces shall be protected in accordance with one or more of the following:

1. The building shall be sprinklered throughout in accordance with Section 903.3.1.1, and auto-

matic sprinklers shall also be provided in the concealed space.

2. The concealed space shall be completely filled with noncombustible insulation.
3. Surfaces within the concealed space shall be fully sheathed with not less than  $\frac{5}{8}$ -inch (15.8 mm) Type X gypsum board.

**Exception:** Concealed spaces within interior walls and partitions with a one hour or greater fire-resistance rating complying with Section 2304.11.2.2, shall not require additional protection.

**602.5 Type V.** Type V construction is that type of construction in which the structural elements, exterior walls and interior walls are of any materials permitted by this code.

### SECTION 603 COMBUSTIBLE MATERIAL IN TYPES I AND II CONSTRUCTION

**603.1 Allowable materials.** Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:

1. Fire-retardant-treated wood shall be permitted in:
  - 1.1. Nonbearing partitions where the required fire-resistance rating is 2 hours or less.
  - 1.2. Nonbearing exterior walls where fire-resistance-rated construction is not required.
  - 1.3. Roof construction, including girders, trusses, framing and decking.
 

**Exception:** In buildings of Type IA construction exceeding two stories above grade plane, fire-retardant-treated wood is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).
  - 1.4. Balconies, porches, decks and exterior stairways not used as required exits on buildings three stories or less above grade plane.
2. Thermal and acoustical insulation, other than foam plastics, having a flame spread index of not more than 25.

**Exceptions:**

1. Insulation placed between two layers of noncombustible materials without an intervening airspace shall be allowed to have a flame spread index of not more than 100.
2. Insulation installed between a finished floor and solid decking without intervening airspace shall be allowed to have a flame spread index of not more than 200.
3. Foam plastics in accordance with Chapter 26.
4. Roof coverings that have an A, B or C classification.

## TYPES OF CONSTRUCTION

5. Interior floor finish and floor covering materials installed in accordance with Section 804.
6. Millwork such as doors, door frames, window sashes and frames.
7. Interior wall and ceiling finishes installed in accordance with Section 803.
8. Trim installed in accordance with Section 806.
9. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases.
10. Finish flooring installed in accordance with Section 805.
11. Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a corridor serving an occupant load of 30 or more shall be permitted to be constructed of fire-retardant-treated wood, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.
12. Stages and platforms constructed in accordance with Sections 410.2 and 410.3, respectively.
13. Combustible exterior wall coverings, balconies and similar projections and bay or oriel windows in accordance with Chapter 14 and Section 705.2.3.1.
14. Blocking such as for handrails, millwork, cabinets and window and door frames.
15. Light-transmitting plastics as permitted by Chapter 26.
16. Mastics and caulking materials applied to provide flexible seals between components of exterior wall construction.
17. Exterior plastic veneer installed in accordance with Section 2605.2.
18. Nailing or furring strips as permitted by Section 803.15.
19. Heavy timber as permitted by Note c to Table 601 and Sections 602.4.3 and 705.2.3.1.
20. Aggregates, component materials and admixtures as permitted by Section 703.2.2.
21. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of fire resistance tests in accordance with Section 703.2 and installed in accordance with Sections 1705.14 and 1705.15, respectively.
22. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 714.
23. Materials used to protect joints in fire-resistance-rated assemblies in accordance with Section 715.
24. Materials allowed in the concealed spaces of buildings of Types I and II construction in accordance with Section 718.5.

25. Materials exposed within plenums complying with Section 602 of the *California Mechanical Code*.

26. Wall construction of freezers and coolers of less than 1,000 square feet (92.9 m<sup>2</sup>), in size, lined on both sides with noncombustible materials and the building is protected throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

**603.1.1 Ducts.** The use of nonmetallic ducts shall be permitted where installed in accordance with the limitations of the *California Mechanical Code*.

**603.1.2 Piping.** The use of combustible piping materials shall be permitted where installed in accordance with the limitations of the *California Mechanical Code* and the *California Plumbing Code*.

**603.1.3 Electrical.** The use of electrical wiring methods with combustible insulation, tubing, raceways and related components shall be permitted where installed in accordance with the limitations of *this code and the California Electrical Code*.

## CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE CHAPTER 7 – FIRE AND SMOKE PROTECTION FEATURES

(Matrix Adoption Tables are nonregulatory, intended only as an aid to the code user.  
See Chapter 1 for state agency authority and building applications.)

Adopting agency	BSC	BSC -CG	SFM	HCD			DSA			OSHDP					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4								
Adopt entire chapter	X							X	X	X	X	X		X	X							
Adopt entire chapter as amendeded (amended sections listed below)			X	X	X																	
Adopt only those sections that are listed below																						
Chapter / Section																						
703.4				X	X																	
703.8 – 703.9			X																			
704.6.1			X																			
705.2.3.2			X																			
705.5			X																			
705.12			X																			
Table 706.4			X																			
Table 707.3.10			X																			
707.4			X																			
708.1			X																			
708.3			X																			
709.5			X																			
709.5.1			X																			
710.2			X																			
710.8			X																			
712.1.9			X																			
Table 716.1(2)			X																			
Table 716.1(3)			X																			
716.2.2.1			X																			
716.2.5.4.1			X																			
716.2.6.6			X																			
716.2.9.4			X																			
716.3.2.1.1.1			X																			
717.5.2			X																			
717.5.4			X																			
717.5.4.1			X																			
717.5.5			X																			
717.6.1			X																			
718.2.1			X																			
721.2				X	X																	
721.2.1				X	X																	
722.7 – 722.7.2.2			X																			

The state agency does not adopt sections identified with the following symbol: †

The Office of the State Fire Marshal's adoption of this chapter or individual sections is applicable to structures regulated by other state agencies pursuant to Section 1.11.



# CHAPTER 7

## FIRE AND SMOKE PROTECTION FEATURES

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**User note:**

*About this chapter:* Chapter 7 provides detailed requirements for fire-resistance-rated construction, including structural members, walls, partitions and horizontal assemblies. Other portions of the code describe where certain fire-resistance-rated elements are required. This chapter specifies how these elements are constructed, how openings in walls and partitions are protected and how penetrations of such elements are protected.

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### SECTION 701 GENERAL

**701.1 Scope.** The provisions of this chapter shall govern the materials, systems and assemblies used for structural fire resistance and fire-resistance-rated construction separation of adjacent spaces to safeguard against the spread of fire and smoke within a building and the spread of fire to or from buildings.

### SECTION 702 MULTIPLE USE FIRE ASSEMBLIES

**702.1 Multiple use fire assemblies.** Fire assemblies that serve multiple purposes in a building shall comply with all of the requirements that are applicable for each of the individual fire assemblies.

### SECTION 703 FIRE-RESISTANCE RATINGS AND FIRE TESTS

**703.1 Scope.** Materials prescribed herein for fire resistance shall conform to the requirements of this chapter.

**703.2 Fire-resistance ratings.** The fire-resistance rating of building elements, components or assemblies shall be determined in accordance with the test procedures set forth in ASTM E119 or UL 263 or in accordance with Section 703.3. The fire-resistance rating of penetrations and fire-resistant joint systems shall be determined in accordance Sections 714 and 715, respectively.

**703.2.1 Nonsymmetrical wall construction.** Interior walls and partitions of nonsymmetrical construction shall be tested with both faces exposed to the furnace, and the assigned fire-resistance rating shall be the shortest duration obtained from the two tests conducted in compliance with ASTM E119 or UL 263. Where evidence is furnished to show that the wall was tested with the least fire-resistant side exposed to the furnace, subject to acceptance of the building official, the wall need not be subjected to tests from the opposite side (see Section 705.5 for exterior walls).

**703.2.2 Combustible components.** Combustible aggregates are permitted in gypsum and Portland cement concrete mixtures for fire-resistance-rated construction. Any component material or admixture is permitted in assemblies if the resulting tested assembly meets the fire-resistance test requirements of this code.

**703.2.3 Restrained classification.** Fire-resistance-rated assemblies tested under ASTM E119 or UL 263 shall not be considered to be restrained unless evidence satisfactory to the building official is furnished by the registered design professional showing that the construction qualifies for a restrained classification in accordance with ASTM

E119 or UL 263. Restrained construction shall be identified on the construction documents.

**703.2.4 Supplemental features.** Where materials, systems or devices that have not been tested as part of a fire-resistance-rated assembly are incorporated into the building element, component or assembly, sufficient data shall be made available to the building official to show that the required fire-resistance rating is not reduced.

**703.2.5 Exterior bearing walls.** In determining the fire-resistance rating of exterior bearing walls, compliance with the ASTM E119 or UL 263 criteria for unexposed surface temperature rise and ignition of cotton waste due to passage of flame or gases is required only for a period of time corresponding to the required fire-resistance rating of an exterior nonbearing wall with the same fire separation distance, and in a building of the same group. Where the fire-resistance rating determined in accordance with this exception exceeds the fire-resistance rating determined in accordance with ASTM E119 or UL 263, the fire exposure time period, water pressure and application duration criteria for the hose stream test of ASTM E119 or UL 263 shall be based on the fire-resistance rating determined in accordance with this section.

**703.3 Methods for determining fire resistance.** The application of any of the methods listed in this section shall be based on the fire exposure and acceptance criteria specified in ASTM E119 or UL 263. The required fire resistance of a building element, component or assembly shall be permitted to be established by any of the following methods or procedures:

1. Fire-resistance designs documented in approved sources.
2. Prescriptive designs of fire-resistance-rated building elements, components or assemblies as prescribed in Section 721.
3. Calculations in accordance with Section 722.
4. Engineering analysis based on a comparison of building element, component or assemblies designs having fire-resistance ratings as determined by the test procedures set forth in ASTM E119 or UL 263.
5. Alternative protection methods as allowed by Section 104.11.
6. Fire-resistance designs certified by an approved agency.

**703.4 Automatic sprinklers.** Under the prescriptive fire-resistance requirements of this code, the fire-resistance rating of a building element, component or assembly shall be established without the use of automatic sprinklers or any other fire suppression system being incorporated as part of the assembly tested in accordance with the fire exposure, procedures and acceptance criteria specified in ASTM E119 or UL

263. However, this section shall not prohibit or limit the duties and powers of the building official allowed by Sections 104.10 and 104.11 and 1.8.7, as applicable.

**703.5 Noncombustibility tests.** The tests indicated in Sections 703.5.1 and 703.5.2 shall serve as criteria for acceptance of building materials as set forth in Sections 602.2, 602.3 and 602.4 in Types I, II, III and IV construction. The term “non-combustible” does not apply to the flame spread characteristics of interior finish or trim materials. A material shall not be classified as a noncombustible building construction material if it is subject to an increase in combustibility or flame spread beyond the limitations herein established through the effects of age, moisture or other atmospheric conditions.

**703.5.1 Elementary materials.** Materials required to be noncombustible shall be tested in accordance with ASTM E136.

**703.5.2 Composite materials.** Materials having a structural base of noncombustible material as determined in accordance with Section 703.5.1 with a surfacing not more than 0.125 inch (3.18 mm) thick that has a flame spread index not greater than 50 when tested in accordance with ASTM E84 or UL 723 shall be acceptable as noncombustible materials.

**703.6 Fire-resistance-rated glazing.** Fire-resistance-rated glazing, when tested in accordance with ASTM E119 or UL 263 and complying with the requirements of Section 707, shall be permitted. Fire-resistance-rated glazing shall bear a label marked in accordance with Table 716.1(1) issued by an agency and shall be permanently identified on the glazing.

**703.7 Marking and identification.** Where there is an accessible concealed floor, floor-ceiling or attic space, fire walls, fire barriers, fire partitions, smoke barriers and smoke partitions or any other wall required to have protected openings or penetrations shall be effectively and permanently identified with signs or stenciling in the concealed space. Such identification shall:

1. Be located within 15 feet (4572 mm) of the end of each wall and at intervals not exceeding 30 feet (9144 mm) measured horizontally along the wall or partition.
2. Include lettering not less than 3 inches (76 mm) in height with a minimum  $\frac{3}{8}$ -inch (9.5 mm) stroke in a contrasting color incorporating the suggested wording, “FIRE AND/OR SMOKE BARRIER—PROTECT ALL OPENINGS,” or other wording.

**703.8 Determination of noncombustible protection time contribution.** *The time, in minutes, contributed to the fire-resistance rating by the noncombustible protection of mass timber building elements, components, or assemblies, shall be established through a comparison of assemblies tested using procedures set forth in ASTM E119 or UL 263. The test assemblies shall be identical in construction, loading, and materials, other than the noncombustible protection. The two test assemblies shall be tested to the same criteria of structural failure.*

1. *Test Assembly 1 shall be without protection.*
2. *Test Assembly 2 shall include the representative non-combustible protection. The protection shall be fully defined in terms of configuration details, attachment details, joint sealing details, accessories and all other relevant details.*

*The noncombustible protection time contribution shall be determined by subtracting the fire-resistance time, in min-*

*utes, of Test Assembly 1 from the fire-resistance time, in minutes, of Test Assembly 2.*

**703.9 Sealing of adjacent mass timber elements.** *In buildings of Type IVA, IVB, and IVC construction, sealant or adhesive shall be provided to resist the passage of air in the following locations:*

1. *At abutting edges and intersections of mass timber building elements required to be fire-resistance rated.*
2. *At abutting intersections of mass timber building elements and building elements of other materials where both are required to be fire-resistance rated.*

*Sealants shall meet the requirements of ASTM C920. Adhesives shall meet the requirements of ASTM D3498.*

**Exception:** *Sealants or adhesives need not be provided where they are not a required component of a tested fire-resistance rated assembly.*

## SECTION 704 FIRE-RESISTANCE RATING OF STRUCTURAL MEMBERS

**704.1 Requirements.** The fire-resistance ratings of structural members and assemblies shall comply with this section and the requirements for the type of construction as specified in Table 601. The fire-resistance ratings shall be not less than the ratings required for the fire-resistance-rated assemblies supported by the structural members.

**Exception:** Fire barriers, fire partitions, smoke barriers and horizontal assemblies as provided in Sections 707.5, 708.4, 709.4 and 711.2, respectively.

**704.2 Column protection.** Where columns are required to have protection to achieve a fire-resistance rating, the entire column shall be provided individual encasement protection by protecting it on all sides for the full column height, including connections to other structural members, with materials having the required fire-resistance rating. Where the column extends through a ceiling, the encasement protection shall be continuous from the top of the foundation or floor/ceiling assembly below through the ceiling space to the top of the column.

**Exception:** Columns that meet the limitations of Section 704.4.1.

**704.3 Protection of the primary structural frame other than columns.** Members of the primary structural frame other than columns that are required to have protection to achieve a fire-resistance rating and support more than two floors or one floor and roof, or support a load-bearing wall or a nonload-bearing wall more than two stories high, shall be provided individual encasement protection by protecting them on all sides for the full length, including connections to other structural members, with materials having the required fire-resistance rating.

**Exception:** Individual encasement protection on all sides shall be permitted on all exposed sides provided that the extent of protection is in accordance with the required fire-resistance rating, as determined in Section 703.

**704.4 Protection of secondary members.** Secondary members that are required to have protection to achieve a fire-resistance rating shall be protected by individual encasement protection.

**704.4.1 Light-frame construction.** Studs, columns and boundary elements that are integral elements in walls of light-frame construction and are located entirely between the top and bottom plates or tracks shall be permitted to have required fire-resistance ratings provided by the membrane protection provided for the wall.

**704.4.2 Horizontal assemblies.** Horizontal assemblies are permitted to be protected with a membrane or ceiling where the membrane or ceiling provides the required fire-resistance rating and is installed in accordance with Section 711.

**704.5 Truss protection.** The required thickness and construction of fire-resistance-rated assemblies enclosing trusses shall be based on the results of full-scale tests or combinations of tests on truss components or on approved calculations based on such tests that satisfactorily demonstrate that the assembly has the required fire resistance.

**704.6 Attachments to structural members.** The edges of lugs, brackets, rivets and bolt heads attached to structural members shall be permitted to extend to within 1 inch (25 mm) of the surface of the fire protection.

**704.6.1 Secondary attachments to structural members.** *Where primary and secondary structural steel members require fire protection, secondary attachments to those structural members shall be protected with the same fire-resistive material and thickness as required for the structural member. The protection shall extend away from the structural member a distance of not less than 12 inches, or shall be applied to the entire length when the attachment is less than 12 inches long. When an attachment is hollow and the ends are open, the fire-resistive material and thickness shall be applied to both exterior and interior of the hollow steel attachment.*

**704.7 Reinforcing.** Thickness of protection for concrete or masonry reinforcement shall be measured to the outside of the reinforcement except that stirrups and spiral reinforcement ties are permitted to project not more than 0.5-inch (12.7 mm) into the protection.

**704.8 Embedments and enclosures.** Pipes, wires, conduits, ducts or other service facilities shall not be embedded in the required fire protective covering of a structural member that is required to be individually encased.

**704.9 Impact protection.** Where the fire protective covering of a structural member is subject to impact damage from moving vehicles, the handling of merchandise or other activity, the fire protective covering shall be protected by corner guards or by a substantial jacket of metal or other noncombustible material to a height adequate to provide full protection, but not less than 5 feet (1524 mm) from the finished floor.

**Exception:** Corner protection is not required on concrete columns in parking garages.

**704.10 Exterior structural members.** Load-bearing structural members located within the exterior walls or on the outside of a building or structure shall be provided with the highest fire-resistance rating as determined in accordance with the following:

1. As required by Table 601 for the type of building element based on the type of construction of the building.
2. As required by Table 601 for exterior bearing walls based on the type of construction.

3. As required by Table 602 for exterior walls based on the fire separation distance.

**704.11 Bottom flange protection.** Fire protection is not required at the bottom flange of lintels, shelf angles and plates, spanning not more than 6 feet 4 inches (1931 mm) whether part of the primary structural frame or not, and from the bottom flange of lintels, shelf angles and plates not part of the structural frame, regardless of span.

**704.12 Seismic isolation systems.** Fire-resistance ratings for the isolation system shall meet the fire-resistance rating required for the columns, walls or other structural elements in which the isolation system is installed in accordance with Table 601. Isolation systems required to have a fire-resistance rating shall be protected with approved materials or construction assemblies designed to provide the same degree of fire resistance as the structural element in which the system is installed when tested in accordance with ASTM E119 or UL 263 (see Section 703.2).

Such isolation system protection applied to isolator units shall be capable of retarding the transfer of heat to the isolator unit in such a manner that the required gravity load-carrying capacity of the isolator unit will not be impaired after exposure to the standard time-temperature curve fire test prescribed in ASTM E119 or UL 263 for a duration not less than that required for the fire-resistance rating of the structure element in which the system is installed.

Such isolation system protection applied to isolator units shall be suitably designed and securely installed so as not to dislodge, loosen, sustain damage or otherwise impair its ability to accommodate the seismic movements for which the isolator unit is designed and to maintain its integrity for the purpose of providing the required fire-resistance protection.

**704.13 Sprayed fire-resistant materials (SFRM).** Sprayed fire-resistant materials (SFRM) shall comply with Sections 704.13.1 through 704.13.5.

**704.13.1 Fire-resistance rating.** The application of SFRM shall be consistent with the fire-resistance rating and the listing, including, but not limited to, minimum thickness and dry density of the applied SFRM, method of application, substrate surface conditions and the use of bonding adhesives, sealants, reinforcing or other materials.

**704.13.2 Manufacturer's installation instructions.** The application of SFRM shall be in accordance with the manufacturer's installation instructions. The instructions shall include, but are not limited to, substrate temperatures and surface conditions and SFRM handling, storage, mixing, conveyance, method of application, curing and ventilation.

**704.13.3 Substrate condition.** The SFRM shall be applied to a substrate in compliance with Sections 704.13.3.1 and 704.13.3.2.

**704.13.3.1 Surface conditions.** Substrates to receive SFRM shall be free of dirt, oil, grease, release agents, loose scale and any other condition that prevents adhesion. The substrates shall be free of primers, paints and encapsulants other than those fire tested and listed by a nationally recognized testing agency. Primed, painted or encapsulated steel shall be allowed, provided that testing has demonstrated that required adhesion is maintained.

**704.13.3.2 Primers, paints and encapsulants.** Where the SFRM is to be applied over primers, paints or encapsulants other than those specified in the listing, the material shall be field tested in accordance with ASTM E736. Where testing of the SFRM with primers, paints or encapsulants demonstrates that required adhesion is maintained, SFRM shall be permitted to be applied to primed, painted or encapsulated wide flange steel shapes in accordance with the following conditions:

1. The beam flange width does not exceed 12 inches (305 mm); or
2. The column flange width does not exceed 16 inches (400 mm); or
3. The beam or column web depth does not exceed 16 inches (400 mm).
4. The average and minimum bond strength values shall be determined based on not fewer than five bond tests conducted in accordance with ASTM E736. Bond tests conducted in accordance with ASTM E736 shall indicate an average bond strength of not less than 80 percent and an individual bond strength of not less than 50 percent, when compared to the bond strength of the SFRM as applied to clean uncoated 1/8-inch-thick (3.2 mm) steel plate.

**704.13.4 Temperature.** A minimum ambient and substrate temperature of 40°F (4.44°C) shall be maintained during and for not fewer than 24 hours after the application of the SFRM, unless the manufacturer’s instructions allow otherwise.

**704.13.5 Finished condition.** The finished condition of SFRM applied to structural members or assemblies shall not, upon complete drying or curing, exhibit cracks, voids, spalls, delamination or any exposure of the substrate. Surface irregularities of SFRM shall be deemed acceptable.

**SECTION 705  
EXTERIOR WALLS**

**705.1 General.** Exterior walls shall comply with this section.

**705.2 Projections.** Cornices, eave overhangs, exterior balconies and similar projections extending beyond the exterior wall shall conform to the requirements of this section and Section 1405. Exterior egress balconies and exterior exit stairways and ramps shall comply with Sections 1021 and 1027, respectively. Projections shall not extend any closer to the line used to determine the fire separation distance than shown in Table 705.2.

**Exception:** Buildings on the same lot and considered as portions of one building in accordance with Section 705.3 are not required to comply with this section for projections between the buildings.

**705.2.1 Types I and II construction.** Projections from walls of Type I or II construction shall be of noncombustible materials or combustible materials as allowed by Sections 705.2.3.1 and 705.2.4.

**705.2.2 Type III, IV or V construction.** Projections from walls of Type III, IV or V construction shall be of any approved material.

**TABLE 705.2  
MINIMUM DISTANCE OF PROJECTION**

FIRE SEPARATION DISTANCE-FSD (feet)	MINIMUM DISTANCE FROM LINE USED TO DETERMINE FSD
0 to less than 2	Projections not permitted
2 to less than 3	24 inches
3 to less than 5	24 inches plus 8 inches for every foot of FSD beyond 3 feet or fraction thereof
5 or greater	40 inches

For SI: 1 foot = 304.8 mm; 1 inch = 25.4 mm.

**705.2.3 Combustible projections.** Combustible projections extending to within 5 feet (1524 mm) of the line used to determine the fire separation distance shall be of not less than 1-hour fire-resistance-rated construction, heavy timber construction, complying with Section 2304.11, fire-retardant-treated wood or as permitted by Section 705.2.3.1.

**Exception:** Type VB construction shall be allowed for combustible projections in Group R-3 and U occupancies with a fire separation distance greater than or equal to 5 feet (1524 mm).

**705.2.3.1 Balconies and similar projections.** Balconies and similar projections of combustible construction other than fire-retardant-treated wood shall be fire-resistance rated where required by Table 601 for floor construction or shall be of heavy timber construction in accordance with Section 2304.11. The aggregate length of the projections shall not exceed 50 percent of the building’s perimeter on each floor.

**Exceptions:**

1. On buildings of Types I and II construction, three stories or less above grade plane, fire-retardant-treated wood shall be permitted for balconies, porches, decks and exterior stairways not used as required exits.
2. Untreated wood and plastic composites that comply with ASTM D7032 and Section 2612 are permitted for pickets, rails and similar guard components that are limited to 42 inches (1067 mm) in height.
3. Balconies and similar projections on buildings of Types III, IV and V construction shall be permitted to be of Type V construction and shall not be required to have a fire-resistance rating where sprinkler protection is extended to these areas.
4. Where sprinkler protection is extended to the balcony areas, the aggregate length of the balcony on each floor shall not be limited.

**705.2.3.2 Vents.** [SFM] Vents required by Section 2304.12.2.6 in fire-rated exterior balconies or elevated walkway surfaces shall be designed where the voids created at the intersection of the exterior curtain wall and the balcony floor are sealed with an approved material or system to retard the interior spread of flame, hot gases and products of combustion. Rated assemblies shall comply with Section 715. Ventilation openings shall comply with the fire sprinkler protection as required by Section 903.3.1.1 or 903.3.1.2 and the reference standard.



units horizontal (2:12), the fire wall shall extend to a height equal to the height of the roof located 4 feet (1219 mm) from the fire wall plus 30 inches (762 mm). The extension of the fire wall shall be not less than 30 inches (762 mm).

**706.7 Combustible framing in fire walls.** Adjacent combustible members entering into a concrete or masonry fire wall from opposite sides shall not have less than a 4-inch (102 mm) distance between embedded ends. Where combustible members frame into hollow walls or walls of hollow units, hollow spaces shall be solidly filled for the full thickness of the wall and for a distance not less than 4 inches (102 mm) above, below and between the structural members, with non-combustible materials approved for fireblocking.

**706.8 Openings.** Each opening through a fire wall shall be protected in accordance with Section 716 and shall not exceed 156 square feet (15 m<sup>2</sup>). The aggregate width of openings at any floor level shall not exceed 25 percent of the length of the wall.

**Exceptions:**

1. Openings are not permitted in party walls constructed in accordance with Section 706.1.1.
2. Openings shall not be limited to 156 square feet (15 m<sup>2</sup>) where both buildings are equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

**706.9 Penetrations.** Penetrations of fire walls shall comply with Section 714.

**706.10 Joints.** Joints made in or between fire walls shall comply with Section 715.

**706.11 Ducts and air transfer openings.** Ducts and air transfer openings shall not penetrate fire walls.

**Exception:** Penetrations by ducts and air transfer openings of fire walls that are not on a lot line shall be allowed provided that the penetrations comply with Section 717. The size and aggregate width of all openings shall not exceed the limitations of Section 706.8.

**SECTION 707  
FIRE BARRIERS**

**707.1 General.** Fire barriers installed as required elsewhere in this code or the *California Fire Code* shall comply with this section.

**707.2 Materials.** Fire barriers shall be of materials permitted by the building type of construction.

**707.3 Fire-resistance rating.** The fire-resistance rating of fire barriers shall comply with this section.

**707.3.1 Shaft enclosures.** The fire-resistance rating of the fire barrier separating building areas from a shaft shall comply with Section 713.4.

**707.3.2 Interior exit stairway and ramp construction.** The fire-resistance rating of the fire barrier separating building areas from an interior exit stairway or ramp shall comply with Section 1023.1.

**707.3.3 Enclosures for exit access stairways.** The fire-resistance rating of the fire barrier separating building areas from an exit access stairway or ramp shall comply with Section 713.4.

**707.3.4 Exit passageway.** The fire-resistance rating of the fire barrier separating building areas from an exit passageway shall comply with Section 1024.3.

**707.3.5 Horizontal exit.** The fire-resistance rating of the separation between building areas connected by a horizontal exit shall comply with Section 1026.1.

**707.3.6 Atriums.** The fire-resistance rating of the fire barrier separating atriums shall comply with Section 404.6.

**707.3.7 Incidental uses.** The fire barrier separating incidental uses from other spaces in the building shall have a fire-resistance rating of not less than that indicated in Table 509.

**707.3.8 Control areas.** Fire barriers separating control areas shall have a fire-resistance rating of not less than that required in Section 414.2.4.

**707.3.9 Separated occupancies.** Where the provisions of Section 508.4 are applicable, the fire barrier separating mixed occupancies shall have a fire-resistance rating of not less than that indicated in Table 508.4 based on the occupancies being separated.

**707.3.10 Fire areas.** The fire barriers, fire walls or horizontal assemblies, or combination thereof, separating a single occupancy into different fire areas shall have a fire-resistance rating of not less than that indicated in Table 707.3.10. The fire barriers, fire walls or horizontal assemblies, or combination thereof, separating fire areas of mixed occupancies shall have a fire-resistance rating of not less than the highest value indicated in Table 707.3.10 for the occupancies under consideration.

**TABLE 707.3.10  
FIRE-RESISTANCE RATING REQUIREMENTS FOR  
FIRE BARRIERS, FIRE WALLS OR HORIZONTAL  
ASSEMBLIES BETWEEN FIRE AREAS**

OCCUPANCY GROUP	FIRE-RESISTANCE RATING (hours)
H-1, H-2	4
F-1, H-3, S-1	3
A, B, E, F-2, H-4, H-5, I, L, M, R, S-2	2
U	1

**707.4 Exterior walls.** Where exterior walls serve as a part of a required fire-resistance-rated shaft or stairway or ramp enclosure, or separation, such walls shall comply with the requirements of Section 705 for exterior walls and the fire-resistance-rated enclosure or separation requirements shall not apply.

**Exceptions:**

1. Exterior walls required to be fire-resistance rated in accordance with Section 1021 for exterior egress balconies, Section 1023.7 for interior exit stairways and ramps and Section 1027.6 for exterior exit stairways and ramp.

2. *Exterior walls required to be fire-resistance rated in accordance with Section 1206 of the California Fire Code for enclosure of energy storage systems.*

**707.5 Continuity.** Fire barriers shall extend from the top of the foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing, slab or deck above and shall be securely attached thereto. Such fire barriers shall be continuous through concealed space, such as the space above a suspended ceiling. Joints and voids at intersections shall comply with Sections 707.8 and 707.9

**Exceptions:**

1. Shaft enclosures shall be permitted to terminate at a top enclosure complying with Section 713.12.
2. Interior exit stairway and ramp enclosures required by Section 1023 and exit access stairway and ramp enclosures required by Section 1019 shall be permitted to terminate at a top enclosure complying with Section 713.12.

**707.5.1 Supporting construction.** The supporting construction for a fire barrier shall be protected to afford the required fire-resistance rating of the fire barrier supported. Hollow vertical spaces within a fire barrier shall be fire-blocked in accordance with Section 718.2 at every floor level.

**Exceptions:**

1. The maximum required fire-resistance rating for assemblies supporting fire barriers separating tank storage as provided for in Section 415.9.1.2 shall be 2 hours, but not less than required by Table 601 for the building construction type.
2. Supporting construction for 1-hour fire barriers required by Table 509 in buildings of Types IIB, IIIB and VB construction is not required to be fire-resistance rated unless required by other sections of this code.

**707.6 Openings.** Openings in a fire barrier shall be protected in accordance with Section 716. Openings shall be limited to a maximum aggregate width of 25 percent of the length of the wall, and the maximum area of any single opening shall not exceed 156 square feet (15 m<sup>2</sup>). Openings in enclosures for exit access stairways and ramps, interior exit stairways and ramps and exit passageways shall also comply with Sections 1019, 1023.4 and 1024.5, respectively.

**Exceptions:**

1. Openings shall not be limited to 156 square feet (15 m<sup>2</sup>) where adjoining floor areas are equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
2. Openings shall not be limited to 156 square feet (15 m<sup>2</sup>) or an aggregate width of 25 percent of the length of the wall where the opening protective is a fire door serving enclosures for exit access stairways and ramps, and interior exit stairways and ramps.
3. Openings shall not be limited to 156 square feet (15 m<sup>2</sup>) or an aggregate width of 25 percent of the length of the wall where the opening protective has been tested in accordance with ASTM E119 or UL 263

and has a minimum fire-resistance rating not less than the fire-resistance rating of the wall.

4. Fire window assemblies permitted in atrium separation walls shall not be limited to a maximum aggregate width of 25 percent of the length of the wall.
5. Openings shall not be limited to 156 square feet (15 m<sup>2</sup>) or an aggregate width of 25 percent of the length of the wall where the opening protective is a fire door assembly in a fire barrier separating an enclosure for exit access stairways and ramps, and interior exit stairways and ramps from an exit passageway in accordance with Section 1023.3.1.

**707.7 Penetrations.** Penetrations of fire barriers shall comply with Section 714.

**707.7.1 Prohibited penetrations.** Penetrations into enclosures for exit access stairways and ramps, interior exit stairways and ramps, and exit passageways shall be allowed only where permitted by Sections 1019, 1023.5 and 1024.6, respectively.

**707.8 Joints.** Joints made in or between fire barriers, and joints made at the intersection of fire barriers with underside of a fire-resistance-rated floor or roof sheathing, slab or deck above, and the exterior vertical wall intersection shall comply with Section 715.

**707.9 Voids at intersections.** The voids created at the intersection of a fire barrier and a nonfire-resistance-rated roof assembly or a nonfire-resistance-rated exterior wall assembly shall be filled. An approved material or system shall be used to fill the void, and shall be securely installed in or on the intersection for its entire length so as not to dislodge, loosen or otherwise impair its ability to accommodate expected building movements and to retard the passage of fire and hot gases.

**707.10 Ducts and air transfer openings.** Penetrations in a fire barrier by ducts and air transfer openings shall comply with Section 717.

**SECTION 708  
FIRE PARTITIONS**

**708.1 General.** The following wall assemblies shall comply with this section.

1. Separation walls as required by Section 420.2 for Group R occupancies.
2. Walls separating tenant spaces in covered and open mall buildings as required by Section 402.4.2.1.
3. Corridor walls as required by Section 1020.1.
4. Enclosed elevator lobby separation as required by Section 3006.2.
5. Egress balconies as required by Section 1021.2.
6. *Walls separating enclosed tenant spaces in high-rise buildings and in buildings of Types I, IIA, IIIA, IV or VA construction of Group A, E, H, I, L and R-2.1 occupancies and other applications listed in Section 1.11 regulated by the Office of the State Fire Marshal.*

**708.2 Materials.** The walls shall be of materials permitted by the building type of construction.

**708.3 Fire-resistance rating.** Fire partitions shall have a fire-resistance rating of not less than 1 hour.

**Exceptions:**

1. Corridor walls permitted to have a 1/2-hour fire-resistance rating by Table 1020.1.
2. Dwelling unit and sleeping unit separations in buildings of Types IIB, IIIB and VB construction shall have fire-resistance ratings of not less than 1/2 hour in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
3. *Walls separating enclosed tenant spaces in Group B high-rise buildings of Type I and II construction equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.*

**708.4 Continuity.** Fire partitions shall extend from the top of the foundation or floor/ceiling assembly below and be securely attached to one of the following:

1. The underside of the floor or roof sheathing, deck or slab above.
2. The underside of a floor/ceiling or roof/ceiling assembly having a fire-resistance rating that is not less than the fire-resistance rating of the fire partition.

**Exceptions:**

1. Fire partitions shall not be required to extend into a crawl space below where the floor above the crawl space has a minimum 1-hour fire-resistance rating.
2. Fire partitions serving as a corridor wall shall not be required to extend above the lower membrane of a corridor ceiling provided that the corridor ceiling membrane is equivalent to corridor wall membrane, and either of the following conditions is met:
  - 2.1. The room-side membrane of the corridor wall extends to the underside of the floor or roof sheathing, deck or slab of a fire-resistance-rated floor or roof above.
  - 2.2. The building is equipped with an automatic sprinkler system installed throughout in accordance with Section 903.3.1.1 or 903.3.1.2, including automatic sprinklers installed in the space between the top of the fire partition and underside of the floor or roof sheathing, deck or slab above.
3. Fire partitions serving as a corridor wall shall be permitted to terminate at the upper membrane of the corridor ceiling assembly where the corridor ceiling is constructed as required for the corridor wall.
4. Fire partitions separating tenant spaces in a covered or open mall building complying with Section 402.4.2.1 shall not be required to extend above the underside of a ceiling. Such ceiling shall not be required to be part of a fire-resistance-rated assembly, and the attic or space above the ceiling at tenant

separation walls shall not be required to be subdivided by fire partitions.

**708.4.1 Supporting construction.** The supporting construction for a fire partition shall have a fire-resistance rating that is equal to or greater than the required fire-resistance rating of the supported fire partition.

**Exception:** In buildings of Types IIB, IIIB and VB construction, the supporting construction requirement shall not apply to fire partitions separating tenant spaces in covered and open mall buildings, fire partitions separating dwelling units, fire partitions separating sleeping units and fire partitions serving as corridor walls.

**708.4.2 Fireblocks and draftstops in combustibile construction.** In combustibile construction where fire partitions do not extend to the underside of the floor or roof sheathing, deck or slab above, the space above and along the line of the fire partition shall be provided with one of the following:

1. Fireblocking up to the underside of the floor or roof sheathing, deck or slab above using materials complying with Section 718.2.1.
2. Draftstopping up to the underside of the floor or roof sheathing, deck or slab above using materials complying with Section 718.3.1 for floors or Section 718.4.1 for attics.

**Exceptions:**

1. Buildings equipped with an automatic sprinkler system installed throughout in accordance with Section 903.3.1.1, or in accordance with Section 903.3.1.2 provided that protection is provided in the space between the top of the fire partition and underside of the floor or roof sheathing, deck or slab above as required for systems complying with Section 903.3.1.1.
2. Where corridor walls provide a sleeping unit or dwelling unit separation, draftstopping shall only be required above one of the corridor walls.
3. In Group R-2 occupancies with fewer than four dwelling units, fireblocking and draftstopping shall not be required.
4. In Group R-2 occupancies up to and including four stories in height in buildings not exceeding 60 feet (18 288 mm) in height above grade plane, the attic space shall be subdivided by draftstops into areas not exceeding 3,000 square feet (279 m<sup>2</sup>) or above every two dwelling units, whichever is smaller.
5. In Group R-3 occupancies with fewer than three dwelling units, fire-blocking and draftstopping shall not be required in floor assemblies.

**708.5 Exterior walls.** Where exterior walls serve as a part of a required fire-resistance-rated separation, such walls shall comply with the requirements of Section 705 for exterior walls, and the fire-resistance-rated separation requirements shall not apply.

**Exception:** Exterior walls required to be fire-resistance rated in accordance with Section 1021.2 for exterior egress

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balconies, Section 1023.7 for interior exit stairways and ramps and Section 1027.6 for exterior exit stairways and ramps.

**708.6 Openings.** Openings in a fire partition shall be protected in accordance with Section 716.

**708.7 Penetrations.** Penetrations of fire partitions shall comply with Section 714.

**708.8 Joints.** Joints made in or between fire partitions shall comply with Section 715.

**708.9 Ducts and air transfer openings.** Penetrations in a fire partition by ducts and air transfer openings shall comply with Section 717.

### SECTION 709 SMOKE BARRIERS

**709.1 General.** Vertical and horizontal smoke barriers shall comply with this section.

**709.2 Materials.** Smoke barriers shall be of materials permitted by the building type of construction.

**709.3 Fire-resistance rating.** A 1-hour fire-resistance rating is required for smoke barriers.

**Exception:** Smoke barriers constructed of minimum 0.10-inch-thick (2.5 mm) steel in Group I-3 buildings.

**709.4 Continuity.** Smoke barriers shall form an effective membrane continuous from the top of the foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing, deck or slab above, including continuity through concealed spaces, such as those found above suspended ceilings, and interstitial structural and mechanical spaces. The supporting construction shall be protected to afford the required fire-resistance rating of the wall or floor supported in buildings of other than Type IIB, IIIB or VB construction. Smoke barrier walls used to separate smoke compartments shall comply with Section 709.4.1. Smoke-barrier walls used to enclose areas of refuge in accordance with Section 1009.6.4 or to enclose elevator lobbies in accordance with Section 405.4.3, 3007.6.2, or 3008.6.2 shall comply with Section 709.4.2.

**Exception:** Smoke-barrier walls are not required in interstitial spaces where such spaces are designed and constructed with ceilings or exterior walls that provide resistance to the passage of fire and smoke equivalent to that provided by the smoke-barrier walls.

**709.4.1 Smoke-barrier walls separating smoke compartments.** Smoke-barrier walls used to separate smoke compartments shall form an effective membrane continuous from outside wall to outside wall.

**709.4.2 Smoke-barrier walls enclosing areas of refuge or elevator lobbies.** Smoke-barrier walls used to enclose areas of refuge in accordance with Section 1009.6.4, or to enclose elevator lobbies in accordance with Section 405.4.3, 3007.6.2, or 3008.6.2, shall form an effective membrane enclosure that terminates at a fire barrier wall having a level of fire protection rating not less than 1 hour, another smoke barrier wall or an outside wall. A smoke

and draft control door assembly as specified in Section 716.2.2.1.1 shall not be required at each elevator hoistway door opening or at each exit doorway between an area of refuge and the exit enclosure.

**709.5 Openings.** Openings in a smoke barrier shall be protected in accordance with Section 716.

#### Exceptions:

1. In Group I-2, *I-2.1*, *R-2.1* and ambulatory care facilities, where a pair of opposite-swinging doors are installed across a corridor in accordance with Section 709.5.1, the doors shall be protected in accordance with Section 716. The doors shall not have a center mullion. Factory-applied or field-applied protective plates are not required to be labeled. *Doors installed across corridors shall comply with Section 1010.1.1.*

2. In Group I-2, *R-2.1* and ambulatory care facilities, special purpose horizontal sliding, accordion or folding doors installed in accordance with Section 1010.1.4.3 and protected in accordance with Section 716. *Doors installed across corridors shall comply with Section 1010.1.1.*

**709.5.1 Group I-2, I-2.1, R-2.1 and ambulatory care facilities.** In Group I-2, *I-2.1*, *R-2.1* and ambulatory care facilities, where doors protecting openings in smoke barriers are installed across a corridor and have hold-open devices, the doors shall be automatic-closing in accordance with Section 716.2.6.6. Such doors shall have a vision panel with fire-protection-rated glazing materials in fire-protection-rated frames, the area of which shall not exceed that tested. *In Group I-2, where swinging doors are installed across a corridor, such doors shall be opposite swinging pairs.*

**709.6 Penetrations.** Penetrations of smoke barriers shall comply with Section 714.

**709.7 Joints.** Joints made in or between smoke barriers shall comply with Section 715.

**709.8 Ducts and air transfer openings.** Penetrations in a smoke barrier by ducts and air transfer openings shall comply with Section 717.

### SECTION 710 SMOKE PARTITIONS

**710.1 General.** Smoke partitions installed as required elsewhere in the code shall comply with this section.

**710.2 Materials.** The walls shall be of materials permitted by the building type of construction. *In Group I-2 and I-2.1, smoke partitions shall have framing covered with noncombustible materials having an approved thermal barrier with an index of not less than 15 in accordance with FM 4880, UL 1040, NFPA 286 or UL 1715.*

**710.3 Fire-resistance rating.** Unless required elsewhere in the code, smoke partitions are not required to have a fire-resistance rating.

**716.1.2.1 Safety glazing.** Fire-protection-rated glazing and fire-resistance-rated glazing installed in fire door assemblies and fire window assemblies shall comply with the safety glazing requirements of Chapter 24 where applicable.

**716.1.2.2 Marking fire-rated glazing assemblies.** Fire-rated glazing assemblies shall be marked in accordance with Tables 716.1(1), 716.1(2) and 716.1(3).

**716.1.2.2.1 Fire-rated glazing identification.** For fire-rated glazing, the label shall bear the identification required in Tables 716.1(1) and 716.1(2). “D” indicates that the glazing is permitted to be used in fire door assemblies and meets the fire protection requirements of NFPA 252, UL 10B or UL 10C. “H” indicates that the glazing meets the hose stream requirements of NFPA 252, UL 10B or UL 10C. “T” indicates that the glazing meets the temperature requirements of Section 716.2.2.3.1. The placeholder “XXX” represents the fire-rating period, in minutes.

**716.1.2.2.2 Fire-protection-rated glazing identification.** For fire-protection-rated glazing, the label shall bear the following identification required in Tables 716.1(1) and 716.1(3): “OH – XXX.” “OH” indicates that the glazing meets both the fire protection and the hose-stream requirements of NFPA 257 or UL 9 and is permitted to be used in fire window openings. The placeholder “XXX” represents the fire-rating period, in minutes.

**716.1.2.2.3 Fire-resistance-rated glazing identification.** For fire-resistance-rated glazing, the label shall bear the identification required in Section 703.6 and Table 716.1(1).

**716.1.2.2.4 Fire-rated glazing that exceeds the code requirements.** Fire-rated glazing assemblies marked as complying with hose stream requirements (H) shall be permitted in applications that do not require compliance with hose stream requirements. Fire-rated glazing assemblies marked as complying with temperature rise requirements (T) shall be permitted in applications that do not require compliance

with temperature rise requirements. Fire-rated glazing assemblies marked with ratings (XXX) that exceed the ratings required by this code shall be permitted.

**716.1.2.3 Fire-resistance-rated glazing.** Fire-resistance-rated glazing tested as part of a fire-resistance-rated wall or floor/ceiling assembly in accordance with ASTM E119 or UL 263 and labeled in accordance with Section 703.6 shall not otherwise be required to comply with this section where used as part of a wall or floor/ceiling assembly.

**716.1.2.3.1 Glazing in fire door and fire window assemblies.** Fire-resistance-rated glazing shall be permitted in fire door and fire window assemblies where tested and installed in accordance with their listings and where in compliance with the requirements of this section.

**716.2 Fire door assemblies.** Fire door assemblies required by other sections of this code shall comply with the provisions of this section. Fire door frames with transom lights, sidelights or both shall be permitted in accordance with Section 716.2.5.4.

**716.2.1 Testing requirements.** Approved fire door and fire shutter assemblies shall be constructed of any material or assembly of component materials that conforms to the test requirements of Sections 716.2.1.1 through 716.2.1.4 and the fire protection rating indicated in Table 716.1(2).

**Exceptions:**

1. Labeled protective assemblies that conform to the requirements of this section or UL 10A, UL 14B and UL 14C for tin-clad fire door assemblies.
2. Floor fire door assemblies in accordance with Section 712.1.13.1.

**716.2.1.1 Side-hinged or pivoted swinging doors.** Fire door assemblies with side-hinged and pivoted swinging doors shall be tested in accordance with NFPA 252 or UL 10C. For tests conducted in accordance with NFPA 252, the fire test shall be conducted using the positive pressure method specified in the standard.

**TABLE 716.1(1)  
MARKING FIRE-RATED GLAZING ASSEMBLIES**

FIRE TEST STANDARD	MARKING	DEFINITION OF MARKING
ASTM E119 or UL 263	W	Meets wall assembly criteria.
ASTM E119 or UL 263	FC	Meets floor/ceiling criteria <sup>a</sup>
NFPA 257 or UL 9	OH	Meets fire window assembly criteria including the hose stream test.
NFPA 252 or UL 10B or UL 10C	D	Meets fire door assembly criteria.
	H	Meets fire door assembly hose stream test.
	T	Meets 450°F temperature rise criteria for 30 minutes
—	XXX	The time in minutes of the fire resistance or fire protection rating of the glazing assembly.

For SI: °C = [(°F) - 32]/1.8.

a. See Section 2409.1

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TABLE 716.1(2)  
OPENING FIRE PROTECTION ASSEMBLIES, RATINGS AND MARKINGS

TYPE OF ASSEMBLY	REQUIRED WALL ASSEMBLY RATING (hours)	MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)	DOOR VISION PANEL SIZE <sup>b</sup>	FIRE-RATED GLAZING MARKING DOOR VISION PANEL <sup>c,e</sup>	MINIMUM SIDELIGHT/TRANSOM ASSEMBLY RATING (hours)		FIRE-RATED GLAZING MARKING SIDELIGHT/TRANSOM PANEL	
					Fire protection	Fire resistance	Fire protection	Fire resistance
Fire walls and fire barriers having a required fire-resistance rating greater than 1 hour	4	3	See Note b	D-H-W-240	Not Permitted	4	Not Permitted	W-240
	3	3 <sup>a</sup>	See Note b	D-H-W-180	Not Permitted	3	Not Permitted	W-180
	2	1½	100 sq. in.	≤ 100 sq. in. = D-H-90 >100 sq. in. = D-H-W-90	Not Permitted	2	Not Permitted	W-120
	1½	1½	100 sq. in.	≤ 100 sq. in. = D-H-90 >100 sq. in. = D-H-W-90	Not Permitted	1½	Not Permitted	W-90
Enclosures for shafts, interior exit stairways and interior exit ramps.	2	1½	100 sq. in. <sup>c</sup>	≤ 100 sq. in. = D-H-90 > 100 sq. in. = D-H-T-W-90	Not Permitted	2	Not Permitted	W-120
Horizontal exits in fire walls <sup>d</sup>	4	3	100 sq. in.	≤ 100 sq. in. = D-H-180 > 100 sq. in. = D-H-W-240	Not Permitted	4	Not Permitted	W-240
	3	3 <sup>a</sup>	100 sq. in.	≤ 100 sq. in. = D-H-180 > 100 sq. in. = D-H-W-180	Not Permitted	3	Not Permitted	W-180
Fire barriers having a required fire-resistance rating of 1 hour: Enclosures for shafts, exit access stairways, exit access ramps, interior exit stairways and interior exit ramps; and exit passageway walls	1	1	100 sq. in.	≤ 100 sq. in. = D-H-60 >100 sq. in. = D-H-T-W-60	Not Permitted	1	Not Permitted	W-60
					<b>Fire protection</b>			
Other fire barriers	1	¾	Maximum size tested	D-H	¾ <sup>f</sup>	D-H <sup>f</sup>		
Fire partitions: Corridor walls	1	⅓ <sup>b</sup>	Maximum size tested	D-20	¾ <sup>b</sup>	D-H-OH-45		
	0.5	⅓ <sup>b</sup>	Maximum size tested	D-20	⅓	D-H-OH-20		
Other fire partitions	1	¾	Maximum size tested	D-H-45	¾	D-H-45		
	0.5	⅓	Maximum size tested	D-H-20	⅓	D-H-20		

(continued)

**TABLE 716.1(2)—continued  
OPENING FIRE PROTECTION ASSEMBLIES, RATINGS AND MARKINGS**

TYPE OF ASSEMBLY	REQUIRED WALL ASSEMBLY RATING (hours)	MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)	DOOR VISION PANEL SIZE <sup>b</sup>	FIRE-RATED GLAZING MARKING DOOR VISION PANEL <sup>c, e</sup>	MINIMUM SIDELIGHT/TRANSOM ASSEMBLY RATING (hours)		FIRE-RATED GLAZING MARKING SIDELIGHT/TRANSOM PANEL		
					Fire protection	Fire resistance	Fire protection	Fire resistance	
Exterior walls	3	1½	100 sq. in. <sup>b</sup>	≤ 100 sq. in. = D-H-90 > 100 sq. in = D-H-W-90	Not Permitted	3	Not Permitted	W-180	
	2	1½	Maximum size tested	D-H 90 or D-H-W-90	1½ <sup>f</sup>	2	D-H-OH-90 <sup>f</sup>	W-120	
						Fire protection			
	1	¾	Maximum size tested	D-H-45	¾ <sup>f</sup>		D-H-45 <sup>f</sup>		
Smoke barriers						Fire protection			
	1	⅓	Maximum size tested	D-20	¾		D-H-OH-45		

For SI: 1 square inch = 645.2 mm.

- a. Two doors, each with a fire protection rating of 1½ hours, installed on opposite sides of the same opening in a fire wall, shall be deemed equivalent in fire protection rating to one 3-hour fire door.
- b. Fire-resistance-rated glazing tested to ASTM E119 in accordance with Section 716.1.2.3 shall be permitted, in the maximum size tested.
- c. Under the column heading “Fire-rated glazing marking door vision panel,” W refers to the fire-resistance rating of the glazing, not the frame.
- d. See Section 716.2.5.1.2.1.
- e. See Section 716.1.2.2.1 and Table 716.1(1) for additional permitted markings.
- f. *Fire-protection-rated glazing is not permitted for fire barriers required by Section 1206 of the California Fire Code to enclose energy storage systems. Fire-resistance-rated glazing assemblies tested to ASTM E119 or UL 263, as specified in Section 716.1.2.3 shall be permitted.*

**TABLE 716.1(3)  
FIRE WINDOW ASSEMBLY FIRE PROTECTION RATINGS**

TYPE OF WALL ASSEMBLY	REQUIRED WALL ASSEMBLY RATING (hours)	MINIMUM FIRE WINDOW ASSEMBLY RATING (hours)	FIRE-RATED GLAZING MARKING
Interior walls			
Fire walls	All	NP <sup>a</sup>	W-XXX <sup>b</sup>
Fire barriers	>1 1	NP <sup>a</sup> NP <sup>a</sup>	W-XXX <sup>b</sup> W-XXX <sup>b</sup>
Atrium separations (Section 707.3.6), Incidental use areas (Section 707.3.7) <sup>c</sup> , Mixed occupancy separations (Section 707.3.9)	1	¾	OH-45 or W-60
Fire partitions	1 0.5	¾ ⅓	OH-45 or W-60 OH-20 or W-30
Smoke barriers	1	¾	OH-45 or W-60
Exterior walls	>1	1½	OH-90 or W-XXX <sup>b</sup>
	1	¾	OH-45 or W-60
	0.5	⅓	OH-20 or W-30
Party wall	All	NP	Not Applicable

NP = Not Permitted.

- a. Not permitted except fire-resistance-rated glazing assemblies tested to ASTM E119 or UL 263, as specified in Section 716.1.2.3.
- b. XXX = The fire rating duration period in minutes, which shall be equal to the fire-resistance rating required for the wall assembly.
- c. *Fire-protection-rated glazing is not permitted for fire barriers required by Section 1206 of the California Fire Code to enclose energy storage systems. Fire-resistance-rated glazing assemblies tested to ASTM E119 or UL 263, as specified in Section 716.1.2.3 shall be permitted.*

**716.2.1.2 Other types of assemblies.** Fire door assemblies with other types of doors, including swinging elevator doors, horizontal sliding fire doors, rolling steel fire doors, fire shutters, bottom- and side-hinged chute intake doors, and top-hinged chute discharge doors, shall be tested in accordance with NFPA 252 or UL 10B. For tests conducted in accordance with NFPA 252, the neutral pressure plane in the furnace shall be maintained as nearly equal to the atmospheric pressure as possible at the top of the door, as specified in the standard.

**716.2.1.3 Glazing in transoms lights and sidelights in corridors and smoke barriers.** Glazing material in any other part of the door assembly, including transom lights and sidelights, shall be tested in accordance with NFPA 257 or UL 9, including the hose stream test, in accordance with Section 716.3.1.1.

**716.2.1.4 Smoke and draft control.** Fire door assemblies that serve as smoke and draft control assemblies shall be tested in accordance with UL 1784.

**716.2.2 Performance requirements.** Fire door assemblies shall be installed in the assemblies specified in Table 716.1(2) and shall comply with the fire protection rating specified.

**716.2.2.1 Door assemblies in corridors and smoke barriers.** Fire door assemblies required to have a minimum fire protection rating of 20 minutes where located in corridor walls or smoke barrier walls having a fire-resistance rating in accordance with Table 716.1(2) shall be tested in accordance with NFPA 252 or UL 10C without the hose stream test.

**Exceptions:**

1. Viewports that require a hole not larger than 1 inch (25 mm) in diameter through the door, have not less than a 0.25-inch-thick (6.4 mm) glass disc and the holder is of metal that will not melt out where subject to temperatures of 1,700°F (927°C).
2. Corridor door assemblies in occupancies of Group I-2 and I-2.1 in fully sprinklered buildings shall be in accordance with Section 407.3.1.
3. Unprotected openings shall be permitted for corridors in multitheater complexes where each motion picture auditorium has not fewer than one-half of its required exit or exit access doorways opening directly to the exterior or into an exit passageway.
4. Horizontal sliding doors in smoke barriers that comply with Sections 408.6 and 408.8.1 in occupancies in Group I-3.
5. Group I-3 occupancy cell or room doors that have any of the following as integral parts of the rated door assembly:

*Sidelights, Cuff Ports, Speaker Ports  
and open into a required exit corridor within a cell complex, medical suite, mental health suite,*

*program office, family visiting area or complex control area.*

6. Safety room doors with a food pass with a lockable shutter, no more than 4 inches (102 mm) high, and located between 26 inches (660 mm) and 32 inches (813 mm) as measured from the bottom of the food pass to the floor.

**716.2.2.1.1 Smoke and draft control.** The air leakage rate of the door assembly shall not exceed 3.0 cubic feet per minute per square foot (0.01524 m<sup>3</sup>/s × m<sup>2</sup>) of door opening at 0.10 inch (24.9 Pa) of water for both the ambient temperature and elevated temperature tests. Louvers shall be prohibited.

**716.2.2.2 Door assemblies in other fire partitions.** Fire door assemblies required to have a minimum fire protection rating of 20 minutes where located in other fire partitions having a fire-resistance rating of 0.5 hour in accordance with Table 716.1(2) shall be tested in accordance with NFPA 252, UL 10B or UL 10C with the hose stream test.

**716.2.2.3 Doors in interior exit stairways and ramps and exit passageways.** Fire door assemblies in interior exit stairways and ramps and exit passageways shall have a maximum transmitted temperature rise of not more than 450°F (250°C) above ambient at the end of 30 minutes of standard fire test exposure.

**Exception:** The maximum transmitted temperature rise is not required in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

**716.2.2.3.1 Glazing in doors.** Fire-protection-rated glazing in excess of 100 square inches (0.065 m<sup>2</sup>) is not permitted. Fire-resistance-rated glazing in excess of 100 square inches (0.065 m<sup>2</sup>) shall be permitted in fire doors. Listed fire-resistance-rated glazing in a fire door shall have a maximum transmitted temperature rise in accordance with Section 716.2.2.3 when the fire door is tested in accordance with NFPA 252, UL 10B or UL 10C.

**716.2.3 Fire doors.** Fire doors installed within a fire door assembly shall meet the fire rating indicated in Table 716.1(2).

**716.2.4 Fire door frames.** Fire door frames installed as part of a fire door assembly shall meet the fire rating indicated in Table 716.1(2).

**716.2.5 Glazing in fire door assemblies.** Fire-rated glazing conforming to the opening protection requirements in Section 716.2.1 shall be permitted in fire door assemblies.

**716.2.5.1 Size limitations.** Fire-resistance-rated glazing shall comply with the size limitations in Section 716.2.5.1.1. Fire-protection-rated glazing shall comply with the size limitations of NFPA 80, and as provided in Section 716.2.5.1.2.

**716.2.5.1.1 Fire-resistance-rated glazing in door assemblies in fire walls and fire barriers rated greater than 1 hour.** Fire-resistance-rated glazing tested to ASTM E119 or UL 263 and NFPA 252, UL



10B or UL 10C shall be permitted in fire door assemblies located in fire walls and in fire barriers in accordance with Table 716.1(2) to the maximum size tested and in accordance with their listings.

**716.2.5.1.2 Fire-protection-rated glazing in door assemblies in fire walls and fire barriers rated greater than 1 hour.** Fire-protection-rated glazing shall be prohibited in fire walls and fire barriers except as provided in Sections 716.2.5.1.2.1 and 716.2.5.1.2.2.

**716.2.5.1.2.1 Horizontal exits.** Fire-protection-rated glazing shall be permitted as vision panels in self-closing swinging fire door assemblies serving as horizontal exits in fire walls where limited to 100 square inches (0.065 m<sup>2</sup>).

**716.2.5.1.2.2 Fire barriers.** Fire-protection-rated glazing shall be permitted in fire doors having a 1½-hour fire protection rating intended for installation in fire barriers, where limited to 100 square inches (0.065 m<sup>2</sup>).

**716.2.5.2 Elevator, stairway and ramp protectives.** Approved fire-protection-rated glazing used in fire door assemblies in elevator, stairway and ramp enclosures shall be so located as to furnish clear vision of the passageway or approach to the elevator, stairway or ramp.

**716.2.5.3 Glazing in door assemblies in corridors and smoke barriers.** In a 20-minute fire door assembly, the glazing material in the door itself shall have a minimum fire-protection-rated glazing of 20 minutes and shall be exempt from the hose stream test.

**716.2.5.4 Fire door frames with transom lights and sidelights.** Fire-protection-rated glazing shall be permitted in door frames with transom lights, sidelights or both, where a ¾-hour fire protection rating or less is required and in 2-hour fire-resistance-rated exterior walls in accordance with Table 716.1(2). Fire door frames with transom lights, sidelights, or both, installed with fire-resistance-rated glazing tested as an assembly in accordance with ASTM E119 or UL 263 shall be permitted where a fire protection rating exceeding ¾ hour is required in accordance with Table 716.1(2).

**716.2.5.4.1 Energy storage system separation.** *Fire-protection-rated glazing shall not be permitted in fire door frames with transom lights and sidelights in fire barriers required by Section 1206 of the California Fire Code to enclose energy storage systems.*

**716.2.6 Fire door hardware and closures.** Fire door hardware and closures shall be installed on fire door assemblies in accordance with the requirements of this section.

**716.2.6.1 Door closing.** Fire doors shall be latching and self- or automatic-closing in accordance with this section.

**Exceptions:**

1. Fire doors located in common walls separating sleeping units in Group R-1 shall be permitted without automatic- or self-closing devices.

2. The elevator car doors and the associated hoistway enclosure doors at the floor level designated for recall in accordance with Section 3003.2 shall be permitted to remain open during Phase I emergency recall operation.

**716.2.6.2 Latch required.** Unless otherwise specifically permitted, single side-hinged swinging fire doors and both leaves of pairs of side-hinged swinging fire doors shall be provided with an active latch bolt that will secure the door when it is closed.

**716.2.6.3 Chute intake door latching.** Chute intake doors shall be positive latching, remaining latched and closed in the event of latch spring failure during a fire emergency.

**716.2.6.4 Automatic-closing fire door assemblies.** Automatic-closing fire door assemblies shall be self-closing in accordance with NFPA 80.

**716.2.6.5 Delayed-action closers.** Doors required to be self-closing and not required to be automatic closing shall be permitted to be equipped with delayed-action closers.

**716.2.6.6 Smoke-activated doors.** Automatic-closing doors installed in the following locations shall be permitted to have hold-open devices. Doors shall automatically close by the actuation of smoke detectors installed in accordance with Section 907.3 or by loss of power to the smoke detector or hold-open device. Doors that are automatic-closing by smoke detection shall not have more than a 10-second delay before the door starts to close after the smoke detector is actuated. Automatic-closing doors that protect openings installed in the following locations shall comply with this section:

1. In walls that separate incidental uses in accordance with Section 509.4.
2. In fire walls in accordance with Section 706.8.
3. In fire barriers in accordance with Section 707.6.
4. In fire partitions in accordance with Section 708.6.
5. In smoke barriers in accordance with Section 709.5.
6. In smoke partitions in accordance with Section 710.5.2.3.
7. In shaft enclosures in accordance with Section 713.7.
8. In waste and linen chutes, discharge openings and access and discharge rooms in accordance with Section 713.13. Loading doors installed in waste and linen chutes shall meet the requirements of Sections 716.2.6.1 and 716.2.6.3.
13. **[SFM]** *Doors installed in walls required to be fire rated in accordance with Section 509.4.*
14. **[SFM]** *Doors installed in walls required to be fire rated in accordance with Section 508.4.*

*In Group I-2 and I-2.1 occupancies smoke activated doors installed in the above locations shall be automatic closing by actuation of the fire alarm system, or*

*actuation of smoke detectors installed in accordance with Section 907.3, or activation of the sprinkler system installed in accordance with Section 903.1.*

**716.2.6.7 Doors in pedestrian ways.** Vertical sliding or vertical rolling steel fire doors in openings through which pedestrians travel shall be heat activated or activated by smoke detectors with alarm verification.

**716.2.7 Swinging fire shutters.** Where fire shutters of the swinging type are installed in exterior openings, not less than one row in every three vertical rows shall be arranged to be readily opened from the outside, and shall be identified by distinguishing marks or letters not less than 6 inches (152 mm) high.

**716.2.8 Rolling fire shutters.** Where fire shutters of the rolling type are installed, such shutters shall include approved automatic-closing devices.

**716.2.9 Labeled protective assemblies.** Fire door assemblies shall be labeled by an approved agency. The labels shall comply with NFPA 80, and shall be permanently affixed to the door or frame.

**716.2.9.1 Fire door labeling requirements.** Fire doors shall be labeled showing the name of the manufacturer or other identification readily traceable back to the manufacturer, the name or trademark of the third-party inspection agency, the fire protection rating and, where required for fire doors in interior exit stairways and ramps and exit passageways by Section 716.2.2.3, the maximum transmitted temperature end point. Smoke and draft control doors complying with UL 1784 shall be labeled as such and shall comply with Section 716.2.9.3. Labels shall be approved and permanently affixed. The label shall be applied at the factory or location where fabrication and assembly are performed.

**716.2.9.1.1 Light kits, louvers and components.** Listed light kits and louvers and their required preparations shall be considered as part of the labeled door where such installations are done under the listing program of the third-party agency. Fire doors and fire door assemblies shall be permitted to consist of components, including glazing, vision light kits and hardware that are listed or classified and labeled for such use by different third-party agencies.

**716.2.9.2 Oversized doors.** Oversized fire doors shall bear an oversized fire door label by an approved agency or shall be provided with a certificate of inspection furnished by an approved testing agency. Where a certificate of inspection is furnished by an approved testing agency, the certificate shall state that the door conforms to the requirements of design, materials and construction, but has not been subjected to the fire test.

**716.2.9.3 Smoke and draft control door labeling requirements.** Smoke and draft control doors complying with UL 1784 shall be labeled in accordance with Section 716.2.9.1 and shall show the letter "S" on the fire-rating label of the door. This marking shall indicate

that the door and frame assembly are in compliance where listed or labeled gasketing is installed.

**716.2.9.4 Fire door frame labeling requirements.** Fire door frames shall be labeled showing the names of the manufacturer and the third-party inspection agency.

*Exception: In Group I-3 doors that are required to be 45 minutes or higher shall be fire-rated assemblies or certified by the manufacturer as being equivalent to the required standard.*

**716.2.9.5 Labeling.** Fire-rated glazing shall bear a label or other identification showing the name of the manufacturer, the test standard and information required in Table 716.1(1) that shall be issued by an approved agency and shall be permanently identified on the glazing.

**716.2.9.6 Fire door operator labeling requirements.** Fire door operators for horizontal sliding doors shall be labeled and listed for use with the assembly.

**716.2.10 Installation of door assemblies in corridors and smoke barriers.** Installation of smoke doors shall be in accordance with NFPA 105.

**716.3 Fire window assemblies.** Fire window assemblies required by other sections of this code shall comply with the provisions of this section.

**716.3.1 Testing requirements.** Fire window assemblies shall be constructed of any material or assembly of component materials that conforms to the test requirements of Sections 716.3.1.1 and 716.3.1.2 and the fire protection rating indicated in Table 716.1(3).

**716.3.1.1 Testing under positive pressure.** NFPA 257 or UL 9 shall evaluate fire-protection-rated glazing under positive pressure. Within the first 10 minutes of a test, the pressure in the furnace shall be adjusted so not less than two-thirds of the test specimen is above the neutral pressure plane, and the neutral pressure plane shall be maintained at that height for the balance of the test.

**716.3.1.2 Nonsymmetrical glazing systems.** Nonsymmetrical fire-protection-rated glazing systems in fire partitions, fire barriers or in exterior walls with a fire separation distance of 10 feet (3048 mm) or less pursuant to Section 705 shall be tested with both faces exposed to the furnace, and the assigned fire protection rating shall be the shortest duration obtained from the two tests conducted in compliance with NFPA 257 or UL 9.

**716.3.2 Performance requirements.** Fire window assemblies shall be installed in the assemblies and comply with the fire protection rating specified in Table 716.1(3).

**716.3.2.1 Interior fire window assemblies.** Fire-protection-rated glazing used in fire window assemblies located in fire partitions and fire barriers shall be limited to use in assemblies with a maximum fire-resistance rating of 1 hour in accordance with this section.

**716.3.2.1.1 Where  $\frac{3}{4}$ -hour-fire-protection window assemblies permitted.** Fire-protection-rated glazing requiring 45-minute opening protection in

accordance with Table 716.1(3) shall be limited to fire partitions designed in accordance with Section 708 and fire barriers utilized in the applications set forth in Sections 707.3.6, 707.3.7 and 707.3.9 where the fire-resistance rating does not exceed 1 hour. Fire-resistance-rated glazing assemblies tested in accordance with ASTM E119 or UL 263 shall not be subject to the limitations of this section.

**716.3.2.1.1.1 Energy storage system separation.** *Fire-protection-rated glazing is not permitted for use in fire window assemblies in fire barriers required by Section 1206 of the California Fire Code to enclose energy storage systems.*

**716.3.2.1.2 Area limitations.** The total area of the glazing in fire-protection-rated window assemblies shall not exceed 25 percent of the area of a common wall with any room.

**716.3.2.1.3 Where 1/3-hour-fire-protection window assemblies permitted.** Fire-protection-rated glazing shall be permitted in window assemblies tested to NFPA 257 or UL 9 in fire partitions requiring 1/3-hour opening protection in accordance with Table 716.1(3).

**716.3.3 Fire window frames.** Fire window frames installed with a fire window assembly shall meet the fire-protection rating indicated in Table 716.1(3).

**716.3.3.1 Window mullions.** Metal mullions that exceed a nominal height of 12 feet (3658 mm) shall be protected with materials to afford the same fire-resistance rating as required for the wall construction in which the protective is located.

**716.3.4 Fire-protection-rated glazing.** Glazing in fire window assemblies shall be fire protection rated in accordance with this section and Table 716.1(3). Fire-protection-rated glazing in fire window assemblies shall be tested in accordance with and shall meet the acceptance criteria of NFPA 257 or UL 9. Openings in nonfire-resistance-rated exterior wall assemblies that require protection in accordance with Section 705.3, 705.8, 705.8.5 or 705.8.6 shall have a fire protection rating of not less than 3/4 hour. Fire-protection-rated glazing in 1/2-hour fire-resistance-rated partitions is permitted to have a 20-minute fire protection rating.

**716.3.4.1 Glass and glazing.** Glazing in fire window assemblies shall be fire-protection-rated glazing installed in accordance with and complying with the size limitations set forth in NFPA 80.

**716.3.5 Labeled protective assemblies.** Glazing in fire window assemblies shall be labeled by an approved agency. The labels shall comply with NFPA 80 and Section 716.3.5.2.

**716.3.5.1 Fire window frames.** Fire window frames shall be approved for the intended application.

**716.3.5.2 Labeling requirements.** Fire-protection-rated glazing shall bear a label or other identification showing the name of the manufacturer, the test standard and information required in Section 716.1.2.2.2 and

Table 716.1(3) that shall be issued by an approved agency and permanently identified on the glazing.

**716.3.6 Installation.** Fire window assemblies shall be installed in accordance with the provisions of this section.

**716.3.6.1 Closure.** Fire-protection-rated glazing shall be in the fixed position or be automatic-closing and shall be installed in labeled frames.

**SECTION 717  
DUCTS AND AIR TRANSFER OPENINGS**

**717.1 General.** The provisions of this section shall govern the protection of duct penetrations and air transfer openings in assemblies required to be protected and duct penetrations in nonfire-resistance-rated floor assemblies.

**717.1.1 Ducts and air transfer openings.** Ducts transitioning horizontally between shafts shall not require a shaft enclosure provided that the duct penetration into each associated shaft is protected with dampers complying with this section.

**717.1.2 Ducts that penetrate fire-resistance-rated assemblies without dampers.** Ducts that penetrate fire-resistance-rated walls and are not required by this section to have fire dampers shall comply with the requirements of Sections 714.3 through 714.4.3. Ducts that penetrate horizontal assemblies not required to be contained within a shaft and not required by this section to have fire dampers shall comply with the requirements of Sections 714.5 through 714.6.2.

**717.1.2.1 Ducts that penetrate nonfire-resistance-rated assemblies.** The space around a duct penetrating a nonfire-resistance-rated floor assembly shall comply with Section 717.6.3.

**717.2 Installation.** Fire dampers, smoke dampers, combination fire/smoke dampers and ceiling radiation dampers located within air distribution and smoke control systems shall be installed in accordance with the requirements of this section, the manufacturer's instructions and the dampers' listing.

**717.2.1 Smoke control system.** Where the installation of a fire damper will interfere with the operation of a required smoke control system in accordance with Section 909, approved alternative protection shall be utilized. Where mechanical systems including ducts and dampers utilized for normal building ventilation serve as part of the smoke control system, the expected performance of these systems in smoke control mode shall be addressed in the rational analysis required by Section 909.4.

**717.2.2 Hazardous exhaust ducts.** Fire dampers for hazardous exhaust duct systems shall comply with the *California Mechanical Code*.

**717.3 Damper testing, ratings and actuation.** *Damper* testing, ratings and actuation shall be in accordance with Sections 717.3.1 through 717.3.3.

**717.3.1 Damper testing.** Dampers shall be listed and labeled in accordance with the standards in this section.

1. Fire dampers shall comply with the requirements of UL 555. Only fire dampers labeled for use in

dynamic systems shall be installed in heating, ventilation and air-conditioning systems designed to operate with fans on during a fire.

2. Smoke dampers shall comply with the requirements of UL 555S.
3. Combination fire/smoke dampers shall comply with the requirements of both UL 555 and UL 555S.
4. Ceiling radiation dampers shall comply with the requirements of UL 555C or shall be tested as part of a fire-resistance-rated floor/ceiling or roof/ceiling assembly in accordance with ASTM E119 or UL 263. Only ceiling radiation dampers labeled for use in dynamic systems shall be installed in heating, ventilation and air-conditioning systems designed to operate with fans on during a fire.
5. Corridor dampers shall comply with requirements of both UL 555 and UL 555S. Corridor dampers shall demonstrate acceptable closure performance when subjected to 150 feet per minute (0.76 mps) velocity across the face of the damper during the UL 555 fire exposure test.

**717.3.2 Damper rating.** Damper ratings shall be in accordance with Sections 717.3.2.1 through 717.3.2.4.

**717.3.2.1 Fire damper ratings.** Fire dampers shall have the minimum rating specified in Table 717.3.2.1.

**TABLE 717.3.2.1  
FIRE DAMPER RATING**

TYPE OF PENETRATION	MINIMUM DAMPER RATING (hours)
Less than 3-hour fire-resistance-rated assemblies	1.5
3-hour or greater fire-resistance-rated assemblies	3

**717.3.2.2 Smoke damper ratings.** Smoke damper leakage ratings shall be Class I or II. Elevated temperature ratings shall be not less than 250°F (121°C).

**717.3.2.3 Combination fire/smoke damper ratings.** Combination fire/smoke dampers shall have the minimum rating specified for fire dampers in Table 717.3.2.1 and shall have the minimum rating specified for smoke dampers in Section 717.3.2.2.

**717.3.2.4 Corridor damper ratings.** Corridor dampers shall have the following minimum ratings:

1. One hour fire-resistance rating.
2. Class I or II leakage rating as specified in Section 717.3.2.2.

**717.3.3 Damper actuation.** Damper actuation shall be in accordance with Sections 717.3.3.1 through 717.3.3.5 as applicable.

**717.3.3.1 Fire damper actuation device.** The fire damper actuation device shall meet one of the following requirements:

1. The operating temperature shall be approximately 50°F (10°C) above the normal tempera-

ture within the duct system, but not less than 160°F (71°C).

2. The operating temperature shall be not more than 350°F (177°C) where located in a smoke control system complying with Section 909.

**717.3.3.2 Smoke damper actuation.** The smoke damper shall close upon actuation of a listed smoke detector or detectors installed in accordance with Section 907.3 and one of the following methods, as applicable:

1. Where a smoke damper is installed within a duct, a smoke detector shall be installed inside the duct or outside the duct with sampling tubes protruding into the duct. The detector or tubes within the duct shall be within 5 feet (1524 mm) of the damper. Air outlets and inlets shall not be located between the detector or tubes and the damper. The detector shall be listed for the air velocity, temperature and humidity anticipated at the point where it is installed. Other than in mechanical smoke control systems, dampers shall be closed upon fan shutdown where local smoke detectors require a minimum velocity to operate.
2. Where a smoke damper is installed above smoke barrier doors in a smoke barrier, a spot-type detector shall be installed on either side of the smoke barrier door opening. The detector shall be listed for releasing service if used for direct interface with the damper.
3. Where a smoke damper is installed within an air transfer opening in a wall, a spot-type detector shall be installed within 5 feet (1524 mm) horizontally of the damper. The detector shall be listed for releasing service if used for direct interface with the damper.
4. Where a smoke damper is installed in a corridor wall or ceiling, the damper shall be permitted to be controlled by a smoke detection system installed in the corridor.
5. Where a smoke detection system is installed in all areas served by the duct in which the damper will be located, the smoke dampers shall be permitted to be controlled by the smoke detection system.

**717.3.3.3 Combination fire/smoke damper actuation.** Combination fire/smoke damper actuation shall be in accordance with Sections 717.3.3.1 and 717.3.3.2. Combination fire/smoke dampers installed in smoke control system shaft penetrations shall not be activated by local area smoke detection unless it is secondary to the smoke management system controls.

**717.3.3.4 Ceiling radiation damper actuation.** The operating temperature of a ceiling radiation damper actuation device shall be 50°F (27.8°C) above the normal temperature within the duct system, but not less than 160°F (71°C).

**717.3.3.5 Corridor damper actuation.** Corridor damper actuation shall be in accordance with Sections 717.3.3.1 and 717.3.3.2.

## SECTION 718 CONCEALED SPACES

**718.1 General.** Fireblocking and draftstopping shall be installed in combustible concealed locations in accordance with this section. Fireblocking shall comply with Section 718.2. Draftstopping in floor/ceiling spaces and attic spaces shall comply with Sections 718.3 and 718.4, respectively. The permitted use of combustible materials in concealed spaces of buildings of Type I or II construction shall be limited to the applications indicated in Section 718.5.

**718.2 Fireblocking.** In combustible construction, fireblocking shall be installed to cut off concealed draft openings (both vertical and horizontal) and shall form an effective barrier between floors, between a top story and a roof or attic space. Fireblocking shall be installed in the locations specified in Sections 718.2.2 through 718.2.7.

**718.2.1 Fireblocking materials.** Fireblocking shall consist of the following materials:

1. Two-inch (51 mm) nominal lumber.
2. Two thicknesses of 1-inch (25 mm) nominal lumber with broken lap joints.
3. One thickness of 0.719-inch (18.3 mm) wood structural panels with joints backed by 0.719-inch (18.3 mm) wood structural panels.
4. One thickness of 0.75-inch (19.1 mm) particleboard with joints backed by 0.75-inch (19 mm) particleboard.
5. One-half-inch (12.7 mm) gypsum board.
6. One-fourth-inch (6.4 mm) cement-based millboard.
7. Batts or blankets of mineral wool, mineral fiber or other approved materials installed in such a manner as to be securely retained in place.
8. Cellulose insulation installed as tested for the specific application.
9. *Mass timber complying with Section 2304.11.*

**718.2.1.1 Batts or blankets of mineral wool or mineral fiber.** Batts or blankets of mineral wool or mineral fiber or other approved nonrigid materials shall be permitted for compliance with the 10-foot (3048 mm) horizontal fireblocking in walls constructed using parallel rows of studs or staggered studs.

**718.2.1.2 Unfaced fiberglass.** Unfaced fiberglass batt insulation used as fireblocking shall fill the entire cross section of the wall cavity to a minimum height of 16 inches (406 mm) measured vertically. Where piping, conduit or similar obstructions are encountered, the insulation shall be packed tightly around the obstruction.

**718.2.1.3 Loose-fill insulation material.** Loose-fill insulation material, insulating foam sealants and caulk materials shall not be used as a fireblock unless specifically tested in the form and manner intended for use to demonstrate its ability to remain in place and to retard the spread of fire and hot gases.

**718.2.1.4 Fireblocking integrity.** The integrity of fireblocks shall be maintained.

**718.2.1.5 Double stud walls.** Batts or blankets of mineral or glass fiber or other approved nonrigid materials shall be allowed as fireblocking in walls constructed using parallel rows of studs or staggered studs.

**718.2.2 Concealed wall spaces.** Fireblocking shall be provided in concealed spaces of stud walls and partitions, including furred spaces, and parallel rows of studs or staggered studs, as follows:

1. Vertically at the ceiling and floor levels.
2. Horizontally at intervals not exceeding 10 feet (3048 mm).

**718.2.3 Connections between horizontal and vertical spaces.** Fireblocking shall be provided at interconnections between concealed vertical stud wall or partition spaces and concealed horizontal spaces created by an assembly of floor joists or trusses, and between concealed vertical and horizontal spaces such as occur at soffits, drop ceilings, cove ceilings and similar locations.

**718.2.4 Stairways.** Fireblocking shall be provided in concealed spaces between stair stringers at the top and bottom of the run. Enclosed spaces under stairways shall comply with Section 1011.7.3.

**718.2.5 Ceiling and floor openings.** Where required by Section 712.1.8, Exception 1 of Section 714.5.1.2 or Section 714.6, fireblocking of the annular space around vents, pipes, ducts, chimneys and fireplaces at ceilings and floor levels shall be installed with a material specifically tested in the form and manner intended for use to demonstrate its ability to remain in place and resist the free passage of flame and the products of combustion.

**718.2.5.1 Factory-built chimneys and fireplaces.** Factory-built chimneys and fireplaces shall be fireblocked in accordance with UL 103 and UL 127.

**718.2.6 Exterior wall coverings.** Fireblocking shall be installed within concealed spaces of exterior wall coverings and other exterior architectural elements where permitted to be of combustible construction as specified in Section 1405 or where erected with combustible frames. Fireblocking shall be installed at maximum intervals of 20 feet (6096 mm) in either dimension so that there will be no concealed space exceeding 100 square feet (9.3 m<sup>2</sup>) between fireblocking. Where wood furring strips are used, they shall be of approved wood of natural decay resistance or preservative-treated wood. If noncontinuous, such elements shall have closed ends, with not less than 4 inches (102 mm) of separation between sections.

### Exceptions:

1. Fireblocking of cornices is not required in single-family dwellings. Fireblocking of cornices of a two-family dwelling is required only at the line of dwelling unit separation.
2. Fireblocking shall not be required where the exterior wall covering is installed on noncombustible framing and the face of the exterior wall covering exposed to the concealed space is covered by one of the following materials:

- 2.1. Aluminum having a minimum thickness of 0.019 inch (0.5 mm).
  - 2.2. Corrosion-resistant steel having a base metal thickness not less than 0.016 inch (0.4 mm) at any point.
  - 2.3. Other approved noncombustible materials.
3. Fireblocking shall not be required where the exterior wall covering has been tested in accordance with, and complies with the acceptance criteria of, NFPA 285. The exterior wall covering shall be installed as tested in accordance with NFPA 285.

**718.2.7 Concealed sleeper spaces.** Where wood sleepers are used for laying wood flooring on masonry or concrete fire-resistance-rated floors, the space between the floor slab and the underside of the wood flooring shall be filled with an approved material to resist the free passage of flame and products of combustion or fireblocked in such a manner that open spaces under the flooring shall not exceed 100 square feet (9.3 m<sup>2</sup>) in area and such space shall be filled solidly under permanent partitions so that communication under the flooring between adjoining rooms shall not occur.

**Exceptions:**

1. Fireblocking is not required for slab-on-grade floors in gymnasiums.
2. Fireblocking is required only at the juncture of each alternate lane and at the ends of each lane in a bowling facility.

**718.3 Draftstopping in floors.** Draftstopping shall be installed to subdivide floor/ceiling assemblies where required by Section 708.4.2. In other than Group R occupancies, draftstopping shall be installed to subdivide combustible floor/ceiling assemblies so that horizontal floor areas do not exceed 1,000 square feet (93 m<sup>2</sup>).

**Exception:** Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

**718.3.1 Draftstopping materials.** Draftstopping materials shall be not less than 1/2-inch (12.7 mm) gypsum board, 3/8-inch (9.5 mm) wood structural panel, 3/8-inch (9.5 mm) particleboard, 1-inch (25-mm) nominal lumber, cement fiberboard, batts or blankets of mineral wool or glass fiber, or other approved materials adequately supported. The integrity of draftstops shall be maintained.

**718.4 Draftstopping in attics.** Draftstopping shall be installed to subdivide attic spaces where required by Section 708.4.2. In other than Group R, draftstopping shall be installed to subdivide combustible attic spaces and combustible concealed roof spaces such that any horizontal area does not exceed 3,000 square feet (279 m<sup>2</sup>). Ventilation of concealed roof spaces shall be maintained in accordance with Section 1202.2.1.

**Exception:** Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

**718.4.1 Draftstopping materials.** Materials utilized for draftstopping of attic spaces shall comply with Section 718.3.1.

**718.4.1.1 Openings.** Openings in the partitions shall be protected by self-closing doors with automatic latches constructed as required for the partitions.

**718.5 Combustible materials in concealed spaces in Type I or II construction.** Combustible materials shall not be permitted in concealed spaces of buildings of Type I or II construction.

**Exceptions:**

1. Combustible materials in accordance with Section 603.
2. Combustible materials exposed within plenums complying with Section 602 of the *California Mechanical Code*.
3. Class A interior finish materials classified in accordance with Section 803.
4. Combustible piping within partitions or shaft enclosures installed in accordance with the provisions of this code.
5. Combustible piping within concealed ceiling spaces installed in accordance with the *California Mechanical Code* and the *California Plumbing Code*.
6. Combustible insulation and covering on pipe and tubing, installed in concealed spaces other than plenums, complying with Section 720.7.

**SECTION 719  
FIRE-RESISTANCE  
REQUIREMENTS FOR PLASTER**

**719.1 Thickness of plaster.** The minimum thickness of gypsum plaster or Portland cement plaster used in a fire-resistance-rated system shall be determined by the prescribed fire tests. The plaster thickness shall be measured from the face of the lath where applied to gypsum lath or metal lath.

**719.2 Plaster equivalents.** For fire-resistance purposes, 1/2 inch (12.7 mm) of unsanded gypsum plaster shall be deemed equivalent to 3/4 inch (19.1 mm) of one-to-three gypsum sand plaster or 1 inch (25 mm) of Portland cement sand plaster.

**719.3 Noncombustible furring.** In buildings of Type I and II construction, plaster shall be applied directly on concrete or masonry or on approved noncombustible plastering base and furring.

**719.4 Double reinforcement.** Plaster protection more than 1 inch (25 mm) in thickness shall be reinforced with an additional layer of approved lath embedded not less than 3/4 inch (19.1 mm) from the outer surface and fixed securely in place.

**Exception:** Solid plaster partitions or where otherwise determined by fire tests.

**719.5 Plaster alternatives for concrete.** In reinforced concrete construction, gypsum plaster or Portland cement plaster is permitted to be substituted for 1/2 inch (12.7 mm) of the required poured concrete protection, except that a minimum thickness of 3/8 inch (9.5 mm) of poured concrete shall be provided in reinforced concrete floors and 1 inch (25 mm) in reinforced concrete columns in addition to the plaster finish. The concrete base shall be prepared in accordance with Section 2510.7.

**722.7 Fire-resistance rating of mass timber.** The required fire resistance of mass timber elements in Section 602.4 shall be determined in accordance with Section 703.2 or Section 703.3. The fire-resistance rating of building elements shall be as required in Tables 601 and 602 and as specified elsewhere in this code. The fire-resistance rating of the mass timber elements shall consist of the fire resistance of the unprotected element added to the protection time of the noncombustible protection.

**722.7.1 Minimum required protection.** Where required by Sections 602.4.1 through 602.4.3, noncombustible protection shall be provided for mass timber building elements in accordance with Table 722.7.1(1). The rating, in minutes, contributed by the noncombustible protection of mass timber building elements, components, or assemblies, shall be established in accordance with Section 703.8. The protection contributions indicated in Table 722.7.1(2) shall be deemed to comply with this requirement when installed and fastened in accordance with Section 722.7.2.

**TABLE 722.7.1(1)  
PROTECTION REQUIRED FROM  
NONCOMBUSTIBLE COVERING MATERIAL**

REQUIRED FIRE-RESISTANCE RATING OF BUILDING ELEMENT PER TABLES 601 AND 602 (hours)	MINIMUM PROTECTION REQUIRED FROM NONCOMBUSTIBLE PROTECTION (minutes)
1 hr.	40
2 hr.	80
3 hr. or more	120

**TABLE 722.7.1(2)  
PROTECTION PROVIDED BY  
NONCOMBUSTIBLE COVERING MATERIAL**

NONCOMBUSTIBLE PROTECTION	PROTECTION CONTRIBUTION (minutes)
1/2-inch Type X Gypsum Board	25
5/8-inch Type X Gypsum Board	40

**722.7.2 Installation of gypsum board noncombustible protection.** Gypsum board complying with Table 722.7.1(2) shall be installed in accordance with this section.

**722.7.2.1 Interior surfaces.** Layers of Type X gypsum board serving as noncombustible protection for interior surfaces of wall and ceiling assemblies determined in accordance with Table 722.7.1(1) shall be installed in accordance with the following:

- Each layer shall be attached with Type S drywall screws of sufficient length to penetrate the mass timber at least 1 inch when driven flush with the paper surface of the gypsum board.

**Exception:** The third layer, where determined necessary by Section 722.7, shall be permitted to be attached with 1 inch #6 Type S drywall screws to furring channels in accordance with ASTM C645.

- Screws for attaching the base layer shall be 12 inches on center in both directions.

- Screws for each layer after the base layer shall be 12 inches on center in both directions and offset from the screws of the previous layers by 4 inches in both directions.
- All panel edges of any layer shall be offset 18 inches from those of the previous layer.
- All panel edges shall be attached with screws sized and offset as in Items 1 through 4 above and placed at least 1 inch but not more than 2 inches from the panel edge.
- All panels installed at wall-to-ceiling intersections shall be installed such that ceiling panels are installed first and the wall panels are installed after the ceiling panel has been installed and is fitted tight to the ceiling panel. Where multiple layers are required, each layer shall repeat this process.
- All panels installed at a wall-to-wall intersection shall be installed such that the panels covering an exterior wall or a wall with a greater fire-resistance rating shall be installed first and the panels covering the other wall shall be fitted tight to the panel covering the first wall. Where multiple layers are required, each layer shall repeat this process.
- Panel edges of the face layer shall be taped and finished with joint compound. Fastener heads shall be covered with joint compound.
- Panel edges protecting mass timber elements adjacent to unprotected mass timber elements in accordance with Section 602.4.2.2 shall be covered with 1 1/4-inch metal corner bead and finished with joint compound.

**722.7.2.2 Exterior surfaces.** Layers of Type X gypsum board serving as noncombustible protection for the outside of the exterior heavy timber walls determined in accordance with Table 722.7.1(1) shall be fastened 12 inches on center each way and 6 inches on center at all joints or ends. All panel edges shall be attached with fasteners located at least 1 inch but not more than 2 inches from the panel edge. Fasteners shall comply with one of the following:

- Galvanized nails of minimum 12 Gage with a 7/16-inch head of sufficient length to penetrate the mass timber a minimum of 1 inch.
- Screws which comply with ASTM C1002 (Type S, Type W, or Type G) of sufficient length to penetrate the mass timber a minimum of 1 inch.





lower end of the rafter tails. Roof eaves may be either “open” or “enclosed.” Open roof eaves have exposed rafter tails and an unenclosed space on the underside of the roof deck. Enclosed roof eaves have a boxed-in roof eave soffit with a horizontal underside or sloping rafter tails with an exterior covering applied to the underside of the rafter tails.

**ROOF EAVE SOFFIT.** An enclosed boxed-in soffit under a roof eave with exterior covering material applied to the soffit framing creating a horizontal surface on the exposed underside.

**STATE RESPONSIBILITY AREA** means lands that are classified by the Board of Forestry pursuant to Public Resources Code Section 4125 where the financial responsibility of preventing and suppressing forest fires is primarily the responsibility of the state.

**WILDFIRE** is any uncontrolled fire spreading through vegetative fuels that threatens to destroy life, property, or resources as defined in Public Resources Code Sections 4103 and 4104.

**WILDFIRE EXPOSURE** is one or a combination of radiant heat, convective heat, direct flame contact and burning embers being projected by vegetation fire to a structure and its immediate environment.

**WILDLAND-URBAN INTERFACE FIRE AREA** is a geographical area identified by the state as a “Fire Hazard Severity Zone” in accordance with the Public Resources Code Sections 4201 through 4204 and Government Code Sections 51175 through 51189, or other areas designated by the enforcing agency to be at a significant risk from wildfires.

**SECTION 703A  
STANDARDS OF QUALITY**

**703A.1 General.** Building material, systems, assemblies and methods of construction used in this chapter shall be in accordance with Section 703A.

**703A.2 Qualification by testing.** Material and material assemblies tested in accordance with the requirements of Section 703A shall be accepted for use when the results and conditions of those tests are met. Product evaluation testing of material and material assemblies shall be approved or listed by the State Fire Marshal, or identified in a current report issued by an approved agency.

**703A.3 Approved agency.** Product evaluation testing shall be performed by an approved agency as defined in Section 1702. The scope of accreditation for the approved agency shall include building product compliance with this code.

**703A.4 Labeling.** Material and material assemblies tested in accordance with the requirements of Section 703A shall bear an identification label showing the fire test results. That identification label shall be issued by a testing and/or inspecting agency approved by the State Fire Marshal.

1. Identification mark of the approved testing and/or inspecting agency.
2. Contact and identification information of the manufacturer.

3. Model number or identification of the product or material.
4. Pre-test weathering specified in this chapter.
5. Compliance standard as described under Section 703A.7.

**703A.5 Weathering and surface treatment protection.**

**703A.5.1 General.** Material and material assemblies tested in accordance with the requirements of Section 703A shall maintain their fire test performance under conditions of use, when installed in accordance with the manufacturers instructions.

**703A.5.2 Weathering.** Fire-retardant-treated wood and fire-retardant-treated wood shingles and shakes shall meet the fire test performance requirements of this chapter after being subjected to the weathering conditions contained in the following standards, as applicable to the materials and the conditions of use.

**703A.5.2.1 Fire-retardant-treated wood.** Fire-retardant-treated wood shall be tested in accordance with ASTM D2898 (Method A) and the requirements of Section 2303.2.

**703A.5.2.2 Fire-retardant-treated wood shingles and shakes.** Fire-retardant-treated wood shingles and shakes shall be approved and listed by the State Fire Marshal in accordance with Section 208(c), Title 19 California Code of Regulations.

**703A.5.3 Surface treatment protection.** The use of paints, coatings, stains or other surface treatments are not an approved method of protection as required in this chapter.

**703A.6 Alternates for materials, design, tests and methods of construction.** The enforcing agency is permitted to modify the provisions of this chapter for site-specific conditions in accordance with Section 1.11.2.4. When required by the enforcing agency for the purposes of granting modifications, a fire protection plan shall be submitted in accordance with the California Fire Code, Chapter 49.

**703A.7 Standards of quality.** The State Fire Marshal standards for exterior wildfire exposure protection listed below and as referenced in this chapter are located in the California Referenced Standards Code, Part 12 and Chapter 35 of this code.

**SFM Standard 12-7A-1, Exterior Wall Siding and Sheathing.** A fire resistance test standard consisting of a 150 kW intensity direct flame exposure for a 10-minute duration.

**SFM Standard 12-7A-2, Exterior Windows.** A fire resistance test standard consisting of a 150 kW intensity direct flame exposure for an 8-minute duration.

**SFM Standard 12-7A-3, Horizontal Projection Underside** A fire resistance test standard consisting of a 300 kW intensity direct flame exposure for a 10-minute duration.

**SFM Standard 12-7A-4, Decking.** A two-part test consisting of a heat release rate (Part A) deck assembly combustion test with an under deck exposure of 80 kW intensity direct flame for a 3-minute duration, and a (Part B) sustained deck assembly combustion test consisting of a deck upper surface burning ember exposure with a 12 mph wind for 40 minutes

using a 2.2lb (1kg) burning “Class A” size 12" x 12" x 2.25" (300 mm x 300 mm x 57 mm) roof test brand.

**SFM Standard 12-7A-4A, Decking Alternate Method A.** A heat release rate deck assembly combustion test with an under deck exposure of 80 kW intensity direct flame for a 3-minute duration.

**SFM Standard 12-7A-5, Ignition-resistant Material.** A generic building material surface burning flame spread test standard consisting of an extended 30 minute ASTM E84 or UL 723 test method as is used for fire-retardant-treated wood.

**ASTM D2898 Standard Practice for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing.**

**ASTM D3909/D3909M Standard Specification for Asphalt Roll Roofing (Glass Felt) Surfaced with Mineral Granules.**

**ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.**

**ASTM E2632/E2632M Standard Test Method for Evaluating the Under-Deck Fire Test Response of Deck Materials.**

**ASTM E2707 Standard Test Method for Determining Fire Penetration of Exterior Wall Assemblies Using a Direct Flame Impingement Exposure.**

**ASTM E2726/E2726M Standard Test Method for Evaluating the Fire Test Response of Deck Structures to Burning Brands.**

**ASTM E2886/E2886M Standard Test Method for Evaluating the Ability of Exterior Vents to Resist the Entry of Embers and Direct Flame Impingement.**

**ASTM E2957 Standard Test Method for Resistance to Wildfire Penetration of Eaves, Soffits and Other Projections.**

**NFPA 257 Standard on Fire Test for Window and Glass Block Assemblies.**

**UL 723 Standard for Test for Surface Burning Characteristics of Building Materials.**

**SECTION 704A  
IGNITION-RESISTANT CONSTRUCTION**

**704A.1 General.** The materials prescribed herein for ignition resistance shall conform to the requirements of this chapter.

**704A.2 Ignition-resistant materials.** Ignition-resistant materials shall comply with one of the following:

1. The requirements in Section 704A.3 when tested in accordance with the test procedures set forth in ASTM E84 or UL 723,
2. The test procedures and requirements set forth in SFM Standard 12-7A-5 “Ignition-Resistant Material”, or
3. One of the alternative methods in Section 704A.4.

**704A.3 Conditions of acceptance for ignition-resistant material tested in accordance with ASTM E84 or UL 723.** A material shall comply with the conditions of acceptance in

Items 1 and 2 below when the test is continued for an additional 20-minute period, meaning for a total test period of an “extended” 30-minute test period.

1. The material shall exhibit a flame spread index not exceeding 25 and shall show no evidence of progressive combustion following the extended 30-minute test period.
2. The material shall exhibit a flame front that does not progress more than 10<sup>1</sup>/<sub>2</sub> feet (3200 mm) beyond the centerline of the burner at any time during the extended 30-minute test period.

**704A.4 Alternative methods for determining ignition-resistant material.** Any one of the following shall be accepted as meeting the definition of ignition-resistant material:

1. Noncombustible material. Material that complies with the definition for noncombustible materials in Section 202.
2. Fire-retardant-treated wood. Fire-retardant-treated wood identified for exterior use that complies with the requirements of Section 2303.2.
3. Fire-retardant-treated wood shingles and shakes. Fire-retardant-treated wood shingles and shakes, as defined in Section 1505.6 and listed by State Fire Marshal for use as “Class B” roof covering, shall be accepted as an ignition-resistant wall covering material when installed over solid sheathing.

**SECTION 705A  
ROOFING**

**705A.1 General.** Roofs shall comply with the requirements of Chapter 7A and Chapter 15. Roofs shall have a roofing assembly installed in accordance with its listing and the manufacturer’s installation instructions. Roof assemblies in the Fire Hazard Severity Zones shall be Class A rating when tested in accordance with ASTM E108 or UL790.

**705A.2 Roof coverings.** Where the roofing profile has an airspace under the roof covering, installed over a combustible deck, a 72 lb. (32.7 kg) cap sheet complying with ASTM D3909 Standard Specification for “Asphalt Rolled Roofing (Glass Felt) Surfaced with Mineral Granules,” shall be installed over the roof deck. Bird stops shall be used at the eaves when the profile fits, to prevent debris at the eave. Hip and ridge caps shall be mudded in to prevent intrusion of fire or embers.

**Exception:** Cap sheet is not required when no less than 1” of mineral wool board or other noncombustible material is located between the roofing material and wood framing or deck.

Alternately, a Class A fire rated roof underlayment, tested in accordance with ASTM E108, shall be permitted to be used. If the sheathing consists of exterior fire-retardant-treated wood, the underlayment shall not be required to comply with a Class A classification. Bird stops shall be used at the eaves when the profile fits, to prevent debris at the eave. Hip and ridge caps shall be mudded in to prevent intrusion of fire or embers.

**705A.3 Roof valleys.** Where valley flashing is installed, the flashing shall be not less than 0.019-inch (0.48 mm) No. 26 gage galvanized sheet corrosion-resistant metal installed over not less than one layer of minimum 72 pound (32.4 kg) mineral-surfaced nonperforated cap sheet complying with ASTM D3909, at least 36-inch-wide (914 mm) running the full length of the valley.

**705A.4 Roof gutters.** Roof gutters shall be provided with the means to prevent the accumulation of leaves and debris in the gutter.

**SECTION 706A  
VENTS**

**706A.1 General.** Where provided, ventilation openings for enclosed attics, enclosed eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, and underfloor ventilation shall be in accordance with Section 1203 and Sections 706A.1 through 706A.3 to resist building ignition from the intrusion of burning embers and flame through the ventilation openings.

**706A.2 Requirements.** Ventilation openings for enclosed attics, enclosed eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, and underfloor ventilation openings shall be fully covered with Wildland Flame and Ember Resistant (WUI) vents approved and listed by the California State Fire Marshal, or WUI vents listed to ASTM E2886, by complying with all of the following requirements:

1. There shall be no flaming ignition of the cotton material during the Ember Intrusion Test.
2. There shall be no flaming ignition during the Integrity Test portion of the Flame Intrusion Test.
3. The maximum temperature of the unexposed side of the vent shall not exceed 662°F (350°C).

**706A.2.1** The requirements of 706.A.2 shall apply to gable ends, ridge ends, crawl spaces, foundations, and all other ventilation vents that mount on a vertical wall.

**706A.3 Ventilation openings on the underside of eaves and cornices.** Vents shall not be installed on the underside of eaves and cornices unless the vents are Wildland Flame and Ember Resistant (WUI) vents approved and listed by the California State Fire Marshal, or WUI vents listed to ASTM E2886, by complying with all the following requirements:

1. There shall be no flaming ignition of the cotton material during the Ember Intrusion Test.
2. There shall be no flaming ignition during the Integrity Test portion of the Flame Intrusion Test.
3. The maximum temperature of the unexposed side of the vent shall not exceed 662°F (350°C).

**Exceptions:**

1. The enforcing agency shall be permitted to accept or approve special eave and cornice vents that resist the intrusion of flame and burning embers.
2. Vents shall be permitted to be installed on the underside of eaves and cornices in accordance with all of the following conditions:

2.1. The attic space being ventilated is fully protected by an automatic sprinkler system installed in accordance with Section 903.3.1.1; and

2.2. The exterior wall covering and exposed underside of the eave are of noncombustible materials, or ignition-resistant materials, as determined in accordance with SFM Standard 12-7A-5 Ignition-Resistant Material and the requirements of Section 704A.3, and the vent is located more than 12 feet (3.66 m) from the ground or walking surface of a deck, porch, patio or similar surface.

**SECTION 707A  
EXTERIOR COVERING**

**707A.1 Scope.** The provisions of this section shall govern the materials and construction methods used to resist building ignition and/or safeguard against the intrusion of flames resulting from small ember and short-term direct flame contact exposure.

**707A.2 General.** The following exterior covering materials and/or assemblies shall comply with this section:

1. Exterior wall covering material.
2. Exterior wall assembly.
3. Exterior exposed underside of roof eave overhangs.
4. Exterior exposed underside of roof eave soffits.
5. Exposed underside of exterior porch ceilings.
6. Exterior exposed underside of floor projections.
7. Exterior underfloor areas.

**Exceptions:**

1. Exterior wall architectural trim, embellishments, fascias, and gutters.
2. Roof or wall top cornice projections and similar assemblies.
3. Roof assembly projections over gable end walls.
4. Solid wood rafter tails and solid wood blocking installed between rafters having minimum dimension 2 inch (50.8 mm) nominal.
5. Deck walking surfaces shall comply with Section 709A.4 only.

**707A.3 Exterior walls.** The exterior wall covering or wall assembly shall comply with one of the following requirements:

1. Noncombustible material.
2. Ignition-resistant material.
3. Sawn lumber or glue laminated wood with the smallest minimum nominal dimension of 4 inches (102 mm). Sawn or glue-laminated planks splined, tongue-and-groove, or set close together and well spiked.
4. Log wall construction assembly.
5. Wall assemblies that have been tested in accordance with the test procedures for a 10-minute direct flame contact exposure test set forth in ASTM E2707 with

the conditions of acceptance shown in Section 707A.3.1.

6. Wall assemblies that meet the performance criteria in accordance with the test procedures for a 10-minute direct flame contact exposure test set forth in SFM Standard 12-7A-1.

**Exception:** Any of the following shall be deemed to meet the assembly performance criteria and intent of this section:

1. One layer of  $5/8$ -inch Type X gypsum sheathing applied behind the exterior covering or cladding on the exterior side of the framing.
2. The exterior portion of a 1-hour fire resistive exterior wall assembly designed for exterior fire exposure including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.

**707A.3.1 Conditions of acceptance when tested in accordance with ASTM E2707.** The ASTM E2707 test shall be conducted on a minimum of three test specimens and the conditions of acceptance in Items 1 and 2 below shall be met. If any one of the three tests does not meet the conditions of acceptance, three additional tests shall be run. All of the additional tests shall meet the conditions of acceptance.

1. Absence of flame penetration through the wall assembly at any time.
2. Absence of evidence of glowing combustion on the interior surface of the assembly at the end of the 70-min test.

**707A.3.2 Extent of exterior wall covering.** Exterior wall coverings shall extend from the top of the foundation to the roof, and terminate at 2 inch (50.8 mm) nominal solid wood blocking between rafters at all roof overhangs, or in the case of enclosed eaves, terminate at the enclosure.

**707A.4 Open roof eaves.** The exposed roof deck on the underside of unenclosed roof eaves shall consist of one of the following:

1. Noncombustible material.
2. Ignition-resistant material.
3. One layer of  $5/8$ -inch Type X gypsum sheathing applied behind an exterior covering on the underside exterior of the roof deck.
4. The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the roof deck designed for exterior fire exposure including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.

**Exceptions:** The following materials do not require protection:

1. Solid wood rafter tails on the exposed underside of open roof eaves having a minimum nominal dimension of 2 inch (50.8 mm).

2. Solid wood blocking installed between rafter tails on the exposed underside of open roof eaves having a minimum nominal dimension of 2 inch (50.8 mm).
3. Gable end overhangs and roof assembly projections beyond an exterior wall other than at the lower end of the rafter tails.
4. Fascia and other architectural trim boards.

**707A.5 Enclosed roof eaves and roof eave soffits.** The exposed underside of enclosed roof eaves having either a boxed-in roof eave soffit with a horizontal underside, or sloping rafter tails with an exterior covering applied to the underside of the rafter tails, shall be protected by one of the following:

1. Noncombustible material.
2. Ignition-resistant material.
3. One layer of  $5/8$ -inch Type X gypsum sheathing applied behind an exterior covering on the underside of the rafter tails or soffit.
4. The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the rafter tails or soffit including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.
5. Boxed-in roof eave soffit assemblies with a horizontal underside that meet the performance criteria in Section 707A.10 when tested in accordance with the test procedures set forth in ASTM E2957.
6. Boxed-in roof eave soffit assemblies with a horizontal underside that meet the performance criteria in accordance with the test procedures set forth in SFM Standard 12-7A-3.

**Exceptions:** The following materials do not require protection:

1. Gable end overhangs and roof assembly projections beyond an exterior wall other than at the lower end of the rafter tails.
2. Fascia and other architectural trim boards.

**707A.6 Exterior porch ceilings.** The exposed underside of exterior porch ceilings shall be protected by one of the following:

1. Noncombustible material.
2. Ignition-resistant material.
3. One layer of  $5/8$ -inch Type X gypsum sheathing applied behind the exterior covering on the underside of the ceiling.
4. The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the ceiling assembly including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.
5. Porch ceiling assemblies with a horizontal underside that meet the performance criteria in Section 707A.10 when tested in accordance with the test procedures set forth in ASTM E2957.

6. Porch ceiling assemblies with a horizontal underside that meet the performance criteria in accordance with the test procedures set forth in SFM Standard 12-7A-3.

**Exception:** Architectural trim boards.

**707A.7 Floor projections.** The exposed underside of a cantilevered floor projection where a floor assembly extends over an exterior wall shall be protected by one of the following:

1. Noncombustible material.
2. Ignition-resistant material.
3. One layer of  $5/8$ -inch Type X gypsum sheathing applied behind an exterior covering on the underside of the floor projection.
4. The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the floor projection including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.
5. The underside of a floor projection assembly that meets the performance criteria in Section 707A.10 when tested in accordance with the test procedures set forth in ASTM E2957.
6. The underside of a floor projection assembly that meets the performance criteria in accordance with the test procedures set forth in SFM Standard 12-7A-3.

**Exception:** Architectural trim boards.

**707A.8 Underfloor protection.** The underfloor area of elevated or overhanging buildings shall be enclosed to grade in accordance with the requirements of this chapter or the underside of the exposed underfloor shall consist of one of the following:

1. Noncombustible material.
2. Ignition-resistant material.
3. One layer of  $5/8$ -inch Type X gypsum sheathing applied behind an exterior covering on the underside of the floor projection.
4. The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the floor including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.
5. The underside of a floor assembly that meets the performance criteria in Section 707A.10 when tested in accordance with the test procedures set forth in ASTM E2957.
6. The underside of a floor assembly that meets the performance criteria in accordance with the test procedures set forth in SFM Standard 12-7A-3.

**Exception:** Structural columns and beams do not require protection when constructed with sawn lumber or glue-laminated wood with the smallest minimum nominal dimension of 4 inches (102 mm). Sawn or glue-laminated planks splined, tongue-and-groove, or set close together and well spiked.

**707A.9 Underside of appendages.** When required by the enforcing agency the underside of overhanging appendages shall be enclosed to grade in accordance with the requirements of this chapter or the underside of the exposed underfloor shall consist of one of the following:

1. Noncombustible material.
2. Ignition-resistant material.
3. One layer of  $5/8$ -inch Type X gypsum sheathing applied behind an exterior covering on the underside of the floor projection.
4. The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the floor including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.
5. The underside of a floor assembly that meets the performance criteria in accordance with the test procedures set forth in either of the following:

- 5.1. SFM Standard 12-7A-3; or
- 5.2. ASTM E2957.

**Exception:** Structural columns and beams do not require protection when constructed with sawn lumber or glue laminated wood with the smallest minimum nominal dimension of 4 inches (102 mm). Sawn or glue-laminated planks splined, tongue-and-groove, or set close together and well spiked.

**707A.10 Conditions of acceptance when tested in accordance with ASTM E2957.** The test shall be conducted on a minimum of three test specimens and the conditions of acceptance in Items 1 through 3 below shall be met. If any one of the three tests does not meet the conditions of acceptance, three additional tests shall be run. All of the additional tests shall meet the conditions of acceptance.

1. Absence of flame penetration of the eaves or horizontal projection assembly at any time.
2. Absence of structural failure of the eaves or horizontal projection subassembly at any time.
3. Absence of sustained combustion of any kind at the conclusion of the 40-minute test.

## SECTION 708A

### EXTERIOR WINDOWS, SKYLIGHTS AND DOORS

#### 708A.1 General.

**708A.2 Exterior glazing.** The following exterior glazing materials and/or assemblies shall comply with this section:

1. Exterior windows.
2. Exterior glazed doors.
3. Glazed openings within exterior doors.
4. Glazed openings within exterior garage doors.
5. Exterior structural glass veneer.
6. Skylights.
7. Vents.

**708A.2.1 Exterior windows, skylights and exterior glazed door assembly requirements.** Exterior windows, skylights and exterior glazed door assemblies shall comply with one of the following requirements:

1. Be constructed of multipane glazing with a minimum of one tempered pane meeting the requirements of Section 2406 Safety Glazing, or
2. Be constructed of glass block units, or
3. Have a fire-resistance rating of not less than 20 minutes when tested according to NFPA 257, or
4. Be tested to meet the performance requirements of SFM Standard 12-7A-2.

**708A.2.2 Operable skylights.** Operable skylights shall be protected by a non-combustible mesh screen where the dimensions of the openings in the screen shall not exceed  $\frac{1}{8}$ -inch (3.2 mm).

**708A.2.3 Structural glass veneer.** The wall assembly behind structural glass veneer shall comply with Section 707A.3.

**708A.3 Exterior doors.** Exterior doors shall comply with one of the following:

1. The exterior surface or cladding shall be of noncombustible material.
2. The exterior surface or cladding shall be of ignition-resistant material.
3. The exterior door shall be constructed of solid core wood that complies with the following requirements:
  - 3.1. Stiles and rails shall not be less than  $1\frac{3}{8}$  inches thick.
  - 3.2. Panels shall not be less than  $1\frac{1}{4}$  inches thick, except for the exterior perimeter of the panel that shall be permitted to taper to a tongue not less than  $\frac{3}{8}$  inch thick.
4. The exterior door assembly shall have a fire-resistance rating of not less than 20 minutes when tested according to NFPA 252.
5. The exterior surface or cladding shall be tested to meet the performance requirements of Section 707A.3.1 when tested in accordance with ASTM E2707.
6. The exterior surface or cladding shall be tested to meet the performance requirements of SFM Standard 12-7A-1.

**708A.3.1 Exterior door glazing.** Glazing in exterior doors shall comply with Section 708A.2.1.

**708A.4 Garage door perimeter gap.** Exterior garage doors shall resist the intrusion of embers from entering by preventing gaps between doors and door openings, at the bottom, sides and tops of doors, from exceeding  $\frac{1}{8}$  inch (3.2 mm). Gaps between doors and door openings shall be controlled by one of the following methods:

1. Weather-stripping products made of materials that: (a) have been tested for tensile strength in accordance with ASTM D638 (Standard Test Method for Tensile Properties of Plastics) after exposure to ASTM G155 (Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials) for

a period of 2,000 hours, where the maximum allowable difference in tensile strength values between exposed and non-exposed samples does not exceed 10%; and (b) exhibit a V-2 or better flammability rating when tested to UL 94, Standard for Tests for Flammability of Plastic Materials for Parts in Devices and Appliances.

2. Door overlaps onto jambs and headers.
3. Garage door jambs and headers covered with metal flashing.

## SECTION 709A DECKING

**709A.1 General.** The walking surface material of decks, porches, balconies and stairs shall comply with the requirements of this section.

**709A.1.1 Flashing.** A minimum of a 6-inch (150 mm) metal flashing, applied vertically on the exterior of the wall, shall be installed at all deck-to-wall intersections.

**709A.2 Where required.** The walking surface material of decks, porches, balconies and stairs shall comply with the requirements of this section when any portion of such surface is within 10 feet (3048 mm) of the building.

**709A.3 Decking Surfaces.** The walking surface material of decks, porches, balconies and stairs shall be constructed with one of the following materials:

1. Material that complies with the performance requirements of Section 709A.4 when tested in accordance with both ASTM E2632 and ASTM E2726.
2. Ignition-resistant material that complies with the performance requirements of 704A.3 when tested in accordance with ASTM E84 or UL 723.
3. Material that complies with the performance requirements of both SFM Standard 12-7A-4 and SFM Standard 12-7A-5.
4. Exterior fire-retardant-treated wood.
5. Noncombustible material.
6. Any material that complies with the performance requirements of SFM Standard 12-7A-4A when attached exterior wall covering is also composed of noncombustible or ignition-resistant material.

**Exception:** Wall material shall be permitted to be of any material that otherwise complies with this chapter when the decking surface material complies with the performance requirements ASTM E84 with a Class B flame spread index.

7. Any material that complies with the performance requirements of Section 709A.5 when tested in accordance with ASTM E2632 and when attached exterior wall covering is also composed of only noncombustible or ignition-resistant materials.

**Exception:** Wall material shall be permitted to be of any material that otherwise complies with this chapter when the decking surface material complies with the performance requirements ASTM E84 with a Class B flame spread index.

**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE  
CHAPTER 9 – FIRE PROTECTION AND LIFE SAFETY SYSTEMS—continued**

Adopting agency	BSC	BSC- CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4								
Adopt entire chapter	X							X	X	X	X	X	X	X								
Adopt entire chapter as amendeded (amended sections listed below)			X	X	X																	
Adopt only those sections that are listed below						X	X														X	
Chapter / Section																						
907.2			X																			
907.2.1			X																			
907.2.1.3			X																			
907.2.2			X																			
907.2.2.2			X																			
907.2.3			X																			
907.2.3.1			X																			
907.2.3.2			X																			
907.2.3.3			X																			
907.2.3.4			X																			
907.2.3.5			X																			
907.2.3.6			X																			
907.2.3.6.1			X																			
907.2.3.6.2			X																			
907.2.3.7			X																			
907.2.3.8			X																			
907.2.3.9			X																			
907.2.3.9.1			X																			
907.2.3.9.2			X																			
907.2.3.10			X																			
907.2.5.1			X																			
907.2.6			X																			
907.2.6.2			X																			
907.2.6.2.1			X																			
907.2.6.2.2			X																			
907.2.6.3			X																			
907.2.6.3.3			X																			
907.2.6.3.4			X																			
907.2.6.4			X																			
907.2.9			X																			
907.2.9.1			X																			
907.2.9.4			X																			
907.2.9.4.1			X																			
907.2.10.2			X																			
907.2.11			X																			
907.2.11.1			X																			
907.2.11.2			X																			
907.2.11.2.1			X																			
907.2.11.2.2			X																			
907.2.11.2.3			X																			
907.2.11.3			X																			
907.2.11.4			X																			
907.2.11.5			X																			
907.2.11.6			X																			
907.2.11.8			X																			

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**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE  
CHAPTER 9 – FIRE PROTECTION AND LIFE SAFETY SYSTEMS—continued**

Adopting agency	BSC	BSC- CG	SFM	HCD			DSA			OSHDPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4								
Adopt entire chapter	X							X	X	X	X	X										
Adopt entire chapter as amendeded (amended sections listed below)			X	X	X																	
Adopt only those sections that are listed below						X	X														X	
Chapter / Section																						
907.2.11.9			X																			
907.2.13			X																			
907.2.13.1			X																			
907.2.13.1.2			X																			
907.2.22			X																			
907.2.24			X																			
907.2.24.1			X																			
907.2.24.2			X																			
907.2.24.3			X																			
907.2.24.4			X																			
907.2.24.4.1			X																			
907.2.24.4.2			X																			
907.2.24.4.3			X																			
907.2.25			X																			
907.2.25.1			X																			
907.2.25.2			X																			
907.2.26			X																			
907.2.26.1			X																			
907.2.26.2			X																			
907.2.26.3			X																			
907.2.26.4			X																			
907.2.26.4.1			X																			
907.2.26.4.2			X																			
907.2.27			X																			
907.2.28			X																			
907.2.28.1			X																			
907.2.29			X																			
907.2.29.1			X																			
907.3			X																			
907.3.2			X																			
907.3.2.1			X																			
907.3.2.2			X																			
907.3.2.3			X																			
907.3.2.4			X																			
907.3.2.5			X																			
907.4.2.1			X																			
907.4.2.2			X				X															
907.4.2.7			X																			
907.5.2.1			X																			
907.5.2.1.3			X																			
907.5.2.2			X																			
907.5.2.2.4			X																			
907.5.2.3			X				X															
907.5.2.3.1			X				X															
907.5.2.3.2			X				X															
Table 907.5.2.3.2			X				X															
907.5.2.3.3			X	X	X	X	X															

(continued)



**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE  
CHAPTER 9 – FIRE PROTECTION AND LIFE SAFETY SYSTEMS—continued**

Adopting agency	BSC	BSC- CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4								
Adopt entire chapter	X							X	X	X	X	X										
Adopt entire chapter as amendeded (amended sections listed below)			X	X	X																	
Adopt only those sections that are listed below						X	X														X	
Chapter / Section																						
907.5.2.3.4			X				X															
907.5.2.4			X																			
907.5.2.5			X																			
907.6.1				X	X																	
907.6.1.1			X																			
907.6.4			X																			
907.6.4.1			X																			
907.6.4.1.1			X																			
907.6.4.2			X																			
907.6.4.3			X																			
907.6.4.4			X																			
907.6.6			X																			
907.6.6.3			X																			
908.2			X																			
909.5.3			X																			
909.5.3.1			X																			
909.12.1			X																			
909.16			X																			
909.16.1			X																			
909.18.9			X																			
909.20			X																			
909.20.1			X																			
909.20.2.2			X																			
909.20.2.3			X																			
909.20.2.4			X																			
909.20.2.5			X																			
909.20.3			X																			
909.20.3.2			X																			
909.20.4			X																			
909.20.4.1			X																			
909.20.4.2			X																			
909.20.4.3			X																			
909.20.4.3.1			X																			
909.20.4.3.2			X																			
909.20.4.3.3			X																			
910.2.1			X																			
910.3.1			X																			
911.1			X																			
911.1.2			X																			
911.1.6			X																			
911.1.7			X																			
912.4			X																			

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**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE**  
**CHAPTER 9 – FIRE PROTECTION AND LIFE SAFETY SYSTEMS—continued**

Adopting agency	BSC	BSC- CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4								
Adopt entire chapter	X							X	X	X	X	X										
Adopt entire chapter as amendeded (amended sections listed below)			X	X	X																	
Adopt only those sections that are listed below						X	X														X	
Chapter / Section																						
912.6			X																			
913.6			X																			
915.1			X	X	X																	
915.1.1			X																			
915.2			X	X	X																	
915.2.1			X	X	X																	
915.4			X	X	X																	
915.4.1, Exceptions 2 and 3			X	X	X																	
915.4.2			X	X	X																	
915.4.3			X																			
915.4.4			X	X	X																	
915.4.5				X	X																	
915.5.2			X	X	X																	
915.5.3			X	X	X																	
915.6			X	X	X																	
915.7			X			X																

The state agency does not adopt sections identified by the following symbol: †

The Office of the State Fire Marshal's adoption of this chapter or individual sections is applicable to structures regulated by other state agencies pursuant to Section 1.11.

*When not used for height increases or for area increases, an automatic sprinkler system installed in accordance with Section 903.3.1.2 shall be allowed in Group R-2.1 occupancies.*

*An automatic sprinkler system designed in accordance with Section 903.3.1.3 shall not be utilized in Group R-2.1 or R-4 occupancies.*

**[F] 903.2.8.1 Group R-3.** An automatic sprinkler system installed in accordance with Section 903.3.1.3 shall be permitted in Group R-3 occupancies.

**[F] 903.2.9 Group S-1.** An automatic sprinkler system shall be provided throughout all buildings containing a Group S-1 occupancy where one of the following conditions exists:

1. A Group S-1 fire area exceeds 12,000 square feet (1115 m<sup>2</sup>).
2. A Group S-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m<sup>2</sup>).
4. A Group S-1 fire area used for the storage of commercial motor vehicles where the fire area exceeds 5,000 square feet (464 m<sup>2</sup>).
5. A Group S-1 occupancy used for the storage of upholstered furniture or mattresses exceeds 2,500 square feet (232 m<sup>2</sup>).

**[F] 903.2.9.1 Repair garages.** An automatic sprinkler system shall be provided throughout all buildings used as repair garages in accordance with Section 406, as shown:

1. Buildings having two or more stories above grade plane, including basements, with a fire area containing a repair garage exceeding 10,000 square feet (929 m<sup>2</sup>).
2. Buildings not more than one story above grade plane, with a fire area containing a repair garage exceeding 12,000 square feet (1115 m<sup>2</sup>).
3. Buildings with repair garages servicing vehicles parked in basements.
4. A Group S-1 fire area used for the repair of commercial motor vehicles where the fire area exceeds 5,000 square feet (464 m<sup>2</sup>).

**[F] 903.2.9.2 Bulk storage of tires.** Buildings and structures where the area for the storage of tires exceeds 20,000 cubic feet (566 m<sup>3</sup>) shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

**[F] 903.2.10 Group S-2 enclosed parking garages.** An automatic sprinkler system shall be provided throughout buildings classified as enclosed parking garages in accordance with Section 406.6 where either of the following conditions exists:

1. Where the fire area of the enclosed parking garage exceeds 12,000 square feet (1115 m<sup>2</sup>).

2. Where the enclosed parking garage is located beneath other groups.

**Exception:** Enclosed parking garages located beneath Group R-3 occupancies.

**[F] 903.2.10.1 Commercial parking garages.** An automatic sprinkler system shall be provided throughout buildings used for storage of commercial motor vehicles where the fire area exceeds 5,000 square feet (464 m<sup>2</sup>).

**903.2.10.2 Mechanical-access enclosed parking garages.** *An approved automatic sprinkler system shall be provided throughout buildings used for the storage of motor vehicles in a mechanical-access enclosed parking garage. The portion of the building that contains the mechanical-access enclosed parking garage shall be protected with a specially engineered automatic sprinkler system.*

**[F] 903.2.11 Specific building areas and hazards.** In all occupancies other than Group U, an automatic sprinkler system shall be installed for building design or hazards in the locations set forth in Sections 903.2.11.1 through 903.2.11.6.

**[F] 903.2.11.1 Stories without openings.** An automatic sprinkler system shall be installed throughout all stories, including basements, of all buildings where the floor area exceeds 1,500 square feet (139.4 m<sup>2</sup>) and where the story does not comply with the following criteria for exterior wall openings:

1. Openings below grade that lead directly to ground level by an exterior stairway complying with Section 1011 or an outside ramp complying with Section 1012. Openings shall be located in each 50 linear feet (15 240 mm), or fraction thereof, of exterior wall in the story on not fewer than one side. The required openings shall be distributed such that the lineal distance between adjacent openings does not exceed 50 feet (15 240 mm).
2. Openings entirely above the adjoining ground level totaling not less than 20 square feet (1.86 m<sup>2</sup>) in each 50 linear feet (15 240 mm), or fraction thereof, of exterior wall in the story on not fewer than one side. The required openings shall be distributed such that the lineal distance between adjacent openings does not exceed 50 feet (15 240 mm). The height of the bottom of the clear opening shall not exceed 44 inches (1118 mm) measured from the floor.

**[F] 903.2.11.1.1 Opening dimensions and access.** Openings shall have a minimum dimension of not less than 30 inches (762 mm). Access to such openings shall be provided for the fire department from the exterior and shall not be obstructed in a manner such that fire fighting or rescue cannot be accomplished from the exterior.

**[F] 903.2.11.1.2 Openings on one side only.** Where openings in a story are provided on only one side and the opposite wall of such story is more than 75 feet (22 860 mm) from such openings, the story shall be equipped throughout with an approved automatic

sprinkler system, or openings shall be provided on not fewer than two sides of the story.

**[F] 903.2.11.1.3 Basements.** Where any portion of a basement is located more than 75 feet (22 860 mm) from openings required by Section 903.2.11.1, or where walls, partitions or other obstructions are installed that restrict the application of water from hose streams, the basement shall be equipped throughout with an approved automatic sprinkler system.

**[F] 903.2.11.2 Rubbish and linen chutes.** An automatic sprinkler system shall be installed at the top of rubbish and linen chutes and in their terminal rooms. Chutes shall have additional sprinkler heads installed at alternate floors and at the lowest intake. Where a rubbish chute extends through a building more than one floor below the lowest intake, the extension shall have sprinklers installed that are recessed from the drop area of the chute and protected from freezing in accordance with Section 903.3.1.1. Such sprinklers shall be installed at alternate floors, beginning with the second level below the last intake and ending with the floor above the discharge. Access to sprinklers in chutes shall be provided for servicing.

**[F] 903.2.11.3 Buildings 55 feet or more in height.** An automatic sprinkler system shall be installed throughout buildings that have one or more stories with an occupant load of 30 or more located 55 feet (16 764 mm) or more above the lowest level of fire department vehicle access, measured to the finished floor.

**Exceptions:**

1. Open parking structures.
2. Occupancies in Group F-2.

**[F] 903.2.11.4 Ducts conveying hazardous exhausts.** Where required by the *California Mechanical Code*, automatic sprinklers shall be provided in ducts conveying hazardous exhaust or flammable or combustible materials.

**Exception:** Ducts where the largest cross-sectional diameter of the duct is less than 10 inches (254 mm).

**[F] 903.2.11.5 Commercial cooking operations.** An automatic sprinkler system shall be installed in commercial kitchen exhaust hood and duct systems where an automatic sprinkler system is used to comply with Section 904.

**[F] 903.2.11.6 Other required suppression systems.** In addition to the requirements of Section 903.2, the provisions indicated in Table 903.2.11.6 require the installation of a fire suppression system for certain buildings and areas.

**[F] 903.2.12 During construction.** Automatic sprinkler systems required during construction, alteration and demolition operations shall be provided in accordance with Chapter 33 of the *California Fire Code*.

**903.2.13 Reserved.**

**903.2.14 Motion picture and television production studio sound stages, approved production facilities and production locations.**

**903.2.14.1 Existing sound stages and approved production facilities.** All existing sound stages and approved production facilities equipped with an automatic fire sprinkler system shall be maintained in accordance with the provisions of *California Fire Code Chapter 9*.

**903.2.14.2 New sound stages.** All new sound stages shall be equipped with an approved automatic fire sprinkler system. The system shall be installed in accordance with the provisions of the *California Fire Code Chapter 9* and shall meet the minimum design requirements of an Extra Hazard, Group 2 system.

**903.2.15 Automatic sprinkler system—existing high-rise buildings.** See *California Fire Code Chapter 11* and *California Existing Building Code*.

**903.2.15.1 Existing Group R-1 and R-2 high-rise buildings fire-extinguishing systems.** See *California Fire Code Chapter 11* and *California Existing Building Code*.

**[F] TABLE 903.2.11.6  
ADDITIONAL REQUIRED SUPPRESSION SYSTEMS**

SECTION	SUBJECT
402.5, 402.6.2	Covered and open mall buildings
403.3	High-rise buildings and Group I-2 occupancies having occupied floors located more than 75 feet above the lowest level of fire department vehicle access
404.3	Atriums
405.3	Underground structures
406.6.4	Mechanical-access enclosed parking garages
407.7	Group I-2
410.6	Stages
411.42	Special amusement areas
412.2.4	Airport traffic control towers
412.3.6, 412.3.6.1, 412.5.6	Aircraft hangars
415.11.11	Group H-5 HPM exhaust ducts
416.5	Flammable finishes
417.4	Drying rooms
419.5	Live/work units
424.3	Children’s play structures
428	Buildings containing Group L occupancies
440	Horse racing stables
441	Pet kennels
449	Public libraries
507	Unlimited area buildings
509.4	Incidental uses
1029.6.2.3	Smoke-protected assembly seating
CFC	Sprinkler system requirements as set forth in Section 903.2.11.6 of the <i>California Fire Code</i>
California Fire Code Section 1206	Stationary and mobile energy storage systems

**903.2.16 Group L occupancies.** An automatic sprinkler system shall be installed throughout buildings housing Group L occupancies. Sprinkler systems for Group L occupancy shall be designed for the square footage area of the Group L occupancy based on an area of sprinkler operation of 2,500 square feet (232 m<sup>2</sup>) and design density of 0.20 gpm/sf.

In mixed occupancies, portions of floors with Group L occupancies, but not classified as Group L, shall be provided with a sprinkler protection system per NFPA 13.

**903.2.16.1 Group L occupancies located on the 11<sup>th</sup> story and above.** The automatic sprinkler system shall be designed and zoned to provide separate indication upon water-flow for each side of the 2-hour fire-smoke barrier on the 11<sup>th</sup> story and above.

**903.2.17 Fixed guideway and passenger rail transit systems.**

**903.2.17.1 Automatic sprinkler system.** An automatic sprinkler system shall be installed in all stations of fixed guideway transit systems.

**Exceptions:**

1. Guideways when the closest sprinkler heads to the guideway are within 3 feet (914 mm) of the edge, over the platform, and spaced 6 feet (1829 mm) on center parallel to the guideway
2. Station agent booths not exceeding 150 square feet (13.9 m<sup>2</sup>) in area, when provided with an approved smoke detector connected to the building fire alarm system
3. Power substations
4. Machinery rooms, electrical rooms and train control rooms protected by an approved automatic fixed fire-extinguishing system
5. Open stations
6. Station platform areas open to three or more sides

**903.2.17.2 Station guideway deluge system.** Underground stations and stations in open cuts with walls 5 feet (1524 mm) above the top of the running rail and with a raised platform shall be provided with an under-vehicle guideway manually activated deluge sprinkler system. In open cut stations, such system shall be provided in guideways which are situated between a raised platform edge and a retaining wall.

**903.2.17.2.1** Systems shall be provided along the entire length of track at each station platform.

**903.2.17.2.2** Deluge nozzles with caps shall be located in the approximate center of track with spacing designed to completely wet the undersides of the vehicle at the applied density.

**903.2.17.2.3** System density shall be a minimum of 0.19 gallon per minute (gpm) per square foot (0.72 L/m per m<sup>2</sup>) for the design area. When more than one zone is provided, two adjacent zones are required to be considered operating for calculating purposes.

**903.2.17.2.4** Deluge systems shall be directly connected to a water supply capable of supplying the required flow rate for a minimum 30-minute duration.

**903.2.17.2.5** Controls or manually operable valves shall be in a location acceptable to the Fire Code Official. All deluge systems shall be monitored by the station fire alarm system.

**903.2.17.2.6** Each valve shall be monitored by a separate circuit. The alarm panel shall be located in an area normally occupied by station personnel or signals shall be transmitted to the operations control center (OCC).

**903.2.18 Group U private garages and carports accessory to Group R-3 occupancies.** Carports with habitable space above and attached garages, accessory to Group R-3 occupancies, shall be protected by residential fire sprinklers in accordance with this section. Residential fire sprinklers shall be connected to, and installed in accordance with, an automatic residential fire sprinkler system that complies with Section R313 of the California Residential Code or with NFPA 13D. Fire sprinklers shall be residential sprinklers or quick-response sprinklers, designed to provide a minimum density of 0.05 gpm/ft<sup>2</sup> (2.04 mm/min) over the area of the garage and/or carport, but not to exceed two sprinklers for hydraulic calculation purposes. Garage doors shall not be considered obstructions with respect to sprinkler placement.

**Exception:** An automatic residential fire sprinkler system shall not be required when additions or alterations are made to existing carports and/or garages that do not have an automatic residential fire sprinkler system installed in accordance with this section.

**903.2.19 Public school state funded construction projects for kindergarten through 12th grade - automatic sprinkler system requirements.**

**903.2.19.1 New public school campus.** An automatic sprinkler system shall be provided in all occupancies. The provisions of this section shall apply to any public school project consisting of one or more buildings on a new school campus and receiving state funds pursuant to Leroy F. Greene School Facilities Act of 1998, California Education Code Sections 17070.10 through 17079. For purposes of this section, new campus refers to a school site, where an application for construction of original buildings was made to DSA on or after July 1, 2002.

An automatic fire sprinkler system is not required in locations identified in Section 903.2.20.

**903.2.19.1.1** Sprinklers shall be installed in spaces where the ceiling creates a "ceiling-plenum" or space above the ceiling is utilized for environmental air.

**903.2.19.1.2 Fire-resistive substitution for new campus.** A new public school campus shall be entitled to include in the design and construction documents all of the applicable fire-resistive construction substitutions as permitted by this code.

**903.2.20 Public school campuses.** *An automatic fire sprinkler system is not required to be provided in the following locations on Kindergarten through 12<sup>th</sup> grade.*

1. *A relocatable building that is sited with the intent that it be at the site for less than three years and is sited upon a temporary foundation in a manner that is designed to permit easy removal. Also see CCR, Title 24, Part 1, California Administrative Code, Section 4-314 for definition of relocatable building.*

2. *Detached buildings designed and used for non-instructional purposes that meet the applicable requirements for that occupancy. Buildings would include but not be limited to:*

- Concession Stand*
- Press Box*
- Restroom Facilities*
- Shade Structure*
- Snack Bar*
- Storage Building*
- Ticket Booth*

**[F] 903.3 Installation requirements.** Automatic sprinkler systems shall be designed and installed in accordance with Sections 903.3.1 through 903.3.9.

**[F] 903.3.1 Standards.** Sprinkler systems shall be designed and installed in accordance with Section 903.3.1.1 unless otherwise permitted by Sections 903.3.1.2 and 903.3.1.3 and other chapters of this code, as applicable.

**[F] 903.3.1.1 NFPA 13 sprinkler systems.** Where the provisions of this code require that a building or portion thereof be equipped throughout with an automatic sprinkler system in accordance with this section, sprinklers shall be installed throughout in accordance with NFPA 13 *as amended in Chapter 35* except as provided in Sections 903.3.1.1.1 and 903.3.1.1.2.

**[F] 903.3.1.1.1 Exempt locations.** Automatic sprinklers shall not be required in the following rooms or areas where such rooms or areas are protected with an approved automatic fire detection system in accordance with Section 907.2 that will respond to visible or invisible particles of combustion. Sprinklers shall not be omitted from a room merely because it is damp, of fire-resistance-rated construction or contains electrical equipment.

1. *A room where the application of water, or flame and water, constitutes a serious life or fire hazard as determined by the authority having jurisdiction.*
2. *A room or space where sprinklers are considered undesirable because of the nature of the contents, as determined by the authority having jurisdiction.*
3. *Machine rooms, machinery spaces, control rooms, control spaces and hoistways associated with fire service access elevators provided in accordance with Section 3007.*

4. *Machine rooms, machinery spaces, control rooms, control spaces and hoistways associated with occupant evacuation elevators designed in accordance with Section 3008.*

5. *Spaces or areas in telecommunications buildings used exclusively for telecommunications equipment, and associated electrical power distribution equipment, provided those spaces or areas are equipped throughout with an automatic smoke detection system in accordance with Section 907.2 and are separated from the remainder of the building by not less than 1-hour fire barriers constructed in accordance with Section 707 or not less than 2-hour horizontal assemblies constructed in accordance with Section 712, or both.*

6. *Solar photovoltaic panel structures with no use underneath. Signs may be provided, as determined by the enforcing agency prohibiting any use underneath including storage.*

7. *Solar photovoltaic (PV) panels supported by framing that have sufficient uniformly distributed and unobstructed openings throughout the top of the array (horizontal plane) to allow heat and gases to escape, as determined by the enforcing agency.*

**[F] 903.3.1.1.2 Bathrooms.** In Group R occupancies sprinklers shall not be required in bathrooms that do not exceed 55 square feet (5 m<sup>2</sup>) in area and are located within individual dwelling units or sleeping units, provided that walls and ceilings, including the walls and ceilings behind a shower enclosure or tub, are of noncombustible or limited-combustible materials with a 15-minute thermal barrier rating.

**[F] 903.3.1.2 NFPA 13R sprinkler systems.** Automatic sprinkler systems in Group R occupancies up to and including four stories in height in buildings not exceeding 60 feet (18 288 mm) in height above grade plane shall be permitted to be installed throughout in accordance with NFPA 13R *as amended in Chapter 35*.

The number of stories of Group R occupancies constructed in accordance with Sections 510.2 and 510.4 shall be measured from the horizontal assembly creating separate buildings.

**[F] 903.3.1.2.1 Balconies and decks.** Sprinkler protection shall be provided for exterior balconies, decks and ground floor patios of dwelling units and sleeping units where either of the following conditions exists:

1. *The building is of Type V construction, provided that there is a roof or deck above.*
2. *Exterior balconies, decks and ground floor patios of dwelling units and sleeping units are constructed in accordance with Section 705.2.3.1, Exception 3.*

Sidewall sprinklers that are used to protect such areas shall be permitted to be located such that their deflectors are within 1 inch (25 mm) to 6 inches (152 mm) below the structural members and a maximum distance of 14 inches (356 mm) below the deck of the exterior balconies and decks that are constructed of open wood joist construction.

**[F] 903.3.1.2.2 Open-ended corridors.** Sprinkler protection shall be provided in open-ended corridors and associated exterior stairways and ramps as specified in Section 1027.6, Exception 3.

**[F] 903.3.1.2.3 Attics.** Attic protection shall be provided as follows:

1. Attics that are used or intended for living purposes or storage shall be protected by an automatic sprinkler system.
2. Where fuel-fired equipment is installed in an un-sprinklered attic, not fewer than one quick-response intermediate temperature sprinkler shall be installed above the equipment.
3. Where located in a building of Type III, Type IV or Type V construction designed in accordance with Section 510.2 or 510.4, attics not required by Item 1 to have sprinklers shall comply with one of the following if the roof assembly is located more than 55 feet (16 764 mm) above the lowest level of required fire department vehicle access:
  - 3.1. Provide automatic sprinkler system protection.
  - 3.2. Construct the attic using noncombustible materials.
  - 3.3. Construct the attic using fire-retardant-treated wood complying with Section 2303.2.
  - 3.4. Fill the attic with noncombustible insulation.

The height of the roof assembly shall be determined by measuring the distance from the lowest required fire vehicle access road surface adjacent to the building to the eave of the highest pitched roof, the intersection of the highest roof to the exterior wall, or the top of the highest parapet, whichever yields the greatest distance. For the purpose of this measurement, required fire vehicle access roads shall include only those roads that are necessary for compliance with Section 503 of the *California Fire Code*.

**[F] 903.3.1.3 NFPA 13D sprinkler systems.** Automatic sprinkler systems installed in one- and two-family dwellings, Group R-3, and townhouses shall be permitted to be installed throughout in accordance with NFPA 13D as amended in Chapter 35.

**[F] 903.3.2 Quick-response and residential sprinklers.** Where automatic sprinkler systems are required by this code, quick-response or residential automatic sprinklers shall be installed in all of the following areas in accordance with Section 903.3.1 and their listings:

1. Throughout all spaces within a smoke compartment containing care recipient sleeping units in Group I-2 in accordance with this code.
2. Throughout all spaces within a smoke compartment containing treatment rooms in ambulatory care facilities.
3. Dwelling units and sleeping units in Group R occupancies.
4. Light-hazard occupancies as defined in NFPA 13.

**[F] 903.3.3 Obstructed locations.** Automatic sprinklers shall be installed with regard to obstructions that will delay activation or obstruct the water distribution pattern and shall be in accordance with the applicable automatic sprinkler system standard that is being used. Automatic sprinklers shall be installed in or under covered kiosks, displays, booths, concession stands, or equipment that exceeds 4 feet (1219 mm) in width. Not less than a 3-foot (914 mm) clearance shall be maintained between automatic sprinklers and the top of piles of combustible fibers.

**Exception:** Kitchen equipment under exhaust hoods protected with a fire-extinguishing system in accordance with Section 904.

**[F] 903.3.4 Actuation.** Automatic sprinkler systems shall be automatically actuated unless specifically provided for in this code.

**[F] 903.3.5 Water supplies.** Water supplies for automatic sprinkler systems shall comply with this section and the standards referenced in Section 903.3.1. The potable water supply shall be protected against backflow in accordance with *the Health and Safety Code Section 13114.7*. For connections to public waterworks systems, the water supply test used for design of fire protection systems shall be adjusted to account for seasonal and daily pressure fluctuations based on information from the water supply authority and as approved by the fire code official.

**[F] 903.3.5.1 Domestic services.** Where the domestic service provides the water supply for the automatic sprinkler system, the supply shall be in accordance with this section.

**[F] 903.3.5.2 Residential combination services.** A single combination water supply shall be allowed provided that the domestic demand is added to the sprinkler demand as required by NFPA 13R.

**[F] 903.3.6 Hose threads.** Fire hose threads and fittings used in connection with automatic sprinkler systems shall be as prescribed by the fire code official.

**[F] 903.3.7 Fire department connections.** Fire department connections for automatic sprinkler systems shall be installed in accordance with Section 912.

**[F] 903.3.8 Limited area sprinkler systems.** Limited area sprinkler systems shall be in accordance with the standards listed in Section 903.3.1 except as provided in Sections 903.3.8.1 through 903.3.8.5.

**903.3.8.1 Number of sprinklers.** Limited area sprinkler systems shall not exceed six sprinklers in any single fire area.

**903.3.8.2 Occupancy hazard classification.** Only areas classified by NFPA 13 as Light Hazard or Ordinary Hazard Group 1 shall be permitted to be protected by limited area sprinkler systems.

**903.3.8.3 Piping arrangement.** Where a limited area sprinkler system is installed in a building with an automatic wet standpipe system, sprinklers shall be supplied by the standpipe system. Where a limited area sprinkler system is installed in a building without an automatic wet standpipe system, water shall be permitted to be supplied by the plumbing system provided that the plumbing system is capable of simultaneously supplying domestic and sprinkler demands.

**903.3.8.4 Supervision.** Control valves shall not be installed between the water supply and sprinklers unless the valves are of an approved indicating type that are supervised or secured in the open position.

**903.3.8.5 Calculations.** Hydraulic calculations in accordance with NFPA 13 shall be provided to demonstrate that the available water flow and pressure are adequate to supply all sprinklers installed in any single fire area with discharge densities corresponding to the hazard classification.

**[F] 903.3.9 Floor control valves.** *Floor control valves and waterflow detection assemblies shall be installed at each floor where any of the following occur:*

1. *Buildings where the floor level of the highest story is located more than 30 feet above the lowest level of fire department vehicle access*
2. *Buildings that are four or more stories in height*
3. *Buildings that are two or more stories below the highest level of fire department vehicle access*

**Exception:** *Group R-3 and R-3.1 occupancies floor control valves and waterflow detection assemblies shall not be required.*

**[F] 903.4 Sprinkler system supervision and alarms.** Valves controlling the water supply for automatic sprinkler systems, pumps, tanks, water levels and temperatures, critical air pressures and waterflow switches on all sprinkler systems shall be electrically supervised by a listed fire alarm control unit.

**Exceptions:**

1. Automatic sprinkler systems protecting one- and two-family dwellings.
2. Limited area sprinkler systems in accordance with Section 903.3.8.

3. Automatic sprinkler systems installed in accordance with NFPA 13R where a common supply main is used to supply both domestic water and the automatic sprinkler system, and a separate shutoff valve for the automatic sprinkler system is not provided.
4. Jockey pump control valves that are sealed or locked in the open position.
5. Control valves to commercial kitchen hoods, paint spray booths or dip tanks that are sealed or locked in the open position.
6. Valves controlling the fuel supply to fire pump engines that are sealed or locked in the open position.
7. Trim valves to pressure switches in dry, preaction and deluge sprinkler systems that are sealed or locked in the open position.

**[F] 903.4.1 Monitoring.** Alarm, supervisory and trouble signals shall be distinctly different and shall be automatically transmitted to an approved supervising station or, where approved by the fire code official, shall sound an audible signal at a constantly attended location.

**Exceptions:**

1. Underground key or hub valves in roadway boxes provided by the municipality or public utility are not required to be monitored.
2. Backflow prevention device test valves located in limited area sprinkler system supply piping shall be locked in the open position. In occupancies required to be equipped with a fire alarm system, the backflow preventer valves shall be electrically supervised by a tamper switch installed in accordance with NFPA 72 and separately annunciated.

**[F] 903.4.2 Alarms.** *One exterior approved audible device, located on the exterior of the building in an approved location, shall be connected to each automatic sprinkler system. Such sprinkler waterflow alarm devices shall be activated by water flow equivalent to the flow of a single sprinkler of the smallest orifice size installed in the system. Where a fire alarm system is installed, actuation of the automatic sprinkler system shall actuate the building fire alarm system. Visible alarm notification appliances shall not be required except when required by Section 907.*

**[F] 903.4.3 Floor control valves.** Approved supervised indicating control valves shall be provided at the point of connection to the riser on each floor in high-rise buildings and Group I-2 occupancies having occupied floors located more than 75 feet above the lowest level of fire department vehicle access.

**[F] 903.5 Testing and maintenance.** Sprinkler systems shall be tested and maintained in accordance with the *California Fire Code*.



**SECTION 905  
STANDPIPE SYSTEMS**

**[F] 904.12.4 Special provisions for automatic sprinkler systems.** Automatic sprinkler systems protecting commercial-type cooking equipment shall be supplied from a separate, indicating-type control valve that is identified. Access to the control valve shall be provided.

**[F] 904.12.4.1 Listed sprinklers.** Sprinklers used for the protection of fryers shall be tested in accordance with UL 199E, listed for that application and installed in accordance with their listing.

**[F] 904.13 Domestic cooking systems.** Cooktops and ranges installed in the following occupancies shall be protected in accordance with Section 904.13.1:

- 1. In Group R-2.1 occupancies where domestic cooking facilities are installed in accordance with Section 420.9.
- 2. In Group I-2 occupancies where domestic cooking facilities are installed in accordance with Section 407.2.6.
- 3. In Group R-2 college dormitories where domestic cooking facilities are installed in accordance with Section 420.10.

**[F] 904.13.1 Protection from fire.** Cooktops and ranges shall be protected in accordance with Section 904.13.1.1 or 904.13.1.2.

**[F] 904.13.1.1 Automatic fire-extinguishing system.** The domestic recirculating or exterior vented cooking hood provided over the cooktop or range shall be equipped with an approved automatic fire-extinguishing system complying with the following:

- 1. The automatic fire-extinguishing system shall be of a type recognized for protection of domestic cooking equipment. Preengineered automatic fire-extinguishing systems shall be listed and labeled in accordance with UL 300A and installed in accordance with the manufacturer's instructions.
- 2. Manual actuation of the fire-extinguishing system shall be provided in accordance with Section 904.12.1.
- 3. Interconnection of the fuel and electric power supply shall be in accordance with Section 904.12.2.

**[F] 904.13.1.2 Ignition prevention.** Cooktops and ranges shall include burners that have been tested and listed to prevent ignition of cooking oil with burners turned on to their maximum heat settings and allowed to operate for 30 minutes.

**[F] 904.14 Aerosol fire-extinguishing systems.** Aerosol fire-extinguishing systems shall be installed, periodically inspected, tested and maintained in accordance with Sections 901 and 904.4, NFPA 2010, and in accordance with their listing.

Such devices and appurtenances shall be listed and installed in compliance with manufacturer's instructions.

**[F] 905.1 General.** Standpipe systems shall be provided in new buildings and structures in accordance with Sections 905.2 through 905.11. In buildings used for high-piled combustible storage, fire protection shall be in accordance with the *California Fire Code*.

**[F] 905.2 Installation standard.** Standpipe systems shall be installed in accordance with this section and NFPA 14 as amended in Chapter 35. Fire department connections for standpipe systems shall be in accordance with Section 912.

**[F] 905.3 Required installations.** Standpipe systems shall be installed where required by Sections 905.3.1 through 905.3.11.1. Standpipe systems are allowed to be combined with automatic sprinkler systems.

**Exception:** Standpipe systems are not required in Group R-3 occupancies.

**[F] 905.3.1 Height.** In other than Group R-3 and R-3.1 occupancies, Class III standpipe systems shall be installed throughout each floor where any of the following occur:

- 1. Buildings where the floor level of the highest story is located more than 30 feet (9144 mm) above the lowest level of fire department vehicle access.
- 2. Buildings that are four or more stories in height.
- 3. Buildings where the floor level of the lowest story is located more than 30 feet (9144 mm) below the highest level of fire department vehicle access.
- 4. Buildings that are two or more stories below the highest level of fire department vehicle access.

**Exceptions:**

- 1. Class I standpipes are allowed in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.
- 2. Class I standpipes are allowed in Group B and E occupancies.
- 3. Class I manual standpipes are allowed in open parking garages where the highest floor is located not more than 150 feet (45 720 mm) above the lowest level of fire department vehicle access.
- 4. Class I manual dry standpipes are allowed in open parking garages that are subject to freezing temperatures, provided that the hose connections are located as required for Class II standpipes in accordance with Section 905.5.
- 5. Class I standpipes are allowed in basements equipped throughout with an automatic sprinkler system.
- 6. Class I standpipes are allowed in buildings where occupant-use hose lines will not be utilized by trained personnel or the fire department.

7. In determining the lowest level of fire department vehicle access, it shall not be required to consider either of the following:

- 7.1. Recessed loading docks for four vehicles or less.
- 7.2. Conditions where topography makes access from the fire department vehicle to the building impractical or impossible.

**[F] 905.3.2 Group A.** Class I automatic wet standpipes shall be provided in nonsprinklered Group A buildings having an occupant load exceeding 1,000 persons.

**Exceptions:**

1. Open-air-seating spaces without enclosed spaces.
2. Class I automatic dry and semiautomatic dry standpipes or manual wet standpipes are allowed in buildings that are not high-rise buildings.

**[F] 905.3.3 Covered and open mall buildings.** Covered mall and open mall buildings shall be equipped throughout with a standpipe system where required by Section 905.3.1. Mall buildings not required to be equipped with a standpipe system by Section 905.3.1 shall be equipped with Class I hose connections connected to the automatic sprinkler system sized to deliver water at 250 gallons per minute (946.4 L/min) at the hydraulically most remote hose connection while concurrently supplying the automatic sprinkler system demand. The standpipe system shall be designed to not exceed a 50 pounds per square inch (psi) (345 kPa) residual pressure loss with a flow of 250 gallons per minute (946.4 L/min) from the fire department connection to the hydraulically most remote hose connection. Hose connections shall be provided at each of the following locations:

1. Within the mall at the entrance to each exit passageway or corridor.
2. At each floor-level landing within interior exit stairways opening directly on the mall.
3. At exterior public entrances to the mall of a covered mall building.
4. At public entrances at the perimeter line of an open mall building.
5. At other locations as necessary so that the distance to reach all portions of a tenant space does not exceed 200 feet (60 960 mm) from a hose connection.

**[F] 905.3.4 Stages.** Stages greater than 1,000 square feet in area (93 m<sup>2</sup>) shall be equipped with a Class III wet standpipe system with 1½-inch and 2½-inch (38 mm and 64 mm) hose connections on each side of the stage.

**Exception:** Where the building or area is equipped throughout with an automatic sprinkler system, a 1½-inch (38 mm) hose connection shall be installed in accordance with NFPA 13 or in accordance with NFPA 14 for Class II or III standpipes.

**[F] 905.3.4.1 Hose and cabinet.** The 1½-inch (38 mm) hose connections shall be equipped with sufficient lengths of 1½-inch (38 mm) hose to provide fire pro-

tection for the stage area. Hose connections shall be equipped with an approved adjustable fog nozzle and be mounted in a cabinet or on a rack.

**[F] 905.3.5 Underground buildings.** Underground buildings shall be equipped throughout with a Class I automatic wet or manual wet standpipe system.

**[F] 905.3.6 Helistops and heliports.** Buildings with a rooftop helistop or heliport shall be equipped with a Class I or III standpipe system extended to the roof level on which the helistop or heliport is located in accordance with Section 2007.5 of the *California Fire Code*.

**[F] 905.3.7 Marinas and boatyards.** Standpipes in marinas and boatyards shall comply with Chapter 36 of the *California Fire Code*.

**[F] 905.3.8 Rooftop gardens and landscaped roofs.** Buildings or structures that have rooftop gardens or landscaped roofs and that are equipped with a standpipe system shall have the standpipe system extended to the roof level on which the rooftop garden or landscaped roof is located.

**[F] 905.3.9 Smokeproof enclosures.** For smokeproof enclosures see Section 909.20.

**[F] 905.3.10 Group I-3.** Housing pods within housing units where 50 or more inmates are restrained, shall be provided with Class I wet standpipes. In addition, Class I wet standpipes shall be located so that it will not be necessary to extend hose lines through interlocking security doors and any doors in smoke-barrier walls, horizontal fire walls or fire barrier walls. Standpipes located in housing units may be placed in secured pipe chases.

**905.3.11 Fixed-guideway and passenger rail transit systems.** Fixed-guideway and passenger rail transit systems shall be provided with a Class I standpipe system in accordance with this section.

**905.3.11.1 Undergraound stations.** Underground stations shall be provided with an automatic Class I standpipe system.

**905.3.11.2 All other stations.** All other stations shall be provided with a Class I.

**Exception:** Open at-grade stations with unrestricted fire department access need not be provided with a standpipe system.

**[F] 905.4 Location of Class I standpipe hose connections.** Class I standpipe hose connections shall be provided in all of the following locations:

1. In every required interior exit stairway, a hose connection shall be provided for each story above and below grade plane. Hose connections shall be located at the main floor landing unless otherwise approved by the fire code official. See Section 909.20.2.3 for additional provisions in smokeproof enclosures.

**Exception:** A single hose connection shall be permitted to be installed in the open corridor or open breezeway between open stairs that are not greater than 75 feet (22 860 mm) apart.

2. On each side of the wall adjacent to the exit opening of a horizontal exit.

**Exception:** Where floor areas adjacent to a horizontal exit are reachable from an interior exit stairway hose connection by a 30-foot (9144 mm) hose stream from a nozzle attached to 100 feet (30 480 mm) of hose *as measured along the path of travel*, a hose connection shall not be required at the horizontal exit.

3. In every exit passageway, at the entrance from the exit passageway to other areas of a building.

**Exception:** Where floor areas adjacent to an exit passageway are reachable from an interior exit stairway hose connection by a 30-foot (9144 mm) hose stream from a nozzle attached to 100 feet (30 480 mm) of hose, a hose connection shall not be required at the entrance from the exit passageway to other areas of the building.

4. In covered mall buildings, adjacent to each exterior public entrance to the mall and adjacent to each entrance from an exit passageway or exit corridor to the mall. In open mall buildings, adjacent to each public entrance to the mall at the perimeter line and adjacent to each entrance from an exit passageway or exit corridor to the mall.

5. Where the roof has a slope less than four units vertical in 12 units horizontal (33.3-percent slope), a hose connection shall be located to serve the roof or at the highest landing of an interior exit stairway with access to the roof provided in accordance with Section 1011.12.

- > 6. Where the most remote portion of a floor or story is more than 150 feet (45 720 mm) from a hose connection, the fire code official is authorized to require that additional hose connections be provided in approved locations. *The distances from a hose connection shall be measured along the path of travel.*
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**[F] 905.4.1 Protection.** Risers and laterals of Class I standpipe systems not located within an interior exit stairway shall be protected by a degree of fire resistance equal to that required for vertical enclosures in the building in which they are located.

**Exception:** In buildings equipped throughout with an approved automatic sprinkler system, laterals that are not located within an interior exit stairway are not required to be enclosed within fire-resistance-rated construction.

**[F] 905.4.2 Interconnection.** In buildings where more than one standpipe is provided, the standpipes shall be interconnected in accordance with NFPA 14.

**[F] 905.5 Location of Class II standpipe hose connections.** Class II standpipe hose connections located so that all portions of the building are within 30 feet (9144 mm) of a *listed variable stream fog nozzle* attached to 100 feet (30 480 mm) of hose. Class II standpipe hose connections shall be located where they will have ready access.

**[F] 905.5.1 Groups A-1 and A-2.** In Group A-1 and A-2 occupancies having occupant loads exceeding 1,000 persons, hose connections shall be located on each side of any stage, on each side of the rear of the auditorium, on each side of the balcony and on each tier of dressing rooms.

**[F] 905.5.2 Protection.** Fire-resistance-rated protection of risers and laterals of Class II standpipe systems is not required.

**[F] 905.5.3 Class II system 1-inch hose.** A minimum 1-inch (25 mm) hose shall be allowed to be used for hose stations in light-hazard occupancies where investigated and listed for this service and where approved by the fire code official.

**[F] 905.6 Location of Class III standpipe hose connections.** Class III standpipe systems shall have hose connections located as required for Class I standpipes in Section 905.4 and shall have Class II hose connections as required in Section 905.5.

**[F] 905.6.1 Protection.** Risers and laterals of Class III standpipe systems shall be protected as required for Class I systems in accordance with Section 905.4.1.

**[F] 905.6.2 Interconnection.** In buildings where more than one Class III standpipe is provided, the standpipes shall be interconnected in accordance with NFPA 14.

**[F] 905.7 Cabinets.** Cabinets containing fire-fighting equipment such as standpipes, fire hoses, fire extinguishers or fire department valves shall not be blocked from use or obscured from view.

**[F] 905.7.1 Cabinet equipment identification.** Cabinets shall be identified in an approved manner by a permanently attached sign with letters not less than 2 inches (51 mm) high in a color that contrasts with the background color, indicating the equipment contained therein.

**Exceptions:**

1. Doors not large enough to accommodate a written sign shall be marked with a permanently attached pictogram of the equipment contained therein.
2. Doors that have either an approved visual identification clear glass panel or a complete glass door panel are not required to be marked.

**[F] 905.7.2 Locking cabinet doors.** Cabinets shall be unlocked.

**Exceptions:**

1. Visual identification panels of glass or other approved transparent frangible material that is easily broken and allows access.
2. Approved locking arrangements.
3. Group I-3 *and in mental health areas of Group I-2 occupancies.*

**[F] 905.8 Dry standpipes.** Dry standpipes shall not be installed.

**Exception:** Where subject to freezing and in accordance with NFPA 14.

**[F] 905.9 Valve supervision.** Valves controlling water supplies shall be supervised in the open position so that a change in the normal position of the valve will generate a supervisory signal at the supervising station required by Section 903.4. Where a fire alarm system is provided, a signal shall be transmitted to the control unit.

**Exceptions:**

1. Valves to underground key or hub valves in roadway boxes provided by the municipality or public utility do not require supervision.
2. Valves locked in the normal position and inspected as provided in this code in buildings not equipped with a fire alarm system.

**[F] 905.10 During construction.** Standpipe systems required during construction and demolition operations shall be provided in accordance with Section 3311.

**[F] 905.11 Locking standpipe outlet caps.** The fire code official is authorized to require locking caps on the outlets on dry standpipes where the responding fire department carries key wrenches for the removal that are compatible with locking FDC connection caps.

**SECTION 906  
PORTABLE FIRE EXTINGUISHERS**

**[F] 906.1 Where required.** Portable fire extinguishers shall be installed in all of the following locations:

1. In Group A, B, E, F, H, I, L, M, R-1, R-2, R-2.1, R-2.2, R.3.1, R-4 and S occupancies.

**Exceptions:**

1. In Group R-2 occupancies, portable fire extinguishers shall be required only in locations specified in Items 2 through 6 where each dwelling unit is provided with a portable fire extinguisher having a minimum rating of 1-A:10-B:C.
2. In Group E occupancies, portable fire extinguishers shall be required only in locations specified in Items 2 through 6 where each classroom is provided with a portable fire extinguisher having a minimum rating of 2-A:20-B:C.
2. Within 30 feet (9144 mm) distance of travel from commercial cooking equipment and from domestic cooking equipment in Group I-1; I-2, Condition 1; and R-2 college dormitory occupancies.
3. In areas where flammable or combustible liquids are stored, used or dispensed.
4. On each floor of structures under construction, except Group R-3 occupancies, in accordance with Section 3315.1 of the *California Fire Code*.
5. Where required by the *California Fire Code* sections indicated in Table 906.1.

6. Special-hazard areas, including but not limited to laboratories, computer rooms and generator rooms, where required by the fire code official.

7. *Large and small family day-care homes shall be equipped with a portable fire extinguisher having a minimum 2A:10B:C rating.*

8. *Where required by California Code of Regulations, Title 19, Division 1, Chapter 3.*

9. *Within 30 feet (9144 mm) of domestic cooking equipment located in a Group I-2.*

**[F] 906.2 General requirements.** Portable fire extinguishers shall be selected and installed in accordance with this section and *California Code of Regulations, Title 19, Division 1, Chapter 3*.

**Exceptions:**

1. The distance of travel to reach an extinguisher shall not apply to the spectator seating portions of Group A-5 occupancies.
2. In Group I-3 and in mental health areas of Group I-2, portable fire extinguishers shall be permitted to be located at staff locations.

**[F] 906.3 Size and distribution.** The size and distribution of portable fire extinguishers shall be in accordance with Sections 906.3.1 through 906.3.4.

**[F] 906.3.1 Class A fire hazards.** The minimum sizes and distribution of portable fire extinguishers for occupancies that involve primarily Class A fire hazards shall comply with Table 906.3(1).

**[F] 906.3.2 Class B fire hazards.** Portable fire extinguishers for occupancies involving flammable or combustible liquids with depths less than or equal to 0.25-inch (6.4 mm) shall be selected and placed in accordance with Table 906.3(2).

Portable fire extinguishers for occupancies involving flammable or combustible liquids with a depth of greater than 0.25-inch (6.4 mm) shall be selected and placed in accordance with *California Code of Regulations, Title 19, Division 1, Chapter 3*.

**[F] 906.3.3 Class C fire hazards.** Portable fire extinguishers for Class C fire hazards shall be selected and placed on the basis of the anticipated Class A or B hazard.

**[F] 906.3.4 Class D fire hazards.** Portable fire extinguishers for occupancies involving combustible metals shall be selected and placed in accordance with *California Code of Regulations, Title 19, Division 1, Chapter 3*.

**[F] 906.4 Cooking equipment fires.** Fire extinguishers provided for the protection of cooking equipment shall be of an approved type compatible with the automatic fire-extinguishing system agent. Cooking equipment involving solid fuels or vegetable or animal oils and fats shall be protected by a Class K-rated portable extinguisher in accordance with Sections 906.1, Item 2, 906.4.1 and 906.4.2 of the *California Fire Code*, as applicable.

installed in accordance with Section 903.3.1.1 or 903.3.1.2.

- 2.2. The notification appliances will activate upon sprinkler water flow.
- 2.3. Not fewer than one manual fire alarm box is installed at an approved location.

**[F] 907.2.8.2 Automatic smoke detection system.** An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.5 shall be installed throughout all interior corridors serving sleeping units.

**Exception:** An automatic smoke detection system is not required in buildings that do not have interior corridors serving sleeping units and where each sleeping unit has a means of egress door opening directly to an exit or to an exterior exit access that leads directly to an exit.

**[F] 907.2.8.3 Smoke alarms.** Single- and multiple-station smoke alarms shall be installed in accordance with Section 907.2.10.

**[F] 907.2.9 Group R-2, R-2.1 and R-2.2.** Fire alarm systems and smoke alarms shall be installed in Group R-2 and R-2.1 occupancies as required in Sections 907.2.9.1 and 907.2.9.4.1. *Group R-2.2 shall be equipped throughout with an automatic fire alarm system and shall have a manual fire alarm pull station at the 24-hour staff watch office.*

**[F] 907.2.9.1 Manual fire alarm system.** A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group R-2 occupancies where any of the following conditions apply:

1. Any dwelling unit or sleeping unit is located three or more stories above the lowest level of exit discharge.
2. Any dwelling unit or sleeping unit is located more than one story below the highest level of exit discharge of exits serving the dwelling unit or sleeping unit.
3. The building contains more than 16 dwelling units or sleeping units.
4. *Congregate residences with more than 16 occupants.*

**Exceptions:**

1. A fire alarm system is not required in buildings not more than two stories in height where all dwelling units or sleeping units and contiguous attic and crawl spaces are separated from each other and public or common areas by not less than 1-hour fire partitions and each dwelling unit or sleeping unit has an exit directly to a public way, egress court or yard.
2. Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 and the occupant notification appliances will auto-

matically activate throughout the notification zones upon a sprinkler water flow.

3. A fire alarm system is not required in buildings that do not have interior corridors serving dwelling units and are protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, provided that dwelling units either have a means of egress door opening directly to an exterior exit access that leads directly to the exits or are served by open-ended corridors designed in accordance with Section 1027.6, Exception 3.

**[F] 907.2.9.2 Smoke alarms.** Single- and multiple-station smoke alarms shall be installed in accordance with Section 907.2.10.

**[F] 907.2.9.3 Group R-2 college and university buildings.** An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group R-2 occupancies operated by a college or university for student or staff housing in all of the following locations:

1. Common spaces outside of dwelling units and sleeping units.
2. Laundry rooms, mechanical equipment rooms and storage rooms.
3. All interior corridors serving sleeping units or dwelling units.

**Exception:** An automatic smoke detection system is not required in buildings that do not have interior corridors serving sleeping units or dwelling units and where each sleeping unit or dwelling unit either has a means of egress door opening directly to an exterior exit access that leads directly to an exit or a means of egress door opening directly to an exit.

Required smoke alarms in dwelling units and sleeping units in Group R-2 occupancies operated by a college or university for student or staff housing shall be interconnected with the fire alarm system in accordance with NFPA 72.

**907.2.9.4 Licensed Group R-2.1 occupancies.** *Licensed Group R-2.1 occupancies housing more than six nonambulatory, elderly clients shall be provided with an approved manual and automatic fire alarm system.*

**Exceptions:** *Buildings housing nonambulatory clients on the first story only and which are protected throughout by the following:*

1. *An approved and supervised automatic sprinkler system, as specified in Sections 903.3.1.1 or 903.3.1.2, which upon activation will initiate the fire alarm system to notify all occupants.*
2. *A manual fire alarm system.*
3. *Smoke alarms required by Section 907.2.11.*

**907.2.9.4.1 Smoke alarms.** *Single- and multiple-station smoke alarms shall be installed in accordance with Section 907.2.11.*

**[F] 907.2.10 Single- and multiple-station smoke alarms.** Listed single- and multiple-station smoke alarms complying with UL 217 shall be installed in accordance with Sections 907.2.10.1 through 907.2.10.7 and NFPA 72.

**Exception:** For Group R occupancies. A fire alarm system with smoke detectors located in accordance with this section may be installed in lieu of smoke alarms. Upon actuation of the detector, only those notification appliances in the dwelling unit or guest room where the detector is actuated shall activate.

**[F] 907.2.10.1 Group R-1.** Single- or multiple-station smoke alarms shall be installed in all of the following locations in Group R-1:

1. In sleeping areas.
2. In every room in the path of the means of egress from the sleeping area to the door leading from the sleeping unit.
3. In each story within the sleeping unit, including basements. For sleeping units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

See Section 907.2.11.8 for specific location requirements.

**[F] 907.2.10.2 Groups R-2, R-2.1, R-2.2, R-3, R-3.1, R-4 and R-4.1.** Single- or multiple-station smoke alarms shall be installed and maintained in Groups R-2, R-2.1, R-2.2, R-3, R-3.1 and R-4 regardless of occupant load at all of the following locations:

1. On the ceiling or wall outside of each separate sleeping area in the immediate vicinity of bedrooms.
2. In each room used for sleeping purposes.
3. In each story within a dwelling unit, including basements but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.
4. In a Group R-3.1 occupancies, in addition to the above, smoke alarms shall be provided throughout the habitable areas of the dwelling unit except kitchens.

See Section 907.2.11.8 for specific location requirements.

**907.2.10.2.1 Licensed Group R-2.1 occupancies.** Licensed Group R-2.1 occupancies housing more than six nonambulatory, elderly clients shall be provided with an approved manual and automatic fire alarm system.

**Exceptions:** Buildings housing nonambulatory clients on the first story only and which are protected throughout by the following:

1. An approved and supervised automatic sprinkler system, as specified in the California Fire Code Sections 903.3.1.1 or 903.3.1.2, which upon activation will initiate the fire alarm system to notify all occupants.
2. A manual fire alarm system.
3. Smoke alarms required by the California Fire Code Section 907.2.10.

**907.2.10.2.1.1 Smoke alarms.** Single- and multiple-station smoke alarms shall be installed in accordance with California Fire Code Section 907.2.10.

**907.2.10.2.2 Group I-4 occupancies.** Large family day-care homes shall be equipped with State Fire Marshal approved and listed single station residential type smoke alarms.

**907.2.10.2.3 Group R-3.1.** In all facilities housing a bedridden client, smoke alarms shall receive their primary power from the building wiring when such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms shall be electrically interconnected so as to cause all smoke alarms to sound a distinctive alarm signal upon actuation of any single smoke alarm. Such alarm signal shall be audible throughout the facility at a minimal level of 15 dB above ambient noise level. These devices need not be interconnected to any other fire alarm device, have a control unit, or be electrically supervised or provided with emergency power.

**907.2.10.2.4 Smoke alarms.** Smoke alarms shall be tested and maintained in accordance with the manufacturer's instructions. Smoke alarms that no longer function shall be replaced.

**907.2.10.2.5 Existing Group R occupancies.** See the California Residential Code for existing Group R-3 occupancies or Chapter 11 of the California Fire Code for all other existing Group R occupancies.

**907.2.10.2.6 Group R-4.** A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group R-4 occupancies housing nonambulatory clients.

**[F] 907.2.10.3 Installation near cooking appliances.** See Section 907.2.11.8.

**[F] 907.2.10.4 Installation near bathrooms.** See Section 907.2.11.8.

**[F] 907.2.10.5 Interconnection.** Where more than one smoke alarm is required to be installed within an individual dwelling unit or sleeping unit in Group R occupancies, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. Physical interconnection of smoke alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

**[F] 907.2.10.6 Power source.** In new construction, and in newly classified Group R-3.1 occupancies, required

smoke alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms with integral strobes that are not equipped with battery backup shall be connected to an emergency electrical system in accordance with Section 2702. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

**Exception:** Smoke alarms are not required to be equipped with battery backup where they are connected to an emergency electrical system that complies with Section 2702.

**[F] 907.2.10.7 Smoke detection system.** Smoke detectors listed in accordance with UL 268 and provided as part of the building fire alarm system shall be an acceptable alternative to single- and multiple-station smoke alarms and shall comply with the following:

1. The fire alarm system shall comply with all applicable requirements in Section 907.
2. Activation of a smoke detector in a dwelling unit or sleeping unit shall initiate alarm notification in the dwelling unit or sleeping unit in accordance with Section 907.5.2.
3. Activation of a smoke detector in a dwelling unit or sleeping unit shall not activate alarm notification appliances outside of the dwelling unit or sleeping unit, provided that a supervisory signal is generated and monitored in accordance with Section 907.6.6.

**907.2.10.8 Specific location requirements.**

*Extract from NFPA 72 Section 29.8.3.4 Specific Location Requirements\*.*

*This extract has been provided by NFPA as amended by the Office of the State Fire Marshal and adopted by reference as follows:*

**29.8.3.4 Specific location requirements.** *The installation of smoke alarms and smoke detectors shall comply with the following requirements:*

- (1) *Smoke alarms and smoke detectors shall not be located where ambient conditions, including humidity and temperature, are outside the limits specified by the manufacturer's published instructions.*
- (2) *Smoke alarms and smoke detectors shall not be located within unfinished attics or garages or in other spaces where temperatures can fall below 40°F (4°C) or exceed 100°F (38°C).*
- (3) *Where the mounting surface could become considerably warmer or cooler than the room, such as a poorly insulated ceiling below an unfinished attic or an exterior wall, smoke alarms and smoke detectors shall be mounted on an inside wall.*
- (4) *Smoke alarms or smoke detectors shall be installed a minimum of 20 feet horizontal dis-*

*tance from a permanently installed cooking appliance.*

**Exceptions:**

- (1) *Ionization smoke alarms with an alarm-silencing switch or photoelectric smoke alarms shall be permitted to be installed 10 feet (3 m) or greater from a permanently installed cooking appliance.*
- (2) *Photoelectric smoke alarms shall be permitted to be installed greater than 6 feet (1.8 m) from a permanently installed cooking appliance where the kitchen or cooking area and adjacent spaces have no clear interior partitions and the 10 ft distances would prohibit the placement of a smoke alarm or smoke detector required by other sections of the code.*
- (3) *Smoke alarms listed for use in close proximity to a permanently installed cooking appliance.*
- (5) *Installation near bathrooms. Smoke alarms shall be installed not less than a 3-foot (0.91 m) horizontal distance from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm required by other sections of the code.*
- (6) *Smoke alarms and smoke detectors shall not be installed within a 36 in. (910 mm) horizontal path from the supply registers of a forced air heating or cooling system and shall be installed outside of the direct airflow from those registers.*
- (7) *Smoke alarms and smoke detectors shall not be installed within a 36 in. (910 mm) horizontal path from the tip of the blade of a ceiling-suspended (paddle) fan.*
- (8) *Where stairs lead to other occupied levels, a smoke alarm or smoke detector shall be located so that smoke rising in the stairway cannot be prevented from reaching the smoke alarm or smoke detector by an intervening door or obstruction.*
- (9) *For stairways leading up from a basement, smoke alarms or smoke detectors shall be located on the basement ceiling near the entry to the stairs.*
- (10) *For tray-shaped ceilings (coffered ceilings), smoke alarms and smoke detectors shall be installed on the highest portion of the ceiling or on the sloped portion of the ceiling within 12 in. (300 mm) vertically down from the highest point.*
- (11) *Smoke alarms and detectors installed in rooms with joists or beams shall comply with the requirements of 17.7.3.2.4 of NFPA 72.*
- (12) *Heat alarms and detectors installed in rooms with joists or beams shall comply with the requirements of 17.6.3 of NFPA 72.*

*\*For additional requirements or clarification see NFPA 72.*

**907.2.10.9 Existing Group R occupancies.** See the *California Residential Code for existing Group R-3 occupancies or Chapter 11 of the California Fire Code for all other existing Group R occupancies.*

**[F] 907.2.11 Special amusement areas.** An automatic smoke detection system shall be provided in special amusement areas and throughout the exit access to the point of exit discharge in accordance with Sections 907.2.11.1 through 907.2.11.3.

**[F] 907.2.11.1 Alarm.** Activation of any single smoke detector, the automatic sprinkler system or any other automatic fire detection device shall immediately activate an audible and visible alarm at the building at a constantly attended location from which emergency action can be initiated, including the capability of manual initiation of requirements in Section 907.2.11.2.

**[F] 907.2.11.2 System response.** The activation of two or more smoke detectors, a single smoke detector equipped with an alarm verification feature, the automatic sprinkler system or other approved fire detection device shall automatically do all of the following:

1. Cause illumination of the means of egress with light of not less than 1 footcandle (11 lux) at the walking surface level.
2. Stop any conflicting or confusing sounds and visual distractions.
3. Activate an approved directional exit marking that will become apparent in an emergency.
4. Activate a prerecorded message, audible throughout the special amusement area and throughout the exit access to the point of exit discharge, instructing patrons to proceed to the nearest exit. Alarm signals used in conjunction with the prerecorded message shall produce a sound that is distinctive from other sounds used during normal operation.

**[F] 907.2.11.3 Emergency voice/alarm communication system.** An emergency voice/alarm communication system, which is allowed to serve as a public address system, shall be installed in accordance with Section 907.5.2.2 and be audible throughout the entire special amusement area and throughout the exit access to the point of exit discharge.

**[F] 907.2.12 High-rise buildings and Group I-2 occupancies having occupied floors located more than 75 feet above the lowest level of fire department vehicle access.** High-rise buildings and Group I-2 occupancies having occupied floors located more than 75 feet above the lowest level of fire department vehicle access shall be provided with an automatic smoke detection system in accordance with Section 907.2.12.1, a fire department communication system in accordance with Section 907.2.12.2 and an emergency voice/alarm communication system in accordance with Section 907.5.2.2.

**Exceptions:**

1. Airport traffic control towers in accordance with Sections 412 and 907.2.21.
2. Open parking garages in accordance with Section 406.5.

3. Buildings with an occupancy in Group A-5 in accordance with Section 303.1.
4. Low-hazard special occupancies in accordance with Section 503.1.1.
5. In Group I-2, I-2.1 and R-2.1 occupancies, the alarm shall sound at a constantly attended location and occupant notification shall be broadcast by the emergency voice/alarm communication system.

**[F] 907.2.12.1 Automatic smoke detection.** Automatic smoke detection in high-rise buildings and Group I-2 occupancies having occupied floors located more than 75 feet above the lowest level of fire department vehicle access shall be in accordance with Sections 907.2.12.1.1 and 907.2.12.1.2.

**[F] 907.2.12.1.1 Area smoke detection.** Area smoke detectors shall be provided in accordance with this section. Smoke detectors shall be connected to an automatic fire alarm system. The activation of any detector required by this section shall activate the emergency voice/alarm communication system in accordance with Section 907.5.2.2. In addition to smoke detectors required by Sections 907.2.1 through 907.2.9, smoke detectors shall be located as follows:

1. In each mechanical equipment, electrical, transformer, telephone equipment or similar room that is not provided with sprinkler protection.
2. In each elevator machine room, machinery space, control room and control space and in elevator lobbies.

**[F] 907.2.12.1.2 Duct smoke detection.** Smoke detectors listed for use in air duct systems shall be provided in accordance with this section and the *California Mechanical Code*. The activation of any detector required by this section shall initiate a visible and audible supervisory signal at a constantly attended location. Duct smoke detectors complying with Section 907.3.1 shall be located as follows:

1. In the main return air and exhaust air plenum of each air-conditioning system having a capacity greater than 2,000 cubic feet per minute (cfm) (0.94 m<sup>3</sup>/s). Such detectors shall be located in a serviceable area downstream of the last duct inlet.
2. At each connection to a vertical duct or riser serving two or more stories from a return air duct or plenum of an air-conditioning system. In Group R-1 and R-2 occupancies, a smoke detector is allowed to be used in each return air riser carrying not more than 5,000 cfm (2.4 m<sup>3</sup>/s) and serving not more than 10 air-inlet openings.

**[F] 907.2.12.2 Fire department communication system.** Where a wired communication system is approved in lieu of an emergency responder radio coverage system in accordance with Section 510 of the *California Fire Code*, the wired fire department communication system shall be designed and installed in accordance with NFPA 72 and shall operate between a fire command center complying with Section 911, elevators, elevator lobbies, emergency and standby power rooms,



fire pump rooms, areas of refuge and inside interior exit stairways. The fire department communication device shall be provided at each floor level within the interior exit stairway.

**[F] 907.2.12.3 Multiple-channel voice evacuation.** In buildings with an occupied floor more than 120 feet (36 576 mm) above the lowest level of fire department vehicle access, voice evacuation systems for high-rise buildings shall be multiple-channel systems.

**[F] 907.2.13 Atriums connecting more than two stories.** A fire alarm system shall be installed in occupancies with an atrium that connects more than two stories, with smoke detection installed in locations required by a rational analysis in Section 909.4 and in accordance with the system operation requirements in Section 909.17. The system shall be activated in accordance with Section 907.5. Such occupancies in Group A, E or M shall be provided with an emergency voice/alarm communication system complying with the requirements of Section 907.5.2.2.

**[F] 907.2.14 High-piled combustibile storage areas.** An automatic smoke detection system shall be installed throughout high-piled combustibile storage areas where required by Section 3206.5 of the *California Fire Code*.

**[F] 907.2.15 Aerosol storage uses.** Aerosol product rooms and general-purpose warehouses containing aerosol products shall be provided with an approved manual fire alarm system where required by the *California Fire Code*.

**[F] 907.2.16 Lumber, wood structural panel and veneer mills.** Lumber, wood structural panel and veneer mills shall be provided with a manual fire alarm system.

**[F] 907.2.17 Underground buildings with smoke control systems.** Where a smoke control system is installed in an underground building in accordance with this code, automatic smoke detectors shall be provided in accordance with Section 907.2.17.1.

**[F] 907.2.17.1 Smoke detectors.** Not fewer than one smoke detector listed for the intended purpose shall be installed in all of the following areas:

1. Mechanical equipment, electrical, transformer, telephone equipment, elevator machine or similar rooms.
2. Elevator lobbies.
3. The main return and exhaust air plenum of each air-conditioning system serving more than one story and located in a serviceable area downstream of the last duct inlet.
4. Each connection to a vertical duct or riser serving two or more floors from return air ducts or plenums of heating, ventilating and air-conditioning systems, except that in Group R occupancies, a listed smoke detector is allowed to be used in each return air riser carrying not more than 5,000 cfm (2.4 m<sup>3</sup>/s) and serving not more than 10 air-inlet openings.

**[F] 907.2.17.2 Alarm required.** Activation of the smoke control system shall activate an audible alarm at a constantly attended location.

**[F] 907.2.18 Deep underground buildings.** Where the lowest level of a structure is more than 60 feet (18 288 mm) below the finished floor of the lowest level of exit discharge, the structure shall be equipped throughout with a manual fire alarm system, including an emergency voice/alarm communication system installed in accordance with Section 907.5.2.2.

**[F] 907.2.19 Covered and open mall buildings.** Where the total floor area exceeds 50,000 square feet (4645 m<sup>2</sup>) within either a covered mall building or within the perimeter line of an open mall building, an emergency voice/alarm communication system shall be provided. Access to emergency voice/alarm communication systems serving a mall, required or otherwise, shall be provided for the fire department. The system shall be provided in accordance with Section 907.5.2.2.

**[F] 907.2.20 Residential aircraft hangars.** Not fewer than one single-station smoke alarm shall be installed within a residential aircraft hangar as defined in Chapter 2 and shall be interconnected into the residential smoke alarm or other sounding device to provide an alarm that will be audible in all sleeping areas of the dwelling.

**[F] 907.2.21 Airport traffic control towers.** An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.5 shall be provided in airport control towers in accordance with Sections 907.2.21.1 and 907.2.21.2.

**Exception:** Audible appliances shall not be installed within the control tower cab.

**[F] 907.2.21.1 Airport traffic control towers with multiple exits and automatic sprinklers.** Airport traffic control towers with multiple exits and equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 shall be provided with smoke detectors in all of the following locations:

1. Airport traffic control cab.
2. Electrical and mechanical equipment rooms.
3. Airport terminal radar and electronics rooms.
4. Outside each opening into interior exit stairways.
5. Along the single means of egress permitted from observation levels.
6. Outside each opening into the single means of egress permitted from observation levels.

**[F] 907.2.21.2 Other airport traffic control towers.** Airport traffic control towers with a single exit or where sprinklers are not installed throughout shall be provided with smoke detectors in all of the following locations:

1. Airport traffic control cab.
2. Electrical and mechanical equipment rooms.
3. Airport terminal radar and electronics rooms.
4. Office spaces incidental to the tower operation.
5. Lounges for employees, including sanitary facilities.
6. Means of egress.

7. Utility shafts where access to smoke detectors can be provided.

**[F] 907.2.22 Energy storage systems.** An automatic smoke detection system or radiant-energy detection system shall be installed in rooms, walk-in units and areas containing energy storage systems as required in Section 1206 of the *California Fire Code*.

**[F] 907.2.23 Capacitor energy storage systems.** An automatic smoke detection system shall be installed in areas containing capacitor energy storage systems as required by Section 1206.3 of the *California Fire Code*.

**907.2.24 Motion picture and television production studio sound stages and approved production facilities.**

**907.2.24.1 Sound stages-solid-ceiling sets and platforms.** Where required by Chapter 48 of the *California Fire Code*, all interior solid-ceiling sets over 600 square feet (55.7 m<sup>2</sup>) in area, and platforms (when provided) over 600 square feet (55.7 m<sup>2</sup>) in area and which exceed 3 feet (914 mm) in height shall be protected by an approved heat detector system. Heat detectors shall be spaced 30 feet (9144 mm) on center or as required by the manufacturer's installation instructions. The fire alarm system shall be connected to an approved supervising station in accordance with Section 907.6.5 or a local alarm which will give an audible signal at a constantly attended location.

**907.2.24.2 Production locations—solid-ceiling sets and platforms.** Where required by Chapter 48 of the *California Fire Code* in buildings with existing fire protection systems and where production intends to construct solid-ceiling sets over 600 square feet (55.7 m<sup>2</sup>) in area, and platforms over 600 square feet (55.7 m<sup>2</sup>) in area and which exceed 3 feet (914 mm) in height shall be protected by an approved heat detector system. Heat detectors shall be spaced 30 feet (9144 mm) on center or as required by the manufacturer's installation instructions. The fire alarm system shall be connected to an approved supervising station in accordance with Section 907.6.6 or a local alarm which will give an audible signal at a constantly attended location.

**907.2.24.3 Fire alarm control units.** Fire alarm control units shall be California State Fire Marshal listed and shall be utilized in accordance with their listing. Control units are permitted to be temporarily supported by sets, platforms or pedestals.

**907.2.24.4 Heat detectors.**

**907.2.24.4.1 Heat detection required by this section** shall be defined as a portable system as it is intended to be reinstalled when platforms or sets are changed.

**907.2.24.4.2 Heat detectors shall be secured to standard outlet boxes and are allowed to be temporarily supported by sets, platforms or pedestals.**

**907.2.24.4.3 Heat detectors shall be provided for solid-ceiling sets and platforms where required by Sections 4805.3 and 4811.14.**

**907.2.25 Group C occupancies (organized camps).**

**907.2.25.1 General.** Every building and structure used or intended for sleeping purposes shall be provided with an automatic smoke detection system.

**Exceptions:**

1. Buildings and structures in existence and in operation prior to January 1, 1985.
2. Tents, tent structures and buildings and structures that do not exceed 25 ft (7620 mm) in any lateral dimensions and where such building or structure is not more than one story.

**907.2.25.2 Camp fire alarm.** Every organized camp shall provide and maintain audible appliances, or devices suitable for sounding a fire alarm. Such audible appliances or devices may be of any type acceptable to the enforcing agency provided they are distinctive in tone from all other signaling devices or systems and shall be audible throughout the camp premises. When an automatic fire alarm system is provided, as required by Section 450.6.6 of the *California Building Code*, all audible appliances required by this section shall be of the same type as that used in the automatic system.

**907.2.26 Fixed-guideway and passenger rail transit systems fire alarm and communication systems.**

**907.2.26.1 General.** Every fixed-guideway transit station shall be provided with an approved emergency voice/alarm communication system in accordance with NFPA 72. The emergency voice/alarm communication system, designed and installed so that damage to any one speaker will not render any paging zone of the system inoperative.

**Exception: Open stations**

**907.2.26.2 System components.** Each station fire alarm system shall consist of:

1. Fire alarm control unit at a location as permitted by the enforcing agency.
2. An alarm annunciator(s). The annunciator(s) shall be located at a point acceptable to the enforcing agency. The annunciator(s) shall indicate the type of device and general location of alarm. All alarm, supervisory and trouble signals shall be transmitted to the local annunciator(s) and the operations control center.
3. Manual fire alarm boxes shall be provided throughout passenger platforms and stations.

**Exception:** Two-way emergency communication reporting devices (emergency telephones) are allowed to be used in lieu of manual fire alarm boxes as permitted by the enforcing agency. Such devices shall provide two-way communication between the operations control center and each device. Such devices shall be located as required for manual fire alarm boxes, and shall be distinctly identified by

signs, coloring or other means acceptable to the enforcing agency.

4. Automatic smoke detectors in all ancillary spaces.

**Exceptions:**

1. Ancillary spaces protected by an approved fixed automatic extinguishing system; or
2. Ancillary spaces protected by quick-response sprinklers.

5. Automatic control of exiting components.

**907.2.26.3 Emergency voice/alarm communication system.** Each station shall be provided with an emergency voice/alarm communication system capable of transmitting voice, recorded or electronically generated textual messages to all areas of the station. The system(s) shall be configured such that the messages can be initiated from either the Emergency Management Panel (EMP) or the operations control center.

**907.2.26.4 Emergency telephones.** A dedicated two-way emergency communication phone system designed and installed in accordance with NFPA 72 shall be provided in all underground stations to facilitate direct communications for emergency response between remote locations and the EMP.

**907.2.26.4.1** Remote emergency phones shall be located at ends of station platforms, each hose outlet connection and station valve rooms.

**907.2.26.4.2** Provisions shall be made in the design of this two-way emergency communication phone system for extensions of the system to the next passenger station or guideway portal.

**907.2.27 Winery caves.** An approved manual fire alarm system conforming to the provisions of Section 907.2 shall be provided in all Type 3 winery caves.

**907.2.28 Group L.** A manual fire alarm system shall be installed throughout buildings having Group L occupancies. When Group L occupancies are located in mixed use buildings, at least one manual fire alarm box shall be located within the Group L occupancy.

**907.2.28.1 Group L occupancies located on the 11<sup>th</sup> story and above.** Manual fire alarm boxes shall be required on each side of the 2-hour fire-smoke barrier and at each exit on the 11<sup>th</sup> story and above.

**907.2.29 Public school state funded construction projects for kindergarten through 12<sup>th</sup> grade - automatic fire alarm system requirements.**

**907.2.29.1 Alterations to existing buildings on an existing public school campus.** An automatic fire alarm system shall be provided for all portions within the scope of an alteration project. The provisions of this section shall apply to any public school project on an existing campus and receiving state funds pursuant to Leroy F. Green, School Facilities Act of 1998, California Education Code Sections 17070.10 through 17079. For purposes of this section, an existing campus refers to a school site, where an application for con-

struction of original buildings was made to DSA prior to July 1, 2002.

**Exceptions:**

1. A manual fire alarm system may be provided for a construction project that has an estimated total cost of less than \$200,000.
2. A manual fire alarm system may be provided for a relocatable building that is sited with the intent that it be at the site for less than three years and is sited upon a temporary foundation in a manner that is designed to permit easy removal. See California Administrative Code, Section 4-314 for definition of relocatable building.
3. A fire alarm system is not required for detached buildings designed and used for non-instructional purposes that meet the applicable requirements for that occupancy. Buildings would include, but not be limited to:

- Concession Stand
- Press Box
- Restroom Facilities
- Shade Structure
- Snack Bar
- Storage Building
- Ticket Booth

**[F] 907.3 Fire safety functions.** Automatic fire detectors utilized for the purpose of performing fire safety functions shall be connected to the building's fire alarm control unit where a fire alarm system is installed. Detectors shall, upon actuation, perform the intended function and activate the alarm notification appliances or activate a visible and audible supervisory signal at a constantly attended location. In buildings not equipped with a fire alarm system, the automatic fire detector shall be powered by normal electrical service and, upon actuation, perform the intended function. The detectors shall be located in accordance with NFPA 72.

**[F] 907.3.1 Duct smoke detectors.** Smoke detectors installed in ducts shall be listed for the air velocity, temperature and humidity present in the duct. Duct smoke detectors shall be connected to the building's fire alarm control unit where a fire alarm system is required by Section 907.2. Activation of a duct smoke detector shall initiate a visible and audible supervisory signal at a constantly attended location and shall perform the intended fire safety function in accordance with this code and the California Mechanical Code. In facilities that are required to be monitored by a supervising station, duct smoke detectors shall report only as a supervisory signal and not as a fire alarm. They shall not be used as a substitute for required open area detection.

**Exceptions:**

1. The supervisory signal at a constantly attended location is not required where duct smoke detectors activate the building's alarm notification appliances.

2. In occupancies not required to be equipped with a fire alarm system, actuation of a smoke detector shall activate a visible and an audible signal in an approved location. Smoke detector trouble conditions shall activate a visible or audible signal in an approved location and shall be identified as air duct detector trouble.

**[F] 907.3.2 Special locking systems.** Where special locking systems are installed on means of egress doors in accordance with Sections 1010.1.9.7 or 1010.1.9.8, an automatic *smoke* detection system shall be installed as required by those sections and Sections 907.3.2.1 through 907.3.2.5.

**907.3.2.1 Delayed egress.** *In other than Groups I, R-2.1 and R-4 occupancies for single-story building, smoke detectors shall be installed at ceilings throughout all occupied areas and mechanical/electrical spaces. For multiple-story buildings, smoke detectors shall be installed throughout all occupied areas and mechanical/electrical spaces for the story where delayed egress devices are installed. Additional detectors are required on adjacent stories where occupants of those stories utilize the same means of egress.*

**Exception:** Refer to Section 907.3.2.4 for Group A courthouse occupancies.

**907.3.2.2 Delayed egress for Group I and R-2.1 occupancies.** *Smoke detectors shall be installed at ceilings throughout all occupied areas and mechanical/electrical spaces of smoke-compartments where delayed egress devices are installed. Additional detectors are required in adjacent smoke-compartments where occupants of those compartments utilize the same means of egress.*

**907.3.2.3 Delayed egress for Group R-4.** *Occupancies licensed as residential care facilities for the elderly, and housing clients with Alzheimer’s disease or dementia residential facilities, smoke detectors shall be installed at ceilings throughout all occupiable rooms and areas and mechanical/ electrical rooms and spaces.*

**907.3.2.4 Delayed egress for Group A Courthouse occupancies.** *An approved automatic smoke detection system shall be installed at ceilings in all occupied corridors and mechanical/electrical spaces of occupancies where delayed egress devices are installed.*

**907.3.2.5 Controlled egress doors for Group I-2 occupancies.** *Smoke detectors shall be installed at ceilings throughout all occupied areas and mechanical/electrical spaces of smoke-compartments where controlled egress doors are installed.*

**[F] 907.3.3 Elevator emergency operation.** Automatic fire detectors installed for elevator emergency operation shall be installed in accordance with the provisions of *California Code of Regulations, Title 8, Division 1, Chapter 4, Subchapter 6, Elevator Safety Orders* and NFPA 72.

**[F] 907.3.4 Wiring.** The wiring to the auxiliary devices and equipment used to accomplish the fire safety functions shall be monitored for integrity in accordance with NFPA 72.

**[F] 907.4 Initiating devices.** Where manual or automatic alarm initiation is required as part of a fire alarm system, the initiating devices shall be installed in accordance with Sections 907.4.1 through 907.4.3.1.

**[F] 907.4.1 Protection of fire alarm control unit.** In areas that are not continuously occupied, a single smoke detector shall be provided at the location of each fire alarm control unit, notification appliance circuit power extenders, and supervising station transmitting equipment.

**Exception:** Where ambient conditions prohibit installation of a smoke detector, a heat detector shall be permitted.

**[F] 907.4.2 Manual fire alarm boxes.** Where a manual fire alarm system is required by another section of this code, it shall be activated by fire alarm boxes installed in accordance with Sections 907.4.2.1 through 907.4.2.6.

**[F] 907.4.2.1 Location.** Manual fire alarm boxes shall be located not more than 5 feet (1524 mm) from the entrance to each exit. In buildings not protected by an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2, additional manual fire alarm boxes shall be located so that the distance of travel to the nearest box does not exceed 200 feet (60 960 mm).

**Exception:** *When individual dwelling units are served by a single exit stairway, additional boxes at other than the ground floor may be omitted.*

**[F] 907.4.2.2 Height.** The height of the manual fire alarm boxes shall be not less than 42 inches (1067 mm) and not more than 48 inches (1219 mm) measured vertically, from the floor level to the *highest point of the activating handle or lever of the box.* *Manual fire alarm boxes shall also comply with Section 11B-309.*

**[F] 907.4.2.3 Color.** Manual fire alarm boxes shall be red in color.

**[F] 907.4.2.4 Signs.** Where fire alarm systems are not monitored by a supervising station, an approved permanent sign shall be installed adjacent to each manual fire alarm box that reads: WHEN ALARM SOUNDS CALL FIRE DEPARTMENT.

**Exception:** Where the manufacturer has permanently provided this information on the manual fire alarm box.

**[F] 907.4.2.5 Protective covers.** The fire code official is authorized to require the installation of listed manual fire alarm box protective covers to prevent malicious false alarms or to provide the manual fire alarm box with protection from physical damage. The protective cover shall be transparent or red in color with a transparent face to permit visibility of the manual fire alarm box. Each cover shall include proper operating instructions. A protective cover that emits a local alarm signal shall not be installed unless approved. Protective covers shall not project more than that permitted by Section 1003.3.3.

**[F] 907.4.2.6 Unobstructed and unobscured.** Manual fire alarm boxes shall be provided with ready access, unobstructed, unobscured and visible at all times.

has been installed and tested in accordance with the approved plans and specifications shall be provided.

**[F] 907.7.3 Instructions.** Operating, testing and maintenance instructions and record drawings (“as-builts”) and equipment specifications shall be provided at an approved location.

**[F] 907.8 Inspection, testing and maintenance.** The maintenance and testing schedules and procedures for fire alarm and fire detection systems shall be in accordance with Section 907.8 of the *California Fire Code*.

## SECTION 908 EMERGENCY ALARM SYSTEMS

**[F] 908.1 Group H occupancies.** Emergency alarms for the detection and notification of an emergency condition in Group H occupancies shall be provided in accordance with Section 415.5.

**[F] 908.2 Group H-5 occupancy.** Emergency alarms for notification of an emergency condition in an HPM facility shall be provided as required in Section 415.11.3.5.

## SECTION 909 SMOKE CONTROL SYSTEMS

**[F] 909.1 Scope and purpose.** This section applies to mechanical or passive smoke control systems where they are required by other provisions of this code. The purpose of this section is to establish minimum requirements for the design, installation and acceptance testing of smoke control systems that are intended to provide a tenable environment for the evacuation or relocation of occupants. These provisions are not intended for the preservation of contents, the timely restoration of operations or for assistance in fire suppression or overhaul activities. Smoke control systems regulated by this section serve a different purpose than the smoke- and heat-removal provisions found in Section 910. Mechanical smoke control systems shall not be considered exhaust systems under Chapter 5 of the *California Mechanical Code*.

**[F] 909.2 General design requirements.** Buildings, structures or parts thereof required by this code to have a smoke control system or systems shall have such systems designed in accordance with the applicable requirements of Section 909 and the generally accepted and well-established principles of engineering relevant to the design. The construction documents shall include sufficient information and detail to adequately describe the elements of the design necessary for the proper implementation of the smoke control systems. These documents shall be accompanied by sufficient information and analysis to demonstrate compliance with these provisions.

**[F] 909.3 Special inspection and test requirements.** In addition to the ordinary inspection and test requirements that buildings, structures and parts thereof are required to undergo, smoke control systems subject to the provisions of Section 909 shall undergo special inspections and tests sufficient to verify the proper commissioning of the smoke control design in its final installed condition. The design submission

accompanying the construction documents shall clearly detail procedures and methods to be used and the items subject to such inspections and tests. Such commissioning shall be in accordance with generally accepted engineering practice and, where possible, based on published standards for the particular testing involved. The special inspections and tests required by this section shall be conducted under the same terms in Section 1704.

**[F] 909.4 Analysis.** A rational analysis supporting the types of smoke control systems to be employed, their methods of operation, the systems supporting them and the methods of construction to be utilized shall accompany the submitted construction documents and shall include, but not be limited to, the items indicated in Sections 909.4.1 through 909.4.7.

**[F] 909.4.1 Stack effect.** The system shall be designed such that the maximum probable normal or reverse stack effect will not adversely interfere with the system’s capabilities. In determining the maximum probable stack effect, altitude, elevation, weather history and interior temperatures shall be used.

**[F] 909.4.2 Temperature effect of fire.** Buoyancy and expansion caused by the design fire in accordance with Section 909.9 shall be analyzed. The system shall be designed such that these effects do not adversely interfere with the system’s capabilities.

**[F] 909.4.3 Wind effect.** The design shall consider the adverse effects of wind. Such consideration shall be consistent with the wind-loading provisions of Chapter 16.

**[F] 909.4.4 HVAC systems.** The design shall consider the effects of the heating, ventilating and air-conditioning (HVAC) systems on both smoke and fire transport. The analysis shall include all permutations of systems status. The design shall consider the effects of the fire on the HVAC systems.

**[F] 909.4.5 Climate.** The design shall consider the effects of low temperatures on systems, property and occupants. Air inlets and exhausts shall be located so as to prevent snow or ice blockage.

**[F] 909.4.6 Duration of operation.** All portions of active or engineered smoke control systems shall be capable of continued operation after detection of the fire event for a period of not less than either 20 minutes or 1.5 times the calculated egress time, whichever is greater.

**909.4.7 Smoke control system interaction.** The design shall consider the interaction effects of the operation of multiple smoke control systems for all design scenarios.

**[F] 909.5 Smoke barrier construction.** Smoke barriers required for passive smoke control and a smoke control system using the pressurization method shall comply with Section 709. The maximum allowable leakage area shall be the aggregate area calculated using the following leakage area ratios:

1. Walls  $A/A_w = 0.00100$
2. Interior exit stairways and ramps and exit passageways:  $A/A_w = 0.00035$

3. Enclosed exit access stairways and ramps and all other shafts:  $A/A_w = 0.00150$

4. Floors and roofs:  $A/A_F = 0.00050$

where:

$A$  = Total leakage area, square feet (m<sup>2</sup>).

$A_F$  = Unit floor or roof area of barrier, square feet (m<sup>2</sup>).

$A_w$  = Unit wall area of barrier, square feet (m<sup>2</sup>).

The leakage area ratios shown do not include openings due to gaps around doors and operable windows. The total leakage area of the smoke barrier shall be determined in accordance with Section 909.5.1 and tested in accordance with Section 909.5.2.

**[F] 909.5.1 Total leakage area.** Total leakage area of the barrier is the product of the smoke barrier gross area multiplied by the allowable leakage area ratio, plus the area of other openings such as gaps around doors and operable windows.

**[F] 909.5.2 Testing of leakage area.** Compliance with the maximum total leakage area shall be determined by achieving the minimum air pressure difference across the barrier with the system in the smoke control mode for mechanical smoke control systems utilizing the pressurization method. Compliance with the maximum total leakage area of passive smoke control systems shall be verified through methods such as door fan testing or other methods, as approved by the fire code official.

**[F] 909.5.3 Opening protection.** Openings in smoke barriers shall be protected by automatic-closing devices actuated by the required controls for the mechanical smoke control system. Door openings shall be protected by fire door assemblies complying with Section 716.

**Exceptions:**

1. Passive smoke control systems with automatic-closing devices actuated by spot-type smoke detectors listed for releasing service installed in accordance with Section 907.3. *When used in Group I-2 or I-2.1, such detectors shall activate the fire alarm system and shall close all the smoke barrier doors within the effected zone.*
2. Fixed openings between smoke zones that are protected utilizing the airflow method *in other than Group I-2 or I-2.1.*
3. In Group I-2, I-2.1, R-2.1; and ambulatory care facilities, where a pair of opposite-swinging doors are installed across a corridor in accordance with Section 909.5.3.1, the doors shall be protected in accordance with Section 716. The doors shall not have a center mullion. *Positive-latching devices are required. Doors installed across corridors shall comply with Section 1010.1.1.*
4. In Group I-2, I-2.1, R-2.1 and ambulatory care facilities, where such doors are special-purpose

horizontal sliding, accordion or folding door assemblies installed in accordance with Section 1010.1.4.3 and are automatic closing by smoke detection in accordance with Section 716.2.6.6, *they shall be protected in accordance with Section 716. Doors installed across corridors shall comply with Section 1010.1.1.*

5. Group I-3.

6. Openings between smoke zones with clear ceiling heights of 14 feet (4267 mm) or greater and bank-down capacity of greater than 20 minutes as determined by the design fire size.

7. *In Group I-2 or I-2.1, smoke damper activation may be accomplished by a fire alarm control unit provided that an open area smoke detection system is provided within all areas served by an HVAC system.*

**909.5.3.1 Group I-2, I-2.1, R-2.1 and ambulatory care facilities.** In Group I-2, I-2.1, R-2.1; and ambulatory care facilities, where doors are installed across a corridor, the doors shall be automatic closing by smoke detection in accordance with Section 716.2.6.5 and shall have a vision panel with fire-protection-rated glazing materials in fire protection-rated frames, the area of which shall not exceed that tested. *Vision panels consisting of fire-rated glazing in approved frames shall be provided in each cross-corridor swinging door and at each cross-corridor horizontal-sliding door in a smoke barrier. In Group I-2, where swinging doors are installed across a corridor, such doors shall be opposite swinging pairs.*

**[F] 909.5.3.2 Ducts and air transfer openings.** Ducts and air transfer openings are required to be protected with a minimum Class II, 250°F (121°C) smoke damper complying with Section 717.

**[F] 909.6 Pressurization method.** The primary mechanical means of controlling smoke shall be by pressure differences across smoke barriers. Maintenance of a tenable environment is not required in the smoke control zone of fire origin.

**[F] 909.6.1 Minimum pressure difference.** The pressure difference across a smoke barrier used to separate smoke zones shall be not less than 0.05-inch water gage (0.0124 kPa) in fully sprinklered buildings.

In buildings permitted to be other than fully sprinklered, the smoke control system shall be designed to achieve pressure differences not less than two times the maximum calculated pressure difference produced by the design fire.

**[F] 909.6.2 Maximum pressure difference.** The maximum air pressure difference across a smoke barrier shall be determined by required door-opening or closing forces. The actual force required to open exit doors when the system is in the smoke control mode shall be in accordance with Section 1010.1.3. Opening and closing forces for other doors shall be determined by standard engineering

2. Where an elevator opens into a lobby enclosed in accordance with Section 3007.6 or 3008.6, the pressure differential is permitted to be measured between the hoistway and the space immediately outside the door(s) from the floor to the enclosed lobby.
3. The pressure differential is permitted to be measured relative to the outdoor atmosphere on floors other than the following:
  - 3.1. The fire floor.
  - 3.2. The two floors immediately below the fire floor.
  - 3.3. The floor immediately above the fire floor.
4. The minimum positive pressure of 0.10 inch of water (25 Pa) and a maximum positive pressure of 0.25 inch of water (67 Pa) with respect to occupied floors are not required at the floor of recall with the doors open.

**909.21.1.1 Use of ventilation systems.** Ventilation systems, other than hoistway supply air systems, are permitted to be used to exhaust air from adjacent spaces on the fire floor, two floors immediately below and one floor immediately above the fire floor to the building's exterior where necessary to maintain positive pressure relationships as required in Section 909.21.1 during operation of the elevator shaft pressurization system.

**909.21.2 Rational analysis.** A rational analysis complying with Section 909.4 shall be submitted with the construction documents.

**909.21.3 Ducts for system.** Any duct system that is part of the pressurization system shall be protected with the same fire-resistance rating as required for the elevator shaft enclosure.

**909.21.4 Fan system.** The fan system provided for the pressurization system shall be as required by Sections 909.21.4.1 through 909.21.4.4.

**909.21.4.1 Fire resistance.** Where located within the building, the fan system that provides the pressurization shall be protected with the same fire-resistance rating required for the elevator shaft enclosure.

**909.21.4.2 Smoke detection.** The fan system shall be equipped with a smoke detector that will automatically shut down the fan system when smoke is detected within the system.

**909.21.4.3 Separate systems.** A separate fan system shall be used for each elevator hoistway.

**909.21.4.4 Fan capacity.** The supply fan shall be either adjustable with a capacity of not less than 1,000 cfm (0.4719 m<sup>3</sup>/s) per door, or that specified by a registered design professional to meet the requirements of a designed pressurization system.

**909.21.5 Standby power.** The pressurization system shall be provided with standby power in accordance with Section 2702.

**909.21.6 Activation of pressurization system.** The elevator pressurization system shall be activated upon activation of either the building fire alarm system or the elevator lobby smoke detectors. Where both a building fire alarm system and elevator lobby smoke detectors are present, each shall be independently capable of activating the pressurization system.

**909.21.7 Testing.** Testing for performance shall be required in accordance with Section 909.18.8. System acceptance shall be in accordance with Section 909.19.

**909.21.8 Marking and identification.** Detection and control systems shall be marked in accordance with Section 909.14.

**909.21.9 Control diagrams.** Control diagrams shall be provided in accordance with Section 909.15.

**909.21.10 Control panel.** A control panel complying with Section 909.16 shall be provided.

**909.21.11 System response time.** Hoistway pressurization systems shall comply with the requirements for smoke control system response time in Section 909.17.

## SECTION 910 SMOKE AND HEAT REMOVAL

**[F] 910.1 General.** Where required by this code, smoke and heat vents or mechanical smoke removal systems shall conform to the requirements of this section.

**[F] 910.2 Where required.** Smoke and heat vents or a mechanical smoke removal system shall be installed as required by Sections 910.2.1 and 910.2.2.

### Exceptions:

1. Frozen food warehouses used solely for storage of Class I and II commodities where protected by an approved automatic sprinkler system.
2. Smoke and heat removal shall not be required in areas of buildings equipped with early suppression fast-response (ESFR) sprinklers.
3. Smoke and heat removal shall not be required in areas of buildings equipped with control mode special application sprinklers with a response time index of 50 (m · s)<sup>1/2</sup> or less that are listed to control a fire in stored commodities with 12 or fewer sprinklers.

**910.2.1 Group F-1 or S-1.** Smoke and heat vents installed in accordance with Section 910.3 or a mechanical smoke removal system installed in accordance with Section 910.4 shall be installed in buildings and portions thereof used as a Group F-1 or S-1 occupancy having more than 50,000 square feet (4645 m<sup>2</sup>) of undivided area. In occupied portions of a building equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 where the upper surface of the story is not a roof assembly, a mechanical smoke removal system in accordance with Section 910.4 shall be installed.

**Exception:** *Group F-1 aircraft manufacturing buildings and Group S-1 aircraft repair hangars.*

**[F] 910.2.2 High-piled combustible storage.** Smoke and heat removal required by Table 3206.2 of the *California Fire Code* for buildings and portions thereof containing high-piled combustible storage shall be installed in accordance with Section 910.3 in unsprinklered buildings. In buildings and portions thereof containing high-piled combustible storage equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, a smoke and heat removal system shall be installed in accordance with Section 910.3 or 910.4. In occupied portions of a building equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, where the upper surface of the story is not a roof assembly, a mechanical smoke removal system in accordance with Section 910.4 shall be installed.

**[F] 910.3 Smoke and heat vents.** The design and installation of smoke and heat vents shall be in accordance with Sections 910.3.1 through 910.3.3.

**[F] 910.3.1 Listing and labeling.** Smoke and heat vents shall be listed and labeled to indicate compliance with UL 793 or FM 4430 or *ICC ES AC 331*.

**[F] 910.3.2 Smoke and heat vent locations.** Smoke and heat vents shall be located 20 feet (6096 mm) or more from adjacent lot lines and fire walls and 10 feet (3048 mm) or more from fire barriers. Vents shall be uniformly located within the roof in the areas of the building where the vents are required to be installed by Section 910.2 with consideration given to roof pitch, sprinkler location and structural members.

**910.3.3 Smoke and heat vents area.** The required aggregate area of smoke and heat vents shall be calculated as follows:

For buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1:

$$A_{VR} = V/9000 \quad \text{(Equation 9-3)}$$

where:

- $A_{VR}$  = The required aggregate vent area (ft<sup>2</sup>).
- $V$  = Volume (ft<sup>3</sup>) of the area that requires smoke removal.

For unsprinklered buildings:

$$A_{VR} = A_{FA}/50 \quad \text{(Equation 9-4)}$$

where:

- $A_{VR}$  = The required aggregate vent area (ft<sup>2</sup>).
- $A_{FA}$  = The area of the floor in the area that requires smoke removal.

**[F] 910.4 Mechanical smoke removal systems.** Mechanical smoke removal systems shall be designed and installed in accordance with Sections 910.4.1 through 910.4.7.

**910.4.1 Automatic sprinklers required.** The building shall be equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1.

**910.4.2 Exhaust fan construction.** Exhaust fans that are part of a mechanical smoke removal system shall be rated for operation at 221°F (105°C). Exhaust fan motors shall be located outside of the exhaust fan air stream.

**910.4.3 System design criteria.** The mechanical smoke removal system shall be sized to exhaust the building at a minimum rate of two air changes per hour based on the volume of the building or portion thereof without contents. The capacity of each exhaust fan shall not exceed 30,000 cubic feet per minute (14.2 m<sup>3</sup>/s).

**910.4.3.1 Makeup air.** Makeup air openings shall be provided within 6 feet (1829 mm) of the floor level. Operation of makeup air openings shall be manual or automatic. The minimum gross area of makeup air inlets shall be 8 square feet per 1,000 cubic feet per minute (0.74 m<sup>2</sup> per 0.4719 m<sup>3</sup>/s) of smoke exhaust.

**910.4.4 Activation.** The mechanical smoke removal system shall be activated by manual controls only.

**910.4.5 Manual control location.** Manual controls shall be located where they are able to be accessed by the fire service from an exterior door of the building and separated from the remainder of the building by not less than 1-hour fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both.

**[F] 910.4.6 Control wiring.** Wiring for operation and control of mechanical smoke removal systems shall be connected ahead of the main disconnect in accordance with Section 701.12E of the *California Electrical Code* and be protected against interior fire exposure to temperatures in excess of 1,000°F (538°C) for a period of not less than 15 minutes.

**[F] 910.4.7 Controls.** Where building air-handling and mechanical smoke removal systems are combined or where independent building air-handling systems are provided, fans shall automatically shut down in accordance with the *California Mechanical Code*. The manual controls provided for the smoke removal system shall have the capability to override the automatic shutdown of fans that are part of the smoke removal system.

**910.5 Maintenance.** Smoke and heat vents and mechanical smoke removal systems shall be maintained in accordance with the *California Fire Code*.

## SECTION 911 FIRE COMMAND CENTER

**[F] 911.1 General.** Where required by other sections of this code and in buildings classified as high-rise buildings by this code and *Group I-2 occupancies having occupied floors located more than 75 feet above the lowest level of fire department vehicle access*, a fire command center for fire department operations shall be provided and shall comply with Sections 911.1.1 through 911.1.6.

**[F] 911.1.1 Location and access.** The location and accessibility of the fire command center shall be approved by the fire code official.

**[F] 911.1.2 Separation.** The fire command center shall be separated from the remainder of the building by not less than a 2-hour fire barrier constructed in accordance with Section 707 or horizontal assembly constructed in accordance with Section 711, or both.



**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE**  
**CHAPTER 10 – MEANS OF EGRESS—continued**

Adopting agency	BSC	BSC- CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC	
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4									5
Adopt entire chapter	X							X	X														
Adopt entire chapter as amendeded (amended sections listed below)			X	X	X	X					X	X	X			X	X						
Adopt only those sections that are listed below								X															
Chapter / Section																							
1011(1st paragraph below title only)								X															
1011.2			X																				
1011.5.2			X																				
1011.5.2 [DSA-AC: exc. 4 only]								X															
1011.6			X																				
1011.11			X																				
1011.11 (2nd paragraph only)								X															
1011.15			X																				
1012 (1st paragraph below title only)								X															
1012.1								X															
1012.6.3								X															
1012.6.4								X															
1012.6.5								X															
1012.10								X															
1013.1			X																				
1013.2			X																				
1013.4			X			X	X																
1013.6.3			X																				
1013.7			X																				
1013.8			X																				
1014 (1st paragraph below title only)								X															
1014.8			X			X																	
1015.2			X					X															
1015.3			X	X	X	X	X																
1015.4			X																				
1015.8				X	X	X																	
1016.2			X																				
1016.2.2			X																				
Table 1017.2			X																				
1018.2 (1st paragraph below title only)								X															
1018.3 Exception only								X															
1018.5 Exception only								X															
1019.3			X																				
1019.4			X																				
1020.1			X																				
Table 1020.1			X																				
Table 1020.2			X																				
1020.4			X																				

(continued)

**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE  
CHAPTER 10 – MEANS OF EGRESS—continued**

Adopting agency	BSC	BSC- CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4								
Adopt entire chapter	X							X	X													
Adopt entire chapter as amendeded (amended sections listed below)			X	X	X	X				X	X	X		X	X							
Adopt only those sections that are listed below							X															
Chapter / Section																						
1020.5			X							X		X		X								
1020.6			X																			
1023.2			X																			
1023.9			X			X																
1023.9 (2nd paragraph only)							X															
1023.9.1			X																			
1023.11.2			X																			
1024.2			X																			
1026.4.1			X																			
1026.4.2			X																			
1028.5			X																			
1029.1			X																			
1029.2			X																			
1029.3			X																			
1029.3.1			X																			
1029.6.4			X																			
1029.9.1			X																			
1030.1			X																			
1030.1.1			X																			

The state agency does not adopt sections identified by the following symbol: †

The Office of the State Fire Marshal's adoption of this chapter or individual sections is applicable to structures regulated by other state agencies pursuant to Section 1.11.

building element other than a means of egress component as specified in this chapter. Obstructions shall not be placed in the minimum width or required capacity of a means of egress component except projections permitted by this chapter. The minimum width or required capacity of a means of egress system shall not be diminished along the path of egress travel.

**1003.7 Elevators, escalators and moving walks.** Elevators, escalators and moving walks shall not be used as a component of a required means of egress from any other part of the building.

**Exception:** Elevators used as an accessible means of egress in accordance with Section 1009.4.

**SECTION 1004  
OCCUPANT LOAD**

**1004.1 Design occupant load.** In determining means of egress requirements, the number of occupants for whom means of egress facilities are provided shall be determined in accordance with this section.

**1004.2 Cumulative occupant loads.** Where the path of egress travel includes intervening rooms, areas or spaces, cumulative occupant loads shall be determined in accordance with this section.

**1004.2.1 Intervening spaces or accessory areas.** Where occupants egress from one or more rooms, areas or spaces through others, the design occupant load shall be the combined occupant load of interconnected accessory or intervening spaces. Design of egress path capacity shall be based on the cumulative portion of occupant loads of all rooms, areas or spaces to that point along the path of egress travel.

**1004.2.2 Adjacent levels for mezzanines.** That portion of the occupant load of a mezzanine with required egress through a room, area or space on an adjacent level shall be added to the occupant load of that room, area or space.

**1004.2.3 Adjacent stories.** Other than for the egress components designed for convergence in accordance with Section 1005.6, the occupant load from separate stories shall not be added.

**1004.3 Multiple function occupant load.** Where an area under consideration contains multiple functions having different occupant load factors, the design occupant load for such area shall be based on the floor area of each function calculated independently.

**1004.4 Multiple occupancies.** Where a building contains two or more occupancies, the means of egress requirements shall apply to each portion of the building based on the occupancy of that space. Where two or more occupancies utilize portions of the same means of egress system, those egress components shall meet the more stringent requirements of all occupancies that are served.

**1004.5 Areas without fixed seating.** The number of occupants shall be computed at the rate of one occupant per unit of area as prescribed in Table 1004.5. For areas without fixed seating, the occupant load shall be not less than that number determined by dividing the floor area under consideration by

**TABLE 1004.5  
MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT**

FUNCTION OF SPACE	OCCUPANT LOAD FACTOR <sup>a</sup>
Accessory storage areas, mechanical equipment room	300 gross
Agricultural building	300 gross
Aircraft hangars	500 gross
Airport terminal	
Baggage claim	20 gross
Baggage handling	300 gross
Concourse	100 gross
Waiting areas	15 gross
Assembly	
Gaming floors (keno, slots, etc.)	11 gross
Exhibit gallery and museum	30 net
Assembly with fixed seats	See Section 1004.6
Assembly without fixed seats	
Concentrated (chairs only—not fixed)	7 net
Standing space	5 net
Unconcentrated (tables and chairs)	15 net
Bowling centers, allow 5 persons for each lane including 15 feet of runway, and for additional areas	7 net
Business areas	150 gross
Concentrated business use areas	See Section 1004.8
Courtrooms—other than fixed seating areas	40 net
Day care	35 net
Dormitories	50 gross
Educational	
Classroom area	20 net
Shops and other vocational room areas	50 net
Exercise rooms	50 gross
Group H-5 fabrication and manufacturing areas	200 gross
Industrial areas	100 gross
Institutional areas <sup>c</sup>	
Inpatient treatment areas	240 gross
Outpatient areas	100 gross
Sleeping areas	120 gross
Kitchens, commercial	200 gross
Laboratory	
Educational (K–12 <sup>th</sup> grade)	50 net
Laboratories, non-educational	100 net
Laboratory suite <sup>b</sup>	200 gross
Library	
Reading rooms	50 net
Stack area	100 gross
Locker rooms	50 gross
Mall buildings—covered and open	See Section 402.8.2
Mercantile	
Storage, stock, shipping areas	60 gross 300 gross
Parking garages	200 gross
Residential	200 gross
Skating rinks, swimming pools	
Rink and pool	50 gross
Decks	15 gross
Stages and platforms	15 net
Warehouses	500 gross

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m<sup>2</sup>.

a. Floor area in square feet per occupant.

b. See Section 453.2.

c. See Table 408.3.13 for I-3 facilities.

## MEANS OF EGRESS

the occupant load factor assigned to the function of the space as set forth in Table 1004.5. Where an intended function is not listed in Table 1004.5, the building official shall establish a function based on a listed function that most nearly resembles the intended function.

**Exception:** Where approved by the building official, the actual number of occupants for whom each occupied space, floor or building is designed, although less than those determined by calculation, shall be permitted to be used in the determination of the design occupant load.

**1004.5.1 Increased occupant load.** The occupant load permitted in any building, or portion thereof, is permitted to be increased from that number established for the occupancies in Table 1004.5, provided that all other requirements of the code are met based on such modified number and the occupant load does not exceed one occupant per 7 square feet (0.65 m<sup>2</sup>) of occupiable floor space. Where required by the building official, an approved aisle, seating or fixed equipment diagram substantiating any increase in occupant load shall be submitted. Where required by the building official, such diagram shall be posted.

**1004.6 Fixed seating.** For areas having fixed seats and aisles, the occupant load shall be determined by the number of fixed seats installed therein. The occupant load for areas in which fixed seating is not installed, such as waiting spaces, shall be determined in accordance with Section 1004.5 and added to the number of fixed seats.

The occupant load of wheelchair spaces and the associated companion seat shall be based on one occupant for each wheelchair space and one occupant for the associated companion seat provided in accordance with Section 1108.2.3.

For areas having fixed seating without dividing arms, the occupant load shall be not less than the number of seats based on one person for each 18 inches (457 mm) of seating length.

The occupant load of seating booths shall be based on one person for each 24 inches (610 mm) of booth seat length measured at the backrest of the seating booth.

**1004.7 Outdoor areas.** Yards, patios, occupied roofs, courts and similar outdoor areas accessible to and usable by the building occupants shall be provided with means of egress as required by this chapter. The occupant load of such outdoor areas shall be assigned by the building official in accordance with the anticipated use. Where outdoor areas are to be used by persons in addition to the occupants of the building, and the path of egress travel from the outdoor areas passes through the building, means of egress requirements for the building shall be based on the sum of the occupant loads of the building plus the outdoor areas.

### Exceptions:

1. Outdoor areas used exclusively for service of the building need only have one means of egress.
2. Both outdoor areas associated with Group R-3 and individual dwelling units of Group R-2.

**1004.8 Concentrated business use areas.** The occupant load factor for concentrated business use shall be applied to telephone call centers, trading floors, electronic data processing centers and similar business use areas with a higher

density of occupants than would normally be expected in a typical business occupancy environment. Where approved by the building official, the occupant load for concentrated business use areas shall be the actual occupant load, but not less than one occupant per 50 square feet (4.65 m<sup>2</sup>) of gross occupiable floor space.

**1004.9 Posting of occupant load.** Every room or space which is used for assembly, classroom, dining, drinking, or similar purposes having an occupant load of 50 or more shall have the occupant load of the room or space posted in a conspicuous place, near the main exit or exit access doorway from the room or space, for the intended configurations. Posted signs shall be of an approved legible permanent design and shall be maintained by the owner or the owner's authorized agent.

## SECTION 1005 MEANS OF EGRESS SIZING

**1005.1 General.** All portions of the means of egress system shall be sized in accordance with this section.

**Exception:** Aisles and aisle accessways in rooms or spaces used for assembly purposes complying with Section 1029.

**1005.2 Minimum width based on component.** The minimum width, in inches (mm), of any means of egress components shall be not less than that specified for such component, elsewhere in this code.

**1005.3 Required capacity based on occupant load.** The required capacity, in inches (mm), of the means of egress for any room, area, space or story shall be not less than that determined in accordance with Sections 1005.3.1 and 1005.3.2:

**1005.3.1 Stairways.** The capacity, in inches, of means of egress stairways shall be calculated by multiplying the occupant load served by such stairways by a means of egress capacity factor of 0.3 inch (7.6 mm) per occupant. Where stairways serve more than one story, only the occupant load of each story considered individually shall be used in calculating the required capacity of the stairways serving that story.

### Exceptions:

1. For other than Group H and I-2 occupancies, the capacity, in inches, of means of egress stairways shall be calculated by multiplying the occupant load served by such stairways by a means of egress capacity factor of 0.2 inch (5.1 mm) per occupant in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 and an emergency voice/alarm communication system in accordance with Section 907.5.2.2.
2. Facilities with smoke-protected assembly seating shall be permitted to use the capacity factors in Table 1029.6.2 indicated for stepped aisles for exit access or exit stairways where the entire path for means of egress from the seating to the exit discharge is provided with a smoke control system complying with Section 909.

**1010.1.9.6 Unlatching.** The unlatching of any door or leaf shall not require more than one operation.

**Exceptions:**

1. Places of detention or restraint.
2. Where manually operated bolt locks are permitted by Section 1010.1.9.5.
3. Doors with automatic flush bolts as permitted by Section 1010.1.9.4, Item 3.
4. Doors from individual dwelling units and sleeping units of Group R occupancies as permitted by Section 1010.1.9.4, Item 4.

**1010.1.9.6.1 Closet doors.** Closet doors that latch in the closed position shall be openable from inside the closet.

**1010.1.9.7 Controlled egress doors in Group I-2.**

Electric locking systems, including electro-mechanical locking systems and electromagnetic locking systems, shall be permitted to be locked in the means of egress in Group I-2 occupancies where the clinical needs of persons receiving *psychiatric or mental health treatment* require their *restraint or containment*. Controlled egress doors shall be permitted in such occupancies where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 and an approved automatic smoke detection system installed in accordance with Section 907, provided that the doors are installed and operate in accordance with all of the following:

1. The door locks shall unlock on actuation of the automatic sprinkler system or automatic *smoke* detection system.
2. The door locks shall unlock on loss of power controlling the lock or lock mechanism.
3. The door locking system shall be installed to have the capability of being unlocked by a switch located at the fire command center, a nursing station or other approved location. The switch shall directly break power to the lock.
4. A building occupant shall not be required to pass through more than one door equipped with a controlled egress locking system before entering an exit.
5. All staff shall have the keys, codes or other means necessary to operate the locking systems.
6. Emergency lighting shall be provided at the door.
7. The door locking system units shall be listed in accordance with UL 294.

**Exception:** Items 1 through 4 shall not apply to doors to areas occupied by persons who, because of clinical needs, require restraint or containment as part of the function of a *psychiatric or mental health treatment area*.

**1010.1.9.8 Delayed egress.** Delayed egress locking systems shall be permitted to be installed on doors serving the following occupancies in buildings that are equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 and an approved automatic smoke detection system installed in accordance with Section 907.

1. Group B, F, I, M, R, S and U occupancies.
2. Group E classrooms with an occupant load of less than 50.

**Exception:** Delayed egress locking systems shall be permitted to be installed on exit or exit access doors, other than the main exit or exit access door, serving a *Group A* courtroom in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 and an approved automatic smoke detection system installed in accordance with Section 907.

**1010.1.9.8.1 Delayed egress locking system.** The delayed egress locking system shall be installed and operated in accordance with all of the following:

1. The delay electronics of the delayed egress locking system shall deactivate upon actuation of the automatic sprinkler system or automatic fire detection system, allowing immediate free egress.
2. The delay electronics of the delayed egress locking system shall deactivate upon loss of *electrical* power, allowing immediate free egress, to any one of the following:
  - 2.1. *The egress-control device itself.*
  - 2.2. *The smoke detection system.*
  - 2.3. *Means of egress illumination as required by Section 1008.*
3. The delayed egress locking system shall have the capability of being deactivated at the fire command center and other approved locations.
4. An attempt to egress shall initiate an irreversible process that shall allow such egress in not more than 15 seconds when a physical effort to exit is applied to the egress side door hardware for not more than 3 seconds. Initiation of the irreversible process shall activate an audible signal in the vicinity of the door. Once the delay electronics have been deactivated, rearming the delay electronics shall be by manual means only. *The time delay established for each egress-control device shall not be field adjustable. For applications listed in Section 1.9.1 regulated by the Division of the State Architect-Access Compliance, see Chapter 11B, 11B-404.2.9.*

**Exception:** In facilities housing *Alzheimer's or dementia clients*, a delay of not more than 30 seconds is permitted on a delayed egress door.

5. The egress path from any point shall not pass through more than one delayed egress locking system.

**Exceptions:**

1. In Group I-2 or I-3 occupancies, the egress path from any point in the building shall pass through not more than two delayed egress locking systems provided that the combined delay does not exceed 30 seconds.
  - 5.1. *A tactile sign shall also be provided in Braille and raised characters, which complies with Chapter 11B, Sections 11B-703.1, 11B-703.2, 11B-703.3 and 11B-703.5.*
  - 5.2. In Group I-4 occupancies, the egress path from any point in the building shall pass through not more than two delayed egress locking systems provided the combined delay does not exceed 30 seconds and the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
6. A sign shall be provided on the door and shall be located above and within 12 inches (305 mm) of the door exit hardware:
  - 6.1. For doors that swing in the direction of egress, the sign shall read: PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS.
  - 6.2. For doors that swing in the opposite direction of egress, the sign shall read: PULL UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS.
  - 6.3. The sign shall comply with the visual character requirements in *Section 11B-703.5. Sign lettering shall be at least 1 inch (25 mm) in height and shall have a stroke of not less than 1/8 inch (3.2 mm).*
  - 6.4. *A tactile sign shall also be provided in Braille and raised characters, which complies with Chapter 11B, Sections 11B-703.1, 11B-703.2, 11B-703.3 and 11B-703.5.*

**Exception:** Where approved, in Group I occupancies, the installation of a sign is not

required where care recipients who because of clinical needs require restraint or containment as part of the function of the treatment area.

7. Emergency lighting shall be provided on the egress side of the door.
8. The delayed egress locking system units shall be *listed* in accordance with UL 294.
9. *Actuation of the panic bar or other door-latching hardware shall activate an audible signal at the door.*
10. *The unlatching shall not require more than one operation.*
11. *Regardless of the means of deactivation, relocking of the egress-control device shall be by manual means only at the door.*

**1010.1.9.9 Sensor release of electrically locked egress doors.** Sensor release of electric locking systems shall be permitted on doors located in the means of egress in any occupancy except Group H where installed and operated in accordance with all of the following criteria:

1. The sensor shall be installed on the egress side, arranged to detect an occupant approaching the doors, and shall cause the electric locking system to unlock.
2. The electric locks shall be arranged to unlock by a signal from or loss of power to the sensor.
3. Loss of power to the lock or locking system shall automatically unlock the electric locks.
4. The doors shall be arranged to unlock from a manual unlocking device located 40 inches to 48 inches (1016 mm to 1219 mm) vertically above the floor and within 5 feet (1524 mm) of the secured doors. Ready access shall be provided to the manual unlocking device and the device shall be clearly identified by a sign that reads "PUSH TO EXIT." When operated, the manual unlocking device shall result in direct interruption of power to the electric lock—*independent of other electronics*—and the electric lock shall remain unlocked for not less than 30 seconds.
5. Activation of the building fire alarm system, where provided, shall automatically unlock the electric lock, and the electric lock shall remain unlocked until the fire alarm system has been reset.
6. Activation of the building automatic sprinkler system or fire detection system, where provided, shall automatically unlock the electric lock. The

2. Means of egress are not prohibited through stockrooms in Group M occupancies where all of the following are met:

- 2.1. The stock is of the same hazard classification as that found in the main retail area.
- 2.2. Not more than 50 percent of the exit access is through the stockroom.
- 2.3. The stockroom is not subject to locking from the egress side.
- 2.4. There is a demarcated, minimum 44-inch-wide (1118 mm) aisle defined by full- or partial-height fixed walls or similar construction that will maintain the required width and lead directly from the retail area to the exit without obstructions.

6. The means of egress shall not pass through any room subject to locking except in Group I-3 occupancies classified as detention facilities and psychiatric treatment areas in Group I-2 occupancies.

**1016.2.1 Multiple tenants.** Where more than one tenant occupies any one floor of a building or structure, each tenant space, dwelling unit and sleeping unit shall be provided with access to the required exits without passing through adjacent tenant spaces, dwelling units and sleeping units.

**Exception:** The means of egress from a smaller tenant space shall not be prohibited from passing through a larger adjoining tenant space where such rooms or spaces of the smaller tenant occupy less than 10 percent of the area of the larger tenant space through which they pass; are the same or similar occupancy group; a discernible path of egress travel to an exit is provided; and the means of egress into the adjoining space is not subject to locking from the egress side. A required means of egress serving the larger tenant space shall not pass through the smaller tenant space or spaces.

**1016.2.2 Basement exits in Group I-2 occupancies.** For additional requirements for occupancies in Group I-2 or I-2.1, see Section 407.

**SECTION 1017  
EXIT ACCESS TRAVEL DISTANCE**

**1017.1 General.** Travel distance within the exit access portion of the means of egress system shall be in accordance with this section.

**1017.2 Limitations.** Exit access travel distance shall not exceed the values given in Table 1017.2.

**1017.2.1 Exterior egress balcony increase.** Exit access travel distances specified in Table 1017.2 shall be increased up to an additional 100 feet (30 480 mm) provided that the last portion of the exit access leading to the exit occurs on an exterior egress balcony constructed in accordance with Section 1021. The length of such balcony shall be not less than the amount of the increase taken.

**TABLE 1017.2  
EXIT ACCESS TRAVEL DISTANCE<sup>a</sup>**

OCCUPANCY	WITHOUT SPRINKLER SYSTEM (feet)	WITH SPRINKLER SYSTEM (feet)
A, E, F-1, M, R, S-1	200 <sup>c</sup>	250 <sup>b</sup>
R-2.1	Not Permitted	250 <sup>b</sup>
B	200	300 <sup>c</sup>
F-2, S-2, U	300	400 <sup>c</sup>
H-1	Not Permitted	75 <sup>d</sup>
H-2	Not Permitted	100 <sup>d</sup>
H-3	Not Permitted	150 <sup>d</sup>
H-4	Not Permitted	175 <sup>d</sup>
H-5	Not Permitted	200 <sup>c</sup>
I-2, I-2.1, I-3 <sup>f</sup>	Not Permitted	200 <sup>c</sup>
I-4	150	200 <sup>c</sup>
L	Not Permitted	200 <sup>c</sup>

For SI: 1 foot = 304.8 mm.

- a. See the following sections for modifications to exit access travel distance requirements:
  - Section 402.8: For the distance limitation in malls.
  - Section 404.9: For the distance limitation through an atrium space.
  - Section 407.4: For the distance limitation in Group I-2 or I-2.1.
  - Section 408.3.10: For increased limitation in Group I-3
  - Sections 408.6.1 and 408.8.1: For the distance limitations in Group I-3.
  - Section 411.2: For the distance limitation in special amusement areas.
  - Section 412.6: For the distance limitations in aircraft manufacturing facilities.
  - Section 1006.2.2.2: For the distance limitation in refrigeration machinery rooms.
  - Section 1006.2.2.3: For the distance limitation in refrigerated rooms and spaces.
  - Section 1006.3.3: For buildings with one exit.
  - Section 1017.2.2: For increased distance limitation in Groups F-1 and S-1.
  - Section 1029.7: For increased limitation in assembly seating.
  - Section 3103.4: For temporary structures.
  - Section 3104.9: For pedestrian walkways.
- b. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where automatic sprinkler systems are permitted in accordance with Section 903.3.1.2.
- c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
- d. Group H occupancies equipped throughout with an automatic sprinkler system in accordance with Section 903.2.5.1.
- e. Group R-3 and R-4 buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.3. See Section 903.2.8 for occupancies where automatic sprinkler systems are permitted in accordance with Section 903.3.1.3.
- f. Not permitted in nonsprinklered Group I-3 occupancies.

**1017.2.2 Groups F-1 and S-1 increase.** The maximum exit access travel distance shall be 400 feet (122 m) in Group F-1 or S-1 occupancies where all of the following conditions are met:

- 1. The portion of the building classified as Group F-1 or S-1 is limited to one story in height.
- 2. The minimum height from the finished floor to the bottom of the ceiling or roof slab or deck is 24 feet (7315 mm).

- The building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

**1017.3 Measurement.** Exit access travel distance shall be measured from the most remote point of each room, area or space along the natural and unobstructed path of horizontal and vertical egress travel to the entrance to an exit.

**Exception:** In open parking garages, exit access travel distance is permitted to be measured to the closest riser of an exit access stairway or the closest slope of an exit access ramp.

**1017.3.1 Exit access stairways and ramps.** Travel distance on exit access stairways or ramps shall be included in the exit access travel distance measurement. The measurement along stairways shall be made on a plane parallel and tangent to the stair tread nosings in the center of the stair and landings. The measurement along ramps shall be made on the walking surface in the center of the ramp and landings.

### SECTION 1018 AISLES

*[DSA-AC] In addition to the requirements of this section, means of egress, which provide access to, or egress from, buildings or facilities where accessibility is required for applications listed in Section 1.9.1 regulated by the Division of the State Architect-Access Compliance, shall also comply with Chapter 11A or Chapter 11B, Section 11B-403, as applicable.*

**1018.1 General.** Aisles and aisle accessways serving as a portion of the exit access in the means of egress system shall comply with the requirements of this section. Aisles or aisle accessways shall be provided from all occupied portions of the exit access that contain seats, tables, furnishings, displays and similar fixtures or equipment. The minimum width or required capacity of aisles shall be unobstructed.

**Exception:** Encroachments complying with Section 1005.7.

**1018.2 Aisles in assembly spaces.** Aisles and aisle accessways serving a room or space used for assembly purposes shall comply with Section 1029.

**1018.3 Aisles in Groups B and M.** In Group B and M occupancies, the minimum clear aisle width shall be determined by Section 1005.1 for the occupant load served, but shall be not less than that required for corridors by Section 1020.2.

**Exception:** Nonpublic aisles serving less than 50 people and not required to be accessible by Chapter 11B, (see Section 11B-403) need not exceed 28 inches (711 mm) in width.

**1018.4 Aisle accessways in Group M.** An aisle accessway shall be provided on not less than one side of each element within the merchandise pad. The minimum clear width for an aisle accessway not required to be accessible shall be 30 inches (762 mm). The required clear width of the aisle accessway shall be measured perpendicular to the elements and merchandise within the merchandise pad. The 30-inch (762 mm) minimum clear width shall be maintained to pro-

vide a path to an adjacent aisle or aisle accessway. The common path of egress travel shall not exceed 30 feet (9144 mm) from any point in the merchandise pad.

**Exception:** For areas serving not more than 50 occupants, the common path of egress travel shall not exceed 75 feet (22 860 mm).

**1018.5 Aisles in other than assembly spaces and Groups B and M.** In other than rooms or spaces used for assembly purposes and Group B and M occupancies, the minimum clear aisle capacity shall be determined by Section 1005.1 for the occupant load served, but the width shall be not less than that required for corridors by Section 1020.2.

**Exception:** Nonpublic aisles serving less than 50 people and not required to be accessible by Chapter 11B (see Section 11B-403) need not exceed 28 inches (711 mm) in width.

### SECTION 1019 EXIT ACCESS STAIRWAYS AND RAMPS

**1019.1 General.** Exit access stairways and ramps serving as an exit access component in a means of egress system shall comply with the requirements of this section. The number of stories connected by exit access stairways and ramps shall include basements, but not mezzanines.

**1019.2 All occupancies.** Exit access stairways and ramps that serve floor levels within a single story are not required to be enclosed.

**1019.3 Occupancies other than Groups I-2, I-2.1, I-3, and R-2.1.** In other than Group I-2, I-2.1, I-3 and R-2.1 occupancies, floor openings containing exit access stairways or ramps that do not comply with one of the conditions listed in this section shall be enclosed with a shaft enclosure constructed in accordance with Section 713.

- Exit access stairways and ramps that serve or atmospherically communicate between only two stories. Such interconnected stories shall not be open to other stories.
- In Group R-1, R-2, R-2.1, R-3 or R-3.1 occupancies, exit access stairways and ramps connecting four stories or less serving and contained within an individual dwelling unit or sleeping unit or live/work unit.
- Exit access stairways serving and contained within a Group R-3 congregate residence or a Group R-4 facility are not required to be enclosed.
- Exit access stairways and ramps in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, where the area of the vertical opening between stories does not exceed twice the horizontal projected area of the stairway or ramp and the opening is protected by a draft curtain and closely spaced sprinklers in accordance with NFPA 13. In other than Group B and M occupancies, this provision is limited to openings that do not connect more than four stories.
- Exit access stairways and ramps within an atrium complying with the provisions of Section 404.



6. Exit access stairways and ramps in open parking garages that serve only the parking garage.
7. Exit access stairways and ramps serving smoke-protected or open-air assembly seating complying with the exit access travel distance requirements of Section 1029.7.
8. Exit access stairways and ramps between the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, places of religious worship, auditoriums and sports facilities.
9. *Fixed-guideway transit stations, constructed in accordance with Section 443.*

**1019.4 Group I-2, I-2.1, I-3, and R-2.1 occupancies.** In Group I-2, I-2.1, I-3, and R-2.1 occupancies, floor openings between stories containing exit access stairways or ramps are required to be enclosed with a shaft enclosure constructed in accordance with Section 713.

**Exception:** In Group I-3 occupancies, exit access stairways or ramps constructed in accordance with Section 408 are not required to be enclosed.

**SECTION 1020  
CORRIDORS**

**1020.1 Construction.** Corridors shall be fire-resistance rated in accordance with Table 1020.1. The corridor walls required to be fire-resistance rated shall comply with Section 708 for fire partitions.

**Exceptions:**

1. A fire-resistance rating is not required for corridors in an occupancy in Group E where each room that is used for instruction has not less than one door opening directly to the exterior and rooms for assembly purposes have not less than one-half of the required means of egress doors opening directly to the exterior. Exterior doors specified in this exception are required to be at ground level.

2. A fire-resistance rating is not required for corridors contained within a dwelling unit or sleeping unit in an occupancy in Group R.
3. A fire-resistance rating is not required for corridors in open parking garages.
4. A fire-resistance rating is not required for corridors in an occupancy in Group B that is a space requiring only a single means of egress complying with Section 1006.2.
5. Corridors adjacent to the exterior walls of buildings shall be permitted to have unprotected openings on unrated exterior walls where unrated walls are permitted by Table 602 and unprotected openings are permitted by Table 705.8.
6. *A fire-resistance rating is not required for corridors within suites in a Group I-2 or I-2.1 constructed in accordance with Section 407.4.4 or 407.4.5.*
7. *A fire-resistance rating is not required for corridors within Group I-3 occupancies that comply with intervening spaces, see Section 408.1.2.2.*

**1020.1.1 Hoistway opening protection.** Elevator hoistway openings shall be protected in accordance with Section 3006.2.1.

**1020.2 Width and capacity.** The required capacity of corridors shall be determined as specified in Section 1005.1, but the minimum width shall be not less than that specified in Table 1020.2.

**Exception:** In Group I-2 occupancies, corridors are not required to have a clear width of 96 inches (2438 mm) in areas where there will not be stretcher or bed movement for access to care or as part of the defend-in-place strategy.

**1020.3 Obstruction.** The minimum width or required capacity of corridors shall be unobstructed.

**Exception:** Encroachments complying with Section 1005.7.

**TABLE 1020.1  
CORRIDOR FIRE-RESISTANCE RATING**

OCCUPANCY	OCCUPANT LOAD SERVED BY CORRIDOR	REQUIRED FIRE-RESISTANCE RATING (hours)	
		Without sprinkler system	With sprinkler system <sup>c</sup>
H-1, H-2, H-3	All	Not Permitted	1
H-4, H-5, L	Greater than 30	Not Permitted	1
A, B, E, F, M, S, U	Greater than 30	1	0
R-1, R-2, R-3, R-3.1, R-4	Greater than 10	Not Permitted	1
I-2 <sup>a</sup> , I-2.1	Greater than 6	Not Permitted	0
I-3, R-2.1	Greater than 6	Not Permitted	1 <sup>b</sup>
I-4	All	1	0
E	Greater than 10	1	0

- a. For requirements for occupancies in Group I-2 and I-2.1, see Sections 407.2 and 407.3.
- b. For a reduction in the fire-resistance rating for occupancies in Group I-3, see Section 408.8.
- c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 where allowed.
- d. Group R-3 and R-4 buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.3. See Section 903.2.8 for occupancies where automatic sprinkler systems are permitted in accordance with Section 903.3.1.3.
- e. [SFM] See Section 1029.

**TABLE 1020.2  
MINIMUM CORRIDOR WIDTH**

OCCUPANCY	MINIMUM WIDTH (inches)
Any facility not listed in this table	44
Access to and utilization of mechanical, plumbing or electrical systems or equipment	24
With an occupant load of less than 50	36
Within a dwelling unit	36
In Group E with a corridor having an occupant load of 100 or more	72
In corridors and areas serving stretcher traffic in ambulatory care facilities	72
Group I-2 and I-3 in areas where required for bed movement	96
Corridors in Group I-2 and I-3 occupancies serving any area caring for one or more nonambulatory persons.	72

For SI: 1 inch = 25.4 mm.

**1020.4 Dead ends.** Where more than one exit or exit access doorway is required, the exit access shall be arranged such that dead-end corridors do not exceed 20 feet (6096 mm) in length.

**Exceptions:**

1. In in Group I-3, Condition 2, 3 or 4, occupancies, the dead end in a corridor shall not exceed 50 feet (15 240 mm).
2. In occupancies in Groups B, E, F, M, R-1, R-2, R-2.1, R-2.2, S and U, where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, the length of the dead-end corridors shall not exceed 50 feet (15 240 mm).
3. A dead-end corridor shall not be limited in length where the length of the dead-end corridor is less than 2.5 times the least width of the dead-end corridor.

**1020.5 Air movement in corridors.** Corridors shall not serve as supply, return, exhaust, relief or ventilation air ducts.

**Exceptions:**

1. Use of a corridor as a source of makeup air for exhaust systems in rooms that open directly onto such corridors, including toilet rooms, bathrooms, dressing rooms, smoking lounges and janitor closets, shall be permitted, provided that each such corridor is directly supplied with outdoor air at a rate greater than the rate of makeup air taken from the corridor.
2. Where located within a dwelling unit, the use of corridors for conveying return air shall not be prohibited.
3. Where located within tenant spaces of 1,000 square feet (93 m<sup>2</sup>) or less in area, utilization of corridors for conveying return air is permitted.
4. Incidental air movement from pressurized rooms within health care facilities and Group L occupancies, provided the corridor is not the primary source of supply or return to the room.
5. For health care facilities under the jurisdiction of the Office of Statewide Health Planning and Development (OSHPD), see the California Mechanical Code.

opment (OSHPD), see the California Mechanical Code.

**1020.5.1 Corridor ceiling.** Use of the space between the corridor ceiling and the floor or roof structure above as a return air plenum is permitted for one or more of the following conditions:

1. The corridor is not required to be of fire-resistance-rated construction.
2. The corridor is separated from the plenum by fire-resistance-rated construction.
3. The air-handling system serving the corridor is shut down upon activation of the air-handling unit smoke detectors required by the California Mechanical Code.
4. The air-handling system serving the corridor is shut down upon detection of sprinkler water flow where the building is equipped throughout with an automatic sprinkler system.
5. The space between the corridor ceiling and the floor or roof structure above the corridor is used as a component of an approved engineered smoke control system.

**1020.6 Corridor continuity.** Fire-resistance-rated corridors shall be continuous from the point of entry to an exit, and shall not be interrupted by intervening rooms. Where the path of egress travel within a fire-resistance-rated corridor to the exit includes travel along unenclosed exit access stairways or ramps, the fire-resistance rating shall be continuous for the length of the stairway or ramp and for the length of the connecting corridor on the adjacent floor leading to the exit.

**Exceptions:**

1. Foyers, lobbies or reception rooms constructed as required for corridors shall not be construed as intervening rooms.
2. Enclosed elevator lobbies as permitted by Item 1 of Section 1016.2 shall not be construed as intervening rooms.
3. [SFM] In fully sprinklered office buildings, corridors may lead through enclosed elevator lobbies if all areas of the building have access to at least one required exit without passing through the elevator lobby.

and through which occupants must travel to complete the exit path.

**1025.2.4.2 Wall-mounted demarcation lines.** Perimeter demarcation lines shall be placed on the wall with the bottom edge of the stripe not more than 4 inches (102 mm) above the finished floor. At the top or bottom of the stairs, demarcation lines shall drop vertically to the floor within 2 inches (51 mm) of the step or landing edge. Demarcation lines on walls shall transition vertically to the floor and then extend across the floor where a line on the floor is the only practical method of outlining the path. Where the wall line is broken by a door, demarcation lines on walls shall continue across the face of the door or transition to the floor and extend across the floor in front of such door.

**Exception:** Demarcation lines shall not extend in front of exit discharge doors that lead out of an exit and through which occupants must travel to complete the exit path.

**1025.2.4.3 Transition.** Where a wall-mounted demarcation line transitions to a floor-mounted demarcation line, or vice versa, the wall-mounted demarcation line shall drop vertically to the floor to meet a complementary extension of the floor-mounted demarcation line, thus forming a continuous marking.

**1025.2.5 Obstacles.** Obstacles at or below 6 feet 6 inches (1981 mm) in height and projecting more than 4 inches (102 mm) into the egress path shall be outlined with markings not less than 1 inch (25 mm) in width comprised of a pattern of alternating equal bands, of luminous material and black, with the alternating bands not more than 2 inches (51 mm) thick and angled at 45 degrees (0.79 rad). Obstacles shall include, but are not limited to, standpipes, hose cabinets, wall projections and restricted height areas. However, such markings shall not conceal any required information or indicators including but not limited to instructions to occupants for the use of standpipes.

**Exception:** The minimum width of 1 inch (25 mm) shall not apply to markings listed in accordance with UL 1994.

**1025.2.6 Doors within the exit path.** Doors through which occupants must pass in order to complete the exit path shall be provided with markings complying with Sections 1025.2.6.1 through 1025.2.6.3.

**1025.2.6.1 Emergency exit symbol.** The doors shall be identified by a low-location luminous emergency exit symbol complying with NFPA 170. The exit symbol shall be not less than 4 inches (102 mm) in height and shall be mounted on the door, centered horizontally, with the top of the symbol not higher than 18 inches (457 mm) above the finished floor.

**1025.2.6.2 Door hardware markings.** Door hardware shall be marked with not less than 16 square inches (406 mm<sup>2</sup>) of luminous material. This marking shall be located behind, immediately adjacent to, or on the door handle or escutcheon. Where a panic bar is installed,

such material shall be not less than 1 inch (25 mm) wide for the entire length of the actuating bar or touchpad.

**1025.2.6.3 Door frame markings.** The top and sides of the door frame shall be marked with a solid and continuous 1-inch- to 2-inch-wide (25 mm to 51 mm) stripe. Where the door molding does not provide sufficient flat surface on which to locate the stripe, the stripe shall be permitted to be located on the wall surrounding the frame.

**1025.3 Uniformity.** Placement and dimensions of markings shall be consistent and uniform throughout the same enclosure.

**1025.4 Self-luminous and photoluminescent.** Luminous egress path markings shall be permitted to be made of any material, including paint, provided that an electrical charge is not required to maintain the required luminance. Such materials shall include, but not be limited to, self-luminous materials and photoluminescent materials. Materials shall comply with either of the following standards:

1. UL 1994.
2. ASTM E2072, except that the charging source shall be 1 footcandle (11 lux) of fluorescent illumination for 60 minutes, and the minimum luminance shall be 30 milicandelas per square meter at 10 minutes and 5 milicandelas per square meter after 90 minutes.

**1025.5 Illumination.** Where photoluminescent exit path markings are installed, they shall be provided with not less than 1 footcandle (11 lux) of illumination for not less than 60 minutes prior to periods when the building is occupied and continuously during occupancy.

## SECTION 1026 HORIZONTAL EXITS

**1026.1 Horizontal exits.** Horizontal exits serving as an exit in a means of egress system shall comply with the requirements of this section. A horizontal exit shall not serve as the only exit from a portion of a building, and where two or more exits are required, not more than one-half of the total number of exits or total exit minimum width or required capacity shall be horizontal exits.

### Exceptions:

1. Horizontal exits are permitted to comprise two-thirds of the required exits from any building or floor area for occupancies in Group I-2.
2. Horizontal exits are permitted to comprise 100 percent of the exits required for occupancies in Group I-3. Not less than 6 square feet (0.6 m<sup>2</sup>) of accessible space per occupant shall be provided on each side of the horizontal exit for the total number of people in adjoining compartments.

**1026.2 Separation.** The separation between buildings or refuge areas connected by a horizontal exit shall be provided by a fire wall complying with Section 706; or by a fire barrier complying with Section 707 or a horizontal assembly com-

plying with Section 711, or both. The minimum fire-resistance rating of the separation shall be 2 hours. Opening protectives in horizontal exits shall also comply with Section 716. Duct and air transfer openings in a fire wall or fire barrier that serves as a horizontal exit shall also comply with Section 717. The horizontal exit separation shall extend vertically through all levels of the building unless floor assemblies have a fire-resistance rating of not less than 2 hours and do not have unprotected openings.

**Exception:** A fire-resistance rating is not required at horizontal exits between a building area and an above-grade pedestrian walkway constructed in accordance with Section 3104, provided that the distance between connected buildings is more than 20 feet (6096 mm).

Horizontal exits constructed as fire barriers shall be continuous from exterior wall to exterior wall so as to divide completely the floor served by the horizontal exit.

**1026.3 Opening protectives.** Fire doors in horizontal exits shall be self-closing or automatic-closing when activated by a smoke detector in accordance with Section 716.2.6.6. Doors, where located in a cross-corridor condition, shall be automatic-closing by activation of a smoke detector installed in accordance with Section 716.2.6.6.

**1026.4 Refuge area.** The refuge area of a horizontal exit shall be a space occupied by the same tenant or a public area and each such refuge area shall be adequate to accommodate the original occupant load of the refuge area plus the occupant load anticipated from the adjoining compartment. The anticipated occupant load from the adjoining compartment shall be based on the capacity of the horizontal exit doors entering the refuge area or the total occupant load of the adjoining compartment, whichever is less.

**1026.4.1 Capacity.** The capacity of the refuge area shall be computed based on a net floor area allowance of 3 square feet (0.2787 m<sup>2</sup>) for each occupant to be accommodated therein. Where the horizontal exit also forms a smoke compartment, the capacity of the refuge area for Group I-2, I-2.1, I-3 and R-2.1 occupancies shall comply with Sections 407.5.3, 408.6.2 and 420.6.2 as applicable.

**1026.4.2 Number of exits.** The refuge area into which a horizontal exit leads shall be provided with exits adequate to meet the occupant requirements of this chapter, but not including the added occupant load imposed by persons entering the refuge area through horizontal exits from other areas. *In other than I-3 occupancies*, not less than one refuge area exit shall lead directly to the exterior or to an interior exit stairway or ramp.

**Exception:** The adjoining compartment shall not be required to have a stairway or door leading directly outside, provided that the refuge area into which a horizontal exit leads has stairways or doors leading directly outside and are so arranged that egress shall not require the occupants to return through the compartment from which egress originates.

**1026.5 Standpipes.** Standpipes and standpipe hose connections shall be provided where required by Sections 905.3 and 905.4.

## SECTION 1027 EXTERIOR EXIT STAIRWAYS AND RAMPS

**1027.1 Exterior exit stairways and ramps.** Exterior exit stairways and ramps serving as an element of a required means of egress shall comply with this section.

**1027.2 Use in a means of egress.** Exterior exit stairways shall not be used as an element of a required means of egress for Group I-2 occupancies. For occupancies in other than Group I-2, exterior exit stairways and ramps shall be permitted as an element of a required means of egress for buildings not exceeding six stories above grade plane or that are not high-rise buildings.

**1027.3 Open side.** Exterior exit stairways and ramps serving as an element of a required means of egress shall be open on not less than one side, except for required structural columns, beams, handrails and guards. An open side shall have not less than 35 square feet (3.3 m<sup>2</sup>) of aggregate open area adjacent to each floor level and the level of each intermediate landing. The required open area shall be located not less than 42 inches (1067 mm) above the adjacent floor or landing level.

**1027.4 Side yards.** The open areas adjoining exterior exit stairways or ramps shall be either yards, courts or public ways; the remaining sides are permitted to be enclosed by the exterior walls of the building.

**1027.5 Location.** Exterior exit stairways and ramps shall have a minimum fire separation distance of 10 feet (3048 mm) measured at right angles from the exterior edge of the stairway or ramps, including landings, to:

1. Adjacent lot lines.
2. Other portions of the building.
3. Other buildings on the same lot unless the adjacent building exterior walls and openings are protected in accordance with Section 705 based on fire separation distance.

For the purposes of this section, other portions of the building shall be treated as separate buildings.

**Exception:** Exterior exit stairways and ramps serving individual dwelling units of Group R-3 shall have a minimum fire separation distance of 5 feet (1525 mm).

**1027.6 Exterior exit stairway and ramp protection.** Exterior exit stairways and ramps shall be separated from the interior of the building as required in Section 1023.2. Openings shall be limited to those necessary for egress from normally occupied spaces. Where a vertical plane projecting from the edge of an exterior exit stairway or ramp and landings is exposed by other parts of the building at an angle of less than 180 degrees (3.14 rad), the exterior wall shall be rated in accordance with Section 1023.7.

### Exceptions:

1. Separation from the interior of the building is not required for occupancies, other than those in Group R-1 or R-2, in buildings that are not more than two stories above grade plane where a level of exit discharge serving such occupancies is the first story above grade plane.

**1029.17.2 Cross aisles.** Cross aisles located more than 30 inches (762 mm) above the floor or grade below shall have guards in accordance with Section 1015.

Where an elevation change of 30 inches (762 mm) or less occurs between a cross aisle and the adjacent floor or grade below, guards not less than 26 inches (660 mm) above the aisle floor shall be provided.

**Exception:** Where the backs of seats on the front of the cross aisle project 24 inches (610 mm) or more above the adjacent floor of the aisle, a guard need not be provided.

**1029.17.3 Sightline-constrained guard heights.** Unless subject to the requirements of Section 1029.17.4, a fascia or railing system in accordance with the guard requirements of Section 1015 and having a minimum height of 26 inches (660 mm) shall be provided where the floor or foot-board elevation is more than 30 inches (762 mm) above the floor or grade below and the fascia or railing would otherwise interfere with the sightlines of immediately adjacent seating.

**1029.17.4 Guards at the end of aisles.** A fascia or railing system complying with the guard requirements of Section 1015 shall be provided for the full width of the aisle where the foot of the aisle is more than 30 inches (762 mm) above the floor or grade below. The fascia or railing shall be not less than 36 inches (914 mm) high and shall provide not less than 42 inches (1067 mm) measured diagonally between the top of the rail and the nosing of the nearest tread.

## SECTION 1030 EMERGENCY ESCAPE AND RESCUE

**1030.1 General.** In addition to the means of egress required by this chapter, emergency escape and rescue openings shall be provided in *Group R* occupancies.

Basements and sleeping rooms below the fourth story above grade plane shall have not fewer than one exterior emergency escape and rescue opening in accordance with this section. Where basements contain one or more sleeping rooms, emergency escape and rescue openings shall be required in each sleeping room, but shall not be required in adjoining areas of the basement. Such openings shall open directly into a public way or to a yard or court that opens to a public way.

### Exceptions:

1. In *Groups R-1* and *R-2* occupancies constructed of *Type I*, *Type IIA*, *Type IIIA* or *Type IV* construction equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1.
2. *Group R-2.1* occupancies meeting the requirements for delayed egress in accordance with Section 1010.1.9.8 may have operable windows that are breakable in sleeping rooms permanently restricted to a maximum of 4-inch open position.

3. Basements with a ceiling height of less than 80 inches (2032 mm) shall not be required to have emergency escape and rescue openings.
4. Emergency escape and rescue openings are not required from basements or sleeping rooms that have an exit door or exit access door that opens directly into a public way or to a yard, court or exterior exit balcony that opens to a public way.
5. Basements without habitable spaces and having not more than 200 square feet (18.6 m<sup>2</sup>) in floor area shall not be required to have emergency escape and rescue openings.
6. Within individual dwelling and sleeping units in *Groups R-2* and *R-3*, where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3, sleeping rooms in basements shall not be required to have emergency escape and rescue openings provided that the basement has one of the following:
  - 6.1. One means of egress and one emergency escape and rescue opening.
  - 6.2. Two means of egress.
7. In *Group R-2.2* occupancies a certified fire escape is acceptable as a secondary means of egress for existing buildings for this section of the code.

**1030.1.1 Operational constraints and opening control devices.** Emergency escape and rescue openings and any exit doors shall be maintained free of any obstructions other than those allowed by this section and shall be operational from inside the room without the use of keys or tools. Window-opening control devices complying with ASTM F2090 shall be permitted for use on windows serving as a required emergency escape and rescue opening. The release mechanism shall be maintained operable at all times.

Such bars, grills, grates or any similar devices shall be equipped with an approved exterior release device for use by the fire department only when required by the authority having jurisdiction.

Where security bars (burglar bars) are installed on emergency egress and rescue windows or doors, on or after July 1, 2000, such devices shall comply with California Building Standards Code, Part 12, Chapter 12-3 and other applicable provisions of Part 2.

**Exception:** *Group R-1* occupancies provided with a monitored fire sprinkler system in accordance with Section 903.2.8 and designed in accordance with NFPA 13 may have operable windows permanently restricted to a maximum 4-inch (102 mm) open position.

**1030.2 Minimum size.** Emergency escape and rescue openings shall have a minimum net clear opening of 5.7 square feet (0.53 m<sup>2</sup>).

**Exception:** The minimum net clear opening for grade-floor emergency escape and rescue openings shall be 5 square feet (0.46 m<sup>2</sup>).

## MEANS OF EGRESS

**1030.2.1 Minimum dimensions.** The minimum net clear opening height dimension shall be 24 inches (610 mm). The minimum net clear opening width dimension shall be 20 inches (508 mm). The net clear opening dimensions shall be the result of normal operation of the opening.

**1030.3 Maximum height from floor.** Emergency escape and rescue openings shall have the bottom of the clear opening not greater than 44 inches (1118 mm) measured from the floor.

**1030.4 Window wells.** An emergency escape and rescue opening with a finished sill height below the adjacent ground level shall be provided with a window well in accordance with Sections 1030.4.1 and 1030.4.2.

**1030.4.1 Minimum size.** The minimum horizontal area of the window well shall be 9 square feet (0.84 m<sup>2</sup>), with a minimum dimension of 36 inches (914 mm). The area of the window well shall allow the emergency escape and rescue opening to be fully opened.

**1030.4.2 Ladders or steps.** Window wells with a vertical depth of more than 44 inches (1118 mm) shall be equipped with an approved permanently affixed ladder or steps. Ladders or rungs shall have an inside width of not less than 12 inches (305 mm), shall project not less than 3 inches (76 mm) from the wall and shall be spaced not more than 18 inches (457 mm) on center (o.c.) vertically for the full height of the window well. The ladder or steps shall not encroach into the required dimensions of the window well by more than 6 inches (152 mm). The ladder or steps shall not be obstructed by the emergency escape and rescue opening. Ladders or steps required by this section are exempt from the stairway requirements of Section 1011.

**1030.5 Bars, grilles, covers and screens.** Bars, grilles, covers, screens or similar devices are permitted to be placed over emergency escape and rescue openings, bulkhead enclosures or window wells that serve such openings, provided that the minimum net clear opening size complies with Sections 1030.1.1 through 1030.4.2 and such devices shall be releasable or removable from the inside without the use of a key, tool or force greater than that which is required for normal operation of the emergency escape and rescue opening. Where such bars, grilles, covers, screens or similar devices are installed in existing buildings, they shall not reduce the net clear opening of the emergency escape and rescue opening and smoke alarms shall be installed in accordance with Section 907.2.10 regardless of the valuation of the alteration.

## SECTION 1111A CHANGES IN LEVEL ON ACCESSIBLE ROUTES

**1111A.1 Changes in level not exceeding  $\frac{1}{2}$  inch.** Abrupt changes in level along any accessible route shall not exceed  $\frac{1}{2}$  inch (12.7 mm). When changes in level do occur, they shall be beveled with a slope no greater than 1 unit vertical in 2 units horizontal (50-percent slope). Changes in level not exceeding  $\frac{1}{4}$  inch (6.35 mm) may be vertical.

**1111A.2 Changes greater than  $\frac{1}{2}$  inch.** Changes in level greater than  $\frac{1}{2}$  inch (12.7 mm) shall be made by means of a sloped surface not greater than 1 unit vertical in 20 units horizontal (5-percent slope), or a curb ramp, ramp, elevator or platform (wheelchair) lift. Stairs shall not be part of an accessible route. When stairs are located along or adjacent to an accessible route they shall comply with Section 1115A for exterior stairways.

## SECTION 1112A CURB RAMPS ON ACCESSIBLE ROUTES

**1112A.1 General.** Curb ramps within the boundary of the site shall be constructed at each corner of street intersections and where a pedestrian way crosses a curb. The preferred and recommended location for curb ramps is in the center of the crosswalk of each street corner. Where it is necessary to locate a curb ramp in the center of the curb return, the street surfaces shall be marked to identify pedestrian crosswalks, and the lower end of the curb ramp shall terminate within such crosswalk areas. Curb ramps do not require handrails.

**1112A.2 Obstructions.** Curb ramps shall be located or protected to prevent obstruction by parked cars. Built-up curb ramps shall be located so that they do not project into vehicular traffic lanes, parking spaces, or the adjacent loading and unloading access aisle.

**1112A.3 Width of curb ramps.** Curb ramps shall be a minimum of 48 inches (1219 mm) in width.

**1112A.4 Diagonal curb ramps.** If diagonal (or corner-type) curb ramps have returned curbs or other well-defined edges, such edges shall be parallel to the direction of pedestrian flow. The bottom of diagonal curb ramps shall have a 48-inch (1219 mm) minimum clear space as shown in Figures 11A-3A through 11A-3L. If diagonal curb ramps are provided at marked crossings, the 48-inch (1219 mm) clear space shall be within the markings (see Figures 11A-3A through 11A-3L). If diagonal curb ramps have flared sides, they shall also have at least a 24-inch-long (610 mm) segment of straight curb located on each side of the curb ramp and within the marked crossing. See Figures 11A-3A through 11A-3L.

**1112A.5 Slope of curb ramps.** The slope of curb ramps shall not exceed 1 unit vertical to 12 units horizontal (8.33-percent slope) and shall lie, generally, in a single sloped plane. Transitions from ramps to walks, gutters or streets shall be flush and free of abrupt changes. Maximum slopes of adjoining gutters, road surface immediately adjacent to the curb ramp, or accessible route shall not exceed 1 unit vertical to 20 units horizontal (5-percent slope) within 4 feet (1219 mm) of the top and bottom of the curb ramp.

If a curb ramp is located where pedestrians must walk across the ramp, then it shall have flared sides; the maximum slope of the flare shall be 1 unit vertical in 10 units horizontal (10-percent slope). Curb ramps with returned curbs may be

used where pedestrians would not normally walk across the ramp. See Figures 11A-3A through 11A-3L.

**1112A.6 Level landing.** A level landing 48 inches (1219 mm) deep shall be provided at the upper end of each curb ramp over its full width to permit safe egress from the ramp surface, or the slope of the flared or flared sides of the curb ramp, shall not exceed 1 unit vertical to 12 units horizontal (8.33-percent slope).

**1112A.7 Finish.** The surface of each curb ramp and its flared sides shall be stable, firm and slip-resistant and shall be of contrasting finish from that of the adjacent sidewalk.

**1112A.8 Border.** All curb ramps shall have a grooved border 12 inches (305 mm) wide at the level surface of the sidewalk along the top and each side approximately  $\frac{3}{4}$  inch (19 mm) on center. All curb ramps constructed between the face of the curb and the street shall have a grooved border at the level surface of the sidewalk. See Figures 11A-3A through 11A-3K.

**1112A.9 Detectable warnings.** See Chapter 11B.

## SECTION 1113A WALKS AND SIDEWALKS ON ACCESSIBLE ROUTES

**1113A.1 Width and continuous surface.** Walks and sidewalks subject to this chapter shall have a continuous common surface, not interrupted by steps or by abrupt changes in level exceeding  $\frac{1}{2}$  inch (12.7 mm). (See Section 1111A).

Walking surfaces shall be stable, firm, and slip resistant, and shall comply with Section 1110A.3.

**1113A.1.1 Width.** Walks and sidewalks shall be a minimum of 48 inches (1219 mm) in width, except that walks serving an individual dwelling unit in covered multifamily buildings may be reduced to 36 inches (914 mm) in clear width except at doors.

**1113A.1.2 Surface cross slopes.** Surface cross slopes shall not exceed 1 unit vertical in 48 units horizontal (2.083-percent slope).

**1113A.2 Walks with continuous gradients.** All walks on an accessible route with continuous gradients shall have level areas at least 60 inches (1524 mm) in length at intervals of at least every 400 feet (122 m).

**1113A.3 Five percent gradient.** When the slope in the direction of travel of any walk on an accessible route exceeds 1 unit vertical in 20 units horizontal (5-percent slope), it shall comply with the ramp provisions of Section 1114A.

**1113A.4 Level areas.** Walks on an accessible route shall be provided with a level area at each side of a door or gate. Level areas shall comply with the applicable requirements for maneuvering clearances in Section 1126A.3.

**1113A.5 Gratings.** Walks, sidewalks and pedestrian ways on an accessible route shall be free of gratings whenever possible. Gratings located in the surface of any of these areas, grid openings in gratings shall be limited to  $\frac{1}{2}$  inch (12.7 mm) in the direction of traffic. Elongated openings in gratings shall be placed so that the long dimension is perpendicular to the dominant direction of traffic.

### Exceptions:

1. Where the enforcement agency determines that compliance with this section would create an unreason-

able hardship, an exception may be granted when equivalent facilitation is provided.

2. This section shall not apply in those conditions where, due to legal or physical constraints, all or portions of the site of the project will not allow compliance with these building standards or equivalent facilitation on all or portions of one site without creating an unreasonable hardship.

**1113A.6 Handrails.** Handrails provided along walking surfaces with running slopes not steeper than one unit vertical in 20 units horizontal (5-percent slope) shall comply with Section 1114A.6.

**SECTION 1114A  
EXTERIOR RAMPS AND LANDINGS  
ON ACCESSIBLE ROUTES**

**1114A.1 Width.** The clear width of ramps shall be consistent with the requirements in Chapter 10 of this code, but in no case shall be less than 48 inches (1219 mm)

Handrails may project into the required clear width of the ramp at each side 3 1/2 inches (89 mm) maximum at the handrail height. Curbs, wheel guides and/or appurtenances shall not project into the required clear width of ramps.

**Exception:** The clear width of ramps serving accessible entrances to covered multifamily dwellings with an occupant load of 10 or less may be 36 inches (914 mm) minimum between handrails.

**Note:** See Section 1114A.6.2.4 for handrail projections.

**1114A.2 Slope.** The maximum slope of ramps on an accessible route shall be no greater than 1 unit vertical in 12 units horizontal (8.33-percent slope). Transitions from ramps to walks, gutters or streets shall be flush and free of abrupt changes.

**Exception:** Ramps serving decks, patios or balconies as specified in Section 1132A.4.

**1114A.2.1 Cross slope.** The cross slope of ramp surfaces shall be no greater than 1 unit vertical in 48 units horizontal (2.083-percent slope).

**1114A.3 Outdoor ramps.** Outdoor ramps, ramp landings and their approaches shall be designed so that water will not accumulate on the walking surface.

**1114A.4 Landings.** Ramp landings shall be level and comply with this section.

**1114A.4.1 Location of landings.** Landings shall be provided at the top and bottom of each ramp. Intermediate landings shall be provided at intervals not exceeding 30 inches (762 mm) of vertical rise and at each change of direction. Landings are not considered in determining the maximum horizontal distance of each ramp.

**Note:** Examples of ramp dimensions are:

SLOPE (Grading %)	MAXIMUM RISE (Inches)	MAXIMUM HORIZONTAL PROJECTION (Feet)
	(x 25.4 for mm)	(x 304.8 for mm)
1:12 (8.33%)	30	30
1:15 (6.67%)	30	37.5
1:16 (6.25%)	30	40
1:20 (5.00%)	30	50

**1114A.4.2 Size of top landings.** Top landings shall not be less than 60 inches (1524 mm) wide. Top landings shall have a minimum length of not less than 60 inches (1524 mm) in the direction of the ramp run. See Section 1126A.3 for maneuvering clearances at doors.

**1114A.4.3 Size of bottom and intermediate landings.** The minimum width of bottom and intermediate landings shall not be less than the width of the ramp.

Intermediate landings shall have a length in the direction of ramp run of not less than 60 inches (1524 mm). Bottom landings shall have a length in the direction of ramp run of not less than 72 inches (1829 mm).

**1114A.4.4 Encroachment of doors.** Doors in any position shall not reduce the minimum dimension of the landing to less than 42 inches (1067 mm) and shall not reduce the required width by more than 3 inches (76.2 mm) when fully open. (See Figure 11A-6D).

**1114A.4.5 Strike edge extension.** The width of the landing shall comply with Section 1126A.3 for strike edge extension and maneuvering clearance at doors.

Where doorways are located adjacent to a ramp landing, maneuvering clearance required by Section 1126A.3 shall be permitted to overlap the required landing area.

**1114A.4.6 Change of direction.** Intermediate landings at a change of direction shall be sized to provide 60 inches turning space complying with Section 1138A.1.3. Intermediate landings at a change of direction in excess of 30 degrees shall have a length in the direction of ramp run of not less than 72 inches (1829 mm). (See Figures 11A-6C and 11A-6D.)

**1114A.5 Ramp height.** Ramps more than 30 inches (762 mm) above the adjacent floor or ground and open on one or both sides shall be provided with guardrails as required by Section 1013. Guardrails shall be continuous from the top of the ramp to the bottom of the ramp.

**1114A.6 Ramp handrails.**

**1114A.6.1 Where required.** Handrails shall be provided at each side of ramps when the slope exceeds 1 unit vertical in 20 units horizontal (5-percent slope).

**Exceptions:**

1. Curb ramps.
2. Ramps that serve an individual dwelling unit may have one handrail, except that ramps open on one or both sides shall have handrails provided on the open side or sides.
3. Ramps at exterior door landings with less than 6 inches (152 mm) rise or less than 72 inches (1829 mm) in length.

**1114A.6.2 Handrail configuration.**

**1114A.6.2.1 Handrail heights.** The top of handrails shall be 34 to 38 inches (864 to 965 mm) above the ramp surface.

**1114A.6.2.2 Handrail continuity.** Handrails on all ramps shall be continuous within the full length of each ramp run. Inside handrails on switchback or dogleg ramps shall be continuous between ramp runs.



3. Secondary exterior doors onto decks, patios or balcony surfaces constructed of impervious materials (e.g., concrete, brick, flagstone) may have a maximum change in height from the interior landing of 4 inches (101.6 mm). Changes in height greater than  $\frac{1}{2}$  inch (12.7 mm) shall be accomplished by means of a ramp complying with Section 1114A or by means of a platform constructed to the level of the floor as illustrated in Figure 11A-8J.
4. Secondary exterior doors onto decks, patios or balcony surfaces constructed of impervious materials (e.g., concrete, brick, flagstone) may have a maximum change in height from the interior landing of 1 inch (25.4 mm), provided a ramp with a maximum slope of 1:8 is permanently installed. (See Figure 11A-8K.)
5. In buildings containing covered multifamily dwelling units, the floor or landing immediately outside the entry may be sloped up to  $\frac{1}{4}$  inch (6.35 mm) per foot (12 inches) (305 mm), in a direction away from the primary entrance of the dwelling unit for drainage.

**1132A.4.1 Thresholds.** Thresholds at the primary entry and required exit doors shall be no higher than  $\frac{1}{2}$  inch (12.7 mm). Thresholds at secondary exterior doors, including sliding door tracks, shall be no higher than  $\frac{3}{4}$  inch (19.05 mm). Changes in height at interior door thresholds (e.g., floor material changes at door thresholds) shall not exceed  $\frac{1}{2}$  inch (12.7 mm). Thresholds shall comply with the following:

1. Thresholds with a change in height of not more than  $\frac{1}{4}$  inch (6.35 mm) may be vertical.
2. Thresholds with a change in height between  $\frac{1}{4}$  inch (6.35 mm) and  $\frac{3}{4}$  inch (19.05 mm) shall be beveled with a slope no greater than 1 unit vertical in 2 units horizontal (50-percent slope).

#### 1132A.5 Maneuvering clearances at doors.

**1132A.5.1 General.** The floor or landing on the dwelling unit side of the primary entry door and any required exit door shall have a minimum length of not less than 44 inches (1118 mm). Section 1126A.3 shall apply to maneuvering clearances at the side of the door exposed to common or public use spaces.

Maneuvering clearances at interior doors shall provide a minimum length on both sides of the door of at least 42 inches (1067 mm) measured at a right angle to the plane of the door in its closed position.

**Exception:** A 39-inch (991 mm) length is acceptable at interior doors when a minimum clear opening width of 34 inches (864 mm) is provided.

**1132A.5.2 Strike edge maneuvering space at doors.** The width of the level area on the side to which the door swings shall extend 18 inches (457 mm) past the strike edge for all doors. The width of the level area at the exterior side of the primary entry door and any required exit doors shall comply with Section 1126A.

#### Notes:

1. See Section 1134A for bathrooms that are required to be accessible.
2. Twenty-four inches (610 mm) is preferred for strike edge clearance.

**1132A.6 Closer-effort to operate doors.** Maximum effort to operate doors shall not exceed 8  $\frac{1}{2}$  pounds (38 N) for exterior doors and 5 pounds (22 N) for interior doors, such pull or push effort being applied at right angles to hinged doors and at the center plane of sliding or folding doors. Compensating devices or automatic door operators may be utilized to meet these standards. When fire doors are required, the maximum effort to operate the door may be increased to the minimum allowable by the appropriate enforcement agency, not to exceed 15 pounds (66.7 N).

**1132A.7 Type of lock or latch.** The type of latch and lock required for all doors shall be in accordance with Section 1132A.8 and Chapter 10, Section 1010.

**1132A.8 Hand-activated door hardware.** Hand-activated door latching, locking and opening hardware shall be centered between 30 inches (762 mm) and 44 inches (1118 mm) above the floor. Latching and locking doors that are hand-activated and on an accessible route shall be operable with a single effort by lever-type hardware, panic bars, push-pull activating bars or other hardware designed to provide passage without requiring the ability to grasp the opening hardware. Locked exit doors shall operate consistent with Section 1132A.6, in the direction of egress.

**1132A.8.1 Lever-type hardware.** The lever or lever of actuated latches or locks shall be curved with a return to within  $\frac{1}{2}$  inch (12.7 mm) of the door to prevent catching on the clothing of persons during egress in Group R and U occupancies with an occupant load greater than 10.

**1132A.9 Smooth surface.** Swinging door or gate surfaces within 10 inches (254 mm) of the finish floor or ground measured vertically shall have a smooth surface on the push side extending the full width of the door or gate. Parts creating horizontal or vertical joints in these surfaces shall be within  $\frac{1}{16}$  inch (1.6 mm) of the same plane as the other and be free of sharp or abrasive edges. Cavities created by added kick plates shall be capped.

#### Exceptions:

1. Automatic doors.
2. Tempered glass doors without stiles and having a bottom rail or shoe with the top leading edge tapered at 60 degrees minimum from the horizontal.
3. Doors or gates that do not extend to within 10 inches (254 mm) of the finish floor.

**1132A.10 Door signal devices.** Every primary entrance to a covered multifamily dwelling unit shall be provided with a door buzzer, bell, chime or equivalent. The activating mechanism shall be mounted a maximum of 48 inches (1219 mm) above the floor and connected to permanent wiring.

## SECTION 1133A KITCHENS

**1133A.1 General.** Kitchens shall be on an accessible route and shall comply with this section. (See Figure 11A-10A.)

**1133A.2 Clear floor space.** Clear floor space at kitchens shall comply with the following:

1. A clear floor space at least 30 inches (762 mm) by 48 inches (1219 mm) that allows a parallel approach by a

person in a wheelchair shall be provided at the range or cooktop.

2. A clear floor space at least 30 inches (762 mm) by 48 inches (1219 mm) that allows either a parallel or forward approach shall be provided at the kitchen sink and all other fixtures or appliances including the oven, dishwasher, refrigerator/freezer and trash compactor.
3. A clear floor space at least 30 inches (762 mm) by 48 inches (1219 mm) that allows either a parallel or a forward approach shall be provided at the work surface required by Section 1133A.4.
4. The centerline of the 30-inch (762 mm) by 48-inch (1219 mm) clear floor space provided for parallel or forward approach shall be aligned with the centerline of the work surface, appliance or fixture.

**1133A.2.1 Clear width.** Kitchens shall have a minimum clear width measured between any cabinet, countertop or the face of any appliance (excluding handles and controls) that projects into the kitchen and the opposing cabinet, countertop, appliance or wall as follows:

1. U-shaped kitchens, designed with parallel approach at a range or cooktop located at the base of the U, shall have a minimum clear width of at least 60 inches (1524 mm). (See Figure 11A-10A.)
2. U-shaped kitchens, designed with a cooktop or sink located at the base of the U, which provides a knee and toe space in accordance with Section 1133A.7 to allow for a forward approach, shall have a clear width of at least 48 inches (1219 mm). (See Figure 11A-10A.)
3. All other kitchen designs shall provide a minimum clear width of at least 48 inches (1219 mm). (See Figure 11A-10A.)

**1133A.3 Removable base cabinets.** Sinks and work surfaces required by Section 1133A.4 (see Item 1 and Item 2) shall be provided with knee and toe space complying with Section 1133A.7. Base cabinets (including toeboard and shelving) directly under kitchen sinks and work surfaces shall be removable without the use of specialized tools or specialized knowledge in order to provide knee and toe space. The finish floor beneath kitchen sinks and work surfaces shall be extended to the wall.

**1133A.4 Countertops.** Kitchen countertops shall comply with this section and shall be provided with the following:

1. A minimum linear length of 30 inches (762 mm) of countertop shall be provided for the kitchen sink installation.
2. A minimum linear length of 30 inches (762 mm) of countertop shall be provided for a work surface.
3. Sinks and work surfaces may be a single integral unit a minimum of 60 inches (1524 mm) in length, or be separate components.

**Exception:** Two 15-inch (381 mm) wide minimum breadboards may be provided in lieu of the required 30 inches (762 mm) of countertop work surface.

**1133A.4.1 Repositionable countertops.** Repositionable countertops shall be provided in a minimum of 5 percent of the covered multifamily dwelling units. Repositionable countertops shall comply with the following:

1. Sinks and work surfaces required by Section 1133A.4 shall be designed to enable repositioning to a minimum height of 28 inches (711 mm).
2. Base cabinets directly under sinks and work surfaces shall be removable as required in Section 1133A.3.
3. The sides of adjacent cabinets and the back wall, which may become exposed to moisture or food handling when a countertop is lowered, shall be constructed of durable, nonabsorbent materials appropriate for such uses.
4. Finished flooring shall be extended to the wall beneath the sink and work surface.

**Exceptions:**

1. Stone, cultured stone and tiled countertops may be used without meeting the repositioning requirements.
2. Two 15-inch (381 mm) wide minimum breadboards may be provided in lieu of the required 30 inches (762 mm) of countertop work surface, and used without meeting the repositioning requirements.

**1133A.5 Lower shelving.** Lower shelving and/or drawer space shall be provided in the kitchen at a height of no more than 48 inches (1219 mm) above the floor.

**1133A.6 Kitchen sink faucet controls.** Faucet controls and operating mechanisms shall be operable with one hand and shall not require tight grasping, pinching or twisting of the wrist.

The force required to activate controls shall be no greater than 5 pounds (22.2N). Lever-operated, push-type and electronically controlled mechanisms are examples of acceptable designs. Self-closing valves are allowed if the faucet remains open for at least 10 seconds.

**1133A.7 Knee and toe space.** Knee and toe space, when required by Section 1133A, shall comply with Section 1138A.2 and the following:

1. The knee and toe space shall be clear and unobstructed, or removable base cabinets in compliance with Section 1133A.3 shall be provided.
2. The knee and toe space shall be 30 inches (762 mm) wide minimum, centered on the sink, countertop or appliance.
3. A clear floor space shall not extend into the knee and toe space more than 19 inches (483 mm).

**1133A.7.1 Plumbing protection.** Water supply and drain pipes under kitchen sinks shall be insulated or otherwise covered to protect against contact. There shall be no sharp or abrasive surfaces under kitchen sinks.

open outward. Glazing used in doors and panels of shower enclosures shall be fully tempered, laminated safety glass or approved plastic. When glass is used, it shall have minimum thickness of not less than  $\frac{1}{8}$  inch (3.17 mm) when fully tempered, or  $\frac{1}{4}$  inch (6.35 mm) when laminated, and shall pass the test requirements of this part, Chapter 24, Glass and Glazing. Plastics used in doors and panels of shower enclosures shall be of a shatter-resistant type.

**1134A.7 Water closets.** Water closets in bathrooms or powder rooms required to be accessible shall comply with this section.

1. **Floor space and location.** The minimum floor space provided at a water closet shall be 48 inches (1219 mm) in clear width. The clear floor space shall extend past the front edge of the water closet at least 36 inches (914 mm). See Figure 11A-9M.

**Exception:** The 48-inch (1219 mm) minimum clear width may be reduced to 36 inches (914 mm) for lavatories, cabinets, wing walls or privacy walls located immediately adjacent to a water closet which extend no more than 24 inches (610 mm) in depth.

Water closets shall be located within bathrooms in a manner that permits a grab bar to be installed on at least one side of the fixture. The centerline of the water closet shall be 17 inches (432 mm) minimum to 18 inches (457 mm) maximum from a grab bar wall or partition. In locations where water closets are adjacent to non-grab bar walls, vanities, lavatories or bathtubs, the centerline of the fixture shall be a minimum of 18 inches (457 mm) from the obstacle.

2. **Reinforced walls for grab bars.** Where the water closet is not placed adjacent to a side wall capable of accommodating a grab bar, the bathroom shall have provisions for installation of floor-mounted, foldaway or similar alternative grab bars.

Where the water closet is placed adjacent to a side wall, reinforcement shall be installed on both sides or one side and the back. If reinforcement is installed at the back, it shall be installed between 32 inches (813 mm) and 38 inches (965 mm) above the floor. The grab bar reinforcement shall be a minimum of 6 inches (152.4 mm) nominal in height. The backing shall be a minimum of 40 inches (1016 mm) in length.

Reinforcement installed at the side of the water closet shall be installed 32 inches to 38 inches (813 mm to 965 mm) above the floor. The reinforcement shall be installed a maximum of 12 inches (305 mm) from the rear wall and shall extend a minimum of 26 inches (660 mm) in front of the water closet. The grab bar reinforcement shall be a minimum of 6 inches (152.4 mm) nominal in height.

3. **Seat height.** The minimum height of water closet seats shall be 15 inches (381 mm) above the floor.

4. **Water closet controls.** Water closet controls shall be mounted no more than 44 inches (1118 mm) above the floor. The force required to activate controls shall be no greater than 5 pounds (22.2 N).

**1134A.8 Lavatories, vanities, mirrors and towel fixtures.** Bathrooms or powder rooms required to be accessible shall have at least one accessible lavatory. Where mirrors and towel fixtures are provided, at least one of each shall be accessible.

1. **Location.** Vanities and lavatories shall be installed with the centerline of the fixture a minimum of 18 inches (457 mm) horizontally from an adjoining wall or fixture to allow for forward approach. When parallel approach is provided, lavatories shall be installed with the centerline of the fixture a minimum of 24 inches (610 mm) horizontally from an adjoining wall or fixture. The top of the fixture rim shall be a maximum of 34 inches (864 mm) above the finished floor.
2. **Floor space.** A clear maneuvering space at least 30 inches by 48 inches (762 mm by 1219 mm) shall be provided at lavatories and shall be centered on the lavatory.
3. **Cabinets.** Cabinets under lavatories are acceptable provided the bathroom has space to allow a parallel approach by a person in a wheelchair and the lavatory cabinets are designed with adaptable knee and toe space.
4. **Knee and toe space.** Knee and toe space shall be provided by one of the following:
  - 4.1. The space beneath the lavatory shall be left clear and unobstructed;
  - 4.2. Any cabinet beneath the lavatory shall be removable without the use of specialized knowledge or specialized tools; or
  - 4.3. Doors to the cabinet beneath the lavatory shall be removable or openable to provide the required unobstructed knee and toe space.
 

The knee and toe space shall be centered on the fixture, and shall comply with Section 1138A.2. The clear floor space required by Item 2 shall not extend into the knee and toe space more than 19 inches (483 mm). (See Figure 11A-9D.)
5. **Finished floor.** The finished floor beneath the lavatory shall be extended to the wall.
6. **Plumbing protection.** Water supply and drain pipes under lavatories shall be insulated or otherwise covered to protect against contact. There shall be no sharp or abrasive surfaces under lavatories.
7. **Lavatory faucet controls.** Faucet controls and operation mechanisms shall be operable with one hand and shall not require tight grasping, pinching or twisting of the wrist.

The force required to activate controls shall be no greater than 5 pounds (22.2 N). Lever operated, push-type and electronically controlled mechanisms are examples of acceptable designs. Self-closing valves are allowed if the faucet remains open for at least 10 seconds.

8. Mirrors and towel fixtures. Where mirrors or towel fixtures are provided they shall be mounted with the bottom edge no higher than 40 inches (1016 mm) from the floor.

### SECTION 1135A LAUNDRY ROOMS

**1135A.1 General.** If clothes washing machines and clothes dryers are provided in covered multifamily dwelling units, one of each type of appliance shall be provided. Where front-loading clothes washers are not provided, management shall provide assistive devices, on request of the occupant, to permit the use of top-loading clothes washers.

### SECTION 1136A ELECTRICAL RECEPTACLE, SWITCH AND CONTROL HEIGHTS

**1136A.1 Receptacle heights.** Electrical receptacle outlets on branch circuits of 30 amperes or less and communication system receptacles shall be located no more than 48 inches (1219 mm) measured from the top of the receptacle outlet box nor less than 15 inches (381 mm) measured from the bottom of the receptacle outlet box to the level of the finished floor or working platform. If the reach is over a physical barrier or an obstruction (for example, a kitchen base cabinet), receptacles shall be located within the reach ranges specified in Section 1138A.3. Physical barriers and obstructions shall not extend more than 25 inches (635 mm) from the wall beneath the receptacle. Countertops shall be allowed to extend 25½ inches (647.7 mm) from the wall beneath the receptacle.

Receptacle outlets that do not satisfy these specifications are acceptable provided that comparable receptacle outlets,

that perform the same functions, are provided within the same area and are accessible.

#### Exceptions:

1. Receptacle outlets installed as part of permanently installed baseboard heaters are exempt.
2. Required receptacle outlets shall be permitted in floors when adjacent to sliding panels or walls.
3. Baseboard electrical outlets used in relocatable partitions, window walls or other electrical convenience floor outlets are not subject to the minimum height requirements.
4. This section shall not apply to existing buildings when the enforcing agency determines that compliance with these standards would create an unreasonable hardship.

**1136A.2 Switch and control heights.** Controls or switches intended to be used by the occupant of the room or area to control lighting and receptacle outlets, appliances, alarms or cooling, heating and ventilating equipment shall be located no more than 48 inches (1219 mm) measured from the top of the outlet box nor less than 15 inches (381 mm) measured from the bottom of the outlet box to the level of the finished floor or working platform. If the reach is over a physical barrier or an obstruction (for example, a kitchen base cabinet) switches and controls shall be located within the reach ranges specified in Section 1138A.3. Physical barriers or obstructions shall not extend more than 25 inches (635 mm) from the wall beneath a control or switch. Countertops shall be allowed to extend 25½ inches (647.7 mm) from the wall beneath a control or switch.

Switches and controls that do not satisfy these specifications are acceptable provided that comparable controls or outlets, that perform the same functions, are provided within the same area and are accessible.

**Exception:** Appliances (e.g., kitchen stoves, dishwashers, range hoods, microwave ovens and similar appliances) which have controls located on the appliance.

work of the project and shall not be required to comply with Section 11B-202.4:

1. Altering one building entrance.
  2. Altering one existing toilet facility.
  3. Altering existing elevators.
  4. Altering existing steps.
  5. Altering existing handrails.
4. Alterations solely for the purpose of barrier removal undertaken pursuant to the requirements of the Americans with Disabilities Act (Public Law 101-336, 28 C.F.R., Section 36.304) or the accessibility requirements of this code as those requirements or regulations now exist or are hereafter amended including, but not limited to, one or more of the following items shall be limited to the actual scope of work of the project and shall not be required to comply with Section 11B-202.4:
1. Installing ramps.
  2. Making curb cuts in sidewalks and entrance.
  3. Repositioning shelves.
  4. Rearranging tables, chairs, vending machines, display racks, and other furniture.
  5. Repositioning telephones.
  6. Adding raised markings on elevator control buttons.
  7. Installing flashing alarm lights.
  8. Widening doors.
  9. Installing offset hinges to widen doorways.
  10. Eliminating a turnstile or providing an alternative accessible route.
  11. Installing accessible door hardware.
  12. Installing grab bars in toilet stalls.
  13. Rearranging toilet partitions to increase maneuvering space.
  14. Insulating lavatory pipes under sinks to prevent burns.
  15. Installing a raised toilet seat.
  16. Installing a full-length bathroom mirror.
  17. Repositioning the paper towel dispenser in a bathroom.
  18. Creating designated accessible parking spaces.
  19. Removing high-pile, low-density carpeting.
5. Alterations of existing parking lots by resurfacing and/or restriping shall be limited to the actual scope of work of the project and shall not be required to comply with Section 11B-202.4.
6. The addition or replacement of signs and/or identification devices shall be limited to the actual scope of work of the project and shall not be required to comply with Section 11B-202.4.
7. Projects consisting only of heating, ventilation, air conditioning, reroofing, electrical work not involving placement of switches and receptacles, cosmetic work that does not affect items regulated by this code, such as painting, equipment not considered to be a part of the architecture of the building or area, such as com-

puter terminals and office equipment shall not be required to comply with Section 11B-202.4 unless they affect the usability of the building or facility.

8. When the adjusted construction cost, as defined, is less than or equal to the current valuation threshold, as defined, the cost of compliance with Section 11B-202.4 shall be limited to 20 percent of the adjusted construction cost of alterations, structural repairs or additions. When the cost of full compliance with Section 11B-202.4 would exceed 20 percent, compliance shall be provided to the greatest extent possible without exceeding 20 percent.

When the adjusted construction cost, as defined, exceeds the current valuation threshold, as defined, and the enforcing agency determines the cost of compliance with Section 11B-202.4 is an unreasonable hardship, as defined, full compliance with Section 11B-202.4 shall not be required. Compliance shall be provided by equivalent facilitation or to the greatest extent possible without creating an unreasonable hardship; but in no case shall the cost of compliance be less than 20 percent of the adjusted construction cost of alterations, structural repairs or additions. The details of the finding of unreasonable hardship shall be recorded and entered into the files of the enforcing agency and shall be subject to Chapter 1, Section 1.9.1.5, Special Conditions for Persons with Disabilities Requiring Appeals Action Ratification.

For the purposes of this exception, the adjusted construction cost of alterations, structural repairs or additions shall not include the cost of alterations to path of travel elements required to comply with Section 11B-202.4.

In choosing which accessible elements to provide, priority should be given to those elements that will provide the greatest access in the following order:

1. An accessible entrance;
2. An accessible route to the altered area;
3. At least one accessible restroom for each sex or one accessible unisex (single-user or family) restroom;
4. Accessible telephones;
5. Accessible drinking fountains; and
6. When possible, additional accessible elements such as parking, signs, storage and alarms.

If an area has been altered without providing an accessible path of travel to that area, and subsequent alterations of that area or a different area on the same path of travel are undertaken within three years of the original alteration, the total cost of alterations to the areas on that path of travel during the preceding three-year period shall be considered in determining whether the cost of making that path of travel accessible is disproportionate.

9. Certain types of privately funded, multistory buildings and facilities were formerly exempt from accessibility requirements above and below the first floor under this code, but as of April 1, 1994 are no longer exempt due to more restrictive provisions in the

federal Americans with Disabilities Act. In alteration projects involving buildings and facilities previously approved and built without elevators, areas above and below the ground floor are subject to the 20-percent disproportionality provisions described in Exception 8, above, even if the value of the project exceeds the valuation threshold in Exception 8. The types of buildings and facilities are:

1. Office buildings and passenger vehicle service stations of three stories or more and 3,000 or more square feet (279 m<sup>2</sup>) per floor.
2. Offices of physicians and surgeons.
3. Shopping centers.
4. Other buildings and facilities three stories or more and 3,000 or more square feet (279 m<sup>2</sup>) per floor if a reasonable portion of services sought and used by the public is available on the accessible level.

For the general privately funded multistory building exception applicable to new construction and alterations, see Section 11B-206.2.3, Exception 1.

The elevator exception set forth in this section does not obviate or limit in any way the obligation to comply with the other accessibility requirements in this code. For example, floors above or below the accessible ground floor must meet the requirements of this section except for elevator service. If toilet or bathing facilities are provided on a level not served by an elevator, then toilet or bathing facilities must be provided on the accessible ground floor.

10. Alterations solely for the purpose of installing electric vehicle charging stations (EVCS) at facilities where vehicle fueling, recharging, parking or storage is a primary function shall comply with Section 11B-202.4 to the maximum extent feasible without exceeding 20 percent of the cost of the work directly associated with the installation of EVCS. A "primary function" is a major activity for which the facility is intended.

Alterations solely for the purpose of installing EVCS at facilities where vehicle fueling, recharging, parking or storage is not a primary function shall not be required to comply with Section 11B-202.4

**11B-202.5 Alterations to qualified historic buildings and facilities.** Alterations to a qualified historic building or facility shall comply with the State Historical Building Code, Part 8, Title 24, of the California Code of Regulations.

**Exception: Reserved.**

### 11B-203 General exceptions

**11B-203.1 General.** Sites, buildings, facilities, and elements are exempt from these requirements to the extent specified by 11B-203.

**11B-203.2 Construction sites.** Structures and sites directly associated with the actual processes of construction, including but not limited to, scaffolding, bridging, materials hoists, materials storage and construction trailers shall not be required to comply with these requirements or to be on an accessible route. Portable toilet units provided for use exclu-

sively by construction personnel on a construction site shall not be required to comply with Section 11B-213 or to be on an accessible route.

**11B-203.3 Raised areas.** Areas raised primarily for purposes of security, life safety, or fire safety, including but not limited to, observation or lookout galleries, prison guard towers, fire towers or life guard stands shall not be required to comply with these requirements or to be on an accessible route.

**11B-203.4 Limited access spaces.** Spaces not customarily occupied and accessed only by ladders, catwalks, crawl spaces or very narrow passageways shall not be required to comply with these requirements or to be on an accessible route.

**11B-203.5 Machinery spaces.** Spaces frequented only by service personnel for maintenance, repair or occasional monitoring of equipment shall not be required to comply with these requirements or to be on an accessible route. Machinery spaces include, but are not limited to, elevator pits or elevator penthouses; mechanical, electrical or communications equipment rooms; piping or equipment catwalks; water or sewage treatment pump rooms and stations; electric substations and transformer vaults; and highway and tunnel utility facilities.

**11B-203.6 Single occupant structures.** Single occupant structures accessed only by passageways below grade or elevated above standard curb height, including but not limited to, toll booths that are accessed only by underground tunnels, shall not be required to comply with these requirements or to be on an accessible route.

**11B-203.7 Detention and correctional facilities.** In detention and correctional facilities, common use areas that are used only by inmates or detainees and security personnel and that do not serve holding cells or housing cells required to comply with Section 11B-232, shall not be required to comply with these requirements or to be on an accessible route.

**11B-203.8 Residential facilities.** In residential facilities, common use areas that do not serve residential dwelling units required to provide mobility features complying with Sections 11B-809.2 through 11B-809.4 or adaptable features complying with Sections 11B-809.6 through 11B-809.12 shall not be required to comply with these requirements or to be on an accessible route.

**11B-203.9 Employee workstations.** Employee workstations shall be on an accessible route complying with Division 4. Spaces and elements within employee workstations shall only be required to comply with Sections 11B-207.1, 11B-215.3, 11B-302, 11B-303, 11B-308.1.1, 11B-308.1.2, and 11B-404.2.3 unless exempted by other parts of this code. Common use circulation paths within employee workstations shall comply with Section 11B-206.2.8.

**Exception:** Receptacles, controls, and switches that are an integral part of workstation furnishings, fixtures, and equipment shall not be required to comply with Sections 11B-308.1.1 and 11B-308.1.2.

**11B-203.10 Raised refereeing, judging and scoring areas.** Raised structures used solely for refereeing, judging or scoring a sport shall not be required to comply with these requirements or to be on an accessible route. An accessible route complying with Division 4 shall be provided to the ground- or floor-level entry points, where provided, of stairs, ladders, or other means of reaching the raised elements or areas.

**11B-203.11 Water slides.** Water slides shall not be required to comply with these requirements or to be on an accessible route. *An accessible route complying with Division 4 shall be provided to the ground- or floor-level entry points, where provided, of stairs, ladders or other means of reaching the raised elements or areas.*

**11B-203.12 Animal containment areas.** Animal containment areas that are not for public use shall not be required to comply with these requirements or to be on an accessible route. *Animal containment areas for public use shall be on an accessible route.*

**11B-203.13 Raised boxing or wrestling rings.** Raised boxing or wrestling rings shall not be required to comply with these requirements or to be on an accessible route. *An accessible route complying with Division 4 shall be provided to the ground- or floor-level entry points, where provided, of stairs, ladders or other means of reaching the raised elements or areas.*

**11B-203.14 Raised diving boards and diving platforms.** Raised diving boards and diving platforms shall not be required to comply with these requirements or to be on an accessible route. *An accessible route complying with Division 4 shall be provided to the ground- or floor-level entry points, where provided, of stairs, ladders or other means of reaching the raised elements or areas.*

**11B-204 Protruding objects**

**11B-204.1 General.** Protruding objects on circulation paths shall comply with *Section 11B-307.*

**Exceptions:**

1. Within areas of sport activity, protruding objects on circulation paths shall not be required to comply with *Section 11B-307.*
2. Within play areas, protruding objects on circulation paths shall not be required to comply with *Section 11B-307* provided that ground level accessible routes provide vertical clearance in compliance with *Section 11B-1008.2.*

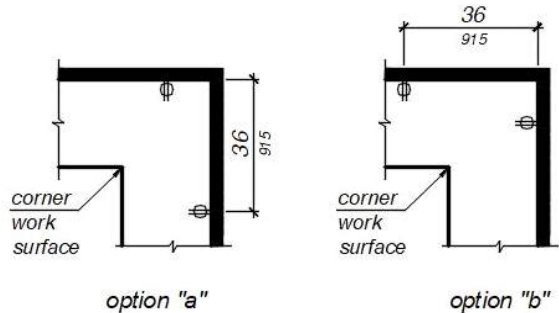
**11B-205 Operable parts**

**11B-205.1 General.** Operable parts on accessible elements, accessible routes, and in accessible rooms and spaces shall comply with *Section 11B-309.*

**Exceptions:**

1. Operable parts that are intended for use only by service or maintenance personnel shall not be required to comply with *Section 11B-309.*
2. Electrical or communication receptacles serving a dedicated use shall not be required to comply with *Section 11B-309.*
3. **Reserved.**
4. Floor electrical receptacles shall not be required to comply with *Section 11B-309.*
5. HVAC diffusers shall not be required to comply with *Section 11B-309.*
6. Except for light switches, where redundant controls are provided for a single element, one control in each space shall not be required to comply with *Section 11B-309.*

7. Cleats and other boat securement devices shall not be required to comply with *Section 11B-309.3.*
8. Exercise machines and exercise equipment shall not be required to comply with *Section 11B-309.*
9. *In residential dwelling units with mobility features where receptacles are provided in a kitchen at a corner work surface, one receptacle shall be located 36 inches (915 mm) from either wall at the inside corner.*



**FIGURE 11B-205.1 Ex. 9  
ELECTRICAL RECEPTACLES AT CORNER WORKSURFACES**

**11B-206 Accessible routes**

**11B-206.1 General.** Accessible routes shall be provided in accordance with *Section 11B-206* and shall comply with *Division 4.*

**11B-206.2 Where required.** Accessible routes shall be provided where required by *Section 11B-206.2.*

**11B-206.2.1 Site arrival points.** At least one accessible route shall be provided within the site from accessible parking spaces and accessible passenger *drop-off and loading zones*; public streets and sidewalks; and public transportation stops to the accessible building or facility entrance they serve. *Where more than one route is provided, all routes must be accessible.*

**Exceptions:**

1. *Reserved.*
2. An accessible route shall not be required between site arrival points and the building or facility entrance if the only means of access between them is a vehicular way not providing pedestrian access.
3. *General circulation paths shall be permitted when located in close proximity to an accessible route.*

**11B-206.2.2 Within a site.** At least one accessible route shall connect accessible buildings, accessible facilities, accessible elements, and accessible spaces that are on the same site.

**Exception:** An accessible route shall not be required between accessible buildings, accessible facilities, accessible elements, and accessible spaces if the only means of access between them is a vehicular way not providing pedestrian access.

**11B-206.2.3 Multistory buildings and facilities.** At least one accessible route shall connect each story and mezzanine in multistory buildings and facilities.

**Exceptions:**

1. *The following types of privately funded multi-story buildings do not require a ramp or elevator above and below the first floor:*

- 1.1. *Multistoried office buildings (other than the professional office of a health care provider) and passenger vehicle service stations less than three stories high or less than 3,000 square feet (279 m<sup>2</sup>) per story.*
- 1.2. *Any other privately funded multistoried building that is not a shopping center, shopping mall or the professional office of a health care provider, or a terminal, depot or other station used for specified public transportation, or an airport passenger terminal and that is less than three stories high or less than 3,000 square feet (279 m<sup>2</sup>) per story if a reasonable portion of all facilities and accommodations normally sought and used by the public in such a building are accessible to and usable by persons with disabilities.*

2. **Reserved.**

3. In detention and correctional facilities, an accessible route shall not be required to connect stories where cells with mobility features required to comply with *Section 11B-807.2*, all common use areas serving cells with mobility features required to comply with *Section 11B-807.2*, and all public use areas are on an accessible route.
4. In residential facilities, an accessible route shall not be required to connect stories where residential dwelling units with mobility features required to comply with *Sections 11B-809.2 through 11B-809.4*, *residential dwelling units with adaptable features complying with Sections 11B-809.6 through 11B-809.12*, all common use areas serving residential dwelling units with mobility features required to comply with *Sections 11B-809.2 through 11B-809.4*, *all common use areas serving residential dwelling units with adaptable features complying with Sections 11B-809.6 through 11B-809.12*, and public use areas serving residential dwelling units are on an accessible route.
5. Within multistory transient lodging guest rooms with mobility features required to comply with *Section 11B-806.2*, an accessible route shall not be required to connect stories provided that spaces complying with *Section 11B-806.2* are on an accessible route and sleeping accommodations for two persons minimum are provided on a story served by an accessible route.
6. In air traffic control towers, an accessible route shall not be required to serve the cab and *the equipment areas* on the floor immediately below the cab.

7. **Reserved.**

**11B-206.2.3.1 Stairs and escalators in existing buildings.** In alterations and additions, where an escalator or stair is provided where none existed previously and major structural modifications are necessary for the installation, an accessible route shall be provided between the levels served by the escalator or stair

unless exempted by *Section 11B-206.2.3 Exceptions 1 through 7*.

**11B-206.2.3.2 Distance to elevators.** In new construction of buildings where elevators are required by *Section 11B-206.2.3*, and which exceed 10,000 square feet (929 m<sup>2</sup>) on any floor, an accessible means of vertical access via ramp, elevator or lift shall be provided within 200 feet (60,960 mm) of travel of each stair and each escalator. In existing buildings that exceed 10,000 square feet (929 m<sup>2</sup>) on any floor and in which elevators are required by *Section 11B-206.2.3*, whenever a newly constructed means of vertical access is provided via stairs or an escalator, an accessible means of vertical access via ramp, elevator or lift shall be provided within 200 feet (60,960 mm) of travel of each new stair or escalator.

**Exception:** *Stairs used solely for emergency egress.*

**11B-206.2.4 Spaces and elements.** At least one accessible route shall connect accessible building or facility entrances with all accessible spaces and elements within the building or facility, *including mezzanines*, which are otherwise connected by a circulation path unless exempted by *Section 11B-206.2.3 Exceptions 1 through 7*.

**Exceptions:**

1. **Reserved.**
2. In assembly areas with fixed seating required to comply with *Section 11B-221*, an accessible route shall not be required to serve fixed seating where wheelchair spaces required to be on an accessible route are not provided.
3. **Reserved.**

**11B-206.2.5 Restaurants, cafeterias, banquet facilities and bars.** In *restaurants, cafeterias, banquet facilities, bars, and similar facilities*, an accessible route shall be provided to all *functional* areas, including raised or sunken areas, and outdoor areas.

**Exceptions:**

1. In *alterations of buildings* or facilities not required to provide an accessible route between stories, an accessible route shall not be required to a mezzanine dining area where the mezzanine contains less than 25 percent of the total combined area for seating and dining and where the same decor and services are provided in the accessible area.
2. **Reserved.**
3. In sports facilities, tiered dining areas providing seating required to comply with *Section 11B-221* shall be required to have accessible routes serving at least 25 percent of the dining area provided that accessible routes serve seating complying with *Section 11B-221* and each tier is provided with the same services.

**11B-206.2.6 Performance areas.** Where a circulation path directly connects a performance area to an assembly seating area, an accessible route shall directly connect the assembly seating area with the performance area. An accessible route shall be provided from performance areas



**11B-206.5.1 Entrances.** Each entrance to a building or facility required to comply with *Section 11B-206.4* shall comply with *Section 11B-404*.

**11B-206.5.2 Rooms and spaces.** Within a building or facility, *every door, doorway or gate serving rooms and spaces* complying with *this chapter* shall comply with *Section 11B-404*.

**11B-206.5.3 Transient lodging facilities.** In transient lodging facilities, entrances, doors, and doorways providing user passage into and within guest rooms that are not required to provide mobility features complying with *Section 11B-806.2* shall comply with *Section 11B-404.2.3*.

**Exception:** Shower and sauna doors in guest rooms that are not required to provide mobility features complying with *Section 11B-806.2* shall not be required to comply with *Section 11B-404.2.3*.

**11B-206.5.4 Residential dwelling units.** In residential dwelling units required to provide mobility features complying with *Sections 11B-809.2 through 11B-809.4*, all doors and doorways providing user passage shall comply with *Section 11B-404*.

**11B-206.6 Elevators.** Elevators provided for passengers shall comply with *Section 11B-407*. Where multiple elevators are provided, each elevator shall comply with *Section 11B-407*.

**Exceptions:**

1. In a building or facility permitted to use the exceptions to *Section 11B-206.2.3* or permitted by *Section 11B-206.7* to use a platform lift, elevators complying with *Section 11B-408* shall be permitted.
2. Elevators complying with *Section 11B-408* or *11B-409* shall be permitted in multistory residential dwelling units. *Elevators provided as a means of access within a private residence shall be installed so that they are not accessible to the general public or to other occupants of the building.*
3. *Destination-oriented elevators complying with Section 11B-411 shall be permitted.*

**11B-206.6.1 Existing elevators.** Where elements of existing elevators are altered, the same element shall also be altered in all elevators that are programmed to respond to the same hall call control as the altered elevator and shall comply with the requirements of *Section 11B-407* for the altered element.

**Exception:** *Where a group of existing elevators are altered into a destination-oriented elevator system, or where elements of existing destination-oriented elevators are altered, the same elements shall also be altered in all elevators that are programmed to respond to the same call console or group of call consoles and shall comply with the requirements of Section 11B-411 for the altered elements.*

**11B-206.7 Platform lifts.** Platform lifts shall comply with *Section 11B-410*. Platform lifts shall be permitted as a component of an accessible route in new construction in accordance with *Section 11B-206.7*. Platform lifts shall be permitted as a component of an accessible route in an existing building or facility.

**11B-206.7.1 Performance areas and speakers' platforms.** Platform lifts shall be permitted to provide accessible routes to performance areas and speakers' platforms.

**11B-206.7.2 Wheelchair spaces.** Platform lifts shall be permitted to provide an accessible route to comply with the wheelchair space dispersion and line-of-sight requirements of *Sections 11B-221* and *11B-802*.

**11B-206.7.3 Incidental spaces.** Platform lifts shall be permitted to provide an accessible route to incidental spaces which are not public use spaces and which are occupied by five persons maximum.

**11B-206.7.4 Judicial spaces.** Platform lifts shall be permitted to provide an accessible route to: jury boxes and witness stands; raised courtroom stations including, judges' benches, clerks' stations, bailiffs' stations, deputy clerks' stations, and court reporters' stations; and to depressed areas such as the well of a court.

**11B-206.7.5 Existing site constraints.** Platform lifts shall be permitted where existing exterior site constraints make use of a ramp or elevator infeasible.

**11B-206.7.6 Guest rooms and residential dwelling units.** Platform lifts shall be permitted to connect levels within transient lodging guest rooms required to provide mobility features complying with *Section 11B-806.2* or residential dwelling units required to provide mobility features complying with *Sections 11B-809.2 through 11B-809.4* or *adaptable features complying with Sections 11B-809.6 through 11B-809.12*.

**11B-206.7.7 Amusement rides.** Platform lifts shall be permitted to provide accessible routes to load and unload areas serving amusement rides.

**11B-206.7.8 Play areas.** Platform lifts shall be permitted to provide accessible routes to play components or soft contained play structures.

**11B-206.7.9 Team or player seating.** Platform lifts shall be permitted to provide accessible routes to team or player seating areas serving areas of sport activity.

**11B-206.7.10 Recreational boating facilities and fishing piers and platforms.** Platform lifts shall be permitted to be used instead of gangways that are part of accessible routes serving recreational boating facilities and fishing piers and platforms.

**11B-206.8 Security barriers.** Security barriers, including but not limited to, security bollards and security check points, shall not obstruct a required accessible route or accessible means of egress.

**Exception:** Where security barriers incorporate elements that cannot comply with these requirements such as certain metal detectors, fluoroscopes, or other similar devices, the accessible route shall be permitted to be located adjacent to security screening devices. The accessible route shall permit persons with disabilities passing around security barriers to maintain visual contact with their personal items to the same extent provided others passing through the security barrier.

**11B-207 Accessible means of egress**

**11B-207.1 General.** Means of egress shall comply with Chapter 10, Section 1009.

**Exceptions:**

1. Where means of egress are permitted by local building or life safety codes to share a common path of egress travel, accessible means of egress shall be permitted to share a common path of egress travel.
2. Areas of refuge shall not be required in detention and correctional facilities.
3. Accessible means of egress are not required to be provided in existing buildings.

**11B-207.2 Platform lifts.** Standby power shall be provided for platform lifts permitted by Chapter 10, Section 1009.5 to serve as a part of an accessible means of egress. To ensure continued operation in case of primary power loss, platform lifts shall be provided with standby power or with self-rechargeable battery power that provides sufficient power to operate all platform lift functions for a minimum of five upward and downward trips.

**11B-208 Parking spaces**

**11B-208.1 General.** Where parking spaces are provided, parking spaces shall be provided in accordance with Section 11B-208. For the purposes of this section, electric vehicle charging stations are not parking spaces; see Section 11B-228.

**Exceptions:**

1. Parking spaces used exclusively for buses, trucks, other delivery vehicles, or vehicular impound shall not be required to comply with Section 11B-208 provided that lots accessed by the public are provided with a passenger drop-off and loading zone complying with Section 11B-503.
2. In public housing facilities, electric vehicle chargers are permitted to be installed at an accessible parking space assigned to the resident.

**11B-208.2 Minimum number.** Parking spaces complying with Section 11B-502 shall be provided in accordance with Table 11B-208.2 except as required by Sections 11B-208.2.1, 11B-208.2.2, and 11B-208.2.3. Where more than one parking facility is provided on a site, the number of accessible spaces provided on the site shall be calculated according to the number of spaces required for each parking facility.

**11B-208.2.1 Hospital outpatient facilities.** Ten percent of patient and visitor parking spaces provided to serve hospital outpatient facilities, and free-standing buildings providing outpatient clinical services of a hospital, shall comply with Section 11B-502.

**11B-208.2.2 Rehabilitation facilities and outpatient physical therapy facilities.** Twenty percent of patient and visitor parking spaces provided to serve rehabilitation facilities specializing in treating conditions that affect mobility and outpatient physical therapy facilities shall comply with Section 11B-502.

**11B-208.2.3 Residential facilities.** Parking spaces provided to serve residential facilities shall comply with Section 11B-208.2.3.

**11B-208.2.3.1 Parking for residents.** Where at least one parking space is provided for each residential dwelling unit, at least one parking space complying with Section 11B-502 shall be provided for each residential dwelling unit required to provide mobility features complying with Sections 11B-809.2 through 11B-809.4. Where fewer than one parking space is provided for each residential dwelling unit, parking spaces complying with Section 11B-502 shall be provided in accordance with Table 11B-208.2.

**11B-208.2.3.2 Additional parking spaces for residents.** Where the total number of parking spaces provided for each residential dwelling unit exceeds one parking space per residential dwelling unit, 2 percent, but no fewer than one space, of all the parking spaces not covered by Section 11B-208.2.3.1 shall comply with Section 11B-502.

**TABLE 11B-208.2  
PARKING SPACES**

TOTAL NUMBER OF PARKING SPACES PROVIDED IN PARKING FACILITY	MINIMUM NUMBER OF REQUIRED ACCESSIBLE PARKING SPACES
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1000	2 percent of total
1001 and over	20, plus 1 for each 100, or fraction thereof, over 1000

**11B-208.2.3.3 Parking for guests, employees, and other non-residents.** Where parking spaces are provided for persons other than residents, parking shall be provided in accordance with Table 11B-208.2.

**11B-208.2.4 Van parking spaces.** For every six or fraction of six parking spaces required by Section 11B-208.2 to comply with Section 11B-502, at least one shall be a van parking space complying with Section 11B-502.

**11B-208.3 Location.** Parking facilities shall comply with Section 11B-208.3.

**11B-208.3.1 General.** Parking spaces complying with Section 11B-502 that serve a particular building or facility shall be located on the shortest accessible route from parking to an entrance complying with Section 11B-206.4. Where parking serves more than one accessible entrance, parking spaces complying with Section 11B-502 shall be dispersed and located on the shortest accessible route to the accessible entrances. In parking facilities that do not serve a particular building or facility, parking spaces complying with Section 11B-502 shall be located on the shortest accessible route to an accessible pedestrian entrance of the parking facility.

**Exceptions:**

1. All van parking spaces shall be permitted to be grouped on one level within a multistory parking facility.
2. Parking spaces shall be permitted to be located in different parking facilities if substantially equivalent or greater accessibility is provided in terms of distance from an accessible entrance or entrances, parking fee, and user convenience.

**11B-208.3.2 Residential facilities.** In residential facilities containing residential dwelling units required to provide mobility features complying with Sections 11B-809.2 through 11B-809.4, and adaptable features complying with Sections 11B-809.6 through 11B-809.12, parking spaces provided in accordance with Section 11B-208.2.3.1 shall be located on the shortest accessible route to the residential dwelling unit entrance they serve. Spaces provided in accordance with Section 11B-208.2.3.2 shall be dispersed throughout all types of parking provided for the residential dwelling units.

**Exception:** Parking spaces provided in accordance with Section 11B-208.2.3.2 shall not be required to be dispersed throughout all types of parking if substantially equivalent or greater accessibility is provided in terms of distance from an accessible entrance, parking fee, and user convenience.

**11B-208.3.3 Private garages accessory to residential dwelling units.** Private garages accessory to residential dwelling units shall comply with Section 11B-208.3. Private garages include individual garages and multiple individual garages grouped together.

**11B-208.3.3.1 Detached private garages accessory to residential dwelling units shall be accessible as required by Section 11B-208.3.**

**11B-208.3.3.2 Attached private garages directly serving a single residential dwelling unit shall provide at least one of the following options:**

1. A door leading directly from the residential dwelling unit which immediately enters the garage.
2. An accessible route from the residential dwelling unit to an exterior door entering the garage.
3. An accessible route from the residential dwelling unit's primary entry door to the vehicular entrance at the garage.

**11B-209 Passenger drop-off and loading zones and bus stops**

**11B-209.1 General.** Passenger drop-off and loading zones shall be provided in accordance with Section 11B-209.

**11B-209.2 Type.** Where provided, passenger drop-off and loading zones shall comply with Section 11B-209.2.

**11B-209.2.1 Passenger drop-off and loading zones.** Passenger drop-off and loading zones, except those required to comply with Sections 11B-209.2.2 and 11B-209.2.3, shall provide at least one passenger drop-off and loading zone complying with Section 11B-503 in every continuous 100 linear feet (30480 mm) of drop-off and loading zone space, or fraction thereof.

**11B-209.2.2 Bus loading zones.** In bus loading zones restricted to use by designated or specified public transportation vehicles, each bus bay, bus stop, or other area designated for lift or ramp deployment shall comply with Section 11B-810.2.

**11B-209.2.3 On-street bus stops.** On-street bus stops shall comply with Section 11B-810.2 to the maximum extent practicable.

**11B-209.3 Medical care and long-term care facilities.** At least one passenger drop-off and loading zone complying with Section 11B-503 shall be provided at an accessible entrance to licensed medical care and licensed long-term care facilities where the period of stay may exceed twenty-four hours.

**11B-209.4 Valet parking.** Parking facilities that provide valet parking services shall provide at least one passenger drop-off and loading zone complying with Section 11B-503. The parking requirements of Section 11B-208.1 apply to facilities with valet parking.

**11B-209.5 Mechanical access parking garages.** Mechanical access parking garages shall provide at least one passenger drop-off and loading zone complying with Section 11B-503 at vehicle drop-off and vehicle pick-up areas.

**11B-210 Stairways**

**11B-210.1 General.** Interior and exterior stairs shall comply with Section 11B-504.

**Exceptions:**

1. In detention and correctional facilities, stairs that are not located in public use areas shall not be required to comply with Section 11B-504.

2. In alterations, stairs between levels that are connected by an accessible route shall not be required to comply with *Section 11B-504*, except that *striping complying with Section 11B-504.4.1* and handrails complying with *Section 11B-505* shall be provided when the stairs are altered.
3. In assembly areas, aisle stairs shall not be required to comply with *Section 11B-504* except that *striping complying with Section 11B-504.4.1* shall be provided.
4. Stairs that connect play components shall not be required to comply with *Section 11B-504* except that *striping complying with Section 11B-504.4.1* shall be provided.

### **11B-211 Drinking fountains and bottle-filling stations**

**11B-211.1 General.** Where drinking fountains are provided on an exterior site, on a floor, or within a secured area they shall be provided in accordance with *Section 11B-211*.

**Exception:** In detention or correctional facilities, drinking fountains only serving holding or housing cells not required to comply with *Section 11B-232* shall not be required to comply with *Section 11B-211*.

**11B-211.2 Minimum number.** No fewer than two drinking fountains shall be provided. *When provided, one* drinking fountain shall comply with *Sections 11B-602.1 through 11B-602.6, 11B-602.8 and 11B-602.9* and one drinking fountain shall comply with *Sections 11B-602.7 and 11B-602.9*.

**Exception:** Where a single drinking fountain complies with *Sections 11B-602.1 through 11B-602.9*, it shall be permitted to be substituted for two separate drinking fountains.

**11B-211.3 More than minimum number.** Where more than the minimum number of drinking fountains specified in *Section 11B-211.2* are provided, 50 percent of the total number of drinking fountains provided shall comply with *Sections 11B-602.1 through 11B-602.6, 11B-602.8 and 11B-602.9*, and 50 percent of the total number of drinking fountains provided shall comply with *Sections 11B-602.7 and 11B-602.9*.

**Exception:** Where 50 percent of the drinking fountains yields a fraction, 50 percent shall be permitted to be rounded up or down provided that the total number of drinking fountains complying with *Section 11B-211* equals 100 percent of drinking fountains.

**11B-211.4 Bottle-filling stations.** *Where bottle-filling stations are provided they shall comply with Section 11B-602.10.*

**Exception:** *In detention or correctional facilities, bottle-filling stations only serving holding or housing cells not required to comply with Section 11B-232 shall not be required to comply with Section 11B-211.4.*

### **11B-212 Kitchens, kitchenettes, wet bars and sinks**

**11B-212.1 General.** Where provided, kitchens, kitchenettes, wet bars and sinks shall comply with *Section 11B-212*.

**11B-212.2 Kitchens, kitchenettes, and wet bars.** Kitchens, kitchenettes and wet bars shall comply with *Section 11B-804*.

**11B-212.3 Sinks.** Where sinks are provided, at least 5 percent, but no fewer than one, of each type provided in each accessible room or space shall comply with *Section 11B-606*.

#### **Exceptions:**

1. Mop, service or scullery sinks shall not be required to comply with *Section 11B-212.3*.
2. Scrub sinks, as defined in *California Plumbing Code Section 221.0*, shall not be required to comply with *Section 11B-606*.

### **11B-213 Toilet facilities and bathing facilities**

**11B-213.1 General.** Where toilet facilities and bathing facilities are provided, they shall comply with *Section 11B-213*. Where toilet facilities and bathing facilities are provided in facilities permitted by *Section 11B-206.2.3 Exception 1* not to connect stories by an accessible route, toilet facilities and bathing facilities shall be provided on a story connected by an accessible route to an accessible entrance.

**11B-213.1.1 Toilet facilities for designated user groups.** *Where separate toilet facilities are provided for the exclusive use of separate user groups, the toilet facilities serving each user group shall comply with Section 11B-213.*

**11B-213.2 Toilet rooms and bathing rooms.** Where toilet rooms are provided, each toilet room shall comply with *Section 11B-603*. Where bathing rooms are provided, each bathing room shall comply with *Section 11B-603*.

#### **Exceptions:**

1. In alterations where it is technically infeasible to comply with *Section 11B-603*, altering existing toilet or bathing rooms shall not be required where a single unisex (*single-user or family*) toilet room or bathing room complying with *Section 11B-213.2.1* is provided and located in the same area and on the same floor as existing inaccessible toilet or bathing rooms.
2. **Reserved.**
3. Where multiple single user portable toilet or bathing units are clustered at a single location 5 percent, *but no fewer than one*, of the toilet units and bathing units at each cluster shall comply with *Section 11B-603*. Portable toilet units and bathing units complying with *Section 11B-603* shall be identified by the International Symbol of Accessibility complying with *Section 11B-703.7.2.1*.
4. Where multiple single user toilet rooms are clustered at a single location, 50 percent, *but no fewer than one*, of the single user toilet rooms for each use at each cluster shall comply with *Section 11B-603*.
5. *Where toilet and bathing rooms are provided in guest rooms that are not required to provide mobility features complying with Section 11B-806.2, toilet and bathing fixtures shall only be required to comply with Section 11B-603.6.*

**11B-213.2.1 Unisex (single-user or family) toilet and unisex (single-user or family) bathing rooms.** Unisex (*single-user or family*) toilet rooms shall contain not more than one lavatory, and *not more than two* water closets

**TABLE 11B-224.4  
GUEST ROOMS WITH COMMUNICATION FEATURES**

TOTAL NUMBER OF GUEST ROOMS PROVIDED	MINIMUM NUMBER OF REQUIRED GUEST ROOMS WITH COMMUNICATION FEATURES
1	1
2 to 25	2
26 to 50	4
51 to 75	7
76 to 100	9
101 to 150	12
151 to 200	14
201 to 300	17
301 to 400	20
401 to 500	22
501 to 1000	5 percent of total
1001 and over	50, plus 3 for each 100 over 1000

**11B-224.5 Dispersion.** Guest rooms required to provide mobility features complying with Section 11B-806.2 and guest rooms required to provide communication features complying with Section 11B-806.3 shall be dispersed among the various classes of guest rooms, and shall provide choices of types of guest rooms, number of beds, and other amenities comparable to the choices provided to other guests. Where the minimum number of guest rooms required to comply with Section 11B-806 is not sufficient to allow for complete dispersion, guest rooms shall be dispersed in the following priority: guest room type, number of beds, and amenities. At least one guest room required to provide mobility features complying with Section 11B-806.2 shall also provide communication features complying with Section 11B-806.3. Not more than 10 percent of guest rooms required to provide mobility features complying with Section 11B-806.2 shall be used to satisfy the minimum number of guest rooms required to provide communication features complying with Section 11B-806.3.

**11B-224.6 Storage.** Fixed or built-in storage facilities within guest rooms required to provide mobility features shall comply with Section 11B-225.

**11B-224.7 Housing at a place of education.** Housing at a place of education subject to this section shall comply with Sections 11B-224.1 through 11B-224.6 and 11B-806 for transient lodging guest rooms. For the purposes of the application of this section, the term “sleeping room” is interchangeable with “guest room” as used in the transient lodging standards.

**Exception:** Housing facilities that are provided by or on behalf of a place of education, with residential dwelling units leased on a year-round basis exclusively to graduate students or faculty, and that do not contain any public use or common use areas available for educational programming, are not subject to Section 11B-224 and shall comply with Section 11B-233.

**11B-224.7.1 Multibedroom housing units with mobility features.** Multibedroom housing units containing accessible sleeping rooms with mobility features shall have an accessible route throughout the unit in compliance with Section 11B-809.2. Kitchens, when provided, within housing units containing accessible sleeping rooms with mobility features shall comply with Section 11B-804.

**11B-224.7.2 Multibedroom housing units with adaptable features.** Multibedroom housing units with adaptable features shall be provided as required by Section 11B-233.3.1.2. The number of required multibedroom housing units with adaptable features shall be reduced by the number of multibedroom housing units with mobility features required by Section 11B-224.2.

**11B-224.8 Social service center establishments.** Group homes, halfway houses, shelters, or similar social service center establishments that provide either temporary sleeping accommodations or residential dwelling units subject to this section shall comply with Section 11B-233.3.

**11B-224.8.1 More than 25-bed sleeping rooms.** In sleeping rooms with more than 25 beds, a minimum of 5 percent of the beds shall have clear floor space complying with Section 11B-806.2.3.

**11B-224.8.2 More than 50-bed facilities.** Facilities with more than 50 beds that provide common use bathing facilities shall provide at least one roll-in shower with a seat that complies with Section 11B-608. When separate shower facilities are provided for men and women, at least one roll-in shower shall be provided for each group.

**11B-225 Storage**

**11B-225.1 General.** Storage facilities shall comply with Section 11B-225.

**11B-225.2 Storage.** Where storage is provided in accessible spaces, at least one of each type shall comply with Section 11B-811.

**11B-225.2.1 Lockers.** Where lockers are provided, at least 5 percent, but no fewer than one of each type, shall comply with Section 11B-811.

**11B-225.2.2 Self-service shelving.** Self-service shelves shall be located on an accessible route complying with Section 11B-402. Self-service shelving shall not be required to comply with Section 11B-308.

**11B-225.2.3 Library book stacks.** Book stacks available for public use shall be 54 inches (1372 mm) maximum above the finish floor.

**Exceptions:**

1. Book stacks available for public use may be higher than 54 inches (1372 mm) maximum above the finish floor when an attendant is available to assist persons with disabilities.
2. Book stacks restricted to employee use are not required to comply with these requirements.

**11B-225.3 Self-service storage facilities.** Self-service storage facilities shall provide individual self-service storage spaces complying with these requirements in accordance with Table 11B-225.3.

**TABLE 11B-225.3  
SELF-SERVICE STORAGE FACILITIES**

TOTAL SPACES IN FACILITY	MINIMUM NUMBER OF SPACES REQUIRED TO BE ACCESSIBLE
1 to 200	5 percent, but no fewer than 1
201 and over	10, plus 2 percent of total number of units over 200

**11B-225.3.1 Dispersion.** Individual self-service storage spaces shall be dispersed throughout the various classes of spaces provided. Where more classes of spaces are provided than the number required to be accessible, the number of spaces shall not be required to exceed that required by Table 11B-225.3. Self-service storage spaces complying with Table 11B-225.3 shall not be required to be dispersed among buildings in a multibuilding facility.

**11B-226 Dining surfaces and work surfaces**

**11B-226.1 General.** Where dining surfaces are provided for the consumption of food or drink, at least 5 percent of the seating spaces and standing spaces at the dining surfaces shall comply with Section 11B-902. In addition, where work surfaces are provided for use by other than employees, at least 5 percent shall comply with Section 11B-902.

**Exceptions:**

1. Sales counters and service counters shall not be required to comply with Section 11B-902. See Section 11B-227.
2. Check writing surfaces provided at check-out aisles not required to comply with Section 11B-904.3 shall not be required to comply with Section 11B-902.

**11B-226.2 Dispersion.** Dining surfaces required to comply with Section 11B-902 shall be dispersed throughout the space or facility containing dining surfaces for each type of seating in a functional area. Work surfaces required to comply with Section 11B-902 shall be dispersed throughout the space or facility containing work surfaces.

**11B-226.3 Dining surfaces exceeding 34 inches in height.** Where food or drink is served for consumption at a counter exceeding 34 inches (864 mm) in height, a portion of the main counter 60 inches (1525 mm) minimum in length shall be provided in compliance with Section 11B-902.3.

**11B-226.4 Baby diaper changing station.** Baby diaper changing stations shall comply with Sections 11B-309 and 11B-902. Baby diaper changing stations when deployed shall not obstruct the required width of an accessible route except as allowed by Section 11B-307.2. Baby diaper changing stations shall not be located in toilet compartments complying with Section 11B-604.8 within a multiple accommodation toilet facility.

**11B-227 Sales and service**

**11B-227.1 General.** Where provided, check-out aisles, sales counters, service counters, food service lines, queues, and waiting lines shall comply with Sections 11B-227 and 11B-904.

**11B-227.2 Check-out aisles.** Where check-out aisles are provided, check-out aisles complying with Section 11B-904.3 shall be provided in accordance with Table 11B-227.2. Where check-out aisles serve different functions, check-out aisles complying with Section 11B-904.3 shall be provided in accordance with Table 11B-227.2 for each function. Where check-out aisles are dispersed throughout the building or facility, check-out aisles complying with Section 11B-904.3 shall be dispersed. When not all check-out aisles are accessible, accessible check-out aisles shall be identified by a sign complying with Section 11B-904.3.4.

*Note: Operational procedures are often necessary to ensure the Americans with Disabilities Act accessibility requirements are met. When check-out aisles are open for customer use, the business should ensure that a minimum of one acces-*

*sible check-out aisle is always available for use by persons with disabilities. As check-out aisles are opened and closed based on fluctuating customer levels, the business should ensure that the number of accessible check-out aisles available complies with Table 11B-227.2.*

**Exception:** In existing buildings, where the selling space is under 5000 square feet (465 m<sup>2</sup>) no more than one check-out aisle complying with Section 11B-904.3 shall be required.

**TABLE 11B-227.2  
CHECK-OUT AISLES**

NUMBER OF CHECK-OUT AISLES OF EACH FUNCTION	MINIMUM NUMBER OF CHECK-OUT AISLES OF EACH FUNCTION REQUIRED TO COMPLY WITH 11B-904.3
1 to 4	1
5 to 8	2
9 to 15	3
16 and over	3, plus 20 percent of additional aisles

**11B-227.2.1 Altered check-out aisles.** Where check-out aisles are altered, at least one of each check-out aisle serving each function shall comply with Section 11B-904.3 until the number of check-out aisles complies with Section 11B-227.2.

**11B-227.3 Counters.** Where provided, at least one of each type of sales counter and service counter shall comply with Section 11B-904.4. Where counters are dispersed throughout the building or facility, counters complying with Section 11B-904.4 also shall be dispersed.

**11B-227.4 Food service lines.** Food service lines shall comply with Section 11B-904.5. Where self-service shelves are provided, at least 50 percent, but no fewer than one, of each type provided shall comply with Section 11B-308.

**11B-227.5 Queues and waiting lines.** Queues and waiting lines servicing counters or check-out aisles required to comply with Sections 11B-904.3 or 11B-904.4 shall comply with Section 11B-403.

**11B-228 Depositories, vending machines, change machines, mail boxes, fuel dispensers, and electric vehicle charging stations.**

**11B-228.1 General.** Where provided, at least one of each type of depository, vending machine, change machine, and fuel dispenser shall comply with Section 11B-309. Electric vehicle charging stations shall comply with Section 11B-228.3.

**Exception:** Drive-up only depositories shall not be required to comply with Section 11B-309.

**11B-228.2 Mail boxes.** Where mail boxes are provided in an interior location, at least 5 percent, but no fewer than one, of each type shall comply with Section 11B-309. In residential facilities, where mail boxes are provided for each residential dwelling unit, mail boxes complying with Section 11B-309 shall be provided for each residential dwelling unit required to provide mobility features complying with Sections 11B-809.2 through 11B-809.4 and adaptable features complying with Sections 11B-809.6 through 11B-809.12.

**11B-228.3 Electric vehicle charging stations**

**11B-228.3.1 General.** Where electric vehicle charging stations (EVCS) are provided, EVCS shall be provided in accordance with Section 11B-228.3.

**11B-228.3.1.1 Existing facilities.** Where new EVCS are added to a facility with existing EVCS, the requirements of Section 11B-812 shall apply only to the new EVCS installed. Alterations to existing EVCS shall comply with Section 11B-228.3.

**11B-228.3.1.2 Operable parts.** Where EV chargers are provided, operable parts on all EV chargers shall comply with Section 11B-309.4.

**11B-228.3.2 Minimum number.** EVCS complying with Section 11B-812 shall be provided in accordance with Section 11B-228.3.2 for each combination of charging level and EV connector type integral to the EV charger. Each combination of charging level (such as: AC Level 1, AC Level 2, DC Fast Charge) and EV connector type shall be considered as a facility. Where EVCS are provided in more than one facility on a site, the number of EVCS complying with Section 11B-228.3.2 provided on the site shall be calculated according to the number required for each facility. In public housing facilities, EVCS provided for common use of residents shall comply with Section 11B-228.3.2. Where an EV charger can simultaneously charge more than one vehicle, the number of EV chargers provided shall be considered equivalent to the number of electric vehicles that can be simultaneously charged.

**Exceptions:**

1. EVCS not available to the general public and intended for use by a designated vehicle or driver shall not be required to comply with Section 11B-228.3.2. Examples include, but are not limited to, EVCS serving public or private fleet vehicles and EVCS assigned to an employee.
2. In public housing facilities, EVCS intended for use by an EV owner or operator at their residence shall not be required to comply with Section 11B-228.3.2.

**Note:** Electric vehicle charging provided in newly constructed facilities are also subject to the California Green Building Standards Code.

**11B-228.3.2.1 Public use or common use EVCS.** Where EVCS are provided for public use or common use, EVCS complying with Section 11B-812 shall be provided in accordance with Table 11B-228.3.2.1. Where new EVCS are installed in facilities with existing EVCS, the "Total Number of EVCS at a Facility" in Table 11B-228.3.2.1 shall include both existing and new EVCS.

**Exception:** All drive-up EVCS shall comply with Section 11B-812.

**11B-229 Windows**

**11B-229.1 General.** Where glazed openings are provided in accessible rooms or spaces for operation by occupants, at least one opening shall comply with Section 11B-309. Each glazed opening required by an administrative authority to be operable shall comply with Section 11B-309.

**Exception:**

1. Glazed openings in residential dwelling units required to comply with Section 11B-809 shall not be required to comply with Section 11B-229.

2. Glazed openings in guest rooms required to provide communication features and in guest rooms required to comply with Section 11B-206.5.3 shall not be required to comply with Section 11B-229.

**11B-230 Two-way communication systems**

**11B-230.1 General.** Where a two-way communication system is provided to gain admittance to a building or facility or to restricted areas within a building or facility, the system shall comply with Section 11B-708.

**11B-231 Judicial facilities**

**11B-231.1 General.** Judicial facilities shall comply with Section 11B-231.

**11B-231.2 Courtrooms.** Each courtroom shall comply with Section 11B-808.

**11B-231.3 Holding cells.** Where provided, central holding cells and court-floor holding cells shall comply with Section 11B-231.3.

**11B-231.3.1 Central holding cells.** Where separate central holding cells are provided for adult male, juvenile male, adult female, or juvenile female, one of each type shall comply with Section 11B-807.2. Where central holding cells are provided and are not separated by age or sex, at least one cell complying with Section 11B-807.2 shall be provided.

**11B-231.3.2 Court-floor holding cells.** Where separate court-floor holding cells are provided for adult male, juvenile male, adult female, or juvenile female, each courtroom shall be served by one cell of each type complying with Section 11B-807.2. Where court-floor holding cells are provided and are not separated by age or sex, courtrooms shall be served by at least one cell complying with Section 11B-807.2. Cells may serve more than one courtroom.

**11B-231.4 Visiting areas.** Visiting areas shall comply with Section 11B-231.4.

**11B-231.4.1 Cubicles and counters.** At least 5 percent, but no fewer than one, of cubicles shall comply with Section 11B-902 on both the visitor and detainee sides. Where counters are provided, at least one shall comply with Section 11B-904.4.2 on both the visitor and detainee sides.

**Exception:** The detainee side of cubicles or counters at non-contact visiting areas not serving holding cells required to comply with Section 11B-231 shall not be required to comply with Sections 11B-902 or 11B-904.4.2.

**11B-231.4.2 Partitions.** Where solid partitions or security glazing separate visitors from detainees at least one of each type of cubicle or counter partition shall comply with Section 11B-904.6.

**11B-232 Detention facilities and correctional facilities**

**11B-232.1 General.** Buildings, facilities, or portions thereof, in which people are detained for penal or correction purposes, or in which the liberty of the inmates is restricted for security reasons shall comply with Section 11B-232.

**11B-232.2 General holding cells and general housing cells.** General holding cells and general housing cells shall be provided in accordance with Section 11B-232.2.

**Exception: Reserved.**

**11B-232.2.1 Cells with mobility features.** At least 3 percent, but no fewer than one, of the total number of cells in a facility shall provide mobility features complying with Section 11B-807.2.

**11B-232.2.1.1 Beds.** In cells having more than 25 beds, at least 5 percent of the beds shall have clear floor space complying with Section 11B-807.2.3.

**11B-232.2.1.2 Dispersion.** Cells with mobility features shall be provided in each classification level.

**11B-232.2.1.3 Substitute cells.** When alterations are made to specific cells, detention and correctional facility operators may satisfy their obligation to provide the required number of cells with mobility features by providing the required mobility features in substitute cells (cells other than those where alterations are originally planned), provided that each substitute cell meets the following conditions:

1. Located within the same prison site.
2. Integrated with the other cells to the maximum extent feasible.
3. Has equal physical access as the altered cells to areas used by inmates or detainees for visitation, dining, recreation, educational programs, medical services, work programs, religious services, and participation in other programs that the facility offers to inmates or detainees.

**11B-232.2.1.4 Technically infeasible.** Where it is technically infeasible to locate a substitute cell within the same prison site in compliance with Section 11B-232.2.1.3, a substitute cell shall be provided at another prison site within the correctional system.

**11B-232.2.2 Cells with communication features.** At least 2 percent, but no fewer than one, of the total number of general holding cells and general housing cells equipped with audible emergency alarm systems and permanently installed telephones within the cell shall provide communication features complying with Section 11B-807.3.

**11B-232.3 Special holding cells and special housing cells.** Where special holding cells or special housing cells are provided, at least one cell serving each purpose shall provide mobility features complying with Section 11B-807.2. Cells subject to this requirement include, but are not limited to, those used for purposes of orientation, protective custody,

administrative or disciplinary detention or segregation, detoxification, and medical isolation.

**Exception: Reserved.**

**11B-232.4 Medical care facilities.** Patient bedrooms or cells required to comply with Section 11B-223 shall be provided in addition to any medical isolation cells required to comply with Section 11B-232.3.

**11B-232.5 Visiting areas.** Visiting areas shall comply with Section 11B-232.5.

**11B-232.5.1 Cubicles and counters.** At least 5 percent, but no fewer than one, of cubicles shall comply with Section 11B-902 on both the visitor and detainee sides. Where counters are provided, at least one shall comply with Section 11B-904.4.2 on both the visitor and detainee or inmate sides.

**Exception:** The inmate or detainee side of cubicles or counters at non-contact visiting areas not serving holding cells or housing cells required to comply with Section 11B-232 shall not be required to comply with Section 11B-902 or 11B-904.4.2.

**11B-232.5.2 Partitions.** Where solid partitions or security glazing separate visitors from detainees or inmates at least one of each type of cubicle or counter partition shall comply with Section 11B-904.6.

**11B-233 Public housing facilities**

**11B-233.1 General.** Public housing facilities with residential dwelling units shall comply with Section 11B-233. See Chapter 2, Section 202 of this code for the definition of Public Housing.

**11B-233.2 Reserved.**

**11B-233.3 Public housing facilities.** Public housing facilities with residential dwelling units shall comply with Section 11B-233.3.

**Note:** Senior citizen housing may also be subject to Civil Code, Division 1. Part 2. Sections 51.2, 51.3 and 51.4.

**11B-233.3.1 Minimum number: new construction.** Newly constructed facilities with residential dwelling units shall comply with Section 11B-233.3.1.

**Exception:** Where facilities contain 15 or fewer residential dwelling units, the requirements of Sections 11B-233.3.1.1 and 11B-233.3.1.3 shall apply to the total number of residential dwelling units that are constructed under a single contract, or are developed as a whole, whether or not located on a common site.

**TABLE 11B-228.3.2.1  
ELECTRIC VEHICLE CHARGING STATIONS FOR PUBLIC USE AND COMMON USE**

TOTAL NUMBER OF EVCS AT A FACILITY <sup>1</sup>	MINIMUM NUMBER (by type) OF EVCS REQUIRED TO COMPLY WITH SECTION 11B-812 <sup>1</sup>		
	Van Accessible	Standard Accessible	Ambulatory
1 to 4	1	0	0
5 to 25	1	1	0
26 to 50	1	1	1
51 to 75	1	2	2
76 to 100	1	3	3
101 and over	1, plus 1 for each 300, or fraction thereof, over 100	3, plus 1 for each 60, or fraction thereof, over 100	3, plus 1 for each 50, or fraction thereof, over 100

1. Where an EV charger can simultaneously charge more than one vehicle, the number of EVCS provided shall be considered equivalent to the number of electric vehicles that can be simultaneously charged.



**11B-233.3.1.1 Residential dwelling units with mobility features.** In facilities with residential dwelling units, at least 5 percent, but no fewer than one unit, of the total number of residential dwelling units shall provide mobility features complying with Sections 11B-809.2 through 11B-809.4 and shall be on an accessible route as required by Section 11B-206.

**11B-233.3.1.2 Residential dwelling units with adaptable features.** In facilities with residential dwelling units, adaptable residential dwelling units complying with Sections 11B-809.6 through 11B-809.12 shall be provided as required by Sections 11B-233.3.1.2.1 through 11B-233.3.1.2.6. Adaptable residential dwelling units shall be on an accessible route as required by Section 11B-206.

**Exception:** The number of required adaptable residential dwelling units shall be reduced by the number of units required by Section 11B-233.3.1.1.

**11B-233.3.1.2.1 Elevator buildings.** Residential dwelling units on floors served by an elevator shall be adaptable.

**11B-233.3.1.2.2 Non-elevator buildings.** Ground floor residential dwelling units in non-elevator buildings shall be adaptable.

**11B-233.3.1.2.3 Ground floors above grade.** Where the first floor in a building containing residential dwelling units is a floor above grade, all units on that floor shall be adaptable.

**11B-233.3.1.2.4 Multistory residential dwelling units in buildings with one or more elevators.** In elevator buildings, facilities with multistory residential dwelling units shall comply with the following:

1. The primary entry of the multistory residential dwelling unit shall be on an accessible route on the floor served by the elevator.
2. At least one powder room or bathroom and kitchen shall be located on the primary entry level.
3. Rooms or spaces located on the primary entry level shall be served by an accessible route and comply with Sections 11B-809.6 through 11B-809.12.

**11B-233.3.1.2.5 Multistory residential dwelling units in buildings with no elevator.** In non-elevator buildings, a minimum of 10 percent but not less than one of the ground floor multistory residential dwelling units shall be calculated using the total number of multistory residential dwelling units in buildings on a site and shall comply with the following:

1. The primary entry of the multistory residential dwelling unit shall be on an accessible route.
2. At least one powder room or bathroom shall be located on the primary entry level.
3. Rooms or spaces located on the primary entry level shall be served by an accessible route and comply with Sections 11B-809.6 through 11B-809.12

**11B-233.3.1.2.6 Public housing facility site impracticability.** The site impracticability tests in this section may be used to determine the number of required residential dwelling units with adaptable features in buildings without an elevator, located on sites with difficult terrain conditions or unusual characteristics.

Except as provided for in Section 11B-233.3.1.2.5, the provisions of this section do not apply to multistory dwelling units in non-elevator buildings.

**11B-233.3.1.2.6.1 Single building with one common (lobby) entrance.** The following may only be used for determining required access to multifamily dwelling units, in a single building with one common (lobby) entrance, located on a site with difficult terrain conditions or unusual characteristics:

All ground floor units in non-elevator buildings shall be adaptable and on an accessible route unless an accessible route to the common (lobby) entrance is not required as determined by Test No. 1, Individual Building Test, or Test No. 3, Unusual Characteristics Test, as described in this section.

Sites where either Test No. 1 or Test No. 3 is used and it is determined that an accessible route to the common (lobby) entrance is not required, a minimum of 20 percent of the ground floor dwelling units shall comply with Section 11B-809.6, and all remaining ground floor dwelling units shall comply with the features listed in Section 11B-233.3.1.2.6.2 unless exempted by Test No. 3, Unusual Characteristics Test.

Test No. 1—Individual Building Test may only be used if the site has terrain over 15 percent slope.

Test No. 3—Unusual Characteristics Test may be used if applicable.

**Provisions to Test Nos. 1 and 2.** Where a building elevator is provided only as means of creating an accessible route to dwelling units on a ground floor, the building is not considered to be an elevator building for purposes of this code; hence, only the ground floor dwelling units would be covered.

**11B-233.3.1.2.6.2 Test number one, individual building test**

It is not required by this code to provide an accessible route when the terrain of the site is such that both of the following apply:

1. The slopes of the undisturbed site measured in a straight line between the planned entrance and all vehicular or pedestrian arrival points within 50 feet (15 240 mm) of the planned entrance exceed 15 percent; and
2. The slopes of the planned finished grade measured between the entrance and all vehicular or pedestrian arrival points within 50 feet (15 240 mm) of the planned entrance also exceed 15 percent.

If there are no vehicular or pedestrian arrival points within 50 feet (15 240 mm) of the planned entrance, the slope for the purposes of Test No. 1 will be measured to the closest vehicular or pedestrian arrival point.

For purposes of these requirements, vehicular or pedestrian site arrival points include public or resident parking areas, public transportation stops, passenger loading zones and public streets or sidewalks. To determine site impracticality, the slope would be measured at ground level from the point of the planned entrance on a straight line to:

1. Each vehicular or pedestrian arrival point that is within 50 feet (15 240 mm) of the planned entrance, or
2. If there are no vehicular or pedestrian arrival points within the specified area, the vehicular or pedestrian arrival point closest to the planned entrance.

In the case of sidewalks, the closest point to the entrance will be where a public sidewalk entering the site intersects with the walk to the entrance. In the case of resident parking areas, the closest point to the planned entrance will be measured from the entry point to the parking area that is located closest to the planned entrance.

#### **11B-233.3.1.2.6.3 Test number two, site analysis test**

For a site having multiple buildings, or a site with a single building with multiple entrances, it is not required to provide a building entrance on an accessible route to all ground floor units under the following conditions:

1. Calculate the percentage of the total buildable area of the undisturbed site with a natural grade less than 10 percent slope. The analysis of the existing slope (before grading) shall be done on a topographic survey with 2 foot (610 mm) contour intervals with slope determination made between each successive interval. The accuracy of the slope analysis shall be certified by a licensed engineer, landscape architect, architect or surveyor.
2. Determine the requirement of providing an accessible route to planned multifamily dwellings based on the topography of the existing natural terrain. The minimum percentage of ground floor units required on an accessible route shall equal the percentage of the total buildable area (not restricted-use areas, flood plains or wetlands) of the undisturbed site with an existing natural grade of less than 10 percent slope.
3. In addition to the percentage established in paragraph (2), all ground floor units in a building, or ground floor units served by a particular entrance on an accessible route

defined by a calculation of the straight line slope not exceeding 8.33 percent, between their planned entrances and an arrival point, shall be on an accessible route and comply with the provisions of Section 11B-809.6.

4. All additional ground floor units in a building, or ground floor units served by a particular entrance, not on an accessible route shall comply with the features listed in Section 11B-233.3.1.2.6.5.
5. In no case shall less than 20 percent of the ground floor dwelling units be on an accessible route and comply with the provisions of Sections 11B-809.6 through 11B-809.12.

#### **11B-233.3.1.2.6.4 Test number three, unusual characteristics test**

Unusual characteristics include sites located in a state or federally designated floodplain or coastal high-hazard areas and sites subject to other similar requirements of law or code that require the lowest floor or the lowest structural member of the lowest floor be designed to a specified level at or above the base flood elevation. An accessible route to a building entrance is impractical due to unusual characteristics of the site when:

1. The original site characteristics result in a difference in finished grade elevation exceeding 30 inches (762 mm) and 10 percent measured between an entrance and all vehicular or pedestrian arrival points within 50 feet (15 240 mm) of the planned entrance; or
2. If there are no vehicular or pedestrian arrival points within 50 feet (15 240 mm) of the planned entrance, the unusual characteristics result in a difference in finished grade elevation exceeding 30 inches (762 mm) and 10 percent measured between an entrance and the closest vehicular or pedestrian arrival point.

#### **11B-233.3.1.2.6.5 Additional requirements.**

1. Grab bar reinforcement complying with Sections 11B-809.10.5.2, 11B-809.10.6.4, or 11B-809.10.7.3.
2. Interior door opening width complying with Section 11B-404.3.1.
3. Door and gate hardware complying with Section 11B-404.2.7.
4. Door signal devices complying with Section 11B-809.8.1.
5. Door maneuvering clearance complying with Section 11B-809.8.
6. Water closet seat height complying with Section 11B-809.10.7.4.
7. Electrical receptacles, switches and controls complying with Section 11B-809.12.
8. Faucets complying with Section 11B-809.10.8.6.

9. *Water closet, bathtub and lavatory maneuvering clearances complying with Section 11B-809.10.*

10. *Removable base cabinets complying with Section 11B-809.9.3.*

**11B-233.3.1.3 Residential dwelling units with communication features.** In public housing facilities with residential dwelling units, at least 2 percent, but no fewer than one unit, of the total number of residential dwelling units shall provide communication features complying with *Section 11B-809.5*.

**11B-233.3.2 Residential dwelling units for sale.** Residential dwelling units *designed and constructed or altered by public entities that will be offered for sale to individuals* shall provide accessible features to the extent required by *this chapter*.

**11B-233.3.2.1 Buyer identified residential dwelling units for sale.** *The requirements of Section 11B-233.3.2 also apply to housing programs that are operated by public entities where design and construction of particular residential dwelling units take place only after a specific buyer has been identified. In such programs, the covered entity must provide the units that comply with the requirements for accessible features to those pre-identified buyers with disabilities who have requested such a unit.*

**11B-233.3.3 Additions.** Where an addition to an existing building results in an increase in the number of residential dwelling units, the requirements of *Section 11B-233.3.1* shall apply only to the residential dwelling units that are added until the total number of residential dwelling units complies with the minimum number required by *Section 11B-233.3.1*. Residential dwelling units required to comply with *Sections 11B-233.3.1.1 and 11B-233.3.1.2* shall be on an accessible route as required by *Section 11B-206*.

**11B-233.3.4 Alterations.** Alterations shall comply with *Section 11B-233.3.4*.

**Exception:** Where compliance with *Sections 11B-809.2, 11B-809.3, or 11B-809.4* is technically infeasible, or where it is technically infeasible to provide an accessible route to a residential dwelling unit, the entity shall be permitted to alter or construct a comparable residential dwelling unit to comply with *Sections 11B-809.2 through 11B-809.4* provided that the minimum number of residential dwelling units required by *Sections 11B-233.3.1.1 and 11B-233.3.1.3*, as applicable, is satisfied.

**11B-233.3.4.1 Alterations to vacated buildings.** Where a building is vacated for the purposes of alteration, and the altered building contains more than 15 residential dwelling units, at least 5 percent of the residential dwelling units shall comply with *Sections 11B-809.2 through 11B-809.4* and shall be on an accessible route as required by *Section 11B-206*. In addition, at least 2 percent of the residential dwelling units shall comply with *Section 11B-809.5*.

**11B-233.3.4.2 Alterations to individual residential dwelling units.** In individual residential dwelling units, where a bathroom or a kitchen is substantially altered, and at least one other room is altered, the requirements of

*Section 11B-233.3.1* shall apply to the altered residential dwelling units until the total number of residential dwelling units complies with the minimum number required by *Sections 11B-233.3.1.1 and 11B-233.3.1.3*. Residential dwelling units required to comply with *Section 11B-233.3.1.1* shall be on an accessible route as required by *Section 11B-206*.

**Exception:** Where facilities contain 15 or fewer residential dwelling units, the requirements of *Sections 11B-233.3.1.1 and 11B-233.3.1.3* shall apply to the total number of residential dwelling units that are altered under a single contract, or are developed as a whole, whether or not located on a common site.

**11B-233.3.4.3 Alterations to residential dwelling units with adaptable features.** *The building standards for residential dwelling units with adaptable features do not apply to the alteration, repair, rehabilitation or maintenance of residential dwelling units constructed for first occupancy on or prior to March 13, 1991. Multifamily dwelling units with adaptable features constructed for first occupancy after March 13, 1991 shall be maintained in compliance with the accessibility standards in effect at the time of construction.*

**Exception:** *Where any portion of a building's exterior is preserved, but the interior of the building is removed, including all structural portions of floors and ceilings and a new building is constructed behind the existing exterior, the building is considered a new building for determining the application of this chapter.*

**11B-233.3.5 Dispersion.** Residential dwelling units required to provide mobility features complying with *Sections 11B-809.2 through 11B-809.4* and residential dwelling units required to provide communication features complying with *Section 11B-809.5* shall be dispersed among the various types of residential dwelling units in the facility and shall provide choices of residential dwelling units comparable to, and integrated with, those available to other residents.

**Exception:** *Where multistory residential dwelling units are one of the types of residential dwelling units provided, one-story residential dwelling units shall be permitted as a substitute for multistory residential dwelling units where equivalent spaces and amenities are provided in the one-story residential dwelling unit.*

**11B-233.3.6 Graduate student and faculty housing at a place of education.** *Housing facilities that are provided by or on behalf of a place of education, with residential dwelling units leased on a year-round basis exclusively to graduate students or faculty, and that do not contain any public use or common use areas available for educational programming, are not subject to Section 11B-224 and shall comply with Section 11B-233.*

#### **11B-234 Amusement rides**

**11B-234.1 General.** Amusement rides shall comply with *Section 11B-234*.

**Exception:** Mobile or portable amusement rides shall not be required to comply with *Section 11B-234*.

**11B-234.2 Load and unload areas.** Load and unload areas serving amusement rides shall comply with *Section 11B-1002.3*.

**11B-234.3 Minimum number.** Amusement rides shall provide at least one wheelchair space complying with *Section 11B-1002.4*, or at least one amusement ride seat designed for transfer complying with *Section 11B-1002.5*, or at least one transfer device complying with *Section 11B-1002.6*.

**Exceptions:**

1. Amusement rides that are controlled or operated by the rider shall not be required to comply with *Section 11B-234.3*.
2. Amusement rides designed primarily for children, where children are assisted on and off the ride by an adult, shall not be required to comply with *Section 11B-234.3*.
3. Amusement rides that do not provide amusement ride seats shall not be required to comply with *Section 11B-234.3*.

**11B-234.4 Existing amusement rides.** Where existing amusement rides are altered, the alteration shall comply with *Section 11B-234.4*.

**11B-234.4.1 Load and unload areas.** Where load and unload areas serving existing amusement rides are newly designed and constructed, the load and unload areas shall comply with *Section 11B-1002.3*.

**11B-234.4.2 Minimum number.** Where the structural or operational characteristics of an amusement ride are altered to the extent that the amusement ride’s performance differs from that specified by the manufacturer or the original design, the amusement ride shall comply with *Section 11B-234.3*.

**11B-235 Recreational boating facilities**

**11B-235.1 General.** Recreational boating facilities shall comply with *Section 11B-235*.

**11B-235.2 Boat slips.** Boat slips complying with *Section 11B-1003.3.1* shall be provided in accordance with *Table 11B-235.2*. Where the number of boat slips is not identified, each 40 feet (12192 mm) of boat slip edge provided along the perimeter of the pier shall be counted as one boat slip for the purpose of this section.

**11B-235.2.1 Dispersion.** Boat slips complying with *Section 11B-1003.3.1* shall be dispersed throughout the various types of boat slips provided. Where the minimum number of boat slips required to comply with *Section 11B-1003.3.1* has been met, no further dispersion shall be required.

**11B-235.3 Boarding piers at boat launch ramps.** Where boarding piers are provided at boat launch ramps, at least 5 percent, but no fewer than one, of the boarding piers shall comply with *Section 11B-1003.3.2*.

**11B-236 Exercise machines and equipment**

**11B-236.1 General.** At least one of each type of exercise machine and equipment shall comply with *Section 11B-1004*.

**11B-237 Fishing piers and platforms**

**11B-237.1 General.** Fishing piers and platforms shall comply with *Section 11B-1005*.

**TABLE 11B-235.2  
BOAT SLIPS**

TOTAL NUMBER OF BOAT SLIPS PROVIDED IN FACILITY	MINIMUM NUMBER OF REQUIRED ACCESSIBLE BOAT SLIPS
1 to 25	1
26 to 50	2
51 to 100	3
101 to 150	4
151 to 300	5
301 to 400	6
401 to 500	7
501 to 600	8
601 to 700	9
701 to 800	10
801 to 900	11
901 to 1000	12
1001 and over	12, plus 1 for every 100, or fraction thereof, over 1000

**11B-238 Golf facilities**

**11B-238.1 General.** Golf facilities shall comply with *Section 11B-238*.

**11B-238.2 Golf courses.** Golf courses shall comply with *Section 11B-238.2*.

**11B-238.2.1 Teeing grounds.** Where one teeing ground is provided for a hole, the teeing ground shall be designed and constructed so that a golf car can enter and exit the teeing ground. Where two teeing grounds are provided for a hole, the forward teeing ground shall be designed and constructed so that a golf car can enter and exit the teeing ground. Where three or more teeing grounds are provided for a hole, at least two teeing grounds, including the forward teeing ground, shall be designed and constructed so that a golf car can enter and exit each teeing ground.

**Exception:** In existing golf courses, the forward teeing ground shall not be required to be one of the teeing grounds on a hole designed and constructed so that a golf car can enter and exit the teeing ground where compliance is not feasible due to terrain.

**11B-238.2.2 Putting greens.** Putting greens shall be designed and constructed so that a golf car can enter and exit the putting green.

**11B-238.2.3 Weather shelters.** Where provided, weather shelters shall be designed and constructed so that a golf car can enter and exit the weather shelter and shall comply with *Section 11B-1006.4*.

**11B-238.3 Practice putting greens, practice teeing grounds, and teeing stations at driving ranges.** At least 5 percent, but no fewer than one, of practice putting greens, practice teeing grounds, and teeing stations at driving ranges shall be designed and constructed so that a golf car can enter and exit the practice putting greens, practice teeing grounds, and teeing stations at driving ranges.

**11B-239 Miniature golf facilities**

**11B-239.1 General.** Miniature golf facilities shall comply with *Section 11B-239*.

**11B-239.2 Minimum number.** At least 50 percent of holes on miniature golf courses shall comply with *Section 11B-1007.3*.

**11B-239.3 Miniature golf course configuration.** Miniature golf courses shall be configured so that the holes complying with *Section 11B-1007.3* are consecutive. Miniature golf courses shall provide an accessible route from the last hole complying with *Section 11B-1007.3* to the course entrance or exit without requiring travel through any other holes on the course.

**Exception:** One break in the sequence of consecutive holes shall be permitted provided that the last hole on the miniature golf course is the last hole in the sequence.

**11B-240 Play areas**

**11B-240.1 General.** Play areas for children ages 2 and over shall comply with *Section 11B-240*. Where separate play areas are provided within a site for specific age groups, each play area shall comply with *Section 11B-240*.

**Exceptions:**

1. Play areas located in family child care facilities where the proprietor actually resides shall not be required to comply with *Section 11B-240*.
2. In existing play areas, where play components are relocated for the purposes of creating safe use zones and the ground surface is not altered or extended for more than one use zone, the play area shall not be required to comply with *Section 11B-240*.
3. Amusement attractions shall not be required to comply with *Section 11B-240*.
4. Where play components are altered and the ground surface is not altered, the ground surface shall not be required to comply with *Section 11B-1008.2.6* unless required by *Section 11B-202.4*.

**11B-240.1.1 Additions.** Where play areas are designed and constructed in phases, the requirements of *Section 11B-240* shall apply to each successive addition so that when the addition is completed, the entire play area complies with all the applicable requirements of *Section 11B-240*.

**11B-240.2 Play components.** Where provided, play components shall comply with *Section 11B-240.2*.

**11B-240.2.1 Ground level play components.** Ground level play components shall be provided in the number and types required by *Section 11B-240.2.1*. Ground level play components that are provided to comply with *Section 11B-240.2.1.1* shall be permitted to satisfy the additional number required by *Section 11B-240.2.1.2* if the minimum required types of play components are satisfied. Where two or more required ground level play components are provided, they shall be dispersed throughout the play area and integrated with other play components.

**11B-240.2.1.1 Minimum number and types.** Where ground level play components are provided, at least one of each type shall be on an accessible route and shall comply with *Section 11B-1008.4*.

**11B-240.2.1.2 Additional number and types.** Where elevated play components are provided, ground level play components shall be provided in accordance with *Table 11B-240.2.1.2* and shall comply with *Section 11B-1008.4*.

**Exception:** If at least 50 percent of the elevated play components are connected by a ramp and at least 3 of the elevated play components connected by the ramp are different types of play components, the play area shall not be required to comply with *Section 11B-240.2.1.2*.

**11B-240.2.2 Elevated play components.** Where elevated play components are provided, at least 50 percent shall be on an accessible route and shall comply with *Section 11B-1008.4*.

**11B-241 Saunas and steam rooms**

**11B-241.1 General.** Where provided, saunas and steam rooms shall comply with *Section 11B-612*.

**Exception:** Where saunas or steam rooms are clustered at a single location, no more than 5 percent of the saunas and steam rooms, but no fewer than one, of each type in each cluster shall be required to comply with *Section 11B-612*.

**11B-242 Swimming pools, wading pools, and spas**

**11B-242.1 General.** Swimming pools, wading pools, and spas shall comply with *Section 11B-242*.

**TABLE 11B-240.2.1.2  
NUMBER AND TYPES OF GROUND LEVEL PLAY COMPONENTS REQUIRED TO BE ON ACCESSIBLE ROUTES**

NUMBER OF ELEVATED PLAY COMPONENTS PROVIDED	MINIMUM NUMBER OF GROUND LEVEL PLAY COMPONENTS REQUIRED TO BE ON AN ACCESSIBLE ROUTE	MINIMUM NUMBER OF DIFFERENT TYPES OF GROUND LEVEL PLAY COMPONENTS REQUIRED TO BE ON AN ACCESSIBLE ROUTE
1	Not applicable	Not applicable
2 to 4	1	1
5 to 7	2	2
8 to 10	3	3
11 to 13	4	3
14 to 16	5	3
17 to 19	6	3
20 to 22	7	4
23 to 25	8	4
26 and over	8, plus 1 for each additional 3, or fraction thereof, over 25	5

**11B-242.2 Swimming pools.** At least two accessible means of entry shall be provided for swimming pools. Accessible means of entry shall be swimming pool lifts complying with Section 11B-1009.2; sloped entries complying with Section 11B-1009.3; transfer walls complying with Section 11B-1009.4; transfer systems complying with Section 11B-1009.5; and pool stairs complying with Section 11B-1009.6. At least one accessible means of entry provided shall comply with Sections 11B-1009.2 or 11B-1009.3.

**Exceptions:**

1. Where a swimming pool has less than 300 linear feet (91 m) of swimming pool wall, no more than one accessible means of entry shall be required provided that the accessible means of entry is a swimming pool lift complying with Section 11B-1009.2 or sloped entry complying with Section 11B-1009.3.
2. Wave action pools, leisure rivers, sand bottom pools, and other pools where user access is limited to one area shall not be required to provide more than one accessible means of entry provided that the accessible means of entry is a swimming pool lift complying with Section 11B-1009.2, a sloped entry complying with Section 11B-1009.3, or a transfer system complying with Section 11B-1009.5.
3. Catch pools shall not be required to provide an accessible means of entry provided that the catch pool edge is on an accessible route.

**11B-242.3 Wading pools.** At least one accessible means of entry shall be provided for wading pools. Accessible means of entry shall comply with sloped entries complying with Section 11B-1009.3.

**11B-242.4 Spas.** At least one accessible means of entry shall be provided for spas. Accessible means of entry shall comply with swimming pool lifts complying with Section 11B-1009.2; transfer walls complying with Section 11B-1009.4; or transfer systems complying with Section 11B-1009.5.

**Exception:** Where spas are provided in a cluster, no more than 5 percent, but no fewer than one, spa in each cluster shall be required to comply with Section 11B-242.4.

**11B-243 Shooting facilities with firing positions**

**11B-243.1 General.** Where shooting facilities with firing positions are designed and constructed at a site, at least 5 percent, but no fewer than one, of each type of firing position shall comply with Section 11B-1010.

**11B-244 Religious facilities**

**11B-244.1 General.** Religious facilities shall be accessible in accordance with the provisions of this code. Where specific areas within religious facilities contain more than one use, each portion shall comply with the applicable requirements for that use.

**11B-245 Public accommodations located in private residences**

**11B-245.1 General.** Public accommodations located in private residences shall comply with Section 11B-245.

**11B-245.2 Application.** When a public accommodation is located in a private residence, that portion used exclusively in the operation of the public accommodation or that portion

used both for the public accommodation and for residential purposes is covered by the new construction and alterations requirements of this chapter.

**Exception:** The portion of the residence used exclusively as a residence is not required to be accessible in accordance with this chapter.

**11B-245.3 Accessible elements required.** The accessible portion of the residence extends to those elements used to enter the public accommodation, including the front sidewalk, if any, the door or entryway, and hallways; and those portions of the residence, interior or exterior, available to or used by employees or visitors of the public accommodation, including restrooms.

**11B-246 Outdoor developed areas**

**11B-246.1 General.** Outdoor developed areas shall comply with Section 11B-246.

**Exceptions:**

1. Where the enforcing agency finds that, in specific areas, the natural environment would be materially damaged by compliance with these regulations, such areas shall be subject to these regulations only to the extent that such material damage would not occur.
2. Automobile access or accessible routes are not required when the enforcing agency determines compliance with this chapter would create an unreasonable hardship as defined in Chapter 2, Section 202.

**11B-246.2 Camping facilities.** In camping facilities where campsites are provided, at least two campsites and one additional campsite for each 100 campsites or fraction thereof, shall be accessed by and connected to sanitary facilities by travel routes with a maximum slope of 1:12. Permanent toilet and bathing facilities serving campsites shall comply with Section 11B-603.

**11B-246.3 Beaches.** Beaches shall be accessible.

**11B-246.4 Day use areas and vista points.** Day use areas, vista points, and similar areas shall be accessible.

**11B-246.5 Picnic areas.** Where picnic tables are provided, at least one picnic table, and one additional table for each 20 tables or fraction thereof, shall be accessible and comply with Section 11B-902.

**11B-246.6 Parking lots.** Parking lots shall comply with Sections 11B-208 and 11B-502 and shall be provided with curb cuts leading to adjacent walks, paths or trails.

**11B-246.7 Trails and paths.** Trails, paths and nature walk areas, or portions of them, shall be constructed with gradients permitting at least partial use by wheelchair occupants. Buildings and other functional areas shall be served by paths or walks with firm and stable surfaces.

**11B-246.8 Nature trails.** Nature trails and similar educational and informational areas shall be accessible to individuals with vision impairments by the provision of rope guidelines, raised Arabic numerals and symbols, or other similar guide and assistance devices.

**11B-247 Detectable warnings and detectable directional texture**

**11B-247.1 Detectable warnings.**

**11B-247.1.1 General.** Detectable warnings shall be provided in accordance with Section 11B-247.1 and shall comply with Section 11B-705.1.

**11B-247.1.2 Where required.** Detectable warnings shall be provided where required by Section 11B-247.1.2.

**11B-247.1.2.1 Platform edges.** Platform boarding edges shall have detectable warnings complying with Sections 11B-705.1.1 and 11B-705.1.2.1.

**11B-247.1.2.2 Curb ramps.** Curb ramps shall have detectable warnings complying with Sections 11B-705.1.1 and 11B-705.1.2.2.

**11B-247.1.2.3 Islands or cut-through medians.** Islands or cut-through medians shall have detectable warnings complying with Sections 11B-705.1.1 and 11B-705.1.2.3.

**11B-247.1.2.4 Bus stops.** Where detectable warnings are provided at bus stop boarding and alighting areas in compliance with Section 11B-810.2.3, detectable warnings shall comply with Sections 11B-705.1.1 and 11B-705.1.2.4.

**11B-247.1.2.5 Blended transitions.** Blended transitions shall have detectable warnings complying with Sections 11B-705.1.1 and 11B-705.1.2.5.

**11B-247.1.2.6 Reflecting pools.** The edges of reflecting pools shall be protected by railings, walls, warning curbs or detectable warnings complying with Sections 11B-705.1.1 and 11B-705.1.2.6.

**11B-247.1.2.7 Track crossings.** Where it is necessary to cross tracks to reach transit boarding platforms, detectable warnings complying with Sections 11B-705.1.1 and 11B-705.1.2.7 shall be provided.

**11B-247.2 Detectable directional texture.** At transit boarding platforms, the pedestrian access shall be identified with a detectable directional texture complying with Section 11B-705.2.

#### **11B-248 Common use areas and employee work areas.**

**11B-248.1 Common use areas.** Common use areas shall comply with this chapter.

**11B-248.2 Employee work areas.** Employee work areas shall comply with this chapter.

#### **11B-249 Adult changing facilities**

**11B-249.1 General.** Adult changing facilities shall comply with Section 11B-249.

**11B-249.1.1** Where adult changing facilities are provided, each adult changing facility shall comply with Section 11B-813.

**11B-249.1.2** Newly constructed commercial places of public amusement shall provide no fewer than one adult changing facility in compliance with Section 11B-813.

#### **11B-250 Circulation paths**

**11B-250.1 General.** Circulation paths contiguous to vehicular traffic shall be physically separated from vehicular traffic. Vehicular traffic includes travel through parking facilities, into and out of parking spaces, into and out of electric vehicle charging spaces, and along roadways, driveways and drive aisles. Physical separation shall be provided with circulation paths raised 4 inches (102 mm) minimum above the area where vehicular traffic occurs.

##### **Exceptions:**

1. Curb ramps and blended transitions with detectable warnings complying with Section 11B-247 may be used to connect raised circulation paths and pedestrian crossings within areas of vehicular traffic. Blended transitions and cut-through medians with detectable warnings complying with Section 11B-247 may be used to connect circulation paths and pedestrian crossings at similar elevations within areas of vehicular traffic.
2. At locations where sidewalks and walks in the public right-of-way cross driveways without yield or stop traffic control, compliance with this section shall not be required.
3. At locations where circulation paths cross driveways or drive aisles, circulation paths shall not be required to comply with this section and detectable warnings shall not be permitted. Beyond the crossing where continuation of the circulation path within a parking facility leads immediately to and does not continue beyond only parking spaces complying with Section 11B-502, passenger drop-off and loading zones complying with Section 11B-503 and electric vehicle charging stations complying with Section 11B-812, the circulation path shall not be required to be raised.
4. In alterations to existing parking facilities, including alterations required by Section 11B-202.4, physical separation may be provided with detectable warnings complying with Sections 11B-247 and 11B-705.1 in lieu of raised circulation paths.
5. Access aisles serving any electric vehicle charging station vehicle spaces complying with Section 11B-812, parking spaces complying with Section 11B-502, or passenger drop-off and loading zones complying with Section 11B-503 shall not be required to comply with this section.
6. At each electric vehicle charging station complying with Section 11B-812 where the charger and its controls are oriented toward the vehicle space it serves and the charger's clear floor spaces for operable parts and point-of-sale devices are at the same elevation as the vehicle space, the accessible route complying with Section 11B-812.5.2 shall not be required to comply with this section.

## DIVISION 3: BUILDING BLOCKS

### 11B-301 General

**11B-301.1 Scope.** The provisions of *Division 3* shall apply where required by *Division 2* or where referenced by a requirement in this *chapter*.

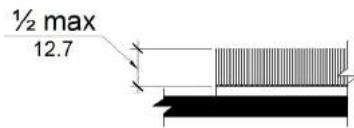
### 11B-302 Floor or ground surfaces

**11B-302.1 General.** Floor and ground surfaces shall be stable, firm, and slip resistant and shall comply with *Section 11B-302*.

#### Exceptions:

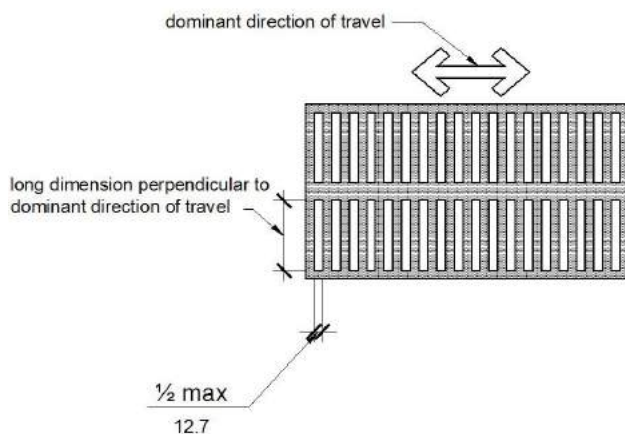
1. Within animal containment areas, floor and ground surfaces shall not be required to be stable, firm, and slip resistant.
2. Areas of sport activity shall not be required to comply with *Section 11B-302*.

**11B-302.2 Carpet.** Carpet or carpet tile shall be securely attached and shall have a firm cushion, pad, or backing or no cushion or pad. Carpet or carpet tile shall have a level loop, textured loop, level cut/uncut pile texture. Pile height shall be  $\frac{1}{2}$  inch (12.7 mm) maximum. Exposed edges of carpet shall be fastened to floor surfaces and shall have trim on the entire length of the exposed edge. Carpet edge trim shall comply with *Section 11B-303*.



**FIGURE 11B-302.2  
CARPET PILE HEIGHT**

**11B-302.3 Openings.** Openings in floor or ground surfaces shall not allow passage of a sphere more than  $\frac{1}{2}$  inch (12.7 mm) diameter except as allowed in *Sections 11B-407.4.3*, *11B-409.4.3*, *11B-410.4*, *11B-810.5.3* and *11B-810.10*. Elongated openings shall be placed so that the long dimension is perpendicular to the dominant direction of travel.



**FIGURE 11B-302.3  
ELONGATED OPENINGS IN FLOOR OR GROUND SURFACES**

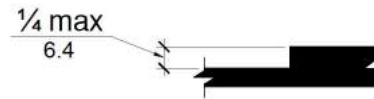
### 11B-303 Changes in level

**11B-303.1 General.** Where changes in level are permitted in floor or ground surfaces, they shall comply with *Section 11B-303*.

#### Exceptions:

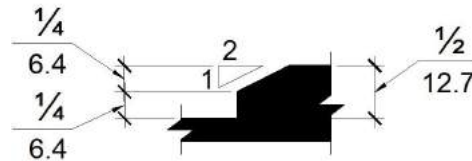
1. Animal containment areas shall not be required to comply with *Section 11B-303*.
2. Areas of sport activity shall not be required to comply with *Section 11B-303*.

**11B-303.2 Vertical.** Changes in level of  $\frac{1}{4}$  inch (6.4 mm) high maximum shall be permitted to be vertical *and without edge treatment*.



**FIGURE 11B-303.2  
VERTICAL CHANGE IN LEVEL**

**11B-303.3 Beveled.** Changes in level between  $\frac{1}{4}$  inch (6.4 mm) high minimum and  $\frac{1}{2}$  inch (12.7 mm) high maximum shall be beveled with a slope not steeper than 1:2.



**FIGURE 11B-303.3  
BEVELED CHANGE IN LEVEL**

**11B-303.4 Ramps.** Changes in level greater than  $\frac{1}{2}$  inch (12.7 mm) high shall be ramped, and shall comply with *Section 11B-405* or *11B-406*.

**11B-303.5 Warning curbs.** Abrupt changes in level exceeding 4 inches (102 mm) in a vertical dimension between walks, sidewalks or other pedestrian ways and adjacent surfaces or features shall be identified by warning curbs at least 6 inches (152 mm) in height above the walk or sidewalk surface.

#### Exceptions:

1. A warning curb is not required between a walk or sidewalk and an adjacent street or driveway.
2. A warning curb is not required when a guard or handrail is provided with a guide rail centered 2 inches (51 mm) minimum and 4 inches (102 mm) maximum above the surface of the walk or sidewalk.

### 11B-304 Turning space

**11B-304.1 General.** Turning space shall comply with *Section 11B-304*.



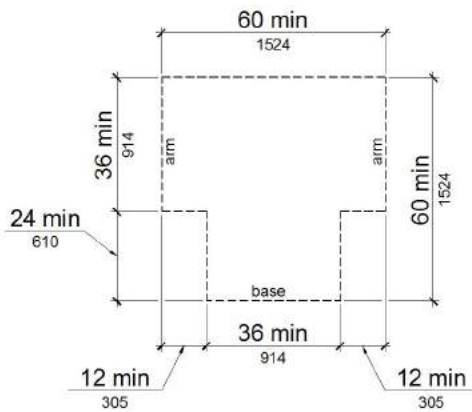
**11B-304.2 Floor or ground surfaces.** Floor or ground surfaces of a turning space shall comply with Section 11B-302. Changes in level, slopes exceeding 1:48, and detectable warnings shall not be permitted.

**Exception:** Reserved.

**11B-304.3 Size.** Turning space shall comply with Section 11B-304.3.1 or 11B-304.3.2.

**11B-304.3.1 Circular space.** The turning space shall be a space of 60 inches (1524 mm) diameter minimum. The space shall be permitted to include knee and toe clearance complying with Section 11B-306.

**11B-304.3.2 T-Shaped space.** The turning space shall be a T-shaped space within a 60 inch (1524 mm) square minimum with arms and base 36 inches (914 mm) wide minimum. Each arm of the T shall be clear of obstructions 12 inches (305 mm) minimum in each direction and the base shall be clear of obstructions 24 inches (610 mm) minimum. The space shall be permitted to include knee and toe clearance complying with Section 11B-306 only at the end



**FIGURE 11B-304.3.2 T-SHAPED TURNING SPACE**

of either the base or one arm.

**11B-304.4 Door swing.** Doors shall be permitted to swing into turning spaces.

**11B-305 Clear floor or ground space**

**11B-305.1 General.** Clear floor or ground space shall comply with Section 11B-305.

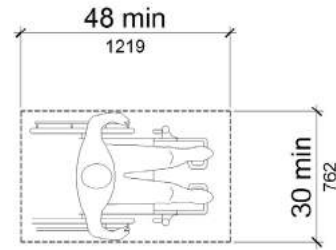
**11B-305.2 Floor or ground surfaces.** Floor or ground surfaces of a clear floor or ground space shall comply with Section 11B-302. Changes in level, slopes exceeding 1:48, and detectable warnings shall not be permitted.

**Exception:** Reserved.

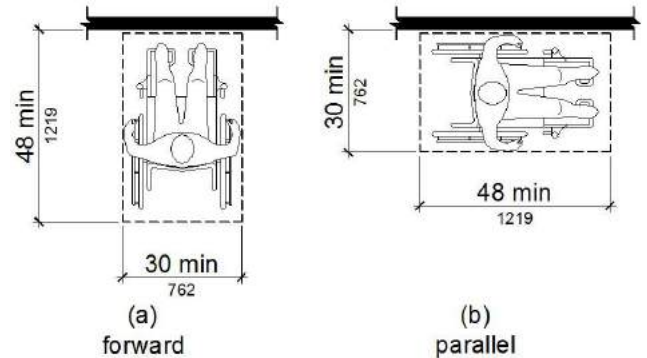
**11B-305.3 Size.** The clear floor or ground space shall be 30 inches (762 mm) minimum by 48 inches (1219 mm) minimum.

**11B-305.4 Knee and toe clearance.** Unless otherwise specified, clear floor or ground space shall be permitted to include knee and toe clearance complying with Section 11B-306.

**11B-305.5 Position.** Unless otherwise specified, clear floor or ground space shall be positioned for either forward or parallel approach to an element.



**FIGURE 11B-305.3 CLEAR FLOOR OR GROUND SPACE**



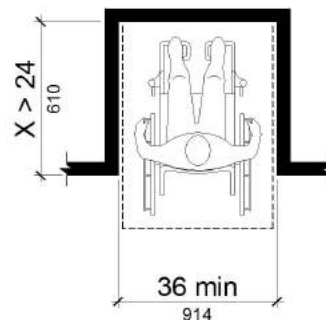
**FIGURE 11B-305.5 POSITION OF CLEAR FLOOR OR GROUND SPACE**

**11B-305.6 Approach.** One full unobstructed side of the clear floor or ground space shall adjoin an accessible route or adjoin another clear floor or ground space. Clear floor or ground space may overlap an accessible route, unless specifically prohibited elsewhere in this chapter.

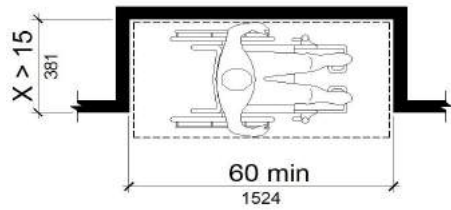
**11B-305.7 Maneuvering clearance.** Where a clear floor or ground space is located in an alcove or otherwise confined on all or part of three sides, additional maneuvering clearance shall be provided in accordance with Sections 11B-305.7.1 and 11B-305.7.2.

**11B-305.7.1 Forward approach.** Alcoves shall be 36 inches (914 mm) wide minimum where the depth exceeds 24 inches (610 mm).

**11B-305.7.2 Parallel approach.** Alcoves shall be 60 inches (1524 mm) wide minimum where the depth exceeds 15 inches (381 mm).



**FIGURE 11B-305.7.1 MANEUVERING CLEARANCE IN AN ALCOVE, FORWARD APPROACH**



**FIGURE 11B-305.7.2**  
**MANEUVERING CLEARANCE IN**  
**AN ALCOVE, PARALLEL APPROACH**

**11B-306 Knee and toe clearance**

**11B-306.1 General.** Where space beneath an element is included as part of clear floor or ground space or turning space, the space shall comply with Section 11B-306. Additional space shall not be prohibited beneath an element but shall not be considered as part of the clear floor or ground space or turning space.

**11B-306.2 Toe clearance**

**11B-306.2.1 General.** Space under an element between the finish floor or ground and 9 inches (229 mm) above the finish floor or ground shall be considered toe clearance and shall comply with Section 11B-306.2.

**11B-306.2.2 Maximum depth.** Toe clearance shall extend 25 inches (635 mm) maximum under an element.

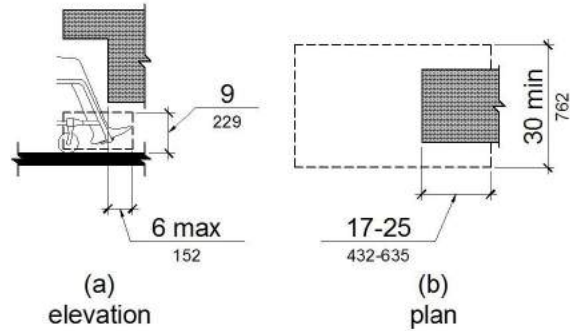
*Exception: Toe clearance shall extend 19 inches (483 mm) maximum under lavatories required to be accessible by Section 11B-213.3.4.*

**11B-306.2.3 Minimum required depth.** Where toe clearance is required at an element as part of a clear floor space, the toe clearance shall extend 17 inches (432 mm) minimum under the element.

**Exceptions:**

1. The toe clearance shall extend 19 inches (483 mm) minimum under sinks required to be accessible by Section 11B-212.3.
2. The toe clearance shall extend 19 inches (483 mm) minimum under built-in dining and work surfaces required to be accessible.

**11B-306.2.4 Additional clearance.** Space extending greater than 6 inches (152 mm) beyond the available knee clearance at 9 inches (229 mm) above the finish floor or ground shall not be considered toe clearance.



**FIGURE 11B-306.2**  
**TOE CLEARANCE**

**11B-306.2.5 Width.** Toe clearance shall be 30 inches (762 mm) wide minimum.

**11B-306.3 Knee clearance.**

**11B-306.3.1 General.** Space under an element between 9 inches (229 mm) and 27 inches (686 mm) above the finish floor or ground shall be considered knee clearance and shall comply with Section 11B-306.3.

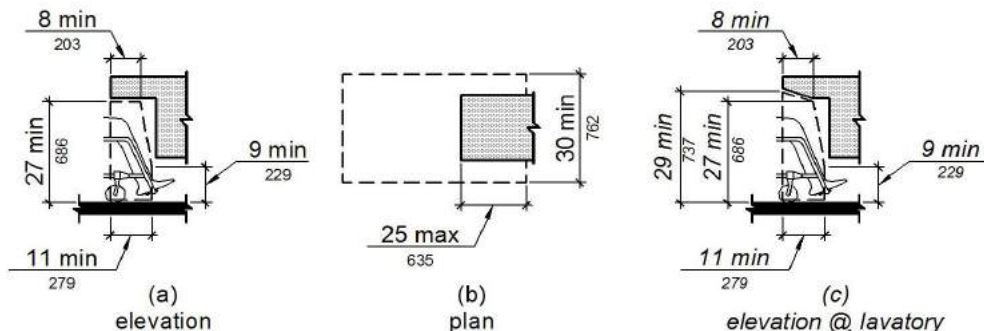
*Exception: At lavatories required to be accessible by Section 11B-213.3.4, space between 9 inches (229 mm) and 29 inches (737 mm) above the finish floor or ground, shall be considered knee clearance.*

**11B-306.3.2 Maximum depth.** Knee clearance shall extend 25 inches (635 mm) maximum under an element at 9 inches (229 mm) above the finish floor or ground.

**11B-306.3.3 Minimum required depth.** Where knee clearance is required under an element as part of a clear floor space, the knee clearance shall be 11 inches (279 mm) deep minimum at 9 inches (229 mm) above the finish floor or ground, and 8 inches (203 mm) deep minimum at 27 inches (686 mm) above the finish floor or ground.

**Exceptions:**

1. At lavatories required to be accessible by Section 11B-213.3.4, the knee clearance shall be 27 inches (686 mm) high minimum above the finish floor or ground at a depth of 8 inches (203 mm) minimum increasing to 29 inches (737 mm) high minimum above the finish floor or ground at the front edge of a counter with a built-in lavatory or at the front edge of a wall-mounted lavatory fixture.



**FIGURE 11B-306.3**  
**KNEE CLEARANCE**

2. At dining and work surfaces required to be accessible, knee clearance shall extend 19 inches (483 mm) deep minimum at 27 inches (686 mm) above the finish floor or ground.

**11B-306.3.4 Clearance reduction.** Between 9 inches (229 mm) and 27 inches (686 mm) above the finish floor or ground, the knee clearance shall be permitted to reduce at a rate of 1 inch (25 mm) in depth for each 6 inches (152 mm) in height.

**Exception:** The knee clearance shall not be reduced at built-in dining and work surfaces required to be accessible by Section 11B-226.1.

**11B-306.3.5 Width.** Knee clearance shall be 30 inches (762 mm) wide minimum.

**11B-307 Protruding objects**

**11B-307.1 General.** Protruding objects shall comply with Section 11B-307.

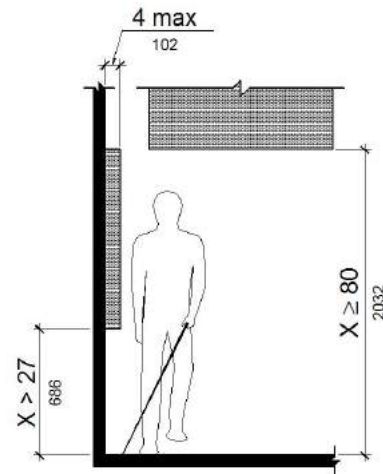
**11B-307.2 Protrusion limits.** Objects with leading edges more than 27 inches (686 mm) and not more than 80 inches (2032 mm) above the finish floor or ground shall protrude 4 inches (102 mm) maximum horizontally into the circulation path.

**Exception:** Handrails shall be permitted to protrude 4½ inches (114 mm) maximum.

**11B-307.3 Post-mounted objects.** Free-standing objects mounted on posts or pylons shall overhang circulation paths 12 inches (305 mm) maximum when located 27 inches (686 mm) minimum and 80 inches (2032 mm) maximum above the finish floor or ground. Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches (305 mm), the lowest edge of such sign or obstruction shall be 27 inches (686 mm) maximum or 80 inches (2032 mm) minimum above the finish floor or ground.

**Exception:** The sloping portions of handrails serving stairs and ramps shall not be required to comply with Section 11B-307.3.

**11B-307.3.1 Edges and corners.** Where signs or other objects are mounted on posts or pylons, and their bottom edges are less than 80 inches (2032 mm) above the floor



**FIGURE 11B-307.2 LIMITS OF PROTRUDING OBJECTS**

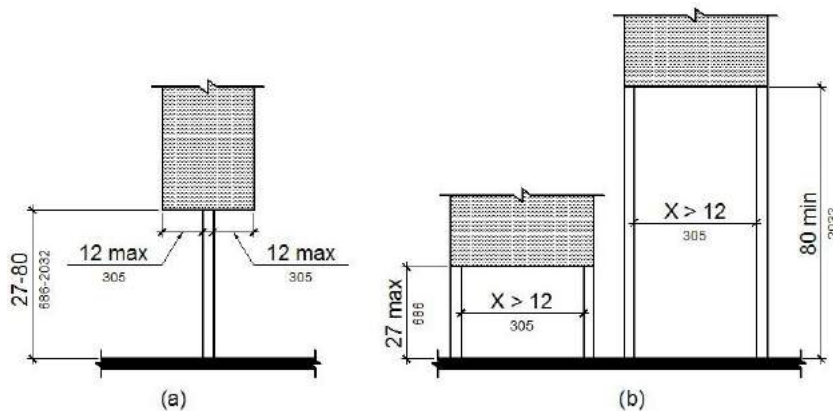
or ground surface, the edges of such signs and objects shall be rounded or eased and the corners shall have a minimum radius of 1/8 inch (3.2 mm).

**11B-307.4 Vertical clearance.** Vertical clearance shall be 80 inches (2032 mm) high minimum. Guardrails or other barriers shall be provided where the vertical clearance is less than 80 inches (2032 mm) high. The leading edge of such guardrail or barrier shall be located 27 inches (686 mm) maximum above the finish floor or ground.

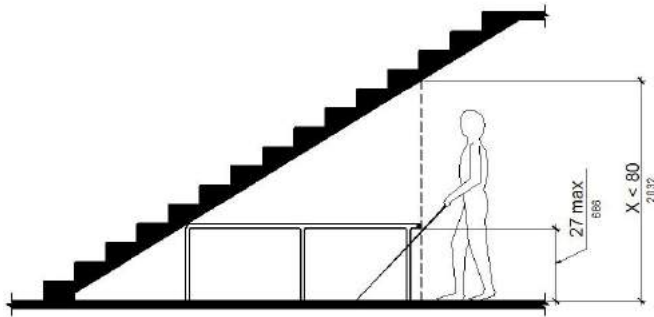
**Exception:** Door closers and door stops shall be permitted to be 78 inches (1981 mm) minimum above the finish floor or ground.

**11B-307.4.1 Guy braces.** Where a guy support is used within either the width of a circulation path or 24 inches (610 mm) maximum outside of a circulation path, a vertical guy brace, sidewalk guy or similar device shall be used to prevent a hazard or an overhead obstruction.

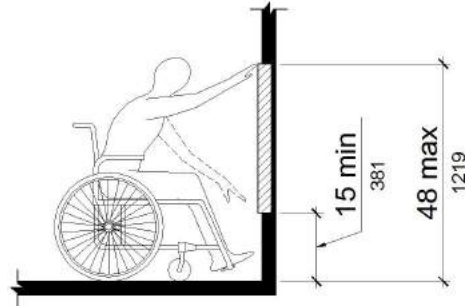
**11B-307.5 Required clear width.** Protruding objects shall not reduce the clear width required for accessible routes.



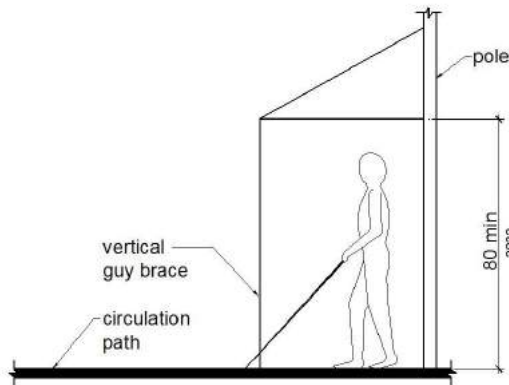
**FIGURE 11B-307.3 POST-MOUNTED PROTRUDING OBJECTS**



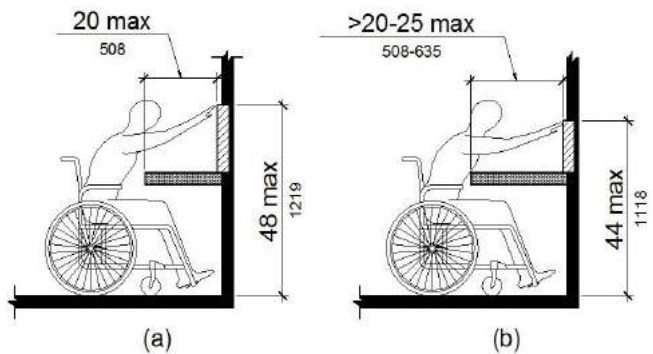
**FIGURE 11B-307.4  
VERTICAL CLEARANCE**



**FIGURE 11B-308.2.1  
UNOBSTRUCTED FORWARD REACH**



**FIGURE 11B-307.4.1  
GUY BRACES**



**FIGURE 11B-308.2.2  
OBSTRUCTED HIGH FORWARD REACH**

**11B-308 Reach ranges**

**11B-308.1 General.** Reach ranges shall comply with Section 11B-308.

**11B-308.1.1 Electrical switches.** Controls and switches intended to be used by the occupant of a room or area to control lighting and receptacle outlets, appliances or cooling, heating and ventilating equipment, shall comply with Section 11B-308 except the low reach shall be measured to the bottom of the outlet box and the high reach shall be measured to the top of the outlet box.

**11B-308.1.2 Electrical receptacle outlets.** Electrical receptacle outlets on branch circuits of 30 amperes or less and communication system receptacles shall comply with Section 11B-308 except the low reach shall be measured to the bottom of the outlet box and the high reach shall be measured to the top of the outlet box.

**11B-308.2 Forward reach.**

**11B-308.2.1 Unobstructed.** Where a forward reach is unobstructed, the high forward reach shall be 48 inches (1219 mm) maximum and the low forward reach shall be 15 inches (381 mm) minimum above the finish floor or ground.

**11B-308.2.2 Obstructed high reach.** Where a high forward reach is over an obstruction, the clear floor space shall extend beneath the element for a distance not less

than the required reach depth over the obstruction. The high forward reach shall be 48 inches (1219 mm) maximum where the reach depth is 20 inches (508 mm) maximum. Where the reach depth exceeds 20 inches (508 mm), the high forward reach shall be 44 inches (1118 mm) maximum and the reach depth shall be 25 inches (635 mm) maximum.

**11B-308.3 Side reach.**

**11B-308.3.1 Unobstructed.** Where a clear floor or ground space allows a parallel approach to an element and the side reach is unobstructed, the high side reach shall be 48 inches (1219 mm) maximum and the low side reach shall be 15 inches (381 mm) minimum above the finish floor or ground.

**Exceptions:**

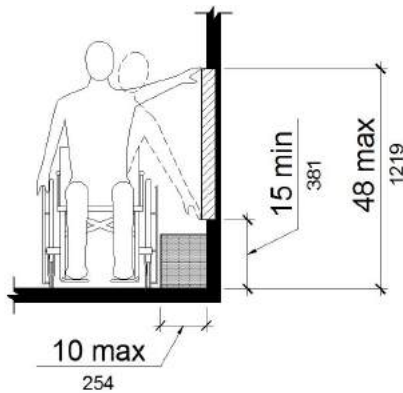
1. An obstruction shall be permitted between the clear floor or ground space and the element where the depth of the obstruction is 10 inches (254 mm) maximum.
2. Operable parts of fuel dispensers shall be permitted to be 54 inches (1372 mm) maximum measured from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

**11B-308.3.2 Obstructed high reach.** Where a clear floor or ground space allows a parallel approach to an element and the high side reach is over an obstruction, the height of the obstruction shall be 34 inches (864 mm) maximum and

the depth of the obstruction shall be 24 inches (610 mm) maximum. The high side reach shall be 48 inches (1219 mm) maximum for a reach depth of 10 inches (254 mm) maximum. Where the reach depth exceeds 10 inches (254 mm), the high side reach shall be 46 inches (1168 mm) maximum for a reach depth of 24 inches (610 mm) maximum.

**Exceptions:**

1. The top of washing machines and clothes dryers shall be permitted to be 36 inches (914 mm) maximum above the finish floor.
2. Operable parts of fuel dispensers shall be permitted to be 54 inches (1372 mm) maximum measured from the surface of the vehicular way where fuel dispensers are installed on existing curbs.



**FIGURE 11B-308.3.1**  
**UNOBSTRUCTED SIDE REACH**

**11B-308.4 Suggested reach ranges for children.** Where building elements such as coat hooks, lockers, or operable parts are designed for use primarily by children, the suggested dimensions of Table 11B-308.4 shall be permitted. These dimensions apply to either forward or side reaches.

**TABLE 11B-308.4**  
**SUGGESTED DIMENSIONS FOR CHILDREN'S USE**

SUGGESTED REACH RANGES FOR CHILDREN AGES 3 THROUGH 12			
Forward or Side Reach	Ages 3 and 4	Ages 5 through 8	Ages 9 through 12
High (maximum)	36 inches (914 mm)	40 inches (1016 mm)	44 inches (1118 mm)
Low (minimum)	20 inches (508 mm)	18 inches (457 mm)	16 inches (406 mm)

**11B-309 Operable parts**

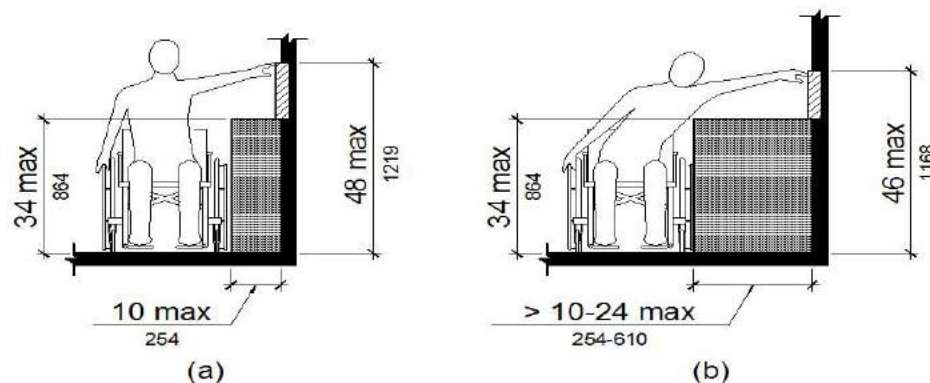
**11B-309.1 General.** Operable parts shall comply with Section 11B-309.

**11B-309.2 Clear floor space.** A clear floor or ground space complying with Section 11B-305 shall be provided.

**11B-309.3 Height.** Operable parts shall be placed within one or more of the reach ranges specified in Section 11B-308.

**11B-309.4 Operation.** Operable parts shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate operable parts shall be 5 pounds (22.2 N) maximum.

**Exception:** Gas pump nozzles and electric vehicle connectors shall not be required to provide operable parts that have an activating force of 5 pounds (22.2 N) maximum.



**FIGURE 11B-308.3.2**  
**OBSTRUCTED HIGH SIDE REACH**

## DIVISION 4: ACCESSIBLE ROUTES

### 11B-401 General

**11B-401.1 Scope.** The provisions of *Division 4* shall apply where required by *Division 2* or where referenced by a requirement in this *chapter*.

### 11B-402 Accessible routes

**11B-402.1 General.** Accessible routes shall comply with 11B-402.

**11B-402.2 Components.** Accessible routes shall consist of one or more of the following components: walking surfaces with a running slope not steeper than 1:20, doorways, ramps, curb ramps excluding the flared sides, elevators, and platform lifts. All components of an accessible route shall comply with the applicable requirements of *Division 4*.

### 11B-403 Walking surfaces

**11B-403.1 General.** Walking surfaces that are a part of an accessible route shall comply with *Section 11B-403*.

**11B-403.2 Floor or ground surface.** Floor or ground surfaces shall comply with *Section 11B-302*.

**11B-403.3 Slope.** The running slope of walking surfaces shall not be steeper than 1:20. The cross slope of walking surfaces shall not be steeper than 1:48.

**Exception:** *The running slope of sidewalks shall not exceed the general grade established for the adjacent street or highway.*

**11B-403.4 Changes in level.** Changes in level shall comply with *Section 11B-303*.

**11B-403.5 Clearances.** Walking surfaces shall provide clearances complying with *Section 11B-403.5*.

**Exception:** Within employee work areas, clearances on common use circulation paths shall be permitted to be decreased by work area equipment provided that the decrease is essential to the function of the work being performed.

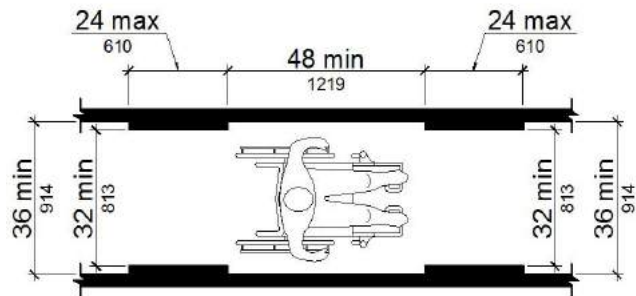
**11B-403.5.1 Clear width.** Except as provided in *Sections 11B-403.5.2* and *11B-403.5.3*, the clear width of walking surfaces shall be 36 inches (914 mm) minimum.

#### Exceptions:

1. The clear width shall be permitted to be reduced to 32 inches (813 mm) minimum for a length of 24 inches (610 mm) maximum provided that reduced width segments are separated by segments that are 48 inches (1219 mm) long minimum and 36 inches (914 mm) wide minimum.
2. The clear width for walking surfaces in corridors serving an occupant load of 10 or more shall be 44 inches (1118 mm) minimum.
3. The clear width for sidewalks and walks shall be 48 inches (1219 mm) minimum. When, because of right-of-way restrictions, natural barriers or other existing conditions, the enforcing agency

determines that compliance with the 48-inch (1219 mm) clear sidewalk width would create an unreasonable hardship, the clear width may be reduced to 36 inches (914 mm).

4. The clear width for aisles shall be 36 inches (914 mm) minimum if serving elements on only one side, and 44 inches (1118 mm) minimum if serving elements on both sides.
5. The clear width for accessible routes to accessible toilet compartments shall be 44 inches (1118 mm) except for door-opening widths and door swings.



**FIGURE 11B-403.5.1  
CLEAR WIDTH OF AN ACCESSIBLE ROUTE**

**11B-403.5.2 Clear width at turn.** Where the accessible route makes a 180 degree turn around an element which is less than 48 inches (1219 mm) wide, clear width shall be 42 inches (1067 mm) minimum approaching the turn, 48 inches (1219 mm) minimum at the turn and 42 inches (1067 mm) minimum leaving the turn.

**Exception:** Where the clear width at the turn is 60 inches (1524 mm) minimum compliance with *Section 11B-403.5.2* shall not be required.

**11B-403.5.3 Passing spaces.** An accessible route with a clear width less than 60 inches (1524 mm) shall provide passing spaces at intervals of 200 feet (60,960 mm) maximum. Passing spaces shall be either: a space 60 inches (1524 mm) minimum by 60 inches (1524 mm) minimum; or, an intersection of two walking surfaces providing a T-shaped space complying with *Section 11B-304.3.2* where the base and arms of the T-shaped space extend 48 inches (1219 mm) minimum beyond the intersection.

**11B-403.6 Handrails.** Where handrails are provided along walking surfaces with running slopes not steeper than 1:20 they shall comply with *Section 11B-505*.

**11B-403.7 Continuous gradient.** All walks with continuous gradients shall have resting areas, 60 inches (1524 mm) in length, at intervals of 400 feet (121,920 mm) maximum. The resting area shall be at least as wide as the walk. The slope of the resting area in all directions shall be 1:48 maximum.

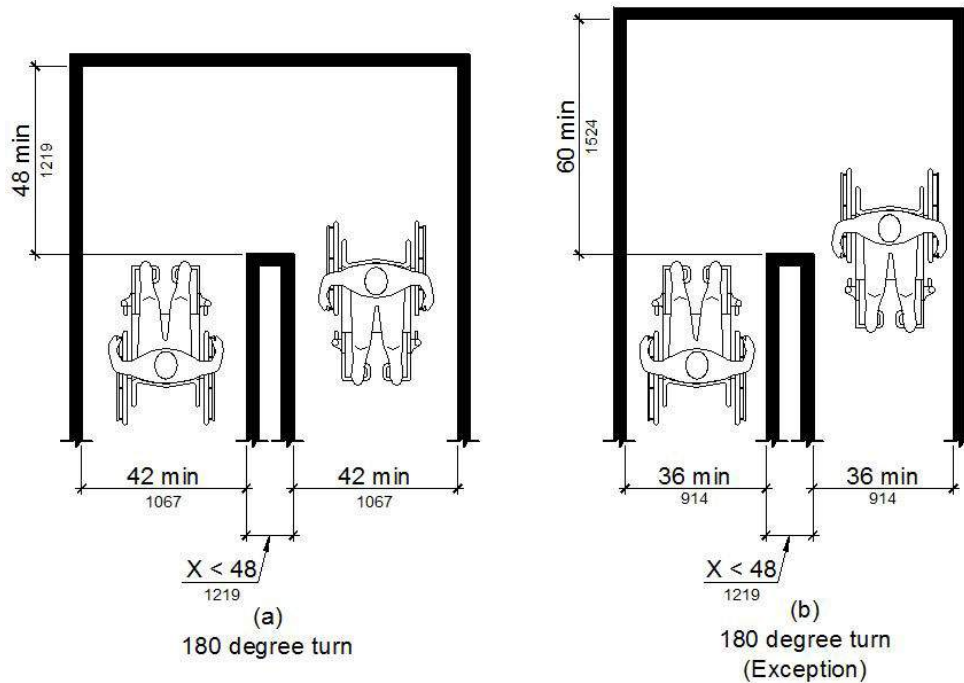


FIGURE 11B-403.5.2  
CLEAR WIDTH AT TURN

**11B-404 Doors, doorways, and gates**

**11B-404.1 General.** Doors, doorways, and gates that are part of an accessible route shall comply with Section 11B-404.

**Exceptions:**

1. Doors, doorways, and gates designed to be operated only by security personnel shall not be required to comply with Sections 11B-404.2.7, 11B-404.2.8, 11B-404.2.9, 11B-404.3.2 and 11B-404.3.4 through 11B-404.3.7. A sign visible from the approach side complying with Section 11B-703.5 shall be posted stating “Entry restricted and controlled by security personnel”.
2. At detention and correctional facilities, doors, doorways, and gates designed to be operated only by security personnel shall not be required to comply with Sections 11B-404.2.7, 11B-404.2.8, 11B-404.2.9, 11B-404.3.2 and 11B-404.3.4 through 11B-404.3.7.

**11B-404.2 Manual doors, doorways, and manual gates** Manual doors and doorways and manual gates intended for user passage shall comply with Section 11B-404.2.

**11B-404.2.1 Revolving doors, gates, and turnstiles.** Revolving doors, revolving gates, and turnstiles shall not be part of an accessible route.

**11B-404.2.2 Double-leaf doors and gates.** At least one of the active leaves of doorways with two leaves shall comply with Sections 11B-404.2.3 and 11B-404.2.4.

**11B-404.2.3 Clear width.** Door openings shall provide a clear width of 32 inches (813 mm) minimum. Clear openings of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees. Openings more than 24 inches (610 mm) deep shall provide a clear opening of 36 inches (914 mm) minimum. There shall be no projections into the required clear opening width lower than 34 inches (864 mm) above the finish floor or ground. Projections into the clear opening width between 34 inches (864 mm) and 80 inches (2032 mm) above the finish floor or ground shall not exceed 4 inches (102 mm).

**Exceptions:**

1. In alterations, a projection of  $\frac{5}{8}$  inch (15.9 mm) maximum into the required clear width shall be permitted for the latch side stop.
2. Door closers and door stops shall be permitted to be 78 inches (1981 mm) minimum above the finish floor or ground.

**11B-404.2.4 Maneuvering clearances.** Minimum maneuvering clearances at doors and gates shall comply with Section 11B-404.2.4. Maneuvering clearances shall extend the full width of the doorway and the required latch side or hinge side clearance.

**Exception: Reserved.**

**11B-404.2.4.1 Swinging doors and gates.** Swinging doors and gates shall have maneuvering clearances complying with Table 11B-404.2.4.1.

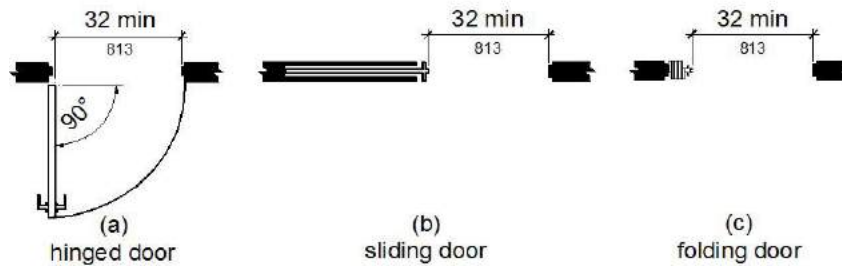


FIGURE 11B-404.2.3  
CLEAR WIDTH OF DOORWAYS

TABLE 11B-404.2.4.1  
MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS AND GATES

TYPE OF USE		MINIMUM MANEUVERING CLEARANCE	
Approach direction	Door or gate side	Perpendicular to doorway	Parallel to doorway (beyond latch side unless noted)
From front	Pull	60 inches (1524 mm)	18 inches (457 mm) <sup>5</sup>
From front	Push	48 inches (1219 mm)	0 inches (0 mm) <sup>1</sup>
From hinge side	Pull	60 inches (1524 mm)	36 inches (914 mm)
From hinge side	Push	44 inches (1118 mm) <sup>2</sup>	22 inches (559 mm) <sup>3</sup>
From latch side	Pull	60 inches (1524 mm)	24 inches (610 mm)
From latch side	Push	44 inches (1118 mm) <sup>4</sup>	24 inches (610 mm)

1. Add 12 inches (305 mm) if closer and latch are provided.
2. Add 4 inches (102 mm) if closer and latch are provided.
3. Beyond hinge side.
4. Add 4 inches (102 mm) if closer is provided.
5. Add 6 inches (152 mm) at exterior side of exterior doors.



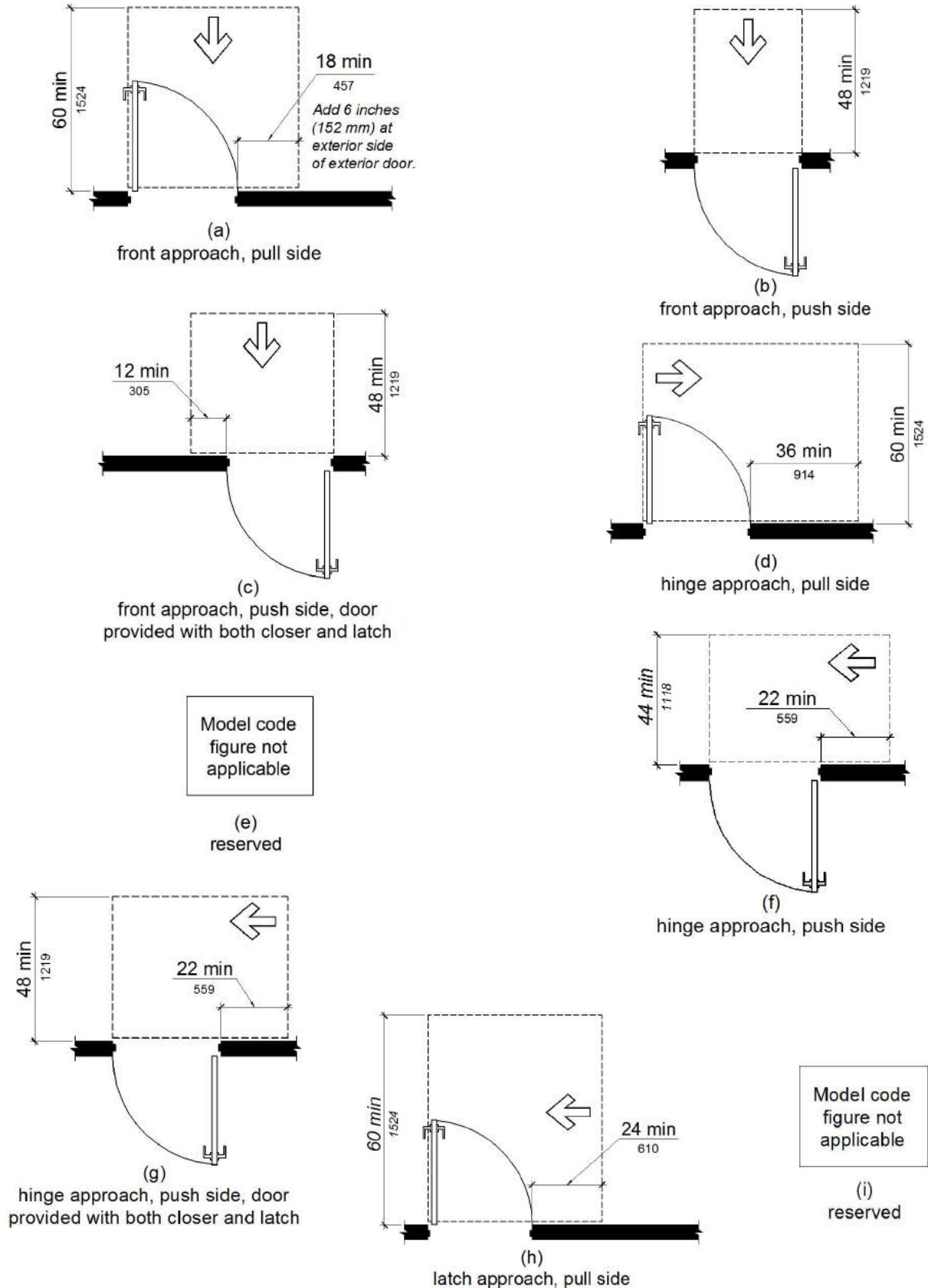


FIGURE 11B-404.2.4.1  
 MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS AND GATES

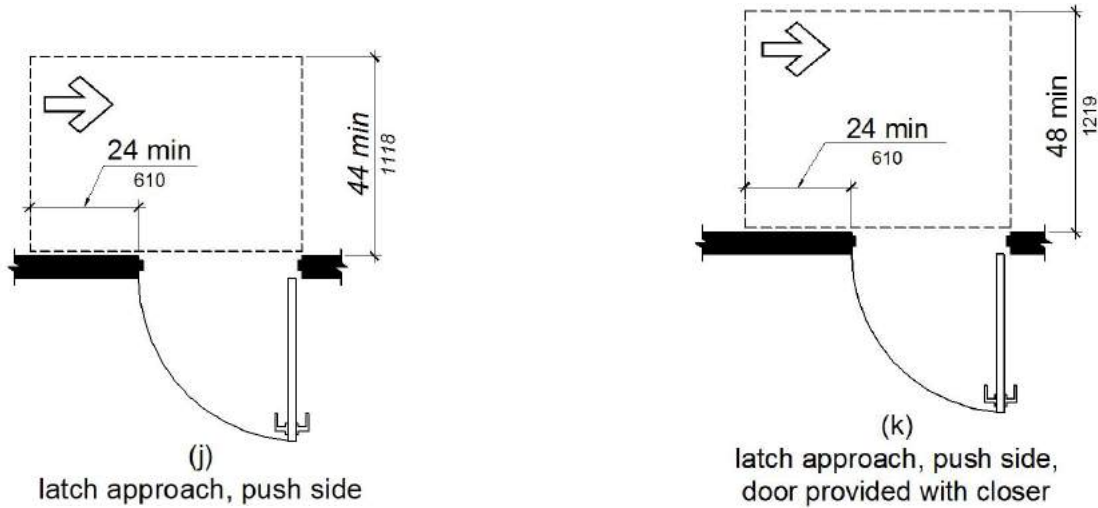


FIGURE 11B-404.2.4.1—continued  
MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS AND GATES

**11B-404.2.4.2 Doorways without doors or gates, sliding doors, and folding doors.** Doorways less than 36 inches (914 mm) wide without doors or gates, sliding doors, or folding doors shall have maneuvering clearances complying with Table 11B-404.2.4.2.

**11B-404.2.4.3 Recessed doors and gates.** Maneuvering clearances for forward approach shall be provided when any obstruction within 18 inches (457 mm) of the latch side at an interior doorway, or within 24 inches (610 mm) of the latch side of an exterior doorway, projects more than 8 inches (203 mm) beyond the face of the door, measured perpendicular to the face of the door or gate.

**11B-404.2.4.4 Floor or ground surface.** Floor or ground surface within required maneuvering clearances shall comply with Section 11B-302. Changes in level, slopes exceeding 1:48, and detectable warnings shall not be permitted.

**Exceptions:**

1. Reserved.
2. Changes in level at thresholds complying with Section 11B-404.2.5 shall be permitted.

**11B-404.2.5 Thresholds.** Thresholds, if provided at doorways, shall be 1/2 inch (12.7 mm) high maximum. Raised thresholds and changes in level at doorways shall comply with Sections 11B-302 and 11B-303.

**Exception: Reserved.**

**11B-404.2.6 Doors in series and gates in series.** The distance between two hinged or pivoted doors in series and gates in series shall be 48 inches (1219 mm) minimum plus the width of doors or gates swinging into the space.

**11B-404.2.7 Door and gate hardware.** Handles, pulls, latches, locks, and other operable parts on doors and gates

shall comply with Section 11B-309.4. Operable parts of such hardware shall be 34 inches (864 mm) minimum and 44 inches (1118 mm) maximum above the finish floor or ground. Where sliding doors are in the fully open position, operating hardware shall be exposed and usable from both sides.

**Exceptions:**

1. Existing locks shall be permitted in any location at existing glazed doors without stiles, existing overhead rolling doors or grilles, and similar existing doors or grilles that are designed with locks that are activated only at the top or bottom rail.
2. Access gates in barrier walls and fences protecting pools, spas, and hot tubs shall be permitted to have operable parts of the release of latch on self-latching devices at 54 inches (1372 mm) maximum above the finish floor or ground provided the self-latching devices are not also self-locking devices and operated by means of a key, electronic opener, or integral combination lock.

**11B-404.2.8 Closing speed.** Door and gate closing speed shall comply with Section 11B-404.2.8.

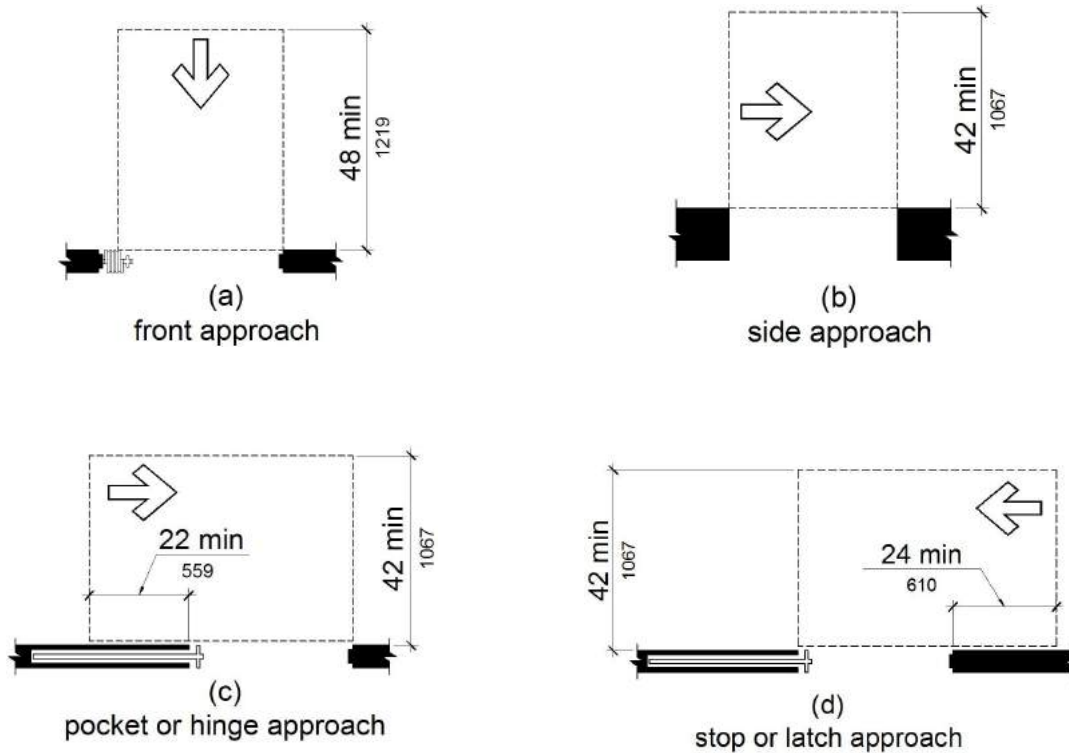
**11B-404.2.8.1 Door closers and gate closers.** Door closers and gate closers shall be adjusted so that from an open position of 90 degrees, the time required to move the door to a position of 12 degrees from the latch is 5 seconds minimum.

**11B-404.2.8.2 Spring hinges.** Door and gate spring hinges shall be adjusted so that from the open position of 70 degrees, the door or gate shall move to the closed position in 1.5 seconds minimum.

**TABLE 11B-404.2.4.2  
MANEUVERING CLEARANCES AT DOORWAYS WITHOUT DOORS OR  
GATES, MANUAL SLIDING DOORS, AND MANUAL FOLDING DOORS**

Approach direction	MINIMUM MANEUVERING CLEARANCE	
	Perpendicular to doorway	Parallel to doorway (beyond stop/latch side unless noted)
From front	48 inches (1219 mm)	0 inches (0 mm)
From side <sup>1</sup>	42 inches (1067 mm)	0 inches (0 mm)
From pocket/hinge side	42 inches (1067 mm)	22 inches (559 mm) <sup>2</sup>
From stop/latch side	42 inches (1067 mm)	24 inches (610 mm)

1. Doorway with no door only.
2. Beyond pocket/hinge side.



**FIGURE 11B-404.2.4.2  
MANEUVERING CLEARANCES AT DOORWAYS WITHOUT DOORS, SLIDING DOORS, GATES, AND FOLDING DOORS**

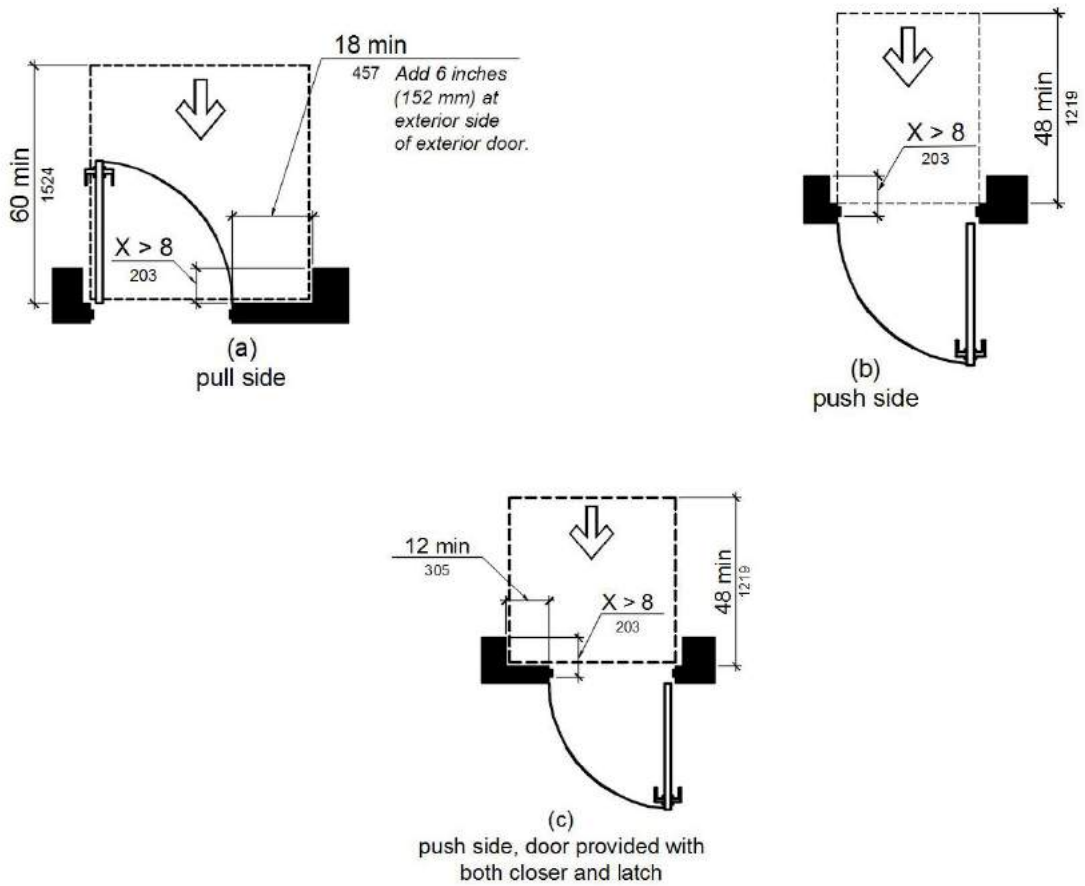


FIGURE 11B-404.2.4.3  
MANEUVERING CLEARANCES AT RECESSED DOORS AND GATES

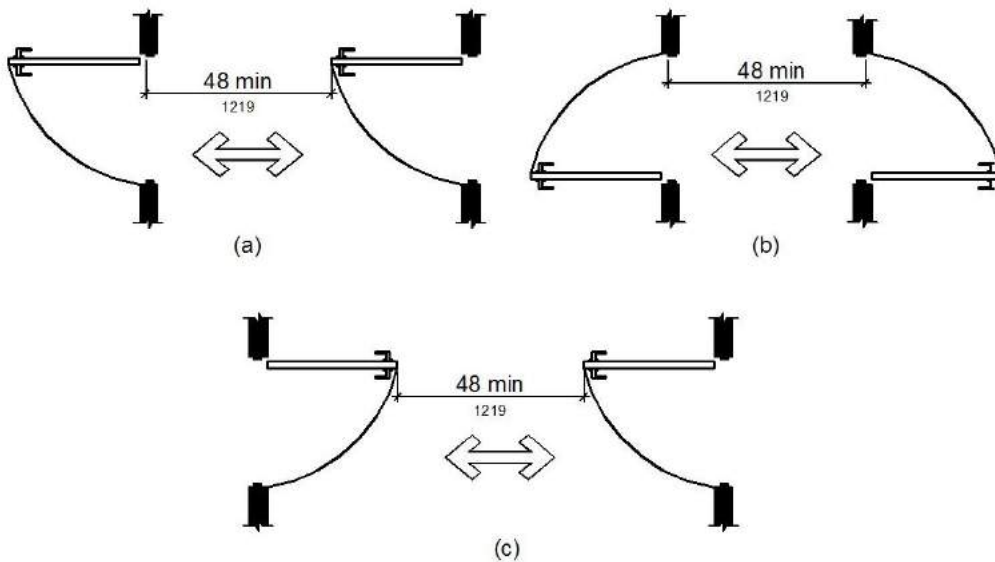


FIGURE 11B-404.2.6  
DOORS IN SERIES AND GATES IN SERIES

**11B-404.2.9 Door and gate opening force.** The force for pushing or pulling open a door or gate shall be as follows:

1. Interior hinged doors and gates: 5 pounds (22.2 N) maximum.
2. Sliding or folding doors: 5 pounds (22.2 N) maximum.
3. *Required fire doors: the minimum opening force allowable by the appropriate administrative authority, not to exceed 15 pounds (66.7 N).*
4. *Exterior hinged doors: 5 pounds (22.2 N) maximum.*

These forces do not apply to the force required to retract latch bolts or disengage other devices that hold the door or gate in a closed position.

**Exception:** *When, at a single location, one of every eight exterior door leafs, or fraction of eight, is a powered door, other exterior doors at the same location, serving the same interior space, may have a maximum opening force of 8.5 pounds (37.8 N). The powered leaf(s) shall be located closest to the accessible route.*

- a. *Powered doors shall comply with Section 11B-404.3. Powered doors shall be fully automatic doors complying with Builders Hardware Manufacturers' Association (BHMA) A156.10 or low energy operated doors complying with BHMA A156.19.*
- b. *Powered doors serving a building or facility with an occupancy of 150 or more shall be provided with a back-up battery or back-up generator. The back-up power source shall be able to cycle the door a minimum of 100 cycles.*
- c. *Powered doors shall be controlled on both the interior and exterior sides of the doors by sensing devices, push plates, vertical actuation bars or other similar operating devices complying with Section 11B-309.*

*At each location where push plates are provided there shall be two push plates; the centerline of one push plate shall be 7 inches (178 mm) minimum and 8 inches (203 mm) maximum above the floor or ground surface and the centerline of the second push plate shall be 30 inches (762 mm) minimum and 44 inches (1118 mm) maximum above the floor or ground surface. Each push plate shall be a minimum of 4 inches (102 mm) diameter or a minimum of 4 inches by 4 inches (102 mm by 102 mm) square and shall display the International Symbol of Accessibility complying with Section 11B-703.7.*

*At each location where vertical actuation bars are provided the operable portion shall be located so the bottom is 5 inches (127 mm) maximum above the floor or ground surface and the top is 35 inches (889 mm) minimum above the floor or ground surface. The operable portion of each vertical actuation bar shall be a minimum of 2 inches (51 mm) wide and shall display the*

*International Symbol of Accessibility complying with Section 11B-703.7.*

*Where push plates, vertical actuation bars or other similar operating devices are provided, they shall be placed in a conspicuous location. A level and clear floor or ground space for forward or parallel approach complying with Section 11B-305 shall be provided, centered on the operating device. Doors shall not swing into the required clear floor or ground space.*

- d. *Signs identifying the accessible entrance required by Section 11B-216.6 shall be placed on, or immediately adjacent to, each powered door. Signs shall be provided in compliance with BHMA A156.10 or BHMA A156.19, as applicable.*
- e. *In addition to the requirements of Item d, where a powered door is provided in buildings or facilities containing assembly occupancies of 300 or more, a sign displaying the International Symbol of Accessibility measuring 6 inches by 6 inches (152 mm by 152 mm), complying with Section 11B-703.7, shall be provided above the door on both the interior and exterior sides of each powered door.*

**11B-404.2.10 Door and gate surfaces.** Swinging door and gate surfaces within 10 inches (254 mm) of the finish floor or ground measured vertically shall have a smooth surface on the push side extending the full width of the door or gate. Parts creating horizontal or vertical joints in these surfaces shall be within  $\frac{1}{16}$  inch (1.6 mm) of the same plane as the other and be free of sharp or abrasive edges. Cavities created by added kick plates shall be capped.

**Exceptions:**

1. Sliding doors shall not be required to comply with Section 11B-404.2.10.
2. Tempered glass doors without stiles and having a bottom rail or shoe with the top leading edge tapered at 60 degrees minimum from the horizontal shall not be required to meet the 10 inch (254 mm) bottom smooth surface height requirement.
3. Doors and gates that do not extend to within 10 inches (254 mm) of the finish floor or ground shall not be required to comply with Section 11B-404.2.10.
4. **Reserved.**

**11B-404.2.11 Vision lights.** Doors, gates, and side lights adjacent to doors or gates, containing one or more glazing panels that permit viewing through the panels shall have the bottom of at least one glazed panel located 43 inches (1092 mm) maximum above the finish floor.

**Exception:** *Glazing panels with the lowest part more than 66 inches (1676 mm) from the finish floor or ground shall not be required to comply with Section 11B-404.2.11.*

**11B-404.3 Automatic and power-assisted doors and gates.** Automatic doors and automatic gates shall comply with Sec-

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tion 11B-404.3. Full-powered automatic doors shall comply with ANSI/BHMA A156.10. Low-energy and power-assisted doors shall comply with ANSI/BHMA A156.19.

**11B-404.3.1 Clear width.** Doorways shall provide a clear opening of 32 inches (813 mm) minimum in power-on and power-off mode. The minimum clear width for automatic door systems in a doorway shall provide a clear, unobstructed opening of 32 inches (813 mm) with one leaf positioned at an angle of 90 degrees from its closed position.

**11B-404.3.2 Maneuvering clearance.** Clearances at power-assisted doors and gates shall comply with Section 11B-404.2.4. Clearances at automatic doors and gates without standby power and serving an accessible means of egress shall comply with Section 11B-404.2.4.

**Exception:** Where automatic doors and gates remain open in the power-off condition, compliance with Section 11B-404.2.4 shall not be required.

**11B-404.3.3 Thresholds.** Thresholds and changes in level at doorways shall comply with Section 11B-404.2.5.

**11B-404.3.4 Doors in series and gates in series.** Doors in series and gates in series shall comply with Section 11B-404.2.6.

**11B-404.3.5 Controls.** Manually operated controls shall comply with Section 11B-309. The clear floor space adjacent to the control shall be located beyond the arc of the door swing.

**11B-404.3.6 Break out opening.** Where doors and gates without standby power are a part of a means of egress, the clear break out opening at swinging or sliding doors and gates shall be 32 inches (813 mm) minimum when operated in emergency mode.

**Exception:** Where manual swinging doors and gates comply with Section 11B-404.2 and serve the same means of egress compliance with Section 11B-404.3.6 shall not be required.

**11B-404.3.7 Revolving doors, revolving gates, and turnstiles.** Revolving doors, revolving gates, and turnstiles shall not be part of an accessible route.

## 11B-405 Ramps

**11B-405.1 General.** Ramps on accessible routes shall comply with Section 11B-405.

**Exception:** In assembly areas, aisle ramps adjacent to seating and not serving elements required to be on an accessible route shall not be required to comply with Section 11B-405.

**11B-405.2 Slope.** Ramp runs shall have a running slope not steeper than 1:12.

**Exception: Reserved.**

**11B-405.3 Cross slope.** Cross slope of ramp runs shall not be steeper than 1:48.

**11B-405.4 Floor or ground surfaces.** Floor or ground surfaces of ramp runs shall comply with Section 11B-302. Changes in level other than the running slope and cross slope are not permitted on ramp runs.

**11B-405.5 Clear width.** The clear width of a ramp run shall be 48 inches (1219 mm) minimum.

### Exceptions:

1. Within employee work areas, the required clear width of ramps that are a part of common use circulation paths shall be permitted to be decreased by work area equipment provided that the decrease is essential to the function of the work being performed.
2. Handrails may project into the required clear width of the ramp at each side  $3\frac{1}{2}$  inches (89 mm) maximum at the handrail height.
3. The clear width of ramps in residential uses serving an occupant load of fifty or less shall be 36 inches (914 mm) minimum between handrails.

**11B-405.6 Rise.** The rise for any ramp run shall be 30 inches (762 mm) maximum.

**11B-405.7 Landings.** Ramps shall have landings at the top and the bottom of each ramp run. Landings shall comply with Section 11B-405.7.

**11B-405.7.1 Slope.** Landings shall comply with Section 11B-302. Changes in level, slopes exceeding 1:48, and detectable warnings shall not be permitted.

**Exception: Reserved.**

**11B-405.7.2 Width.** The landing clear width shall be at least as wide as the widest ramp run leading to the landing.

**11B-405.7.2.1: Top landings shall be 60 inches (1524 mm) wide minimum.**

**11B-405.7.3 Length.** The landing clear length shall be 60 inches (1524 mm) long minimum.

**11B-405.7.3.1: Bottom landings shall extend 72 inches (1829 mm) minimum in the direction of ramp run.**

**11B-405.7.4 Change in direction.** Ramps that change direction between runs at landings shall have a clear landing 60 inches (1525 mm) minimum by 72 inches (1829 mm) minimum in the direction of downward travel from the upper ramp run.

**11B-405.7.5 Doorways.** Where doorways are located adjacent to a ramp landing, maneuvering clearances required by Sections 11B-404.2.4 and 11B-404.3.2 shall be permitted to overlap the required landing area. Doors, when fully open, shall not reduce the required ramp landing width by more than 3 inches (76 mm). Doors, in any position, shall not reduce the minimum dimension of the ramp landing to less than 42 inches (1067 mm).

**11B-405.8 Handrails.** Ramp runs shall have handrails complying with Section 11B-505.

### Exceptions:

1. Reserved.
2. Reserved.
3. Curb ramps do not require handrails.
4. At door landings, handrails are not required on ramp runs less than 6 inches (152 mm) in rise or 72 inches (1829 mm) in length.

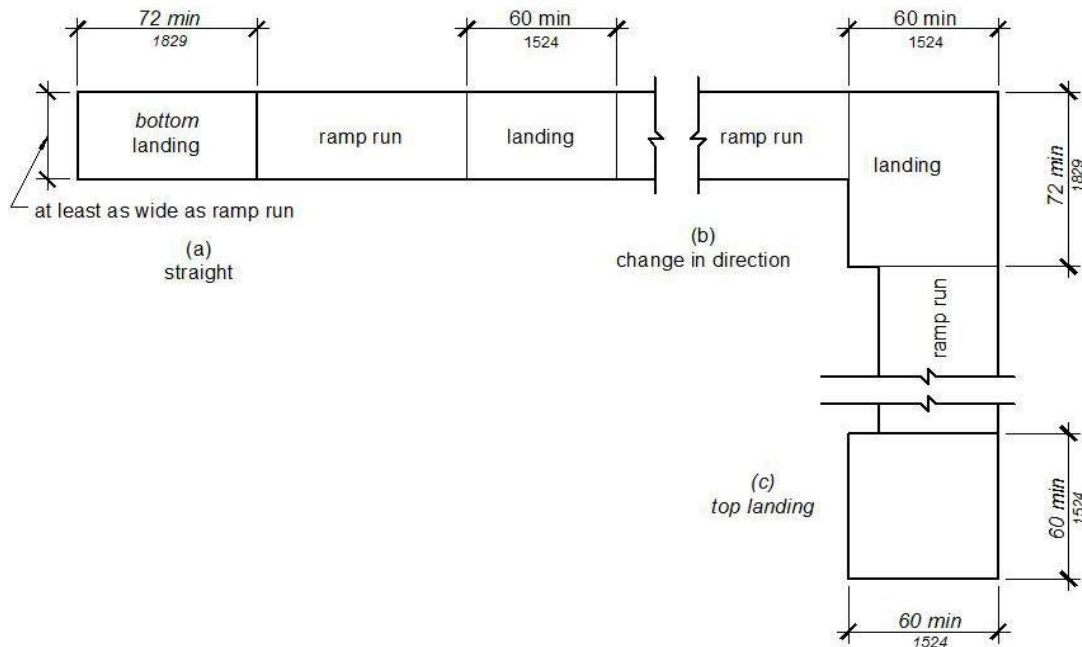


FIGURE 11B-405.7  
RAMP LANDINGS

**11B-405.9 Edge protection.** Edge protection complying with Section 11B-405.9.2 shall be provided on each side of ramp runs and at each side of ramp landings.

**Exceptions:**

1. Edge protection shall not be required on ramps that are not required to have handrails and have sides complying with Section 11B-406.2.2.
2. Edge protection shall not be required on the sides of ramp landings serving an adjoining ramp run or stairway.
3. Edge protection shall not be required on the sides of ramp landings having a vertical drop-off of 1/2 inch (12.7 mm) maximum within 10 inches (254 mm) horizontally of the minimum landing area specified in Section 11B-405.7.

**11B-405.9.1 Reserved.**

**11B-405.9.2 Curb or barrier.** A curb or barrier shall be provided that prevents the passage of a 4-inch (102 mm) diameter sphere, where any portion of the sphere is within 4 inches (102 mm) of the finish floor or ground surface. To prevent wheel entrapment, the curb or barrier shall provide a continuous and uninterrupted barrier along the length of the ramp.

**11B-405.10 Wet conditions.** Landings subject to wet conditions shall be designed to prevent the accumulation of water.

**11B-406 Curb ramps, blended transitions and islands**

**11B-406.1 General.** Curb ramps, blended transitions and islands on accessible routes shall comply with Section 11B-406. Curb ramps may be perpendicular, parallel, or a combination of perpendicular and parallel.

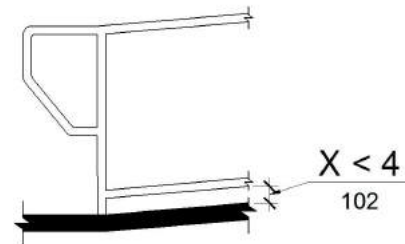


FIGURE 11B-405.9.2  
CURB OR BARRIER EDGE PROTECTION

**11B-406.1.1 Perpendicular curb ramps.** Perpendicular curb ramps shall comply with Section 11B-406.2.

**11B-406.1.2 Parallel curb ramps.** Parallel curb ramps shall comply with Section 11B-406.3.

**11B-406.1.3 Blended transitions.** Blended transitions shall comply with Section 11B-406.4.

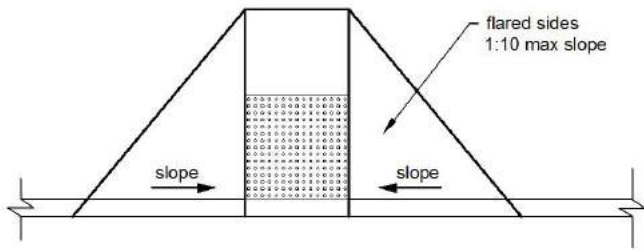
**11B-406.1.4 Islands.** Islands shall comply with Section 11B-406.6.

**11B-406.2 Perpendicular curb ramps.** Perpendicular curb ramps shall comply with Sections 11B-406.2 and 11B-406.5.

**11B-406.2.1 Slope.** Ramp runs shall have a running slope not steeper than 1:12.

**11B-406.2.2 Sides of curb ramps.** Where provided, curb ramp flares shall not be steeper than 1:10.

**11B-406.3 Parallel curb ramps.** Parallel curb ramps shall comply with Sections 11B-406.3 and 11B-406.5. A parallel curb ramp may be provided with one sloping segment or two opposing sloping segments.



**FIGURE 11B-406.2.2  
SIDES OF CURB RAMPS**

**11B-406.3.1 Slope.** The running slope of the curb ramp segments shall be in-line with the direction of sidewalk travel. Ramp runs shall have a running slope not steeper than 1:12.

**11B-406.3.2 Turning space.** A turning space 48 inches (1219 mm) minimum by 48 inches (1219 mm) minimum shall be provided at the bottom of the curb ramp. The slope of the turning space in all directions shall be 1:48 maximum.

**11B-406.4 Blended transitions.** Blended transitions shall comply with Sections 11B-406.4 and 11B-406.5.

**11B-406.4.1 Slope.** Blended transitions shall have a running slope not steeper than 1:20.

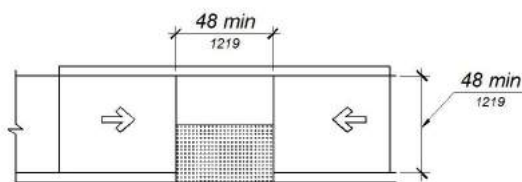
**11B-406.5 Common requirements.** Curb ramps and blended transitions shall comply with Section 11B-406.5.

**11B-406.5.1 Location.** Curb ramps and the flared sides of curb ramps shall be located so that they do not project into vehicular traffic lanes, parking spaces, or parking access aisles. Curb ramps at marked crossings shall be wholly contained within the markings, excluding any flared sides.

**Exception:** Diagonal curb ramps shall comply with Section 11B-406.5.9.

**11B-406.5.2 Width.** The clear width of curb ramp runs (excluding any flared sides), blended transitions, and turning spaces shall be 48 inches (1219 mm) minimum.

**11B-406.5.3 Landings.** Landings shall be provided at the tops of curb ramps and blended transitions. The landing clear length shall be 48 inches (1219 mm) minimum. The landing clear width shall be at least as wide as the curb ramp, excluding any flared sides, or the blended transition leading to the landing. The slope of the landing in all directions shall be 1:48 maximum.



**FIGURE 11B-406.3.2  
PARALLEL CURB RAMPS**

**Exception:** Parallel curb ramps shall not be required to comply with Section 11B-406.5.3.

**11B-406.5.4 Floor or ground surfaces.** Floor or ground surfaces of curb ramps and blended transitions shall comply with Section 11B-405.4.

**11B-406.5.5 Wet conditions.** Curb ramps and blended transitions shall comply with Section 11B-405.10.

**11B-406.5.6 Grade breaks.** Grade breaks at the top and bottom of curb ramp runs shall be perpendicular to the direction of the ramp run. Grade breaks shall not be permitted on the surface of ramp runs and turning spaces. Surface slopes that meet at grade breaks shall be flush.

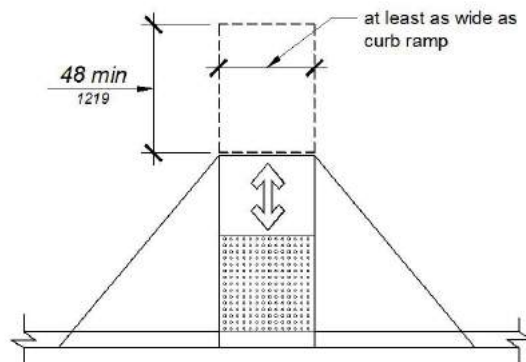
**11B-406.5.7 Cross slope.** The cross slope of curb ramps and blended transitions shall be 1:48 maximum.

**11B-406.5.8 Counter slope.** Counter slopes of adjoining gutters and road surfaces immediately adjacent to and within 24 inches (610 mm) of the curb ramp shall not be steeper than 1:20. The adjacent surfaces at transitions at curb ramps to walks, gutters, and streets shall be at the same level.

**11B-406.5.9 Clear space at diagonal curb ramps.** The bottom of diagonal curb ramps shall have a clear space 48 inches (1219 mm) minimum outside active traffic lanes of the roadway. Diagonal curb ramps provided at marked crossings shall provide the 48 inches (1219 mm) minimum clear space within the markings.

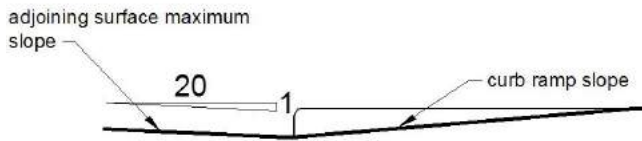
**11B-406.5.10 Diagonal curb ramps.** Diagonal or corner type curb ramps are perpendicular or parallel curb ramps that are oriented diagonally at an intersection. Diagonal or corner type curb ramps with returned curbs or other well-defined edges shall have the edges parallel to the direction of pedestrian flow. Diagonal curb ramps with flared sides shall have a segment of curb 24 inches (610 mm) long minimum located on each side of the curb ramp and within the marked crossing.

**11B-406.5.11 Reserved.**



**FIGURE 11B-406.5.3  
LANDINGS AT THE TOP OF CURB RAMPS**





**FIGURE 11B-406.5.8**  
COUNTER SLOPE OF SURFACES ADJACENT TO CURB RAMP

**11B-406.5.12 Detectable warnings.** Curb ramps and blended transitions shall have detectable warnings complying with Section 11B-705.

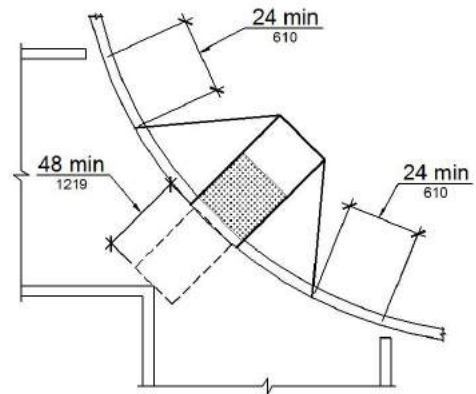
**11B-406.6 Islands.** Raised islands in crossings shall be cut through level with the street or have curb ramps at both sides. The clear width of the accessible route at islands shall be 60 inches (1524 mm) wide minimum. Where curb ramps are provided, they shall comply with Section 11B-406. Landings complying with Section 11B-406.5.3 and the accessible route shall be permitted to overlap. Islands shall have detectable warnings complying with Section 11B-705.

**11B-407 Elevators**

**11B-407.1 General.** Elevators shall comply with Section 11B-407 and with ASME A17.1 They shall be passenger elevators as classified by ASME A17.1. Elevator operation shall be automatic.

**11B-407.1.1 Combined passenger and freight elevators.** When the only elevators provided for use by the public and employees are combination passenger and freight elevators, they shall comply with Section 11B-407 and with ASME A17.1.

**11B-407.2 Elevator landing requirements.** Elevator landings shall comply with Section 11B-407.2.



**FIGURE 11B-406.5.10**  
DIAGONAL OR CORNER TYPE CURB RAMP

**11B-407.2.1 Call controls.** Where elevator call buttons or keypads are provided, they shall comply with Sections 11B-407.2.1 and 11B-309.4.

**Exception: Reserved.**

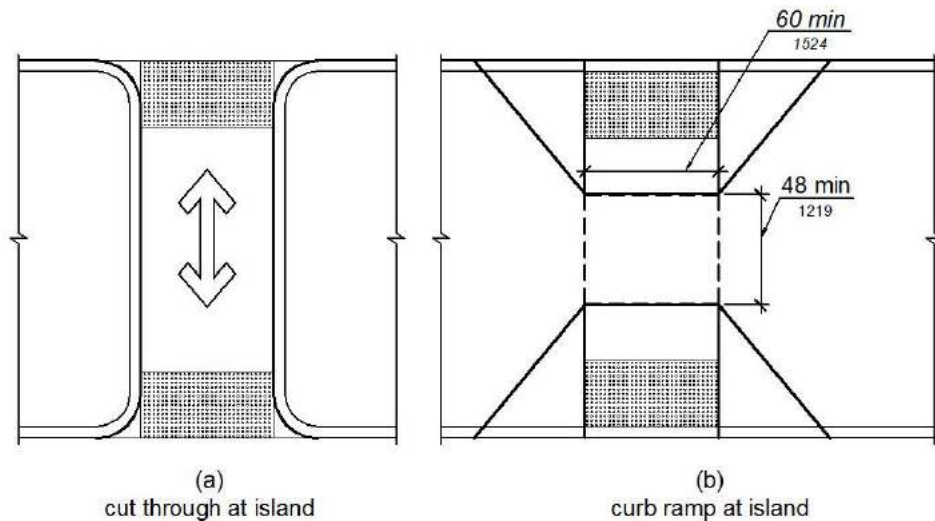
**11B-407.2.1.1 Height.** Call buttons and keypads shall be located within one of the reach ranges specified in Section 11B-308, measured to the centerline of the highest operable part.

**Exception: Reserved.**

**11B-407.2.1.2 Size and shape.** Call buttons shall have square shoulders, be  $\frac{3}{4}$  inch (19.1 mm) minimum in the smallest dimension and shall be raised  $\frac{1}{8}$  inch (3.2 mm) plus or minus  $\frac{1}{32}$  inch (0.8 mm) above the surrounding surface. The buttons shall be activated by a mechanical motion that is detectable.

**Exception: Reserved.**

**11B-407.2.1.3 Clear floor or ground space.** A clear floor or ground space complying with Section 11B-305 shall be provided at call controls.



**FIGURE 11B-406.6**  
ISLANDS IN CROSSINGS

**11B-407.2.1.4 Location.** The call button that designates the up direction shall be located above the call button that designates the down direction.

**Exception: Reserved.**

**11B-407.2.1.5 Signals.** Call buttons shall have visible signals that will activate when each call is registered and will extinguish when each call is answered. Call buttons shall be internally illuminated with a white light over the entire surface of the button.

**Exceptions:**

1. *Reserved.*
2. *Reserved.*

**11B-407.2.1.6 Keypads.** Where keypads are provided, keypads shall be in a standard telephone keypad arrangement and shall comply with Section 11B-407.4.7.2.

**11B-407.2.2 Hall signals.** Hall signals, including in-car signals, shall comply with Section 11B-407.2.2.

**11B-407.2.2.1 Visible and audible signals.** A visible and audible signal shall be provided at each hoistway entrance to indicate which car is answering a call and the car's direction of travel. Where in-car signals are provided, they shall be visible from the floor area adjacent to the hall call buttons.

**Exceptions:**

1. *Reserved.*
2. *Reserved.*

**11B-407.2.2.2 Visible signals.** Visible signal fixtures shall be centered at 72 inches (1829 mm) minimum above the finish floor or ground. The visible signal elements shall be a minimum 2½ inches (64 mm) high by 2½ inches (64 mm) wide. Signals shall be visible from the floor area adjacent to the hall call button.

**Exceptions:**

1. *Reserved.*
2. *Reserved.*

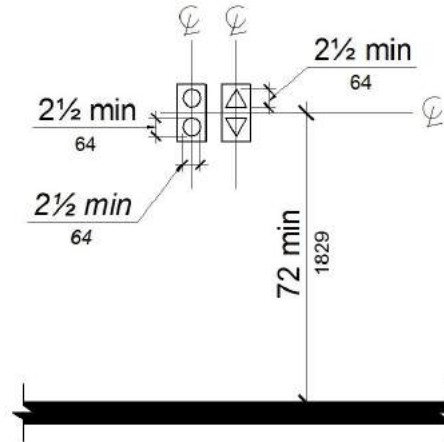
**11B-407.2.2.3 Audible signals.** Audible signals shall sound once for the up direction and twice for the down direction, or shall have verbal annunciators that indicate the direction of elevator car travel. Audible signals shall have a frequency of 1500 Hz maximum. Verbal annunciators shall have a frequency of 300 Hz minimum and 3000 Hz maximum. The audible signal and verbal annunciator shall be 10 dB minimum above ambient, but shall not exceed 80 dB, measured at the hall call button.

**Exceptions:**

1. *Reserved.*
2. *Reserved.*

**11B-407.2.2.4 Reserved**

**11B-407.2.3 Hoistway signs.** Signs at elevator hoistways shall comply with Section 11B-407.2.3.



**FIGURE 11B-407.2.2.2 VISIBLE HALL SIGNALS**

**11B-407.2.3.1 Floor designation.** Floor designations complying with Sections 11B-703.2 and 11B-703.4.1 shall be provided on both jambs of elevator hoistway entrances. Floor designations shall be provided in both raised characters and Braille. Raised characters shall be 2 inches (51 mm) high. A raised star, placed to the left of the floor designation, shall be provided on both jambs at the main entry level. The outside diameter of the star shall be 2 inches (51 mm) and all points shall be of equal length. Raised characters, including the star, shall be white on a black background. Braille complying with Section 11B-703.3 shall be placed below the corresponding raised characters and the star. The Braille translation for the star shall be "MAIN". Applied plates are acceptable if they are permanently fixed to the jamb.

**11B-407.2.3.2 Reserved**

**11B-407.3 Elevator door requirements.** Hoistway and car doors shall comply with Section 11B-407.3.

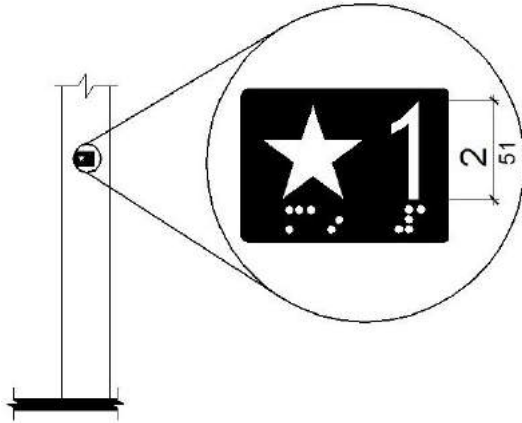
**11B-407.3.1 Type.** Elevator doors shall be the horizontal sliding type. Car gates shall be prohibited.

**11B-407.3.2 Operation.** Elevator hoistway and car doors shall open and close automatically.

**Exception:** Existing manually operated hoistway swing doors shall be permitted provided that they comply with Sections 11B-404.2.3 and 11B-404.2.9. Car door closing shall not be initiated until the hoistway door is closed.

**11B-407.3.3 Reopening device.** Elevator doors shall be provided with a reopening device complying with Section 11B-407.3.3 that shall stop and reopen a car door and hoistway door automatically if the door becomes obstructed by an object or person.

**Exception:** Existing elevators with manually operated doors shall not be required to comply with Section 11B-407.3.3.



**FIGURE 11B-407.2.3.1**  
**FLOOR DESIGNATIONS ON JAMBS**  
**OF ELEVATOR HOISTWAY ENTRANCES**

**11B-407.3.3.1 Height.** The device shall be activated by sensing an obstruction passing through the opening at 5 inches (127 mm) nominal and 29 inches (737 mm) nominal above the finish floor.

**11B-407.3.3.2 Contact.** The device shall not require physical contact to be activated, although contact is permitted to occur before the door reverses.

**11B-407.3.3.3 Duration.** Door reopening devices shall remain effective for 20 seconds minimum.

**11B-407.3.4 Door and signal timing.** The minimum acceptable time from notification that a car is answering a call until the doors of that car start to close shall be calculated from the following equation:

$T = D/(1.5 \text{ ft/s})$  or  $T = D/(457 \text{ mm/s}) = 5$  seconds minimum where  $T$  equals the total time in seconds and  $D$  equals the distance (in feet or millimeters) from the point in the lobby or corridor 60 inches (1524 mm) directly in front of the farthest call button controlling that car to the centerline of its hoistway door.

**Exceptions:**

1. For cars with in-car lanterns,  $T$  shall be permitted to begin when the signal is visible from the point 60 inches (1524 mm) directly in front of the farthest hall call button and the audible signal is sounded.
2. *Reserved.*

**11B-407.3.5 Door delay.** Elevator doors shall remain fully open in response to a car call for 5 seconds minimum.

**11B-407.3.6 Width.** The width of elevator doors shall comply with Table 11B-407.4.1.

**Exception:** In existing elevators, a power-operated car door complying with Section 11B-404.2.3 shall be permitted.

**11B-407.4 Elevator car requirements.** Elevator cars shall comply with Section 11B-407.4.

**11B-407.4.1 Car dimensions.** Inside dimensions of elevator cars and clear width of elevator doors shall comply with Table 11B-407.4.1.

**Exception:** In existing buildings, where existing shaft configuration prohibits strict compliance with Section 11B-407.4.1, existing elevator car configurations that provide a clear floor area of 18 square feet (1.67 m<sup>2</sup>) minimum and also provide an inside clear depth 54 inches (1372 mm) minimum and a clear width 48 inches (1219 mm) minimum shall be permitted.

**11B-407.4.2 Floor surfaces.** Floor surfaces in elevator cars shall comply with Sections 11B-302 and 11B-303.

**11B-407.4.3 Platform to hoistway clearance.** The clearance between the car platform sill and the edge of any hoistway landing shall be 1<sup>1</sup>/<sub>4</sub> inch (32 mm) maximum.

**11B-407.4.4 Leveling.** Each car shall be equipped with a self-leveling feature that will automatically bring and maintain the car at floor landings within a tolerance of 1/2 inch (12.7 mm) under rated loading to zero loading conditions.

**11B-407.4.5 Illumination.** The level of illumination at the car controls, platform, car threshold and car landing sill shall be 5 foot candles (54 lux) minimum.

**11B-407.4.6 Elevator car controls.** Where provided, elevator car controls shall comply with Sections 11B-407.4.6 and 11B-309.4.

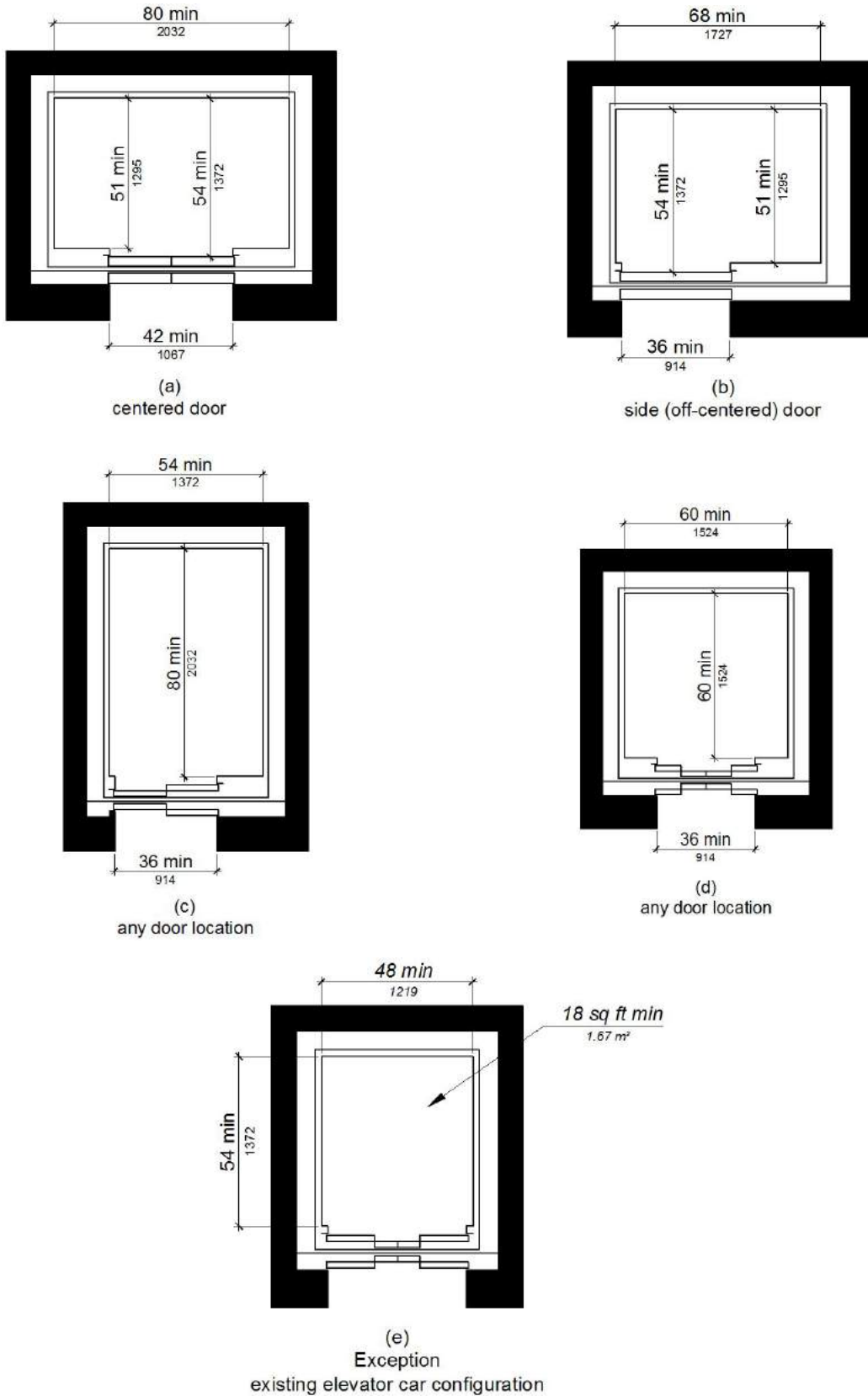
**Exception:** In existing elevators, where a new car operating panel complying with Section 11B-407.4.6 is provided, existing car operating panels may remain operational and shall not be required to comply with Section 11B-407.4.6.

**TABLE 11B-407.4.1**  
**ELEVATOR CAR DIMENSIONS**

MINIMUM DIMENSIONS				
Door location	Door clear width	Inside car, side to side	Inside car, back wall to front return	Inside car, back wall to inside face of door
Centered	42 inches (1067 mm)	80 inches (2032 mm)	51 inches (1295 mm)	54 inches (1372 mm)
Side (off-centered)	36 inches (914 mm) <sup>1</sup>	68 inches (1727 mm)	51 inches (1295 mm)	54 inches (1372 mm)
Any	36 inches (914 mm) <sup>1</sup>	54 inches (1372 mm)	80 inches (2032 mm)	80 inches (2032 mm)
Any	36 inches (914 mm) <sup>2</sup>	60 inches (1524 mm) <sup>2</sup>	60 inches (1524 mm) <sup>2</sup>	60 inches (1524 mm) <sup>2</sup>

1. A tolerance of minus 5/8 inch (15.9 mm) is permitted.

2. Other car configurations that provide a turning space complying with Section 11B-304 with the door closed shall be permitted.



**FIGURE 11B-407.4.1  
 ELEVATOR CAR DIMENSIONS**

**11B-407.4.6.1 Location.** Controls shall be located within one of the reach ranges specified in *Section 11B-308*.

**Exceptions:**

1. Where the elevator panel serves more than 16 openings and a parallel approach is provided, buttons with floor designations shall be permitted to be 54 inches (1372 mm) maximum above the finish floor.
2. In existing elevators, car control buttons with floor designations shall be permitted to be located 54 inches (1372 mm) maximum above the finish floor where a parallel approach is provided.

**11B-407.4.6.2 Buttons.** Car control buttons with floor designations shall comply with *Section 11B-407.4.6.2*.

**Exception: Reserved.**

**11B-407.4.6.2.1 Size and shape.** Buttons shall have square shoulders, be  $\frac{3}{4}$  inch (19.1 mm) minimum in their smallest dimension and be raised  $\frac{1}{8}$  inch (3.2 mm) plus or minus  $\frac{1}{32}$  inch (0.8 mm) above the surrounding surface.

**11B-407.4.6.2.2 Arrangement.** Buttons shall be arranged with numbers in ascending order. When two or more columns of buttons are provided they shall read from left to right.

**11B-407.4.6.2.3 Illumination.** Car control buttons shall be illuminated.

**11B-407.4.6.2.4 Operation.** Car control buttons shall be activated by a mechanical motion that is detectable.

**11B-407.4.6.3 Keypads.** Car control keypads shall be in a standard telephone keypad arrangement and shall comply with *Section 11B-407.4.7.2*.

**11B-407.4.6.4 Emergency controls.** Emergency controls shall comply with *Section 11B-407.4.6.4*.

**11B-407.4.6.4.1 Height.** Emergency control buttons shall have their centerlines 35 inches (889 mm) minimum above the finish floor.

**11B-407.4.6.4.2 Location.** Emergency controls, including the emergency alarm, shall be grouped at the bottom of the panel.

**11B-407.4.7 Designations and indicators of car controls.** Designations and indicators of car controls shall comply with *Section 11B-407.4.7*.

**Exception:** In existing elevators, where a new car operating panel complying with *Section 11B-407.4.7* is provided, existing car operating panels may remain operational and shall not be required to comply with *Section 11B-407.4.7*.

**11B-407.4.7.1 Buttons.** Car control buttons shall comply with *Section 11B-407.4.7.1*.

**11B-407.4.7.1.1 Type.** Control buttons shall be identified by raised characters or symbols, white on a black background, complying with *Section 11B-703.2* and Braille complying with *Section 11B-703.3*.










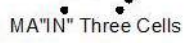

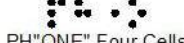
**11B-407.4.7.1.2 Location.** Raised characters or symbols and Braille designations shall be placed immediately to the left of the control button to which the designations apply.

**Exception: Reserved.**

**11B-407.4.7.1.3 Symbols.** The control button for the emergency stop, alarm, door open, door close, main entry floor, and phone, shall be identified with raised symbols and Braille as shown in *Table 11B-407.4.7.1.3*.

**11B-407.4.7.1.4 Visible indicators.** Buttons with floor designations shall be provided with visible indicators to show that a call has been registered. The visible indication shall extinguish when the car arrives at the designated floor.

**TABLE 11B-407.4.7.1.3  
ELEVATOR CONTROL BUTTON IDENTIFICATION**

Control Button	Raised Symbol	Braille Message
Emergency Stop		 "ST"OP Three Cells
Alarm		 AL"AR"M Four Cells
Door Open		 OP"EN" Three Cells
Door Close		 CLOSE Five Cells
Main Entry Floor		 MA"IN" Three Cells
Phone		 PH"ONE" Four Cells

**11B-407.4.7.1.5 Button spacing.** A minimum clear space of  $\frac{3}{8}$  inch (9.5 mm) or other suitable means of separation shall be provided between rows of control buttons.

**11B-407.4.7.2 Keypads.** Keypads shall be identified by characters complying with Section 11B-703.5 and shall be centered on the corresponding keypad button. The number five key shall have a single raised dot. The dot shall be 0.118 inch (3 mm) to 0.120 inch (3.05 mm) base diameter and in other aspects comply with Table 11B-703.3.1.

**11B-407.4.8 Car position indicators.** Audible and visible car position indicators shall be provided in elevator cars.

**11B-407.4.8.1 Visible indicators.** Visible indicators shall comply with Section 11B-407.4.8.1.

**11B-407.4.8.1.1 Size.** Characters shall be  $\frac{1}{2}$  inch (12.7 mm) high minimum.

**11B-407.4.8.1.2 Location.** Indicators shall be located above the car control panel or above the door.

**11B-407.4.8.1.3 Floor arrival.** As the car passes a floor and when a car stops at a floor served by the elevator, the corresponding character shall illuminate.

**Exception: Reserved.**

**11B-407.4.8.1.4 Reserved.**

**11B-407.4.8.2 Audible indicators.** Audible indicators shall comply with Section 11B-407.4.8.2.

**11B-407.4.8.2.1 Signal type.** The signal shall be an automatic verbal annunciator which announces the floor at which the car is about to stop.

**Exception:** For elevators that have a rated speed of 200 feet per minute (1 m/s) or less, a non-verbal audible signal with a frequency of 1500 Hz maximum which sounds as the car passes or is about to stop at a floor served by the elevator shall be permitted.

**11B-407.4.8.2.2 Signal level.** The verbal annunciator shall be 10 dB minimum above ambient, but shall not exceed 80 dB, measured at the annunciator.

**11B-407.4.8.2.3 Frequency.** The verbal annunciator shall have a frequency of 300 Hz minimum to 3000 Hz maximum.

**11B-407.4.9 Emergency communication.** Emergency two-way communication systems shall comply with Section 11B-308. Raised symbols or characters, white on a black background, and Braille shall be provided adjacent to the device and shall comply with Sections 11B-703.2 and 11B-703.3. Emergency two-way communication systems between the elevator and a point outside the hoistway shall comply with ASME A17.1.

**11B-407.4.10 Support rail.** Support rails shall be provided on at least one wall of the car.

**11B-407.4.10.1 Location.** Clearance between support rails and adjacent surfaces shall be  $1\frac{1}{2}$  inches (38 mm) minimum. Top of support rails shall be 31 inches (787 mm) minimum to 33 inches (838 mm) maximum above

the floor of the car. The ends of the support rail shall be 6 inches (152 mm) maximum from adjacent walls.

**11B-407.4.10.2 Surfaces.** Support rails shall be smooth and any surface adjacent to them shall be free of sharp or abrasive elements.

**11B-407.4.10.3 Structural strength.** Allowable stresses shall not be exceeded for materials used when a vertical or horizontal force of 250 pounds (1112 N) is applied at any point on the support rail, fastener, mounting device, or supporting structure.

## 11B-408 Limited-use/limited-application elevators

**11B-408.1 General.** Limited-use/limited-application elevators shall comply with Section 11B-408 and with ASME A17.1. They shall be passenger elevators as classified by ASME A17.1. Elevator operation shall be automatic.

**11B-408.2 Elevator landings.** Landings serving limited-use/limited-application elevators shall comply with Section 11B-408.2.

**11B-408.2.1 Call buttons.** Elevator call buttons and keypads shall comply with Section 11B-407.2.1.

**11B-408.2.2 Hall signals.** Hall signals shall comply with Section 11B-407.2.2.

**11B-408.2.3 Hoistway signs.** Signs at elevator hoistways shall comply with Section 11B-407.2.3.1.

**11B-408.3 Elevator doors.** Elevator hoistway doors shall comply with Section 11B-408.3.

**11B-408.3.1 Sliding doors.** Sliding hoistway and car doors shall comply with Sections 11B-407.3.1 through 11B-407.3.3 and 11B-408.4.1.

**11B-408.3.2 Swinging doors.** Swinging hoistway doors shall open and close automatically and shall comply with Sections 11B-404, 11B-407.3.2 and 11B-408.3.2.

**11B-408.3.2.1 Power operation.** Swinging doors shall be power-operated and shall comply with ANSI/BHMA A156.19.

**11B-408.3.2.2 Duration.** Power-operated swinging doors shall remain open for 20 seconds minimum when actuated.

**11B-408.4 Elevator cars.** Elevator cars shall comply with Section 11B-408.4.

**11B-408.4.1 Car dimensions and doors.** Elevator cars shall provide a clear width 42 inches (1067 mm) minimum and a clear depth 54 inches (1372 mm) minimum. Car doors shall be positioned at the narrow ends of cars and shall provide 32 inches (813 mm) minimum clear width.

### Exceptions:

1. Cars that provide a clear width 51 inches (1295 mm) minimum shall be permitted to provide a clear depth 51 inches (1295 mm) minimum provided that car doors provide a clear opening 36 inches (914 mm) wide minimum.

### 2. Reserved.

**11B-408.4.2 Floor surfaces.** Floor surfaces in elevator cars shall comply with Sections 11B-302 and 11B-303.

**11B-408.4.3 Platform to hoistway clearance.** The platform to hoistway clearance shall comply with *Section 11B-407.4.3*.

**11B-408.4.4 Leveling.** Elevator car leveling shall comply with *Section 11B-407.4.4*.

**11B-408.4.5 Illumination.** Elevator car illumination shall comply with *Section 11B-407.4.5*.

**11B-408.4.6 Car controls.** Elevator car controls shall comply with *Section 11B-407.4.6*. Control panels shall be centered on a side wall.

**11B-408.4.7 Designations and indicators of car controls.** Designations and indicators of car controls shall comply with *Section 11B-407.4.7*.

**11B-408.4.8 Emergency communications.** Car emergency signaling devices complying with *Section 11B-407.4.9* shall be provided.

**11B-409 Private residence elevators**

**11B-409.1 General.** Private residence elevators that are provided within a residential dwelling unit required to provide mobility features complying with *Sections 11B-809.2 through 11B-809.4* shall comply with *Section 11B-409* and with ASME A17.1. They shall be passenger elevators as classified by ASME A17.1. Elevator operation shall be automatic.

**11B-409.2 Call buttons.** Call buttons shall be  $\frac{3}{4}$  inch (19.1 mm) minimum in the smallest dimension and shall comply with *Section 11B-309*.

**11B-409.3 Elevator doors.** Hoistway doors, car doors, and car gates shall comply with *Sections 11B-409.3 and 11B-404*.

**Exception:** Doors shall not be required to comply with the maneuvering clearance requirements in *Section 11B-404.2.4.1* for approaches to the push side of swinging doors.

**11B-409.3.1 Power operation.** Elevator car and hoistway doors and gates shall be power operated and shall comply with ANSI/BHMA A156.19. Power operated doors and gates shall remain open for 20 seconds minimum when activated.

**Exception:** In elevator cars with more than one opening, hoistway doors and gates shall be permitted to be of the manual-open, self-close type.

**11B-409.3.2 Location.** Elevator car doors or gates shall be positioned at the narrow end of the clear floor spaces required by *Section 11B-409.4.1*.

**11B-409.4 Elevator cars.** Private residence elevator cars shall comply with *Section 11B-409.4*.

**11B-409.4.1 Inside dimensions of elevator cars.** Elevator cars shall provide a clear floor space of 36 inches (914 mm) minimum by 48 inches (1219 mm) minimum and shall comply with *Section 11B-305*.

**11B-409.4.2 Floor surfaces.** Floor surfaces in elevator cars shall comply with *Sections 11B-302 and 11B-303*.

**11B-409.4.3 Platform to hoistway clearance.** The clearance between the car platform and the edge of any landing sill shall be  $1\frac{1}{2}$  inch (38 mm) maximum.

**11B-409.4.4 Leveling.** Each car shall automatically stop at a floor landing within a tolerance of  $\frac{1}{2}$  inch (12.7 mm) under rated loading to zero loading conditions.

**11B-409.4.5 Illumination levels.** Elevator car illumination shall comply with *Section 11B-407.4.5*.

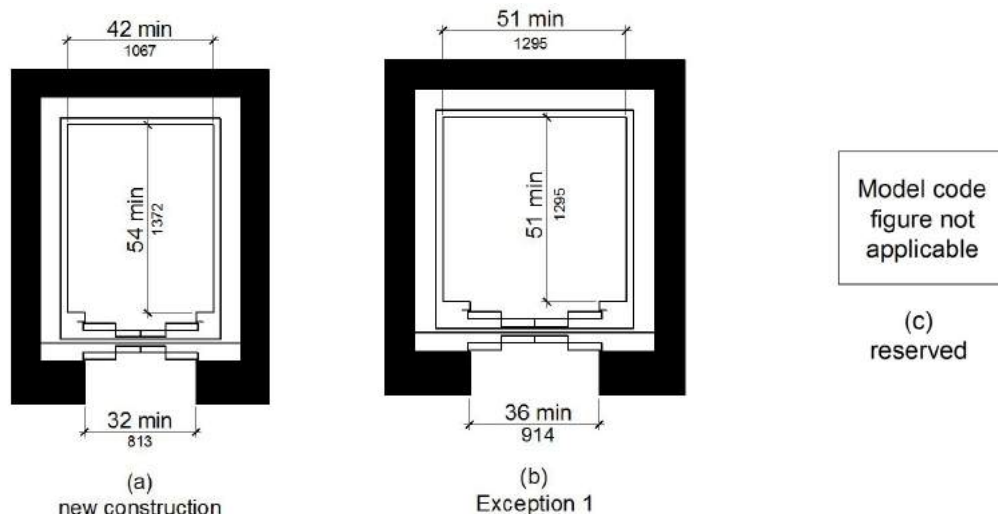
**11B-409.4.6 Car controls.** Elevator car control buttons shall comply with *Sections 11B-409.4.6, 11B-309.3, 11B-309.4*, and shall be raised or flush.

**11B-409.4.6.1 Size.** Control buttons shall be  $\frac{3}{4}$  inch (19.1 mm) minimum in their smallest dimension.

**11B-409.4.6.2 Location.** Control panels shall be on a side wall, 12 inches (305 mm) minimum from any adjacent wall.

**11B-409.4.7 Emergency communications.** Emergency two-way communication systems shall comply with *Section 11B-409.4.7*.

**11B-409.4.7.1 Type.** A telephone and emergency signal device shall be provided in the car.



**FIGURE 11B-408.4.1 LIMITED-USE/LIMITED-APPLICATION (LULA) ELEVATOR CAR DIMENSIONS**

**11B-409.4.7.2 Operable parts.** The telephone and emergency signaling device shall comply with Sections 11B-309.3 and 11B-309.4.

**11B-409.4.7.3 Compartment.** If the telephone or device is in a closed compartment, the compartment door hardware shall comply with Section 11B-309.

**11B-409.4.7.4 Cord.** The telephone cord shall be 29 inches (737 mm) long minimum.

**11B-410 Platform lifts**

**11B-410.1 General.** Platform lifts shall comply with ASME A18.1. Platform lifts shall not be attendant-operated and shall provide unassisted entry and exit from the lift.

**11B-410.2 Floor surfaces.** Floor surfaces in platform lifts shall comply with Sections 11B-302 and 11B-303.

**11B-410.3 Clear floor space.** Clear floor space in platform lifts shall comply with Section 11B-305.

**11B-410.4 Platform to runway clearance.** The clearance between the platform sill and the edge of any runway landing shall be 1<sup>1</sup>/<sub>4</sub> inch (32 mm) maximum.

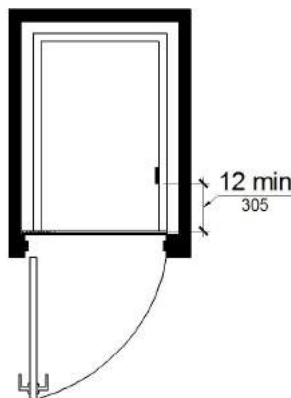
**11B-410.5 Operable parts.** Controls for platform lifts shall comply with Section 11B-309.

**11B-410.6 Doors and gates.** Platform lifts shall have low-energy power-operated doors or gates complying with Section 11B-404.3. Doors shall remain open for 20 seconds minimum. End doors and gates shall provide a clear width 32 inches (813 mm) minimum. Side doors and gates shall provide a clear width 42 inches (1067 mm) minimum.

**Exception:** Platform lifts serving two landings maximum and having doors or gates on opposite sides shall be permitted to have self-closing manual doors or gates.

**11B-410.7 Landing size.** The minimum size of landings at platform lifts shall be 60 inches by 60 inches (1524 mm by 1524 mm).

**11B-410.8 Restriction sign.** A sign complying with Section 11B-703.5 shall be posted in a conspicuous place at each landing and within the platform enclosure stating "No Freight" and include the International Symbol of Accessibility complying with Section 11B-703.7.2.1.



**FIGURE 11B-409.4.6.2**  
LOCATION OF PRIVATE RESIDENCE  
ELEVATOR CONTROL PANEL

**11B-411 Destination-oriented elevators.**

**11B-411.1 General.** Destination-oriented elevators shall comply with Section 11B-411 and with ASME A17.1. They shall be passenger elevators as classified by ASME A17.1. Elevator operation shall be automatic.

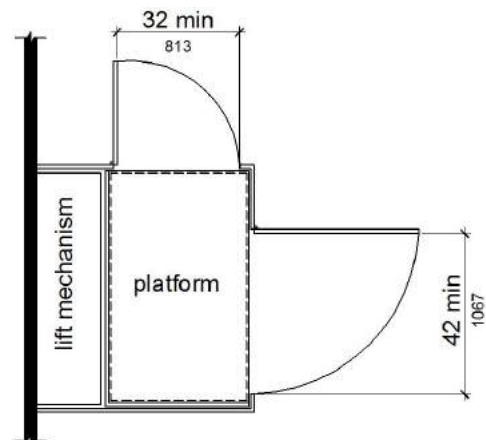
**11B-411.1.1 Floor designations.** In facilities served by destination-oriented elevator systems, floor designations shall be numeric characters only. Floor designations shall be "one" (1) or "zero" (0) at the main entry level and shall increase by one for each successive higher story or level. The initial floor below the main entry level shall be designated "minus one" (-1) and the designation for each successive lower story or level shall decrease by one. Stories or levels shall not be designated by alphabetic characters.

**Exceptions:**

1. In existing facilities where new elevators are installed or existing elevators are altered into a destination-oriented elevator system, levels within stories, such as mezzanines located above or below the main entry level shall be permitted to be designated with an alpha-numeric character such as "M2", indicating "mezzanine" and the "story number", respectively, in which it is located, provided there is no duplication with alpha-numeric designations of elevator cars in the facility.
2. Non-successive floor numbering shall be permitted where a specific floor number is omitted or where a floor is frequented only by service personnel for maintenance, repair or occasional monitoring of equipment.

**11B-411.1.2 Car designations.** Elevator cars shall be designated with a single alphabetic character. For elevators programmed to the same hall call console or group of hall call consoles, each elevator car shall be designated with a different single alphabetic character.

**Exception:** Elevator systems with more than 26 elevators shall be permitted to use alpha-numeric designations such as "A1".



**FIGURE 11B-410.6**  
PLATFORM LIFT DOORS AND GATES



**11B-411.2 Elevator landing requirements.** Elevator landings shall comply with Section 11B-411.2.

**11B-411.2.1 Hall call consoles.** Hall call consoles shall comply with Sections 11B-411.2.1 and 11B-309.

**11B-411.2.1.1 Location.** Hall call consoles shall be wall-mounted. On floors with a building entry, including parking and transfer levels, each hoistway entrance shall be adjacent to a hall call console. On other floors, a minimum of one hoistway entrance shall be adjacent to a hall call console.

**Exception:** Hall call consoles beyond those required by Section 11B-411.2.1.1 shall be permitted to be provided outside the elevator landing and to be wall-mounted, pedestal-mounted, or mounted on a kiosk or security turnstile.

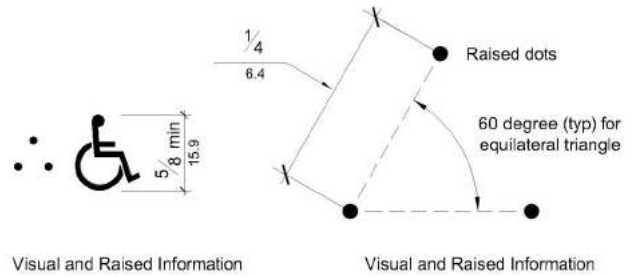
**11B-411.2.1.2 Required features.** Hall call consoles shall include a touch screen or keypad with display screen, an accessibility function button, and audio output loudspeaker.

**11B-411.2.1.2.1 Keypads.** Keypads shall be in a 12-key ascending telephone keypad layout. Characters and symbols shall be centered on the corresponding button. The number five key shall have a single raised dot. The dot shall have a base diameter of 0.118 inch (3 mm) minimum and 0.120 inch (3.05 mm) maximum and a height of 0.025 inch (0.6 mm) minimum and 0.037 inch (0.9 mm) maximum. Keypads shall have a star (☆) on the lower left button and a minus sign (-) on the lower right button. From any level above and below the main egress level, when the star button is pressed an elevator shall be dispatched to the main egress level.

**11B-411.2.1.2.2 Touch screen.** Touch screen display shall comply with Section 11B-411.2.1.2.4.

**11B-411.2.1.2.3 Accessibility function button.** The accessibility function button shall be identified by the International Symbol of Accessibility and a raised indication. The International Symbol of Accessibility shall comply with Section 11B-703.7.2.1, and shall be  $\frac{5}{8}$  inch (15.9 mm) minimum in height. The indication shall be three raised dots. Each dot shall have a base diameter of 0.059 inch (1.5 mm) minimum and 0.063 inch (1.6 mm) maximum and a height of 0.025 inch (0.6 mm) minimum and 0.037 inch (0.9 mm) maximum. The dots shall be spaced  $\frac{1}{4}$  inch (6.4 mm), measured center to center, in the form of an equilateral triangle with a vertex pointing up. The accessibility function button shall not be provided with a key repeat function.

**11B-411.2.1.2.4 Display screen.** Upon activation of the accessibility function button, the display screen shall display information including but not limited to, operating instructions, user input confirmation, elevator assignment characters, direction to the assigned elevator, and error mes-



**FIGURE 11B-411.2.1.2.3 DESTINATION-ORIENTED ELEVATOR ACCESSIBILITY FUNCTION BUTTON INDICATION**

sages. The display screen shall comply with Section 11B-411.2.1.2.4.

**11B-411.2.1.2.4.1 Contrast.** Display screens shall provide contrast with light characters and symbols on a dark background or dark characters and symbols on a light background. The background shall be solid and static.

**11B-411.2.1.2.4.2 Size.** Elevator assignment characters shall be 1 inch high (25 mm) minimum.

**11B-411.2.1.2.4.3 Duration.** Elevator assignment characters shall be displayed for a minimum of 5 seconds.

**11B-411.2.1.2.5 Audio output.** Upon activation of the accessibility function button, the audio output shall provide verbal announcements, including but not limited to, operating instructions, user input confirmation, announcement of the elevator assignment characters, direction to the assigned elevator, and error messages. Audio output shall be recorded or digitized human speech, and shall be delivered through a loudspeaker. Auditory volume shall be at least 10 dB above ambient sound level, but shall not exceed 80 dB, measured 36 inches (914 mm) in front of the console. At hall call console locations where the ambient sound level varies, auditory volume shall be maintained at the required volume by an automatic gain control or shall be set at not less than 75 dB.

**11B-411.2.1.3 Arrangement.** Hall call console arrangement of required features shall comply with Section 11B-411.2.1.3.

**11B-411.2.1.3.1 Keypad call console arrangement.** Where keypad call consoles are provided, the display screen shall be located directly above the keypad. The accessibility function button shall be located directly below the keypad at a height of 36 inches (914 mm) to 42 inches (1067 mm) above the finish floor.

**11B-411.2.1.3.2 Touch screen call console arrangement.** Where touch screen call consoles are provided, the touch screen shall be located directly above the accessibility function button.

The accessibility function button shall be located at a height of 36 inches (914 mm) to 42 inches (1067 mm) above the finish floor.

**11B-411.2.1.3.3 Proximity of required elements.** Required features shall be provided on a hall call console assembly or as individual elements grouped in close proximity.

**11B-411.2.1.3.4 Position.** Display screens and touch screens shall be positioned so glare is reduced on the screen. Keypads or buttons shall slope away from the user at 15 to 25 degrees from the vertical plane. Touch screens shall be sloped away from the user at 7 to 25 degrees from the vertical plane.

**11B-411.2.1.4 Additional features.** Hall call console additional features, if provided, shall comply with Sections 11B-309 and 11B-411.2.1.4.

**11B-411.2.1.4.1 Hall call console additional buttons.** Hall call console buttons provided in addition to the accessibility function button and keypad buttons shall comply with Section 11B-411.2.1.4.1. Buttons in addition to the accessibility function button are not permitted on hall call consoles using a touch screen.

**11B-411.2.1.4.1.1 Arrangement.** Buttons shall be arranged in columns to the right of the keypad with a minimum horizontal spacing of 1.5 times the horizontal spacing between the numeric keys and with the same vertical spacing as the numeric keys.

**11B-411.2.1.4.1.2 Identification.** Buttons shall be identified by raised characters and symbols, white on a black background, complying with Section 11B-703.2 and Braille complying with Section 11B-703.3. Identification shall be placed immediately to the left of the control button to which the designation applies.

**11B-411.2.1.4.2 Security or access controls.** Security or access control system card readers associated with elevator operation shall be in close proximity to each hall call console in a consistent manner throughout the facility.

**11B-411.2.1.5 Button requirements.** Keypad buttons, the accessibility function button, and additional hall call console buttons shall comply with Section 11B-411.2.1.5.

**11B-411.2.1.5.1 Size.** Buttons shall have square shoulders, be  $\frac{3}{4}$  inch (19.1 mm) minimum in the smallest dimension and shall be raised  $\frac{1}{8}$  inch (3.2 mm) plus or minus  $\frac{1}{32}$  inch (0.8 mm) above the surrounding surface. The buttons shall be activated by a mechanical motion that is detectable.

**11B-411.2.1.5.2 Color.** Characters and symbols on buttons, where provided, shall be white on a black background.

**11B-411.2.1.6 Identification of floors served.** In buildings with two or more elevator banks, each serving a different group of specific floors, hall call consoles located on floors with a building entry, including parking and transfer levels, shall be provided with signs complying with Sections 11B-703.2, 11B-703.3, and 11B-703.5 on the surface of or above the hall call console stating "FLOORS n1 – n2," where n1 - n2 represents the range of floors served. Characters shall be white on a black background. When the accessibility function button is pressed, the audio output shall provide a verbal announcement of the floors served by the elevator group.

**11B-411.2.1.7 Elevator car assignment.** When the accessibility function button is pressed, elevator car assignment shall comply with Section 11B-411.2.1.7.

**11B-411.2.1.7.1 Assignment by keypad hall call console.** The audio output shall provide verbal instruction for the user to enter a destination floor. The selected destination floor shall be confirmed by verbal announcement and on the display screen. Verbal and visible indication of an invalid input shall be provided. The display screen shall indicate the elevator assignment characters and a verbal announcement shall be made of the assigned elevator responding to the call. Visual and verbal direction to the assigned elevator shall be provided.

**11B-411.2.1.7.2 Assignment by touch screen hall call console.** The audio output shall provide verbal instruction for the user to press the accessibility function button as a response to verbal direction in order to select the destination floor. The selected destination floor shall be confirmed by verbal announcement and on the display screen. Verbal and visible indication of an invalid input shall be provided. The display screen shall indicate the elevator assignment characters and a verbal announcement shall be made of the assigned elevator responding to the call. Visual and verbal direction to the assigned elevator shall be provided.

**Exception:** In addition to assignment by Section 11B-411.2.1.7.2, a verbal announcement providing the user with an option to select an alternative mode of operation shall be permitted. Alternative operation shall be by one of the following options:

1. Virtual keypad. The size of the keypad shall be a nominal 4 inches (102 mm) wide by 5 inches (127 mm) high in a 12-key ascending telephone keypad layout centered in the console. Characters and symbols shall be centered on the corresponding button. Keypads shall have a star (☆) on the lower left button and a minus sign (-) on the lower right button. Operation shall be by contact

with the touch screen with a press on the key. The audio output shall provide user input confirmation after each key is pressed. Keys shall not be provided with a key repeat function. From any level above and below the main egress level, when the star button is pressed an elevator shall be dispatched to the main egress level.

2. **Gesture-based mode of operation.** Operation shall be by contact with the touch screen, without specific contact with an icon, and using established non-proprietary gestures for selection and input, including but not limited to tapping, sliding, and tap-hold contact-release to select. The audio output shall provide verbal direction on use of the touch screen, and indication of floor selection options until assignment to the elevator is given.

**11B-411.2.1.7.3 Assignment by security credential.** If a security system or other form of access control system is provided, the audio output shall provide a verbal announcement and direction to the location of the access control activation sensor, such as “present security credential at the sensor immediately to the left”. Upon presentation of security credential, the destination floor shall be confirmed by verbal announcement and on the display screen. The display screen shall indicate the elevator assignment characters and a verbal announcement shall be made of the assigned elevator responding to the call. Visual and verbal direction to the assigned elevator shall be provided.

**11B-411.2.1.7.4 Adjacency assignment.** The system shall assign an elevator car immediately to the left or right of the hall call console.

**Exception:** The most adjacent elevator serving the selected floor shall be assigned by hall call consoles located outside the elevator landing.

**11B-411.2.2 Elevator car identification at elevator landings.** Elevator car identification shall comply with Section 11B-411.2.2.

**11B-411.2.2.1 Visible identification.** Above or adjacent to each elevator car entrance there shall be a visible identification fixture with a car designation character. The identification fixture shall be 80 inches (2032 mm) minimum above the finish floor or ground to the bottom of the fixture. The characters on the fixture shall be upper case with a height of 4 inches (102 mm) minimum complying with Sections 11B-703.5.1, 11B-703.5.3, 11B-703.5.4, 11B-703.5.7, and 11B-703.5.8.

**Exception:** Existing buildings shall be permitted to have a visible identification fixture with a car designation character adjacent to each elevator

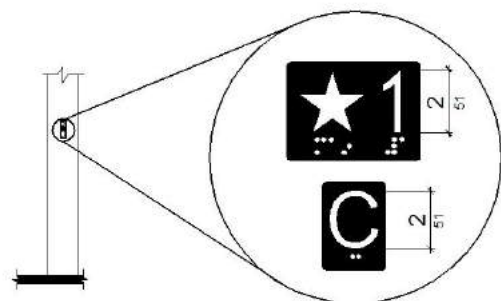
car entrance centered at 72 inches (1829 mm) above the finish floor or ground. The character on the fixture shall be upper case with a height of 2½ inches (64 mm) minimum complying with Sections 11B-703.5.1, 11B-703.5.3, 11B-703.5.4, 11B-703.5.7, and 11B-703.5.8.

**11B-411.2.2.2 Verbal identification.** When the accessibility function button is pressed, verbal announcement of the car designation shall be provided at the elevator car entrance upon arrival. Audio output shall be recorded or digitized human speech, and shall be delivered through a loud-speaker. The verbal annunciator shall have a frequency of 300 Hz minimum and 3000 Hz maximum. Auditory volume shall be at least 10 dB above ambient sound level, but shall not exceed 80 dB, measured 36 inches (914 mm) in front of the elevator entrance and at 48 inches (1219 mm) above the floor. At elevator entrances where the ambient sound level varies, auditory volume shall be maintained at the required volume by an automatic gain control or shall be set at not less than 75 dB.

**11B-411.2.3 Signs on jambs of elevator hoistway entrances.** Signs on jambs of elevator hoistway entrances shall comply with Section 11B-411.2.3.

**11B-411.2.3.1 Floor designation signs.** Floor designation signs complying with Sections 11B-703.2 and 11B-703.4.1 shall be provided on both jambs of elevator hoistway entrances. Signs shall be provided in both raised characters and Braille. Raised characters shall be 2 inches (51 mm) high. A raised star placed to the left of the floor designation, shall be provided on both jambs at the main entry level. The outside diameter of the star shall be 2 inches (51 mm) and all points shall be of equal length. Raised characters, including the star, shall be white on a black background. Braille complying with Section 11B-703.3 shall be placed below the corresponding raised characters and the star. The Braille translation for the star shall be “MAIN”. Applied plates are acceptable if they are permanently fixed to the jamb.

**11B-411.2.3.2 Car designation signs.** Car designation signs complying with Sections 11B-703.2 and 11B-703.4.1 shall be provided on both jambs of the



**FIGURE 11B-411.2.3 FLOOR DESIGNATION AND CAR DESIGNATION SIGNS ON JAMBS OF DESTINATION-ORIENTED ELEVATOR HOISTWAY ENTRANCES**

hoistway immediately below the floor designation. Signs shall be provided in both raised characters and Braille. Raised characters shall be 2 inches (51 mm) high. Raised characters shall be white on a black background. Braille complying with Section 11B-703.3 shall be placed below the corresponding raised characters. Applied plates are acceptable if they are permanently fixed to the jamb.

**11B-411.3 Elevator door requirements.** Hoistway and car doors shall comply with Section 11B-411.3.

**11B-411.3.1 Type.** Elevator door type shall comply with Section 11B-407.3.1.

**11B-411.3.2 Operation.** Elevator hoistway and car doors shall open and close automatically.

**11B-411.3.3 Reopening device.** Elevator doors shall be provided with a reopening device complying with Section 11B-411.3.3 that shall stop and reopen a car door and hoistway door automatically if the door becomes obstructed by an object or person.

**11B-411.3.3.1 Height.** The height of the reopening device shall comply with Section 11B-407.3.3.1.

**11B-411.3.3.2 Contact.** The device contact shall comply with Section 11B-407.3.3.2.

**11B-411.3.3.3 Duration.** The door reopening device duration shall comply with Section 11B-407.3.3.3.

**11B-411.3.4 Door delay.** Door delay shall comply with Section 11B-407.3.5.

**11B-411.3.5 Width.** The width of elevator doors shall comply with Table 11B-407.4.1.

**11B-411.4 Elevator car requirements.** Elevator cars shall comply with Section 11B-411.4.

**11B-411.4.1 Car dimensions.** Inside dimensions of elevator cars and clear width of elevator doors shall comply with Section 11B-407.4.1.

**11B-411.4.2 Floor surfaces.** Floor surfaces in elevator cars shall comply with Section 11B-407.4.2.

**11B-411.4.3 Platform to hoistway clearance.** Platform to hoistway clearance shall comply with Section 11B-407.4.3.

**11B-411.4.4 Leveling.** Elevator car leveling shall comply with Section 11B-407.4.4.

**11B-411.4.5 Illumination.** The level of illumination at the car controls shall comply with Section 11B-407.4.5.

**11B-411.4.6 Elevator car controls.** Where provided, elevator car controls shall comply with Sections 11B-411.4.6 and 11B-309.4.

**11B-411.4.6.1 Location.** Controls shall be located within one of the reach ranges specified in Section 11B-308.

**11B-411.4.6.2 Buttons.** Car control buttons shall comply with Sections 11B-407.4.6.2.1 and 11B-407.4.6.2.4. The car shall not have non-functional, exposed floor buttons.

**11B-411.4.6.3 Emergency controls.** Emergency controls shall comply with Section 11B-407.4.6.4.

**11B-411.4.7 Designations and indicators of car control buttons.** Designations and indicators of car control buttons shall comply with Section 11B-411.4.7.

**11B-411.4.7.1 Type.** Control button type shall comply with Section 11B-407.4.7.1.1.

**11B-411.4.7.2 Location.** Raised characters or symbols and Braille designations shall comply with Section 11B-407.4.7.1.2.

**11B-411.4.7.3 Symbols.** The control button for the emergency stop, alarm, door open, door close, and phone, shall be identified with raised symbols and Braille as shown in Table 11B-407.4.7.1.3.

**11B-411.4.7.4 Button spacing.** Button spacing shall comply with Section 11B-407.4.7.1.5.

**11B-411.4.8 Car position indicators.** Audible and visible car position indicators shall be provided in elevator cars.

**11B-411.4.8.1 Visible indicators.** Visible indicators shall comply with Section 11B-411.4.8.1.

**11B-411.4.8.1.1 Size.** Characters shall comply with Section 11B-407.4.8.1.1.

**11B-411.4.8.1.2 Location.** Location of indicators shall comply with Section 11B-407.4.8.1.2.

**11B-411.4.8.2 Audible indicators.** Audible indicators shall comply with Section 11B-411.4.8.2.

**11B-411.4.8.2.1 Signal type.** The signal shall be an automatic verbal annunciator which announces the floor at which the car is about to stop.

**11B-411.4.8.2.2 Signal level.** The verbal annunciator signal level shall comply with Section 11B-407.4.8.2.2.

**11B-411.4.8.2.3 Frequency.** The verbal annunciator frequency shall comply with Section 11B-407.4.8.2.3.

**11B-411.4.9 Emergency communication.** Emergency communication shall comply with Section 11B-407.4.9.

**11B-411.4.10 Support rail.** Support rails complying with Section 11B-407.4.10 shall be provided on at least one wall of the car.

**11B-411.4.11 Floor destination indicators.** There shall be on each elevator car door jamb a visual display indicating floor destinations.

**11B-411.4.11.1 Height.** Floor destination characters shall be 1 inch (25 mm) high minimum complying with Section 11B-703.5.3.

**11B-411.4.11.2 Contrast.** Visual display shall provide contrast with light characters on a dark background or dark characters on a light background. The background shall be solid and static.

**11B-411.4.11.3 Duration.** Floor destination characters shall be displayed upon elevator car arrival at the input floor and shall not extinguish until the elevator car arrives at the destination floor.

## DIVISION 5: GENERAL SITE AND BUILDING ELEMENTS

### 11B-501 General

**11B-501.1 Scope.** The provisions of *Division 5* shall apply where required by *Division 2* or where referenced by a requirement in this *chapter*.

### 11B-502 Parking spaces

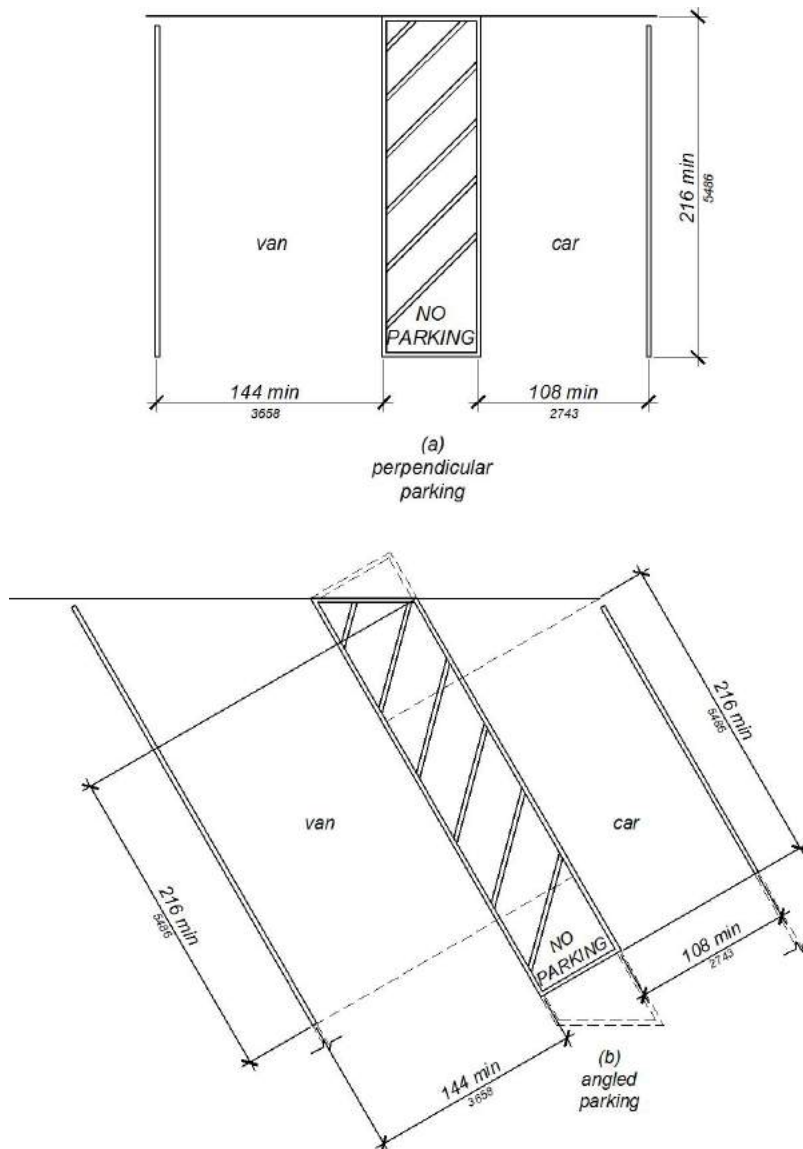
**11B-502.1 General.** Car and van parking spaces shall comply with *Section 11B-502*. Where parking spaces are marked with lines, width measurements of parking spaces and access aisles shall be made from the centerline of the markings.

**Exception:** Where parking spaces or access aisles are not adjacent to another parking space or access aisle, measure-

ments shall be permitted to include the full width of the line defining the parking space or access aisle.

**11B-502.2 Vehicle spaces.** Car and van parking spaces shall be 216 inches (5486 mm) long minimum. Car parking spaces shall be 108 inches (2743 mm) wide minimum and van parking spaces shall be 144 inches (3658 mm) wide minimum, shall be marked to define the width, and shall have an adjacent access aisle complying with *Section 11B-502.3*.

**Exception:** Van parking spaces shall be permitted to be 108 inches (2743 mm) wide minimum where the access aisle is 96 inches (2438 mm) wide minimum.



**FIGURE 11B-502.2  
VEHICLE PARKING SPACES**

**11B-502.3 Access aisle.** Access aisles serving parking spaces shall comply with Section 11B-502.3. Access aisles shall adjoin an accessible route. Two parking spaces or one parking space and one electric vehicle charging space shall be permitted to share a common access aisle.

**11B-502.3.1 Width.** Access aisles serving car and van parking spaces shall be 60 inches (1524 mm) wide minimum.

**11B-502.3.2 Length.** Access aisles shall extend the full required length of the parking spaces they serve.

**11B-502.3.3 Marking.** Access aisles shall be marked with a blue painted borderline around their perimeter. The area within the blue borderlines shall be marked with

*hatched lines a maximum of 36 inches (914 mm) on center in a color contrasting with that of the aisle surface, preferably blue or white. The words "NO PARKING" shall be painted on the surface within each access aisle in white letters a minimum of 12 inches (305 mm) in height and located to be visible from the adjacent vehicular way. Access aisle markings may extend beyond the minimum required length.*

**11B-502.3.4 Location.** Access aisles shall not overlap the vehicular way. Access aisles shall be permitted to be placed on either side of the parking space except for van parking spaces which shall have access aisles located on the passenger side of the parking spaces.

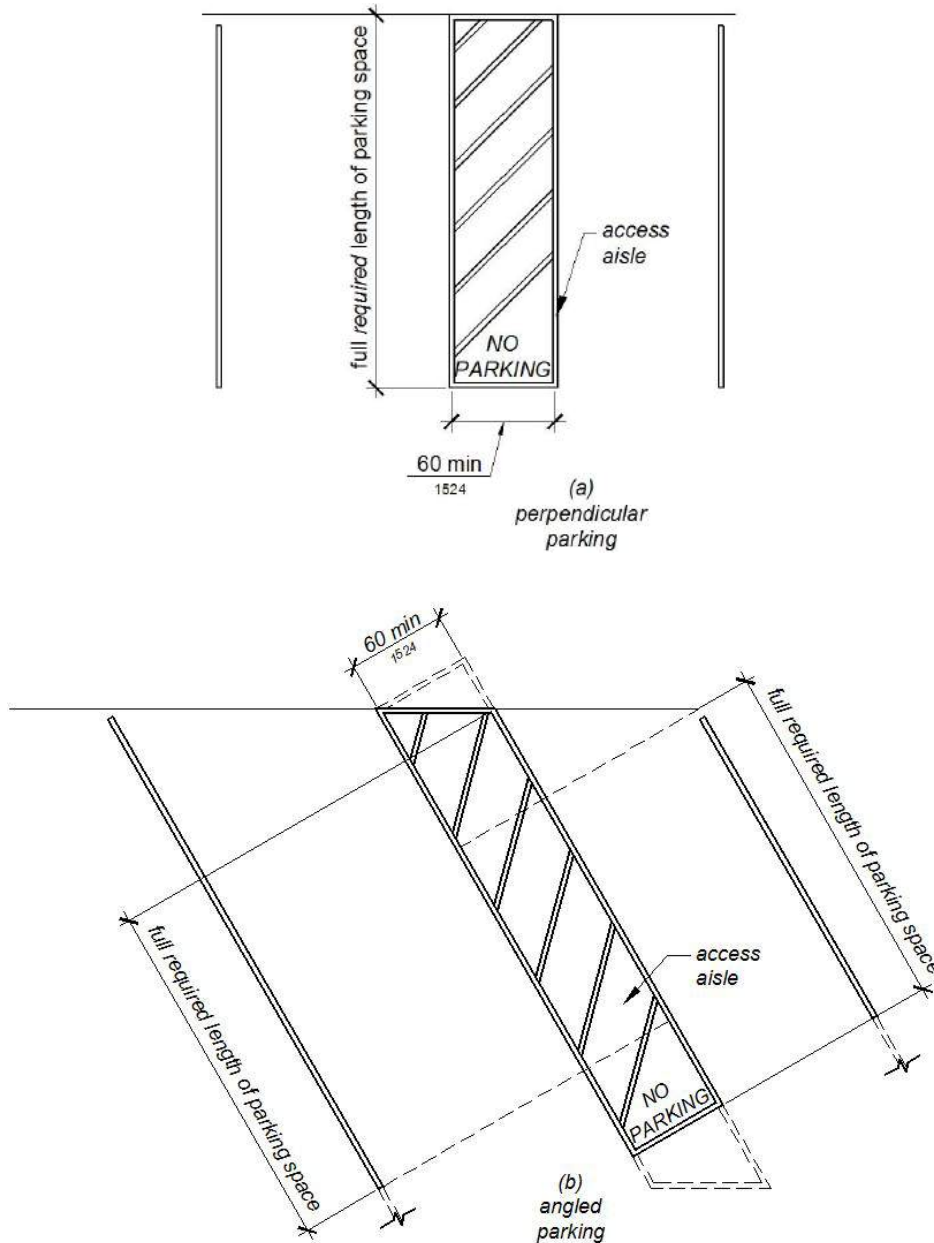
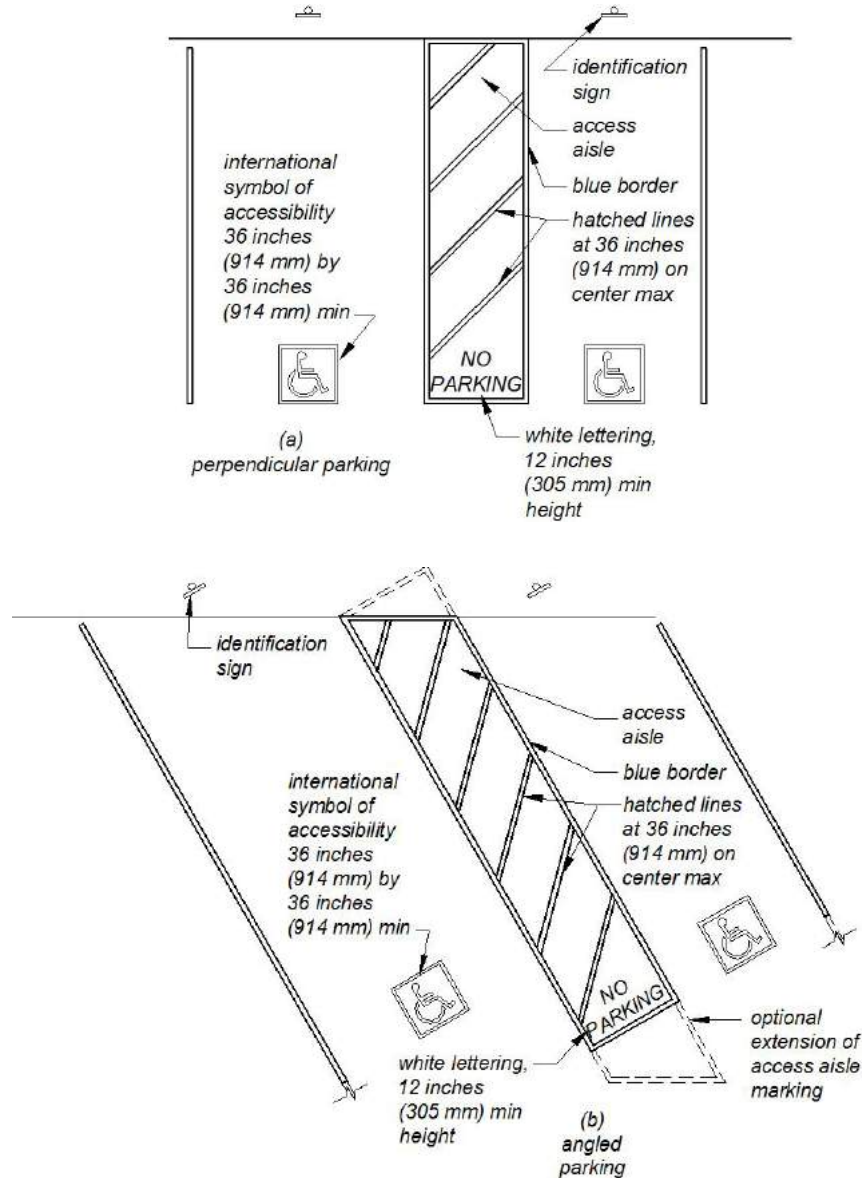


FIGURE 11B-502.3  
PARKING SPACE ACCESS AISLE



**FIGURE 11B-502.3.3**  
**ANGLED AND PERPENDICULAR PARKING IDENTIFICATION**

**11B-502.4 Floor or ground surfaces.** Parking spaces and access aisles serving them shall comply with Section 11B-302. Access aisles shall be at the same level as the parking spaces they serve. Changes in level, slopes exceeding 1:48, and detectable warnings shall not be permitted.

**Exception:** Reserved.

**11B-502.5 Vertical clearance.** Parking spaces, access aisles and vehicular routes serving them shall provide a vertical clearance of 98 inches (2489 mm) minimum.

**Exception:** In existing multistory parking facilities, car parking spaces, access aisles and vehicular routes serving them shall provide a vertical clearance of 80 inches (2032 mm) minimum. Existing vertical clearance in excess of 80 inches (2032 mm) and less than 98 inches (2489 mm) shall

be maintained. This exception shall not apply to van parking spaces, access aisles, or vehicular routes serving them.

**11B-502.6 Identification.** Parking space identification signs shall include the International Symbol of Accessibility complying with Section 11B-703.7.2.1 in white on a blue background. Signs identifying van parking spaces shall contain additional language or an additional sign with the designation “van accessible”. Signs shall be 60 inches (1524 mm) minimum above the finish floor or ground surface measured to the bottom of the sign.

**Exception:** Signs located within a circulation path shall be a minimum of 80 inches (2032 mm) above the finish floor or ground surface measured to the bottom of the sign.

**11B-502.6.1 Finish and size.** Parking identification signs shall be reflectorized with a minimum area of 70 square inches (45,161 mm<sup>2</sup>).

**11B-502.6.2 Minimum fine.** Additional language or an additional sign below the International Symbol of Accessibility shall state “Minimum Fine \$250”.

**11B-502.6.3 Location.** A parking space identification sign shall be visible from each parking space. Signs shall be permanently posted either immediately adjacent to the parking space or within the projected parking space width at the head end of the parking space. Signs may also be permanently posted on a wall at the interior end of the parking space.

**11B-502.6.4 Marking.** Each accessible car and van space shall have surface identification complying with either Section 11B-502.6.4.1 or 11B-502.6.4.2.

**11B-502.6.4.1** The parking space shall be marked with an International Symbol of Accessibility complying with Section 11B-703.7.2.1 in white on a blue background a minimum 36 inches wide by 36 inches high (914 mm by 914 mm). The centerline of the International Symbol of Accessibility shall be a maximum of 6 inches (152 mm) from the centerline of the parking space, its sides parallel to the length of the parking space and its lower corner at, or lower side aligned with, the end of the parking space length.

**11B-502.6.4.2** The parking space shall be outlined in blue or painted blue and shall be marked with an International Symbol of Accessibility complying with Section 11B-703.7.2.1 a minimum 36 inches wide by 36 inches high (914 mm by 914 mm) in white or a suitable contrasting color. The centerline of the International Symbol of Accessibility shall be a maximum of 6 inches (152 mm) from the centerline of the parking space, its sides parallel to the length of the parking space and its lower corner at, or lower side aligned with, the end of the parking space.

**11B-502.7 Relationship to accessible routes.** Parking spaces and access aisles shall be designed so that cars and vans, when parked, cannot obstruct the required clear width of adjacent accessible routes.

**11B-502.7.1 Arrangement.** Parking spaces and access aisles shall be designed so that persons using them are not required to travel behind parking spaces other than to pass behind the parking space in which they parked.

**11B-502.7.2 Wheel stops.** A curb or wheel stop shall be provided if required to prevent encroachment of vehicles over the required clear width of adjacent accessible routes.

**11B-502.8 Additional signs.** An additional sign shall be posted either; 1) in a conspicuous place at each entrance to an off-street parking facility or 2) immediately adjacent to on-site accessible parking and visible from each parking space.

**11B-502.8.1 Size.** The additional sign shall not be less than 17 inches (432 mm) wide by 22 inches (559 mm) high.

**11B-502.8.2 Lettering.** The additional sign shall clearly state in letters with a minimum height of 1 inch (25 mm) the following:

“Unauthorized vehicles parked in designated accessible spaces not displaying distinguishing placards or special license plates issued for persons with disabilities will be towed away at the owner’s expense. Towed vehicles may be reclaimed at: \_\_\_\_\_ or by telephoning \_\_\_\_\_.”

Blank spaces shall be filled in with appropriate information as a permanent part of the sign.

**11B-503 Passenger drop-off and loading zones**

**11B-503.1 General.** Passenger drop-off and loading zones shall comply with Section 11B-503.

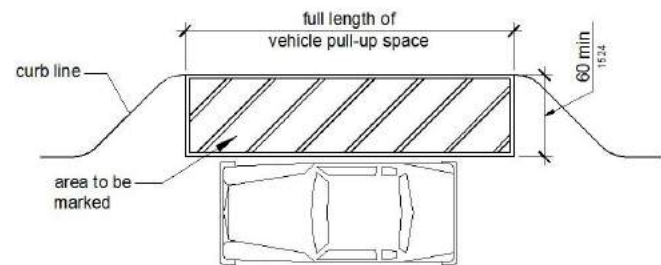
**11B-503.2 Vehicle pull-up space.** Passenger drop-off and loading zones shall provide a vehicular pull-up space 96 inches (2438 mm) wide minimum and 20 feet (6096 mm) long minimum.

**11B-503.3 Access aisle.** Passenger drop-off and loading zones shall provide access aisles complying with Section 11B-503 adjacent and parallel to the vehicle pull-up space. Access aisles shall adjoin an accessible route and shall not overlap the vehicular way.

**11B-503.3.1 Width.** Access aisles serving vehicle pull-up spaces shall be 60 inches (1524 mm) wide minimum.

**11B-503.3.2 Length.** Access aisles shall extend the full length of the vehicle pull-up spaces they serve.

**11B-503.3.3 Marking.** Access aisles shall be marked with a painted borderline around their perimeter. The area within the borderlines shall be marked with hatched lines a maximum of 36 inches (914 mm) on center in a color contrasting with that of the aisle surface.



**FIGURE 11B-503.3 PASSENGER DROP-OFF AND LOADING ZONE ACCESS AISLE**

**11B-503.4 Floor and ground surfaces.** Vehicle pull-up spaces and access aisles serving them shall comply with Section 11B-302. Access aisles shall be at the same level as the vehicle pull-up space they serve. Changes in level, slopes exceeding 1:48, and detectable warnings shall not be permitted.

**Exception:** Reserved.



**11B-503.5 Vertical clearance.** Vehicle pull-up spaces, access aisles serving them, and a vehicular route from an entrance to the passenger *drop-off and* loading zone and from the passenger *drop-off and* loading zone to a vehicular exit shall provide a vertical clearance of 114 inches (2896 mm) minimum.

**11B-504 Stairways**

**11B-504.1 General.** Stairs shall comply with *Section 11B-504*.

**11B-504.2 Treads and risers.** All steps on a flight of stairs shall have uniform riser heights and uniform tread depths. Risers shall be 4 inches (102 mm) high minimum and 7 inches (178 mm) high maximum. Treads shall be 11 inches (279 mm) deep minimum.

**Exception:** *Curved stairways with winder treads are permitted at stairs which are not part of a required means of egress.*

**11B-504.3 Open risers.** Open risers are not permitted.

**Exceptions:**

1. *On exterior stairways, an opening of not more than 1/2 inch (12.7 mm) may be permitted between the base of the riser and the tread.*
2. *On exterior stairways, risers constructed of grating containing openings of not more than 1/2 inch (12.7 mm) may be permitted.*

**11B-504.4 Tread surface.** Stair treads shall comply with *Section 11B-302*. Changes in level, slopes exceeding 1:48, and detectable warnings shall not be permitted.

**Exception:** *Reserved.*

**11B-504.4.1 Contrasting stripe.** Interior stairs shall have the upper approach and lower tread marked by a stripe providing clear visual contrast. Exterior stairs shall have the upper approach and all treads marked by a stripe providing clear visual contrast.

*The stripe shall be a minimum of 2 inches (51 mm) wide to a maximum of 4 inches (102 mm) wide placed parallel to, and not more than 1 inch (25 mm) from, the nose of the step or upper approach. The stripe shall extend the full width of the step or upper approach and shall be of material that is at least as slip resistant as the other treads of the stair. A painted stripe shall be acceptable. Grooves shall not be used to satisfy this requirement.*

**11B-504.5 Nosings.** The radius of curvature at the leading edge of the tread shall be 1/2 inch (12.7 mm) maximum. Nosings that project beyond risers shall have the underside of the leading edge curved or beveled. Risers shall be permitted to slope under the tread at an angle of 30 degrees maximum from vertical. The permitted projection of the nosing shall extend 1 1/4 inches (32 mm) maximum over the tread below.

**Exception:** *In existing buildings there is no requirement to retroactively alter existing nosing projections of 1 1/2 inches (38 mm) which were constructed in compliance with the building code in effect at the time of original construction.*

**11B-504.6 Handrails.** Stairs shall have handrails complying with *Section 11B-505*.

**11B-504.7 Wet conditions.** Stair treads and landings subject to wet conditions shall be designed to prevent the accumulation of water.

**11B-504.8 Floor identification.** *Floor identification signs required by Chapter 10, Section 1023.9 complying with Sections 11B-703.1, 11B-703.2, 11B-703.3 and 11B-703.5 shall be located at the landing of each floor level, placed adjacent to the door on the latch side, in all enclosed stairways in buildings two or more stories in height to identify the floor level. At the exit discharge level, the sign shall include a raised five pointed star located to the left of the identifying floor level. The outside diameter of the star shall be the same as the height of the raised characters.*

**11B-505 Handrails**

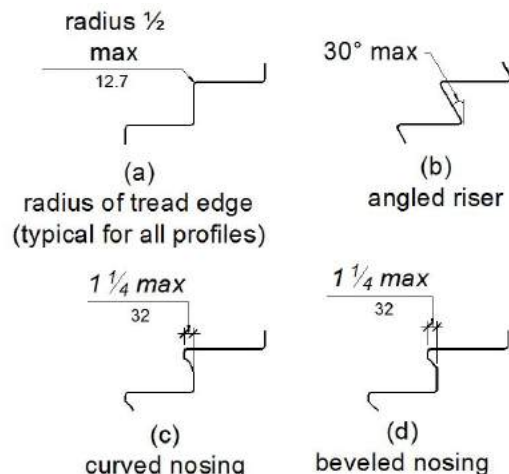
**11B-505.1 General.** Handrails provided along walking surfaces complying with *Section 11B-403*, required at ramps complying with *Section 11B-405*, and required at stairs complying with *Section 11B-504* shall comply with *Section 11B-505*.

**11B-505.2 Where required.** Handrails shall be provided on both sides of stairs and ramps.

**Exceptions:**

1. *In assembly areas, handrails shall not be required on both sides of aisle ramps where a handrail is provided at either side or within the aisle width.*
2. *Curb ramps do not require handrails.*
3. *At door landings, handrails are not required when the ramp run is less than 6 inches (152 mm) in rise or 72 inches (1829 mm) in length.*

**11B-505.2.1 Orientation.** *The orientation of at least one handrail shall be in the direction of the stair run, perpendicular to the direction of the stair nosing, and shall not reduce the minimum required width of the stair.*

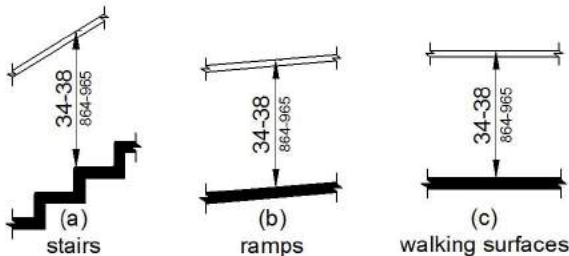


**FIGURE 11B-504.5 STAIR NOSINGS**

**11B-505.3 Continuity.** Handrails shall be continuous within the full length of each stair flight or ramp run. Inside handrails on switchback or dogleg stairs and ramps shall be continuous between flights or runs.

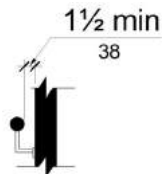
**Exception:** In assembly areas, ramp handrails adjacent to seating or within the aisle width shall not be required to be continuous in aisles serving seating.

**11B-505.4 Height.** Top of gripping surfaces of handrails shall be 34 inches (864 mm) minimum and 38 inches (965 mm) maximum vertically above walking surfaces, stair nosings, and ramp surfaces. Handrails shall be at a consistent height above walking surfaces, stair nosings, and ramp surfaces.



**FIGURE 11B-505.4  
HANDRAIL HEIGHT**

**11B-505.5 Clearance.** Clearance between handrail gripping surfaces and adjacent surfaces shall be 1½ inches (38 mm) minimum. Handrails may be located in a recess if the recess is 3 inches (76 mm) maximum deep and 18 inches (457 mm) minimum clear above the top of the handrail.



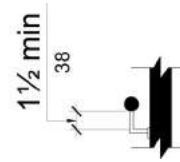
**FIGURE 11B-505.5  
HANDRAIL CLEARANCE**

**11B-505.6 Gripping surface.** Handrail gripping surfaces shall be continuous along their length and shall not be obstructed along their tops or sides. The bottoms of handrail gripping surfaces shall not be obstructed for more than 20 percent of their length. Where provided, horizontal projections shall occur 1½ inches (38 mm) minimum below the bottom of the handrail gripping surface.

**Exceptions:**

1. Where handrails are provided along walking surfaces with slopes not steeper than 1:20, the bottoms of handrail gripping surfaces shall be permitted to be obstructed along their entire length where they are integral to crash rails or bumper guards.
2. The distance between horizontal projections and the bottom of the gripping surface shall be permitted to be reduced by 1/8 inch (3.2 mm) for each 1/2 inch

(12.7 mm) of additional handrail perimeter dimension that exceeds 4 inches (102 mm).

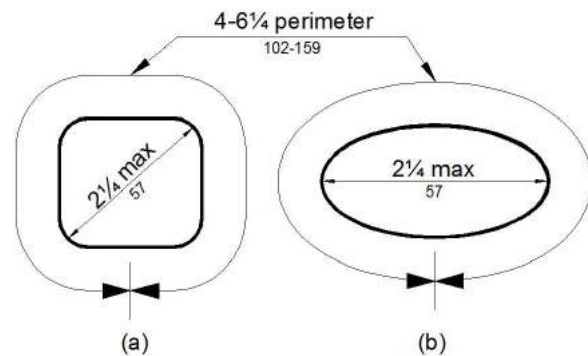


**FIGURE 11B-505.6  
HORIZONTAL PROJECTIONS BELOW GRIPPING SURFACE**

**11B-505.7 Cross section.** Handrail gripping surfaces shall have a cross section complying with Section 11B-505.7.1 or 11B-505.7.2.

**11B-505.7.1 Circular cross section.** Handrail gripping surfaces with a circular cross section shall have an outside diameter of 1¼ inches (32 mm) minimum and 2 inches (51 mm) maximum.

**11B-505.7.2 Non-circular cross sections.** Handrail gripping surfaces with a non-circular cross section shall have a perimeter dimension of 4 inches (102 mm) minimum and 6¼ inches (159 mm) maximum, and a cross-section dimension of 2¼ inches (57 mm) maximum.



**FIGURE 11B-505.7.2  
HANDRAIL NON-CIRCULAR CROSS SECTION**

**11B-505.8 Surfaces.** Handrail gripping surfaces and any surfaces adjacent to them shall be free of sharp or abrasive elements and shall have rounded edges.

**11B-505.9 Fittings.** Handrails shall not rotate within their fittings.

**11B-505.10 Handrail extensions.** Handrail gripping surfaces shall extend beyond and in the same direction of stair flights and ramp runs in accordance with Section 11B-505.10.

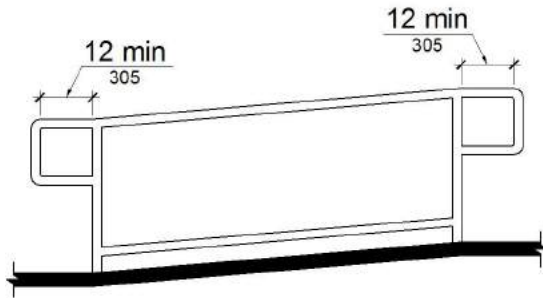
**Exceptions:**

1. Extensions shall not be required for continuous handrails at the inside turn of switchback or dogleg stairs and ramps.
2. In assembly areas, extensions shall not be required for ramp handrails in aisles serving seating where the handrails are discontinuous to provide access to seating and to permit crossovers within aisles.
3. In alterations, where the extension of the handrail in the direction of stair flight or ramp run would create a

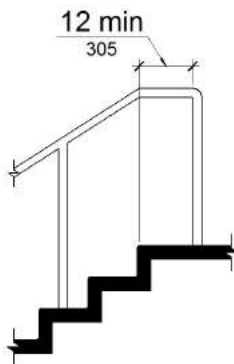
hazard, the extension of the handrail may be turned 90 degrees from the direction of stair flight or ramp run.

**11B-505.10.1 Top and bottom extension at ramps.** Ramp handrails shall extend horizontally above the landing for 12 inches (305 mm) minimum beyond the top and bottom of ramp runs. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent ramp run.

**11B-505.10.2 Top extension at stairs.** At the top of a stair flight, handrails shall extend horizontally above the landing for 12 inches (305 mm) minimum beginning directly above the first riser nosing. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent stair flight.



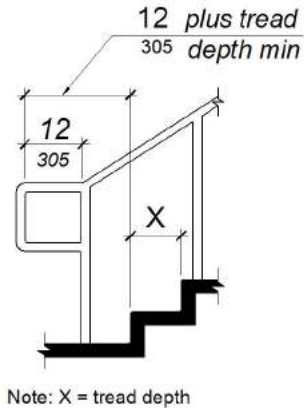
**FIGURE 11B-505.10.1**  
TOP AND BOTTOM HANDRAIL EXTENSION AT RAMPS



**FIGURE 11B-505.10.2**  
TOP HANDRAIL EXTENSION AT STAIRS

**11B-505.10.3 Bottom extension at stairs.** At the bottom of a stair flight, handrails shall extend at the slope of the stair flight for a horizontal distance equal to one tread depth beyond the last riser nosing. The horizontal extension of a handrail shall be 12 inches (305 mm) long minimum and a height equal to that of the sloping portion of

the handrail as measured above the stair nosings. Extension shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent stair flight.



**FIGURE 11B-505.10.3**  
BOTTOM HANDRAIL EXTENSION AT STAIRS

## DIVISION 6: PLUMBING ELEMENTS AND FACILITIES

### 11B-601 General

**11B-601.1 Scope.** The provisions of *Division 6* shall apply where required by *Division 2* or where referenced by a requirement in this *chapter*.

### 11B-602 Drinking fountains and bottle-filling stations

**11B-602.1 General.** Drinking fountains shall comply with *Sections 11B-307* and *11B-602*.

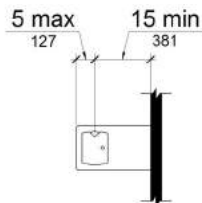
**11B-602.2 Clear floor space.** Units shall have a clear floor or ground space complying with *Section 11B-305* positioned for a forward approach and centered on the unit. Knee and toe clearance complying with *Section 11B-306* shall be provided.

**Exception:** A parallel approach complying with *Section 11B-305* shall be permitted at units for children's use where the spout is 30 inches (762 mm) maximum above the finish floor or ground and is 3½ inches (89 mm) maximum from the front edge of the unit, including bumpers.

**11B-602.3 Operable parts.** Operable parts shall comply with *Section 11B-309*. *The flow of water shall be activated by a manually operated system that is front mounted or side mounted and located within 6 inches (152 mm) of the front edge of the fountain or an automatic electronically controlled device.*

**11B-602.4 Spout height.** Spout outlets shall be 36 inches (914 mm) maximum above the finish floor or ground.

**11B-602.5 Spout location.** The spout shall be located 15 inches (381 mm) minimum from the vertical support and 5 inches (127 mm) maximum from the front edge of the unit, including bumpers.



**FIGURE 11B-602.5  
DRINKING FOUNTAIN SPOUT LOCATION**

**11B-602.6 Water flow.** The spout shall provide a flow of water 4 inches (102 mm) high minimum and shall be located 5 inches (127 mm) maximum from the front of the unit. The angle of the water stream shall be measured horizontally relative to the front face of the unit. Where spouts are located less than 3 inches (76 mm) of the front of the unit, the angle of the water stream shall be 30 degrees maximum. Where spouts are located between 3 inches (76 mm) and 5 inches (127 mm) maximum from the front of the unit, the angle of the water stream shall be 15 degrees maximum.

**11B-602.7 Drinking fountains for standing persons.** Spout outlets of drinking fountains for standing persons shall be 38 inches (965 mm) minimum and 43 inches (1092 mm) maximum above the finish floor or ground.

**11B-602.8 Depth.** *Wall- and post-mounted cantilevered drinking fountains shall be 18 inches (457 mm) minimum and 19 inches (483 mm) maximum in depth.*

**11B-602.9 Pedestrian protection.** *All drinking fountains shall either be located completely within alcoves, positioned completely between wing walls, or otherwise positioned so as not to encroach into pedestrian ways. The protected area within which a drinking fountain is located shall be 32 inches (813 mm) wide minimum and 18 inches (457 mm) deep minimum, and shall comply with Section 11B-305.7. When used, wing walls or barriers shall project horizontally at least as far as the drinking fountain and to within 6 inches (152 mm) vertically from the floor or ground surface.*

**11B-602.10 Bottle-filling stations.** *Bottle-filling stations shall comply with Sections 11B-307 and 11B-309.*

**Exception:** *Where bottle-filling stations are provided at a drinking fountain for standing persons, the bottle-filling station is not required to comply with this section provided a bottle-filling station is located at the drinking fountain complying with Sections 11B-602.2 through 11B-602.6.*

### 11B-603 Toilet and bathing rooms

**11B-603.1 General.** Toilet and bathing rooms shall comply with *Section 11B-603*.

**11B-603.2 Clearances.** Clearances shall comply with *Section 11B-603.2*.

**11B-603.2.1 Turning space.** Turning space complying with *Section 11B-304* shall be provided within the room.

**11B-603.2.2 Overlap.** Required clear floor spaces, clearance at fixtures, and turning space shall be permitted to overlap.

**11B-603.2.3 Door swing.** Doors shall not swing into the clear floor space or clearance required for any fixture. *Doors to accessible water closet compartments shall be permitted to encroach into the turning space without limitation. Other than doors to accessible water closet compartments, a door, in any position, shall be permitted to encroach into the turning space by 12 inches (305 mm) maximum.*

#### Exceptions:

1. *Reserved.*
2. Where the toilet room or bathing room is for individual use and a clear floor space complying with *Section 11B-305.3* is provided within the room beyond the arc of the door swing, doors shall be permitted to swing into the clear floor space or clearance required for any fixture.
3. *In residential dwelling units complying with Section 11B-233.3.1.1, doors shall be permitted to swing over the turning space without limitation.*

**11B-603.3 Mirrors.** Mirrors located above lavatories or countertops shall be installed with the bottom edge of the reflecting surface 40 inches (1016 mm) maximum above the finish floor or ground. Mirrors not located above lavatories or countertops shall be installed with the bottom edge of the reflecting surface 35 inches (889 mm) maximum above the finish floor or ground.

**11B-603.4 Coat hooks, shelves and medicine cabinets.** Coat hooks shall be located within one of the reach ranges specified in *Section 11B-308*. Shelves shall be located 40 inches (1016 mm) minimum and 48 inches (1219 mm) maximum

above the finish floor. Medicine cabinets shall be located with a usable shelf no higher than 44 inches (1118 mm) maximum above the finish floor.

**11B-603.5 Accessories.** Where towel or sanitary napkin dispensers, waste receptacles, or other accessories are provided in toilet facilities, at least one of each type shall be located on an accessible route. All operable parts, including coin slots, shall be 40 inches (1016 mm) maximum above the finish floor.

**Exception:** Baby diaper changing stations are not required to comply with Section 11B-603.5.

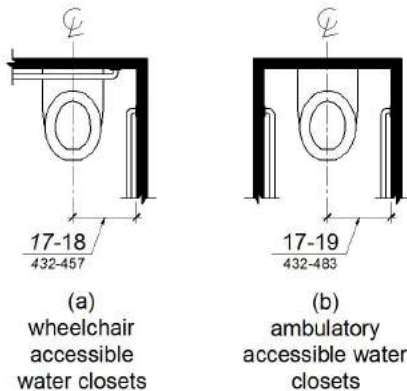
**11B-603.6 Guest room toilet and bathing rooms.** Toilet and bathing rooms within guest rooms that are not required to provide mobility features complying with Section 11B-806.2 shall provide all toilet and bathing fixtures in a location that allows a person using a wheelchair measuring 30 inches by 48 inches (762 mm by 1219 mm) to touch the wheelchair to any lavatory, urinal, water closet, tub, sauna, shower stall and any other similar sanitary installation, if provided.

**11B-604 Water closets and toilet compartments**

**11B-604.1 General.** Water closets and toilet compartments shall comply with Sections 11B-604.2 through 11B-604.8.

**Exception:** Water closets and toilet compartments for children's use shall be permitted to comply with Section 11B-604.9.

**11B-604.2 Location.** The water closet shall be positioned with a wall or partition to the rear and to one side. The centerline of the water closet shall be 17 inches (432 mm) minimum to 18 inches (457 mm) maximum from the side wall or partition, except that the water closet shall be 17 inches (432 mm) minimum and 19 inches (483 mm) maximum from the side wall or partition in the ambulatory accessible toilet compartment specified in Section 11B-604.8.2. Water closets shall be arranged for a left-hand or right-hand approach.



**FIGURE 11B-604.2 WATER CLOSET LOCATION**

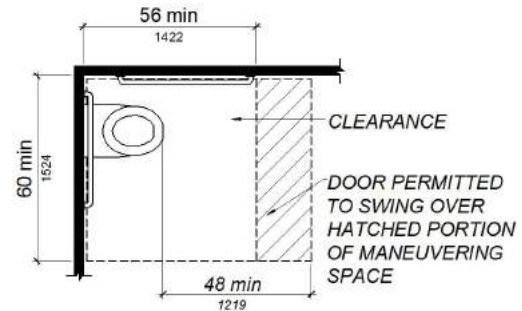
**11B-604.3 Clearance.** Clearances around water closets and in toilet compartments shall comply with Section 11B-604.3.

**11B-604.3.1 Size.** Clearance around a water closet shall be 60 inches (1524 mm) minimum measured perpendicular from the side wall and 56 inches (1422 mm) minimum measured perpendicular from the rear wall. A minimum 60 inches (1524 mm) wide and 48 inches (1219 mm) deep maneuvering space shall be provided in front of the water closet.

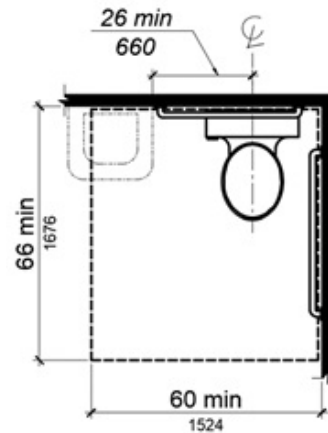
**Exception:** In residential dwelling units complying with Section 11B-233.3.1.1, maneuvering space in front of the water closet shall be a minimum 60 inches (1524 mm) wide and 36 inches (914 mm) deep.

**11B-604.3.2 Overlap.** The required clearance around the water closet shall be permitted to overlap the water closet, associated grab bars, dispensers, sanitary napkin disposal units, coat hooks, shelves, accessible routes, clear floor space and clearances required at other fixtures, and the turning space. No other fixtures or obstructions shall be located within the required water closet clearance.

**Exception:** In residential dwelling units, a lavatory complying with Section 11B-606 shall be permitted on the rear wall 26 inches (660 mm) minimum from the water closet centerline to allow for the installation of a grab bar where the clearance at the water closet is 66 inches (1676 mm) minimum measured perpendicular from the rear wall.



**FIGURE 11B-604.3.1 SIZE OF CLEARANCE AT WATER CLOSETS**



**FIGURE 11B-604.3.2 (EXCEPTION) OVERLAP OF WATER CLOSET CLEARANCE IN RESIDENTIAL DWELLING UNITS**

**11B-604.4 Seats.** The seat height of a water closet above the finish floor shall be 17 inches (432 mm) minimum and 19 inches (483 mm) maximum measured to the top of the seat. Seats shall not be sprung to return to a lifted position. Seats shall be 2 inches (51 mm) high maximum.

**Exceptions:**

1. Reserved.
2. In residential dwelling units, the height of water closets shall be permitted to be 15 inches (381 mm)

minimum and 19 inches (483 mm) maximum above the finish floor measured to the top of the seat.

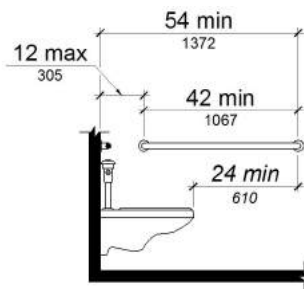
3. A 3-inch (76 mm) high seat shall be permitted only in alterations where the existing fixture is less than 15 inches (381 mm) high.

**11B-604.5 Grab bars.** Grab bars for water closets shall comply with Section 11B-609. Grab bars shall be provided on the side wall closest to the water closet and on the rear wall. Where separate grab bars are required on adjacent walls at a common mounting height, an L-shaped grab bar meeting the dimensional requirements of Sections 11B-604.5.1 and 11B-604.5.2 shall be permitted.

**Exceptions:**

1. Reserved.
2. In residential dwelling units, grab bars shall not be required to be installed in toilet or bathrooms provided that reinforcement has been installed in walls and located so as to permit the installation of grab bars complying with Section 11B-604.5.
3. In detention or correction facilities, grab bars shall not be required to be installed in housing or holding cells that are specially designed without protrusions for purposes of suicide prevention.

**11B-604.5.1 Side wall.** The side wall grab bar shall be 42 inches (1067 mm) long minimum, located 12 inches (305 mm) maximum from the rear wall and extending 54 inches (1372 mm) minimum from the rear wall with the front end positioned 24 inches (610 mm) minimum in front of the water closet.



**FIGURE 11B-604.5.1**  
SIDE WALL GRAB BAR AT WATER CLOSETS

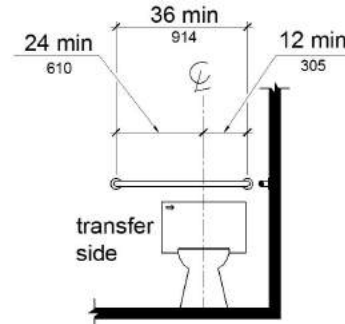
**11B-604.5.2 Rear wall.** The rear wall grab bar shall be 36 inches (914 mm) long minimum and extend from the centerline of the water closet 12 inches (305 mm) minimum on one side and 24 inches (610 mm) minimum on the other side.

**Exceptions:**

1. The rear grab bar shall be permitted to be 24 inches (610 mm) long minimum, centered on the water

closet, where wall space does not permit a length of 36 inches (914 mm) minimum due to the location of a recessed fixture adjacent to the water closet.

2. Where an administrative authority requires flush controls for flush valves to be located in a position that conflicts with the location of the rear grab bar, then the rear grab bar shall be permitted to be split or shifted to the open side of the toilet area.



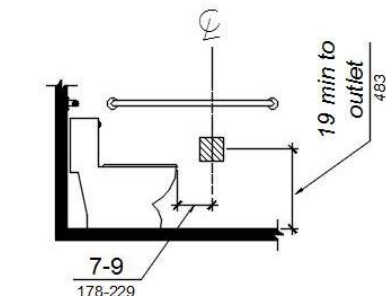
**FIGURE 11B-604.5.2**  
REAR WALL GRAB BAR AT WATER CLOSETS

**11B-604.6 Flush controls.** Flush controls shall be hand operated or automatic. Hand operated flush controls shall comply with Section 11B-309 except they shall be located 44 inches (1118 mm) maximum above the floor. Flush controls shall be located on the open side of the water closet except in ambulatory accessible compartments complying with Section 11B-604.8.2.

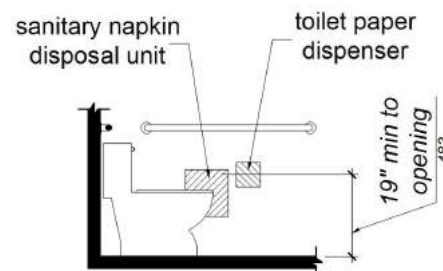
**11B-604.7 Dispensers and disposal units.** Toilet paper dispensers and sanitary napkin disposal units shall comply with Section 11B-604.7. Combination accessory units are not permitted to encroach into the space required by Section 11B-609.3.

**11B-604.7.1 Dispensers.** Toilet paper dispensers shall comply with Section 11B-309.4 and shall be 7 inches (178 mm) minimum and 9 inches (229 mm) maximum in front of the water closet measured to the centerline of the dispenser. The outlet of the dispenser shall be below the grab bar, 19 inches (483 mm) minimum above the finish floor and shall not be located behind grab bars. Dispensers shall not be of a type that controls delivery or that does not allow continuous paper flow.

**11B-604.7.2 Disposal units.** Sanitary napkin disposal units, if provided, shall comply with Section 11B-309.4 and shall be wall mounted and located on the sidewall between the rear wall of the toilet and the toilet paper dispenser, adjacent to the toilet paper dispenser. The disposal unit shall be located below the grab bar with the opening of the disposal unit 19 inches minimum (483 mm) above the finish floor.



**FIGURE 11B-604.7.1**  
DISPENSER OUTLET LOCATION



**FIGURE 11B-604.7.2**  
DISPOSAL UNIT LOCATION

**11B-604.8 Toilet compartments.** Wheelchair accessible toilet compartments shall meet the requirements of Sections 11B-604.8.1 and 11B-604.8.3. Compartments containing more than one plumbing fixture shall comply with Section 11B-603. Ambulatory accessible compartments shall comply with Sections 11B-604.8.2 and 11B-604.8.3.

**11B-604.8.1 Wheelchair accessible compartments.** Wheelchair accessible compartments shall comply with Section 11B-604.8.1.

**11B-604.8.1.1 Size.** Wheelchair accessible compartments shall be 60 inches (1524 mm) wide minimum measured perpendicular to the side wall, and 56 inches (1422 mm) deep minimum for wall hung water closets and 59 inches (1499 mm) deep minimum for floor mounted water closets measured perpendicular to the rear wall. Wheelchair accessible compartments shall additionally provide maneuvering space complying with Section 11B-604.8.1.1.1, 11B-604.8.1.1.2, or 11B-604.8.1.1.3, as applicable. Wheelchair accessible compartments for children's use shall be 60 inches (1524 mm) wide minimum measured perpendicular to the side wall, and 59 inches (1499 mm) deep minimum for wall hung and floor mounted water closets measured perpendicular to the rear wall.

**11B-604.8.1.1.1 Maneuvering space with in-swinging door.** In a wheelchair accessible compartment with an in-swinging door, a minimum 60 inches (1524 mm) wide by 36 inches (914 mm) deep maneuvering space shall be provided in front of the clearance required in Section 11B-604.8.1.1. See Figures 11B-604.8.1.1.2 (b) and 11B-604.8.1.1.3 (b).

**11B-604.8.1.1.2 Maneuvering space with side-opening door.** In a wheelchair accessible compartment with a door located in the side wall or partition, either in-swinging or out-swinging, a minimum 60 inches (1524 mm) wide and 60 inches (1524 mm) deep maneuvering space shall be provided in front of the water closet. See Figure 11B-604.8.1.1.2.

**11B-604.8.1.1.3 Maneuvering space with end-opening door.** In a wheelchair accessible compartment with a door located in the front wall or partition (facing the water closet), either in-swinging or out-swinging, a minimum 60 inches (1524 mm) wide and 48 inches (1219 mm) deep maneuvering space shall be provided in front of the water closet. See Figure 11B-604.8.1.1.3.

**11B-604.8.1.2 Doors.** Toilet compartment doors, including door hardware, shall comply with Section 11B-404 except that if the approach is from the push side of the compartment door, clearance between the door side of the compartment and any obstruction shall be 48 inches (1219 mm) minimum measured perpendicular to the compartment door in its closed position. Doors shall be located in the front partition or in the side wall or partition farthest from the water closet. Where located in the front partition, the door opening shall be 4 inches (102 mm) maximum from the side wall or partition farthest from the water closet. Where located in the side wall or partition, the door opening shall be farthest from the water closet and shall be 54 inches (1372 mm) minimum from the rear wall. The door shall be self-closing. A door pull complying with Section 11B-404.2.7 shall be placed on both sides of the

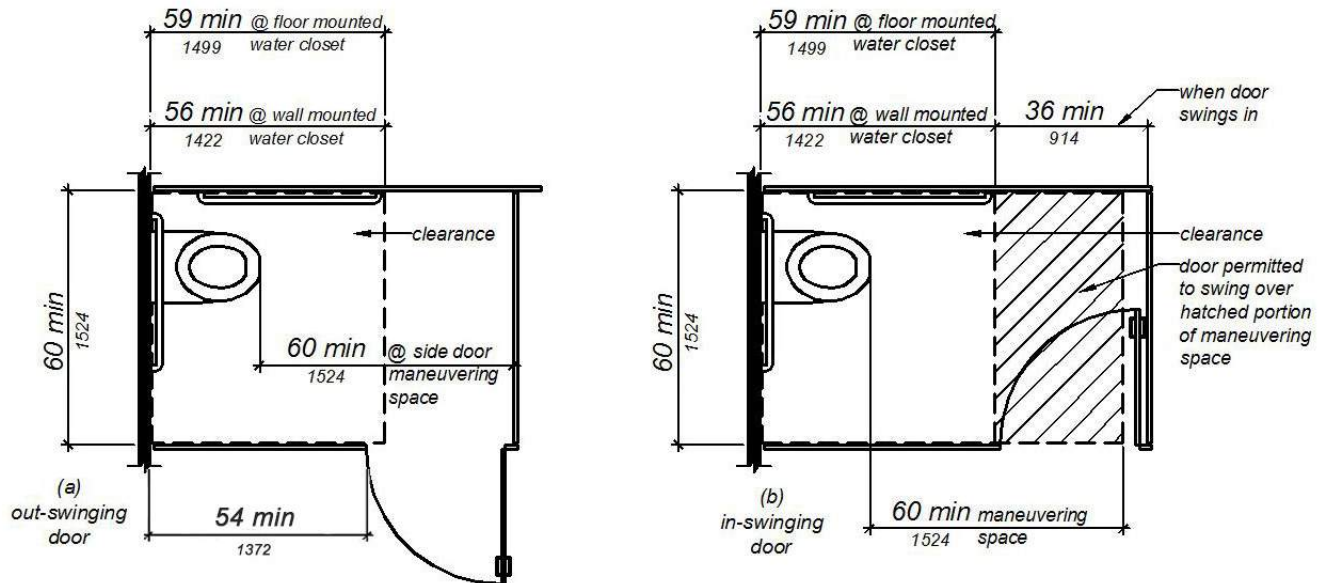
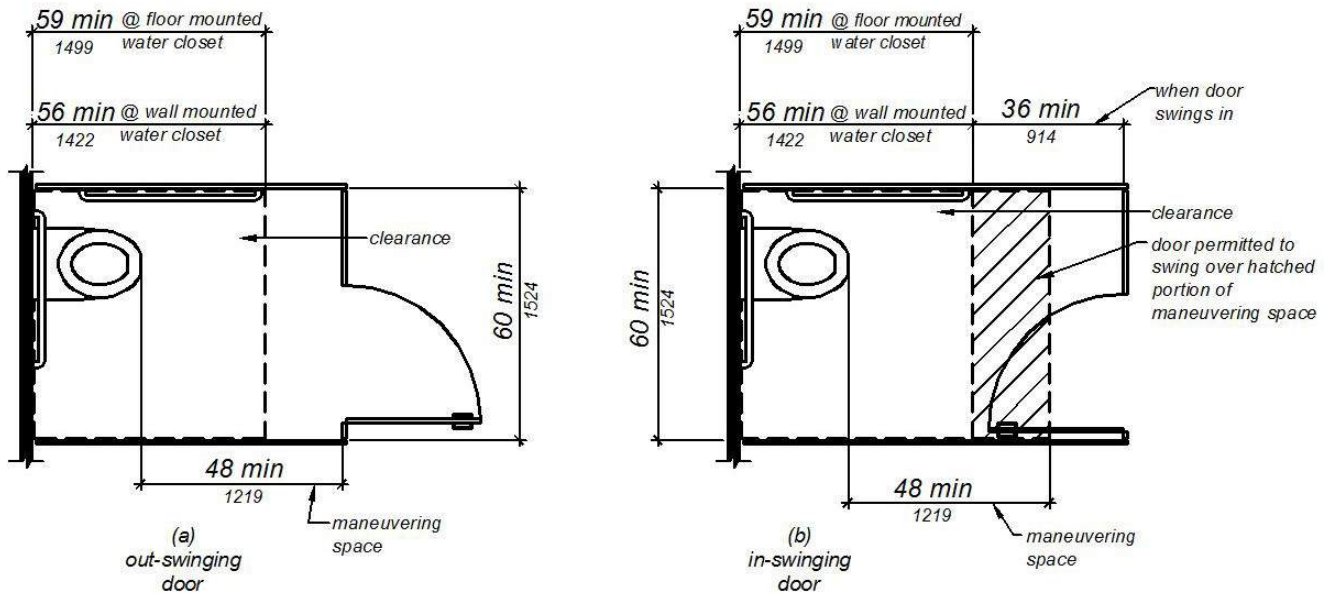


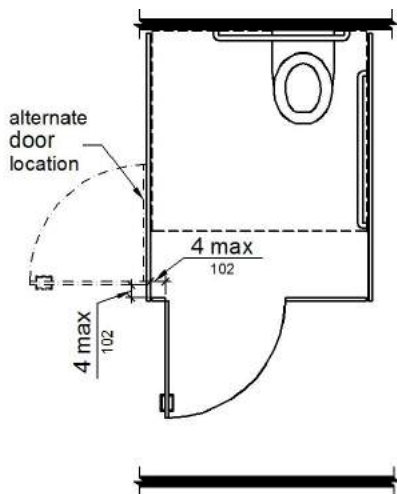
FIGURE 11B-604.8.1.1.2  
MANEUVERING SPACE WITH SIDE-OPENING DOOR



**FIGURE 11B-604.8.1.1.3**  
**MANEUVERING SPACE WITH END-OPENING DOOR**

door near the latch. Doors shall not swing into the clear floor space or clearance required for any fixture. Doors may swing into that portion of maneuvering space which does not overlap the clearance required at a water closet.

**Exception:** When located at the side of a toilet compartment, the toilet compartment door opening shall provide a clear width of 34 inches (864 mm) minimum.



**FIGURE 11B-604.8.1.2**  
**WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT DOORS**

**11B-604.8.1.3 Approach.** Compartments shall be arranged for left-hand or right-hand approach to the water closet.

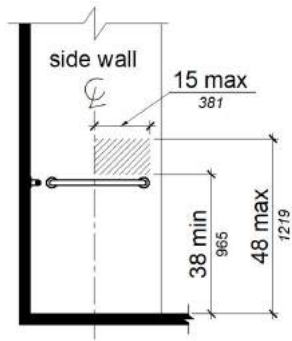
**11B-604.8.1.4 Toe clearance.** At least one side partition shall provide a toe clearance of 9 inches (229 mm) minimum above the finish floor and 6 inches (152 mm) deep minimum beyond the compartment-side face of the partition, exclusive of partition support members. Partition components at toe clearances shall be smooth without sharp edges or abrasive surfaces. Compartments for children's use shall provide a toe clearance of 12 inches (305 mm) minimum above the finish floor.

**Exception:** Toe clearance at the side partition is not required in a compartment greater than 66 inches (1676 mm) wide.

**11B-604.8.1.5 Grab bars.** Grab bars shall comply with Section 11B-609. A side-wall grab bar complying with Section 11B-604.5.1 shall be provided and shall be located on the wall closest to the water closet. In addition, a rear-wall grab bar complying with Section 11B-604.5.2 shall be provided. Where separate grab bars are required on adjacent walls at a common mounting height, an L-shaped grab bar meeting the dimensional requirements of Sections 11B-604.5.1 and 11B-604.5.2 shall be permitted.

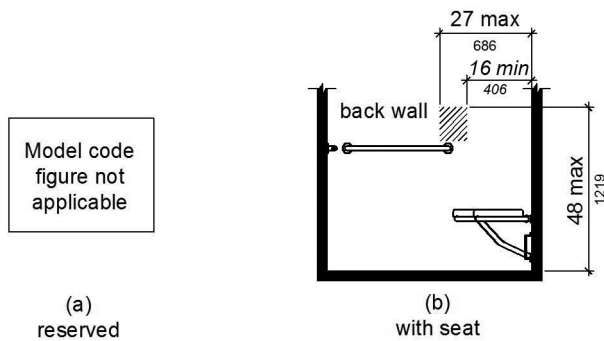


maximum from the centerline of the seat toward the shower opening.



**FIGURE 11B-608.5.1**  
**TRANSFER TYPE SHOWER**  
**COMPARTMENT CONTROL LOCATION**

**11B-608.5.2 Standard roll-in type shower compartments.** In standard roll-in type shower compartments, the controls, faucets, and the shower spray unit shall be located on the back wall of the compartment adjacent to the seat wall 16 inches (406 mm) minimum and 27 inches (686 mm) maximum from the seat wall; and shall be located above the grab bar, but no higher than 48 inches (1219 mm) above the shower floor.

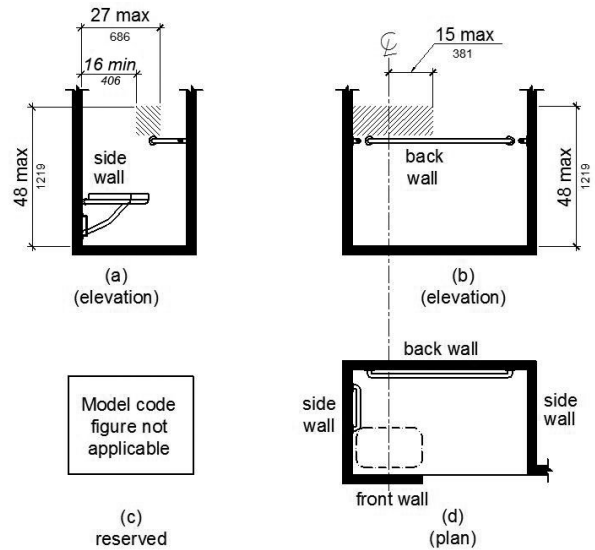


**FIGURE 11B-608.5.2**  
**STANDARD ROLL-IN TYPE**  
**SHOWER COMPARTMENT CONTROL LOCATION**

**11B-608.5.3 Alternate roll-in type shower compartments.** In alternate roll-in type shower compartments, the controls, faucets, and shower spray unit shall be located on the side wall of the compartment adjacent to the seat wall 16 inches (406 mm) minimum and 27 inches (686 mm) maximum from the seat wall or shall be located on the back wall opposite the seat 15 inches (381 mm) maximum, left or right of the centerline of the seat. The controls, faucets, and shower spray units shall be located above the grab bar, but no higher than 48 inches (1219 mm) above the shower floor.

**11B-608.6 Shower spray unit and water.** A shower spray unit with a hose 59 inches (1499 mm) long minimum that can be used both as a fixed-position shower head and as a handheld shower shall be provided. The shower spray unit shall have an on/off control with a non-positive shut-off. If an adjustable-height shower head on a vertical bar is used, the bar shall be installed so as not to obstruct the use of grab bars. Shower spray units shall deliver water that is 120°F (49°C) maximum.

**Exception:** Where subject to excessive vandalism, two fixed shower heads shall be permitted instead of a handheld spray unit in facilities that are not medical care facilities, long-term care facilities, transient lodging guest rooms, or residential dwelling units. Each shower head shall be installed so it can be operated independently of the other and shall have swivel angle adjustments, both vertically and horizontally. One shower head shall be located at a height of 48 inches (1219 mm) maximum above the shower finish floor.



**FIGURE 11B-608.5.3**  
**ALTERNATE ROLL-IN TYPE**  
**SHOWER COMPARTMENT CONTROL LOCATION**

**11B-608.7 Thresholds.** Thresholds in roll-in type shower compartments shall be 1/2 inch (12.7 mm) high maximum in accordance with Section 11B-303. In transfer type shower compartments, thresholds 1/2 inch (12.7 mm) high maximum shall be beveled, rounded, or vertical.

**Exception:** A threshold 2 inches (51 mm) high maximum shall be permitted in transfer type shower compartments in existing facilities where provision of a 1/2 inch (12.7 mm) high threshold would disturb the structural reinforcement of the floor slab.

**11B-608.8 Shower enclosures.** Enclosures for shower compartments shall not obstruct controls, faucets, and shower

spray units or obstruct transfer from wheelchairs onto shower seats.

**11B-608.9 Shower floor or ground surface.** Floor or ground surfaces of showers shall comply with Section 11B-302.1 and shall be sloped 1:48 maximum in any direction. Where drains are provided, grate openings shall be 1/4 inch (6.4 mm) maximum and flush with the floor surface.

**11B-608.10 Soap dish.** Where a soap dish is provided, it shall be located on the control wall at 40 inches (1016 mm) maximum above the shower floor, and within the reach limits from the seat.

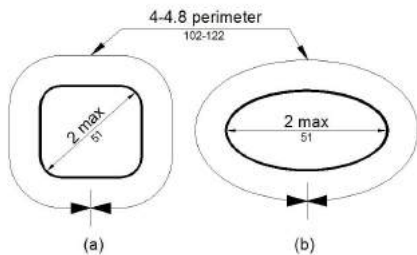
**11B-609 Grab bars**

**11B-609.1 General.** Grab bars in toilet facilities and bathing facilities shall comply with Section 11B-609.

**11B-609.2 Cross section.** Grab bars shall have a cross section complying with Section 11B-609.2.1 or 11B-609.2.2.

**11B-609.2.1 Circular cross section.** Grab bars with circular cross sections shall have an outside diameter of 1 1/4 inches (32 mm) minimum and 2 inches (51 mm) maximum.

**11B-609.2.2 Non-circular cross section.** Grab bars with non-circular cross sections shall have a cross-section dimension of 2 inches (51 mm) maximum and a perimeter dimension of 4 inches (102 mm) minimum and 4.8 inches (122 mm) maximum.



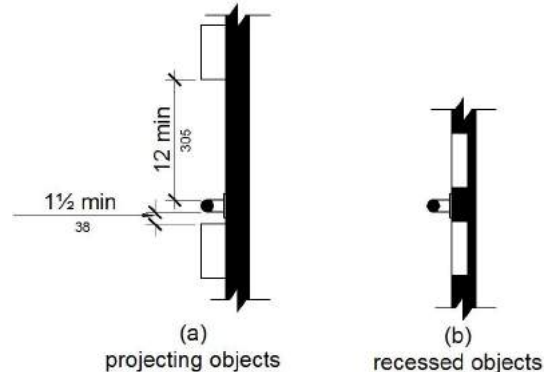
**FIGURE 11B-609.2.2 GRAB BAR NON-CIRCULAR CROSS SECTION**

**11B-609.3 Spacing.** The space between the wall and the grab bar shall be 1 1/2 inches (38 mm). The space between the grab bar and projecting objects below and at the ends shall be 1 1/2 inches (38 mm) minimum. The space between the grab bar and projecting objects above shall be 12 inches (305 mm) minimum.

**Exceptions:**

1. The space between the grab bars and shower controls, shower fittings, and other grab bars above shall be permitted to be 1 1/2 inches (38 mm) minimum.
2. For L-shaped or U-shaped grab bars complying with Section 11B-609.9 the space between the walls and the grab bar shall be 1 1/2 inches (38 mm) mini-

um for a distance of 6 inches on either side of the inside corner between two adjacent wall surfaces.



**FIGURE 11B-609.3 SPACING OF GRAB BARS**

**11B-609.4 Position of grab bars.** Grab bars shall be installed in a horizontal position, 33 inches (838 mm) minimum and 36 inches (914 mm) maximum above the finish floor measured to the top of the gripping surface, except that at water closets for children's use complying with Section 11B-604.9, grab bars shall be installed in a horizontal position 18 inches (457 mm) minimum and 27 inches (686 mm) maximum above the finish floor measured to the top of the gripping surface. The height of the lower grab bar on the back wall of a bathtub shall comply with Section 11B-607.4.1.1 or 11B-607.4.2.1.

**11B-609.5 Surface hazards.** Grab bars and any wall or other surfaces adjacent to grab bars shall be free of sharp or abrasive elements and shall have rounded edges.

**11B-609.6 Fittings.** Grab bars shall not rotate within their fittings.

**11B-609.7 Installation.** Grab bars shall be installed in any manner that provides a gripping surface at the specified locations and that does not obstruct the required clear floor space.

**11B-609.8 Structural strength.** Allowable stresses shall not be exceeded for materials used when a vertical or horizontal force of 250 pounds (1112 N) is applied at any point on the grab bar, fastener, mounting device, or supporting structure.

**11B-609.9 Alternate configuration.** L-shaped or U-shaped grab bars shall be permitted.

**11B-610 Seats**

**11B-610.1 General.** Seats in bathtubs and shower compartments shall comply with Section 11B-610.

**11B-610.2 Bathtub seats.** The top of bathtub seats shall be 17 inches (432 mm) minimum and 19 inches (483 mm) maximum above the bathroom finish floor. The depth of a removable in-tub seat shall be 15 inches (381 mm) minimum and 16 inches (406 mm) maximum. The seat shall be capable of secure placement. Permanent seats at the head end of the

**11B-703.8.10 Finish.** The background of low resolution VMS characters shall have a nonglare finish.

**11B-703.8.11 Contrast.** Low resolution VMS characters shall be light characters on a dark background.

**11B-703.8.12 Protective covering.** Where a protective layer is placed over VMS characters through which the VMS characters must be viewed, the protective covering shall have a nonglare finish.

**11B-703.8.13 Brightness.** The brightness of variable message signs in exterior locations shall automatically adjust in response to change in ambient light levels.

**11B-703.8.14 Rate of change.** Where a VMS message can be displayed in its entirety on a single screen, it shall be displayed on a single screen and shall remain motionless on the screen for a minimum 3 seconds or 1 second minimum for every seven characters of the message including spaces, whichever is longer.

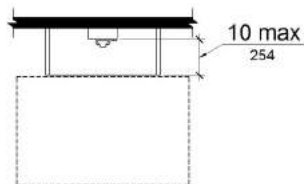
**11B-704 Telephones**

**11B-704.1 General.** Public telephones shall comply with Section 11B-704.

**11B-704.2 Wheelchair accessible telephones.** Wheelchair accessible telephones shall comply with Section 11B-704.2.

**11B-704.2.1 Clear floor or ground space.** A clear floor or ground space complying with Section 11B-305 shall be provided. The clear floor or ground space shall not be obstructed by bases, enclosures, or seats.

**11B-704.2.1.1 Parallel approach.** Where a parallel approach is provided, the distance from the edge of the telephone enclosure to the face of the telephone unit shall be 10 inches (254 mm) maximum.



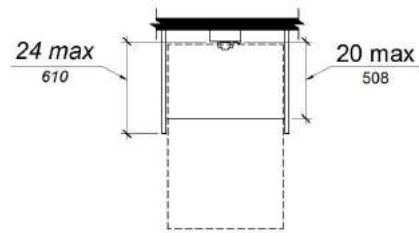
**FIGURE 11B-704.2.1.1 PARALLEL APPROACH TO TELEPHONE**

**11B-704.2.1.2 Forward approach.** Where a forward approach is provided at a telephone within an enclosure, the counter may extend beyond the face of the telephone 20 inches (508 mm) into the required clear floor or ground space and the enclosure may extend beyond the face of the telephone 24 inches (610 mm). If an additional 6 inches (152 mm) in width of clear floor space is provided, creating a clear floor space of 36 inches by 48 inches (914 mm by 1219 mm), the enclosure may extend more than 24 inches (610 mm) beyond the face of the telephone.

**11B-704.2.2 Operable parts.** Operable parts shall comply with Section 11B-309. Telephones shall have push-button controls where such service is available.

**11B-704.2.3 Telephone directories.** Telephone directories, where provided, shall be located in accordance with Section 11B-309.

**11B-704.2.4 Cord length.** The cord from the telephone to the handset shall be 29 inches (737 mm) long minimum.



**FIGURE 11B-704.2.1.2 FORWARD APPROACH TO TELEPHONE**

**11B-704.3 Volume control telephones.** Public telephones required to have volume controls shall be equipped with a receive volume control that provides a gain adjustable up to 20 dB minimum. For incremental volume control, provide at least one intermediate step of 12 dB of gain minimum. An automatic reset shall be provided. *Volume control telephones shall be equipped with a receiver that generates a magnetic field in the area of the receiver cap. Public telephones with volume control shall be hearing aid compatible.*

**11B-704.4 TTYs.** TTYs provided at a public pay telephone shall be permanently affixed within, or adjacent to, the telephone enclosure. Where an acoustic coupler is used, the telephone cord shall be sufficiently long to allow connection of the TTY and the telephone receiver.

**11B-704.4.1 Height.** When in use, the touch surface of TTY keypads shall be 34 inches (864 mm) minimum above the finish floor.

**Exception:** Where seats are provided, TTYs shall not be required to comply with Section 11B-704.4.1.

**11B-704.5 TTY shelf.** Public pay telephones required to accommodate portable TTYs shall be equipped with a shelf and an electrical outlet within or adjacent to the telephone enclosure. The telephone handset shall be capable of being placed flush on the surface of the shelf. The shelf shall be capable of accommodating a TTY and shall have 6 inches (152 mm) minimum vertical clearance above the area where the TTY is to be placed.

**11B-705 Detectable warnings and detectable directional texture**

**11B-705.1 Detectable warnings**

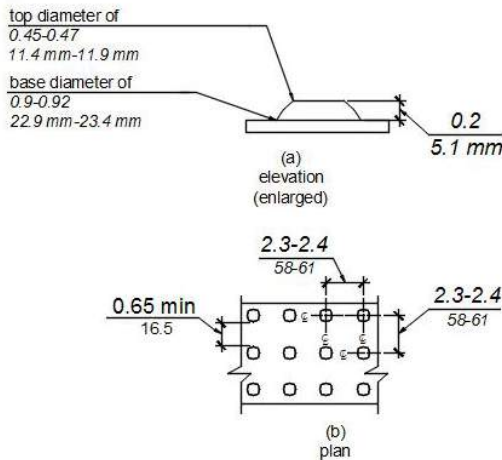
**11B-705.1.1 General.** Detectable warnings shall consist of a surface of truncated domes and shall comply with Section 11B-705.

**11B-705.1.1.1 Dome size.** Truncated domes in a detectable warning surface shall have a base diameter of 0.9 inch (22.9 mm) minimum and 0.92 inch (23.4 mm) maximum, a top diameter of 0.45 inch (11.4 mm) minimum and 0.47 inch (11.9 mm) maximum, and a height of 0.2 inch (5.1 mm).

**11B-705.1.1.2 Dome spacing.** Truncated domes in a detectable warning surface shall have a center-to-center spacing of 2.3 inches (58 mm) minimum and 2.4 inches (61 mm) maximum, and a base-to-base spacing of 0.65 inch (16.5 mm) minimum, measured between the most adjacent domes on a square grid.

**Exception:** Where installed in a radial pattern, truncated domes shall have a center-to-center spacing of

1.6 inches (41 mm) minimum to 2.4 inches (61 mm) maximum.



**FIGURE 11B-705.1**  
**SIZE AND SPACING OF TRUNCATED DOMES**

**11B-705.1.1.3 Color and contrast.** Detectable warning surfaces shall comply with Section 11B-705.1.1.3.1. The material used to comply with this section shall be an integral part of the detectable warning surface.

**Exceptions:**

1. Replacement of less than 20 percent of existing detectable warnings at a single contiguous location shall be permitted to be in-kind at existing curb ramps, islands, or cut-through medians with detectable warnings in compliance with the code requirements in effect at the time of installation.
2. Existing installed detectable warnings at curb ramps, islands, or cut-through medians may comply with Section 11B-705.1.1.3.2 in lieu of Section 11B-705.1.1.3.1.

**11B-705.1.1.3.1** Detectable warning surfaces shall be yellow and approximate 33538 of SAE AMS-STD-595A.

**11B-705.1.1.3.2** Detectable warning surfaces shall provide a 70 percent minimum visual contrast with adjacent walking surfaces. Contrast in percent shall be determined by:

$$\text{Contrast percent} = [(B1-B2)/B1] \times 100 \text{ where}$$

B1 = light reflectance value (LRV) of the lighter area and

B2 = light reflectance value (LRV) of the darker area.

**Exception:** Where the detectable warning surface does not provide a 70 percent minimum contrast with adjacent walking surfaces, a 1-inch (25 mm) wide minimum visually contrasting surface shall separate the detectable warning from adjacent walking surfaces. The visually contrasting surface shall contrast with both the detectable warning and adjacent walking surfaces either light-on-dark, or dark-on-light.

**11B-705.1.1.4 Resiliency.** Detectable warning surfaces shall differ from adjoining surfaces in resiliency or sound-on-cane contact.

**Exception:** Detectable warning surfaces at curb ramps, islands or cut-through medians shall not be required to comply with Section 11B-705.1.1.4.

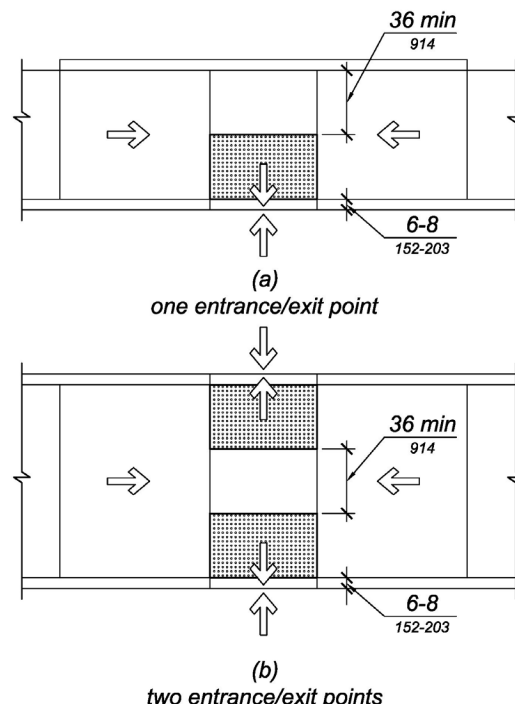
**11B-705.1.2 Locations.** Detectable warnings at the following locations shall comply with Section 11B-705.1.

**11B-705.1.2.1 Platform edges.** Detectable warning surfaces at platform boarding edges shall be 24 inches (610 mm) wide and shall extend the full length of the public use areas of the platform.

**11B-705.1.2.2 Curb ramps.** Detectable warnings at curb ramps shall comply with Section 11B-705.1.2.2.

**11B-705.1.2.2.1 Perpendicular curb ramps.** Detectable warnings at curb ramps shall extend 36 inches (914 mm) in the direction of travel. Detectable warnings shall extend the full width of the ramp run less 2 inches (51 mm) maximum on each side, excluding any flared sides. Detectable warnings shall be located so the edge nearest the curb is 6 inches (152 mm) minimum and 8 inches (203 mm) maximum from the demarcation line at the face of the curb between the curb and the gutter, street or highway.

**11B-705.1.2.2.2 Parallel curb ramps.** Detectable warnings at parallel curb ramps shall be located so the edge nearest the curb is 6 inches (152 mm) minimum and 8 inches (203 mm) maximum from the demarcation line at the face of the curb between the curb and the gutter, street or highway. Detectable warnings shall extend the full width of the turning space at the demarcation between the street and the sidewalk less 2 inches (51 mm) maximum on each side.



**FIGURE 11B-705.1.2.2.2**  
**PARALLEL CURB RAMPS**

**11B-705.1.2.2.2.1 One entrance/exit point.**

Where the turning space has one entrance/exit point other than the sloped ramp segments, detectable warnings shall be 36 inches (914 mm) deep, as measured perpendicular to the curb, and the turning space shall provide a minimum 36 inches (914 mm) wide portion without detectable warnings to allow pedestrian travel in the direction of the sidewalk without travelling over the detectable warnings.

**Exceptions:**

1. Where it is technically infeasible to provide a minimum 72 inches (1828 mm) wide turning space, as measured perpendicular to the curb, the depth of detectable warnings may be reduced to 24 inches (610 mm) minimum.
2. Existing parallel curb ramps with detectable warnings in compliance with the code requirements in effect at the time of installation shall not be required to provide a minimum 36 inches (914 mm) wide portion of the turning space without detectable warnings.

**11B-705.1.2.2.2.2 Two entrance/exit points.**

Where the turning space has two entrance/exit points other than the sloped ramp segments, detectable warnings shall be 36 inches (914 mm) deep at both entrance/exit points, as measured perpendicular to the curb, and the turning space shall provide a minimum 36 inches (914 mm) wide portion without detectable warnings to allow pedestrian travel in the direction of the sidewalk without travelling over the detectable warnings.

**Exceptions:**

1. Where it is technically infeasible to provide a minimum 108 inches (2743 mm) wide turning space, as measured perpendicular to the curb, the depth of detectable warnings may be reduced to 24 inches (610 mm) minimum.
2. Existing parallel curb ramps with detectable warnings in compliance with the code requirements in effect at the time of installation shall not be required to provide a minimum 36 inches (914 mm) wide portion of the turning space without detectable warnings.

**11B-705.1.2.3 Islands or cut-through medians.** Detectable warnings at pedestrian islands or cut-through medians shall be 36 inches (914 mm) minimum in depth extending the full width of the pedestrian path or cut-through less 2 inches (51 mm) maximum on each side, placed at the edges of the pedestrian island or cut-through median, and shall be separated by 24 inches (610 mm) minimum of walking surface without detectable warnings.

**Exception:** Detectable warnings shall be 24 inches (610 mm) minimum in depth at pedestrian islands or

cut-through medians that are less than 96 inches (2438 mm) in length in the direction of pedestrian travel.

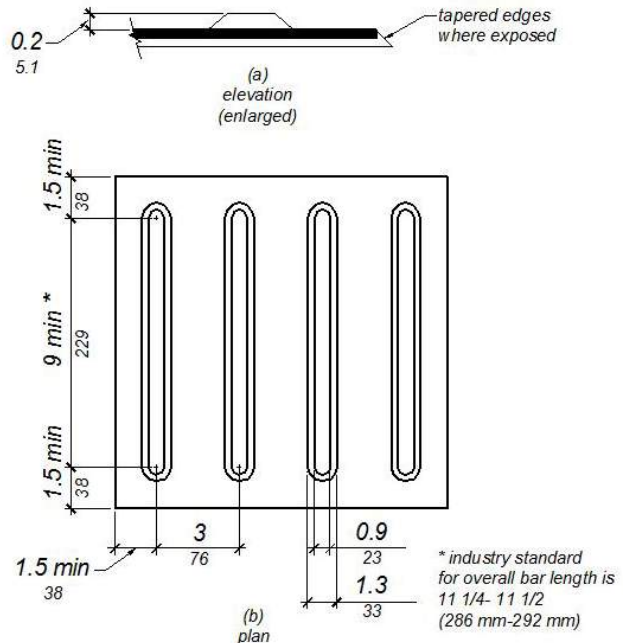
**11B-705.1.2.4 Bus stops.** When detectable warnings are provided at bus stop boarding and alighting areas, the detectable warnings shall extend the full width of the boarding/alighting area and shall be 36 inches (914 mm) minimum in depth.

**11B-705.1.2.5 Blended transitions.** Detectable warnings at blended transitions shall be 36 inches (914 mm) in width.

**11B-705.1.2.6 Reflecting pools.** When detectable warnings are provided at reflecting pools, it shall be 24 inches (610 mm) minimum and 36 inches (914 mm) maximum in width.

**11B-705.1.2.7 Track crossings.** Detectable warnings at track crossings shall be 36 inches (914 mm) in the direction of pedestrian travel and extend the full width of the circulation path.

**11B-705.2 Detectable directional texture.** Detectable directional texture at transit boarding platforms shall comply with Figure 11B-705.2 and shall be 0.1 inch (2.5 mm) in height that tapers off to 0.04 inch (1.0 mm), with bars raised 0.2 inch (5.1 mm) from the surface. The raised bars shall be 1.3 inches (33 mm) wide and 3 inches (76 mm) from center-to-center of each bar. This surface shall differ from adjoining walking surfaces in resiliency or sound-on-cane contact. The color shall be yellow and approximate FS 33538 of Federal Standard 595C. This surface will be placed directly behind the yellow detectable warning texture specified in Section 11B-705.1.2.1, aligning with all doors of the transit vehicles where passengers will embark. The width of the directional texture shall be equal to the width of the transit vehicle's door opening. The depth of the texture shall not be less than 36 inches (914 mm).



**FIGURE 11B-705.2  
DETECTABLE DIRECTIONAL TEXTURE**

**11B-705.3 Product approval.** Only approved DSA-AC detectable warning products and directional surfaces shall be installed as provided in the California Code of Regulations (CCR), Title 24, Part 1, Chapter 5, Articles 2, 3 and 4. Refer to CCR Title 24, Part 12, Chapter 11B, Section 12-11B.205 for building and facility access specifications for product approval for detectable warning products and directional surfaces.

### **11B-706 Assistive listening systems**

**11B-706.1 General.** Assistive listening systems required in assembly areas, conference and meeting rooms shall comply with Section 11B-706.

**11B-706.2 Receiver jacks.** Receivers required for use with an assistive listening system shall include a  $\frac{1}{8}$  inch (3.2 mm) standard mono jack.

**11B-706.3 Receiver hearing-aid compatibility.** Receivers required to be hearing-aid compatible shall interface with telecoils in hearing aids through the provision of neckloops.

**11B-706.4 Sound pressure level.** Assistive listening systems shall be capable of providing a sound pressure level of 110 dB minimum and 118 dB maximum with a dynamic range on the volume control of 50 dB.

**11B-706.5 Signal-to-noise ratio.** The signal-to-noise ratio for internally generated noise in assistive listening systems shall be 18 dB minimum.

**11B-706.6 Peak clipping level.** Peak clipping shall not exceed 18 dB of clipping relative to the peaks of speech.

### **11B-707 Automatic teller machines, fare machines and point-of-sale devices**

**11B-707.1 General.** Automatic teller machines, fare machines and point-of-sale devices shall comply with Section 11B-707.

**11B-707.2 Clear floor or ground space.** A clear floor or ground space complying with Section 11B-305 shall be provided.

**Exception:** Clear floor or ground space shall not be required at drive-up only automatic teller machines and fare machines.

**11B-707.3 Operable parts.** Operable parts shall comply with Section 11B-309. Unless a clear or correct key is provided, each operable part shall be able to be differentiated by sound or touch, without activation.

#### **Exceptions:**

1. Drive-up only automatic teller machines and fare machines shall not be required to comply with Sections 11B-309.2 and 11B-309.3.
2. Where automatic teller machines and fare machines do not require compliance with Section 11B-707.2, compliance with Sections 11B-309.2 and 11B-309.3 shall not be required.
3. Where point-of-sale devices do not require compliance with Section 11B-707.2, compliance with Sections 11B-309.2 and 11B-309.3 shall not be required.

**11B-707.4 Privacy.** Automatic teller machines shall provide the opportunity for the same degree of privacy of input and output available to all individuals.

**11B-707.5 Speech output.** Machines shall be speech enabled. Operating instructions and orientation, visible transaction prompts, user input verification, error messages, and all displayed information for full use shall be accessible to and independently usable by individuals with vision impairments. Speech shall be delivered through a mechanism that is readily available to all users, including but not limited to, an industry standard connector or a telephone handset. Speech shall be recorded or digitized human, or synthesized.

#### **Exceptions:**

1. Audible tones shall be permitted instead of speech for visible output that is not displayed for security purposes, including but not limited to, asterisks representing personal identification numbers.
2. Advertisements and other similar information shall not be required to be audible unless they convey information that can be used in the transaction being conducted.
3. Where speech synthesis cannot be supported, dynamic alphabetic output shall not be required to be audible.

**11B-707.5.1 User control.** Speech shall be capable of being repeated or interrupted. Volume control shall be provided for the speech function.

**Exception:** Speech output for any single function shall be permitted to be automatically interrupted when a transaction is selected.

**11B-707.5.2 Receipts.** Where receipts are provided, speech output devices shall provide audible balance inquiry information, error messages, and all other information on the printed receipt necessary to complete or verify the transaction.

#### **Exceptions:**

1. Machine location, date and time of transaction, customer account number, and the machine identifier shall not be required to be audible.
2. Information on printed receipts that duplicates information available on-screen shall not be required to be presented in the form of an audible receipt.
3. Printed copies of bank statements and checks shall not be required to be audible.

**11B-707.6 Input.** Input devices shall comply with Section 11B-707.6.

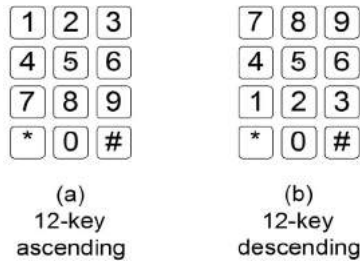
**11B-707.6.1 Input controls.** At least one tactilely discernible input control shall be provided for each function. Where provided, key surfaces not on active areas of display screens, shall be raised above surrounding surfaces. Where membrane keys are the only method of input, each shall be tactilely discernible from surrounding surfaces and adjacent keys.

**11B-707.6.2 Numeric keys.** Numeric keys shall be arranged in a 12-key ascending or descending telephone keypad layout. The number five key shall be tactilely distinct from the other keys.

**11B-707.6.3 Function keys.** Function keys shall comply with Section 11B-707.6.3.

**11B-707.6.3.1 Contrast.** Function keys shall contrast visually from background surfaces. Characters and symbols on key surfaces shall contrast visually from key surfaces. Visual contrast shall be either light-on-dark or dark-on-light.

**Exception:** Tactile symbols required by Section 11B-707.6.3.2 shall not be required to comply with Section 11B-707.6.3.1.



**FIGURE 11B-707.6.2  
NUMERIC KEY LAYOUT**

**11B-707.6.3.2 Tactile symbols.** Function key surfaces shall have tactile symbols as follows: Enter or Proceed key: raised circle; Clear or Correct key: raised left arrow; Cancel key: raised letter ex; Add Value key: raised plus sign; Decrease Value key: raised minus sign.

**11B-707.7 Display screen.** The display screen shall comply with Section 11B-707.7.

**Exception:** Drive-up only automatic teller machines and fare machines shall not be required to comply with Section 11B-707.7.1.

**11B-707.7.1 Visibility.** The display screen shall be visible from a point located 40 inches (1016 mm) above the center of the clear floor space in front of the machine.

**11B-707.7.1.1 Vertically mounted display screen.** Where display screens are mounted vertically or tipped away from the viewer less than 30 degrees, the center line of the display screen and other display devices shall be no more than 52 inches (1321 mm) above the floor or ground surface.

**11B-707.7.1.2 Angle-mounted display screen.** Where display screens are mounted tipped away from the viewer 30 degrees to less than 60 degrees from vertical, the center line of the display screen and other display devices shall be no more than 44 inches (1118 mm) above the floor or ground surface.

**11B-707.7.1.3 Horizontally mounted display screen.** Where display screens are mounted tipped away from the viewer 60 degrees to 90 degrees (horizontal) from vertical, the center line of the display screen and other display devices shall be no more than 34 inches (864 mm) above the floor or ground surface.

**11B-707.7.2 Characters.** Characters displayed on the screen shall be in a sans serif font. Characters shall be <sup>3</sup>/<sub>16</sub> inch (4.8 mm) high minimum based on the uppercase letter “I”. Characters shall contrast with their background

with either light characters on a dark background or dark characters on a light background.

**11B-707.8 Braille instructions.** Braille instructions for initiating the speech mode shall be provided. Braille shall comply with Section 11B-703.3.

**11B-707.9 Point-of-sale devices.** Point-of-sale devices shall comply with Section 11B-707.9.

**11B-707.9.1 General.** Point-of-sale systems that include a video touch screen or any other non-tactile keypad shall be equipped with either of the following:

**11B-707.9.1.1 Tactilely discernible numerical keypad.** A tactilely discernible numerical keypad similar to a telephone keypad containing a raised dot with a dot base diameter between 1.5 mm and 1.6 mm and a height between 0.6 mm and 0.9 mm on the number 5 key that enables a visually impaired person to enter his or her own personal identification number or any other personal information necessary to process the transaction in a manner that provides the opportunity for the same degree of privacy input and output available to all individuals.

**11B-707.9.1.2 Other technology.** Other technology, such as a radio frequency identification device, fingerprint biometrics, or some other mechanism that enables a visually impaired person to access the video touch screen device with his or her personal identifier and to process his or her transaction in a manner that provides the opportunity for the same degree of privacy input and output available to all individuals. Where a video screen overlay is provided it shall be equipped with a tactilely discernible numerical keypad complying with Section 11B-707.9.1.1.

**11B-708 Two-way communication systems**

**11B-708.1 General.** Two-way communication systems shall comply with Section 11B-708.

**11B-708.2 Audible and visual indicators.** The system shall provide both audible and visual signals.

**11B-708.3 Handsets.** Handset cords, if provided, shall be 29 inches (737 mm) long minimum.

**11B-708.4 Residential dwelling unit communication systems.** Communications systems between a residential dwelling unit and a site, building, or floor entrance shall comply with Section 11B-708.4.

**11B-708.4.1 Common use or public use system interface.** The common use or public use system interface shall include the capability of supporting voice and TTY communication with the residential dwelling unit interface.

**11B-708.4.2 Residential dwelling unit interface.** The residential dwelling unit system interface shall include a telephone jack capable of supporting voice and TTY communication with the common use or public use system interface.

## DIVISION 8: SPECIAL ROOMS, SPACES, AND ELEMENTS

### 11B-801 General

**11B-801.1 Scope.** The provisions of *Division 8* shall apply where required by *Division 2* or where referenced by a requirement in this *chapter*.

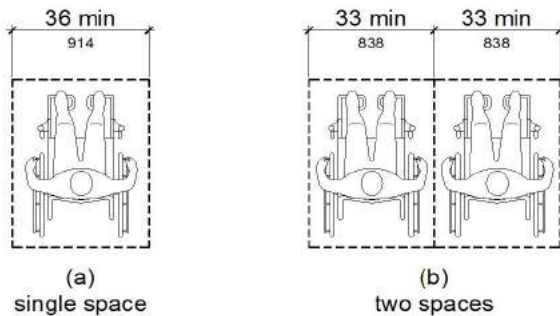
### 11B-802 Wheelchair spaces, companion seats, and designated aisle seats and semi-ambulant seats

**11B-802.1 Wheelchair spaces.** Wheelchair spaces shall comply with *Section 11B-802.1*.

**11B-802.1.1 Floor or ground surface.** The floor or ground surface of wheelchair spaces shall comply with *Section 11B-302*. Changes in level, *slopes exceeding 1:48*, and *detectable warnings shall not be permitted*.

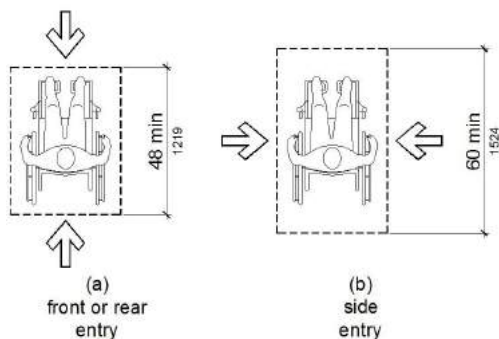
**Exception:** *Reserved*.

**11B-802.1.2 Width.** A single wheelchair space shall be 36 inches (914 mm) wide minimum. Where two adjacent wheelchair spaces are provided, each wheelchair space shall be 33 inches (838 mm) wide minimum.



**FIGURE 11B-802.1.2  
WIDTH OF WHEELCHAIR SPACES**

**11B-802.1.3 Depth.** Where a wheelchair space can be entered from the front or rear, the wheelchair space shall be 48 inches (1219 mm) deep minimum. Where a wheelchair space can be entered only from the side, the wheelchair space shall be 60 inches (1524 mm) deep minimum.



**FIGURE 11B-802.1.3  
DEPTH OF WHEELCHAIR SPACES**

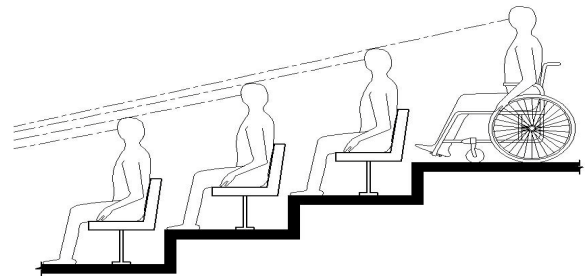
**11B-802.1.4 Approach.** Wheelchair spaces shall adjoin accessible routes. Accessible routes shall not overlap wheelchair spaces.

**11B-802.1.5 Overlap.** Wheelchair spaces shall not overlap circulation paths.

**11B-802.2 Lines of sight.** Lines of sight to the screen, performance area, or playing field for spectators in wheelchair spaces shall comply with *Section 11B-802.2*.

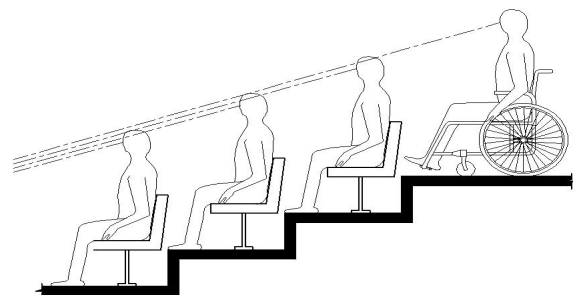
**11B-802.2.1 Lines of sight over seated spectators.** Where spectators are expected to remain seated during events, spectators in wheelchair spaces shall be afforded lines of sight complying with *Section 11B-802.2.1*.

**11B-802.2.1.1 Lines of sight over heads.** Where spectators are provided lines of sight over the heads of spectators seated in the first row in front of their seats, spectators seated in wheelchair spaces shall be afforded lines of sight over the heads of seated spectators in the first row in front of wheelchair spaces.



**FIGURE 11B-802.2.1.1  
LINES OF SIGHT OVER THE  
HEADS OF SEATED SPECTATORS**

**11B-802.2.1.2 Lines of sight between heads.** Where spectators are provided lines of sight over the shoulders and between the heads of spectators seated in the first row in front of their seats, spectators seated in wheelchair spaces shall be afforded lines of sight over the shoulders and between the heads of seated spectators in the first row in front of wheelchair spaces.

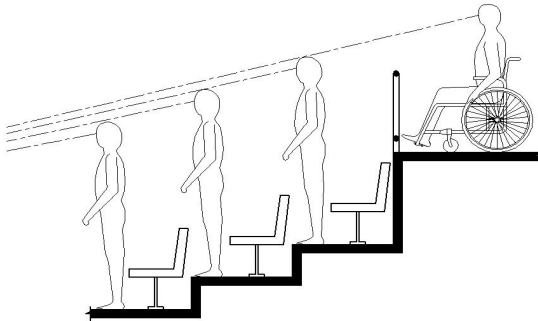


**FIGURE 11B-802.2.1.2  
LINES OF SIGHT BETWEEN THE  
HEADS OF SEATED SPECTATORS**



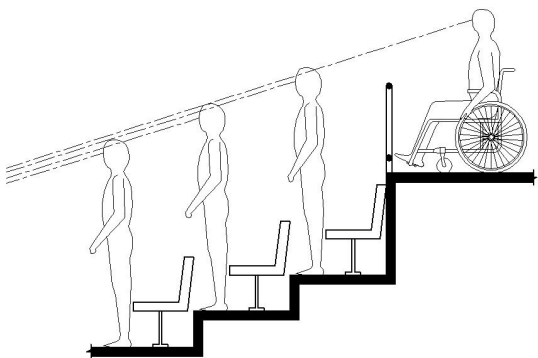
**11B-802.2.2 Lines of sight over standing spectators.** Where spectators are expected to stand during events, spectators in wheelchair spaces shall be afforded lines of sight complying with *Section 11B-802.2.2*.

**11B-802.2.2.1 Lines of sight over heads.** Where standing spectators are provided lines of sight over the heads of spectators standing in the first row in front of their seats, spectators seated in wheelchair spaces shall be afforded lines of sight over the heads of standing spectators in the first row in front of wheelchair spaces.



**FIGURE 11B-802.2.2.1  
LINES OF SIGHT OVER THE  
HEADS OF STANDING SPECTATORS**

**11B-802.2.2.2 Lines of sight between heads.** Where standing spectators are provided lines of sight over the shoulders and between the heads of spectators standing in the first row in front of their seats, spectators seated in wheelchair spaces shall be afforded lines of sight over the shoulders and between the heads of standing spectators in the first row in front of wheelchair spaces.



**FIGURE 11B-802.2.2.2  
LINES OF SIGHT BETWEEN THE  
HEADS OF STANDING SPECTATORS**

**11B-802.3 Companion seats.** Companion seats shall comply with *Section 11B-802.3*.

**11B-802.3.1 Alignment.** In row seating, companion seats shall be located to provide shoulder alignment with adjacent wheelchair spaces. The shoulder alignment point of the wheelchair space shall be measured 36 inches (914 mm) from the front of the wheelchair space. The floor surface of the companion seat shall be at the same elevation as the floor surface of the wheelchair space.

**11B-802.3.2 Type.** Companion seats shall be equivalent in size, quality, comfort, and amenities to the seating in the immediate area. Companion seats shall be permitted to be movable.

**11B-802.4 Designated aisle seats.** Designated aisle seats shall comply with *Section 11B-802.4*.

**11B-802.4.1 Armrests.** Where armrests are provided on the seating in the immediate area, folding or retractable armrests shall be provided on the aisle side of the seat.

**11B-802.4.2 Identification.** Each designated aisle seat shall be identified by a sign or marker with the *International Symbol of Accessibility* complying with *Section 11B-703.7.2.1*. Signs complying with *Section 11B-703.5*, notifying patrons of the availability of such seats shall be posted at the ticket office.

**11B-802.5 Semi-ambulant seats.** Semi-ambulant seats shall provide at least 24 inches (610 mm) clear leg space between the front of the seat to the nearest obstruction or to the back of the seat immediately in front.

**11B-803 Dressing, fitting, and locker rooms**

**11B-803.1 General.** Dressing, fitting and locker rooms shall comply with *Section 11B-803*.

**11B-803.2 Turning space.** Turning space complying with *Section 11B-304* shall be provided within the room.

**11B-803.3 Door swing.** Doors shall not swing into the room unless a turning space complying with *Section 11B-304.3* is provided beyond the arc of the door swing.

**11B-803.4 Benches.** A bench complying with *Section 11B-903* shall be provided within the room.

**11B-803.5 Coat hooks and shelves.** Coat hooks provided within the room shall be located within one of the reach ranges specified in *Section 11B-308*. Shelves shall be 40 inches (1016 mm) minimum and 48 inches (1219 mm) maximum above the finish floor or ground. Coat hooks shall not be located above the bench or other seating in the room.

**11B-803.6 Mirrors.** Mirrors shall be installed with the bottom edge of the reflecting surface 20 inches (508 mm) maximum above the finish floor or ground. Mirrors shall be full length with a reflective surface 18 inches (457 mm) wide minimum by 54 inches (1372 mm) high minimum and shall be mounted in a position affording a view to a person on the bench as well as to a person in a standing position.

**11B-804 Kitchens, kitchenettes, and wet bars.**

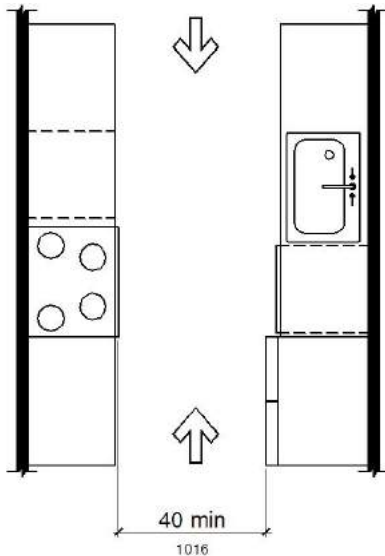
**11B-804.1 General.** Kitchens, kitchenettes, and wet bars shall comply with *Section 11B-804*.

**11B-804.2 Clearance.** Where a pass through kitchen is provided, clearances shall comply with *Section 11B-804.2.1*. Where a U-shaped kitchen is provided, clearances shall comply with *Section 11B-804.2.2*.

**Exception:** Spaces that do not provide a cooktop or conventional range shall not be required to comply with *Section 11B-804.2*.

**11B-804.2.1 Pass through kitchen.** In pass through kitchens where counters, appliances or cabinets are on two opposing sides, or where counters, appliances or cabinets are opposite a parallel wall, clearance between all oppos-

ing base cabinets, counter tops, appliances, or walls within kitchen work areas shall be 40 inches (1016 mm) minimum. Pass through kitchens shall have two entries.



**FIGURE 11B-804.2.1  
PASS THROUGH KITCHENS**

**11B-804.2.2 U-shaped.** In U-shaped kitchens enclosed on three contiguous sides, clearance between all opposing base cabinets, counter tops, appliances, or walls within kitchen work areas shall be 60 inches (1524 mm) minimum.

**11B-804.2.3 Turning space.** In kitchens within multi-bedroom housing units and on floors containing accessible sleeping rooms with adaptable features in undergraduate student housing, turning spaces complying with Section 11B-304 shall be provided.

**11B-804.3 Kitchen work surface.** In residential dwelling units required to comply with Section 11B-809, at least one 30 inches (762 mm) wide minimum section of counter shall provide a kitchen work surface that complies with Section 11B-804.3. In kitchens within multi-bedroom housing units and on floors con-

taining accessible sleeping rooms with adaptable features in undergraduate student housing, at least one 30 inches (762 mm) wide minimum section of counter shall provide a kitchen work surface that complies with Section 11B-804.3.

**11B-804.3.1 Clear floor or ground space.** A clear floor space complying with Section 11B-305 positioned for a forward approach shall be provided. The clear floor or ground space shall be centered on the kitchen work surface and shall provide knee and toe clearance complying with Section 11B-306.

**Exception:** Cabinetry shall be permitted under the kitchen work surface provided that all of the following conditions are met:

- (a) the cabinetry can be removed without removal or replacement of the kitchen work surface;
- (b) the finish floor extends under the cabinetry; and
- (c) the walls behind and surrounding the cabinetry are finished.

**11B-804.3.2 Height.** The kitchen work surface shall be 34 inches (864 mm) maximum above the finish floor or ground.

**Exception:** A counter that is adjustable to provide a kitchen work surface at variable heights, 29 inches (737 mm) minimum and 36 inches (914 mm) maximum, shall be permitted.

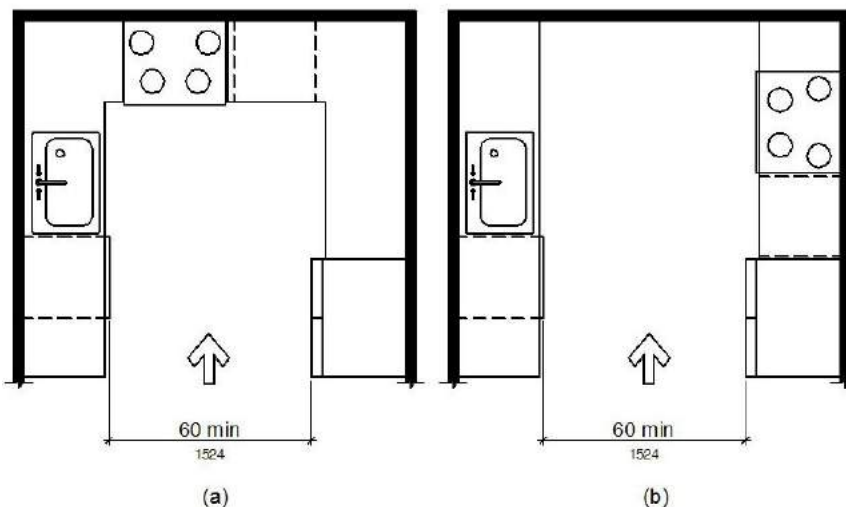
**11B-804.3.3 Exposed surfaces.** There shall be no sharp or abrasive surfaces under the work surface counters.

**11B-804.4 Sinks.** Sinks shall comply with Section 11B-606.

**11B-804.5 Storage.** At least 50 percent of shelf space in storage facilities shall comply with Section 11B-811.

**11B-804.6 Appliances.** Where provided, kitchen appliances shall comply with Section 11B-804.6.

**11B-804.6.1 Clear floor or ground space.** A clear floor or ground space complying with Section 11B-305 shall be provided at each kitchen appliance. Clear floor or ground spaces shall be permitted to overlap.



**FIGURE 11B-804.2.2  
U-SHAPED KITCHENS**

**11B-807.3.1 Alarms.** Where audible emergency alarm systems are provided to serve the occupants of cells, visible alarms complying with *Section 11B-702* shall be provided.

**Exception:** Visible alarms shall not be required where inmates or detainees are not allowed independent means of egress.

**11B-807.3.2 Telephones.** Telephones, where provided within cells, shall have volume controls complying with *Section 11B-704.3*.

### **11B-808 Courtrooms**

**11B-808.1 General.** Courtrooms shall comply with *Section 11B-808*.

**11B-808.2 Turning space.** Where provided, areas that are raised or depressed and accessed by ramps or platform lifts with entry ramps shall provide unobstructed turning space complying with *Section 11B-304*.

**11B-808.3 Clear floor space.** Each jury box and witness stand shall have, within its defined area, clear floor space complying with *Section 11B-305*.

**Exception:** In alterations, wheelchair spaces are not required to be located within the defined area of raised jury boxes or witness stands and shall be permitted to be located outside these spaces where ramp or platform lift access poses a hazard by restricting or projecting into a means of egress required by the appropriate administrative authority.

**11B-808.4 Judges' benches and courtroom stations.** Judges' benches, clerks' stations, bailiffs' stations, deputy clerks' stations, court reporters' stations and litigants' and counsel stations shall comply with *Section 11B-902*.

### **11B-809 Residential dwelling units**

**11B-809.1 General.** When located within public housing facilities, residential dwelling units shall comply with *Section 11B-809*. Residential dwelling units required to provide mobility features shall comply with *Sections 11B-809.2* through *11B-809.4*. Residential dwelling units required to provide communication features shall comply with *Section 11B-809.5*.

**11B-809.2 Accessible routes.** Accessible routes complying with *Division 4* shall be provided within residential dwelling units in accordance with *Section 11B-809.2*.

**Exception:** Accessible routes shall not be required to or within unfinished attics or unfinished basements.

**11B-809.2.1 Location.** At least one accessible route shall connect all spaces and elements which are a part of the residential dwelling unit. Where only one accessible route is provided, it shall not pass through bathrooms, closets, or similar spaces.

**11B-809.2.2 Turning space.** All rooms served by an accessible route shall provide a turning space complying with *Section 11B-304*.

**Exception:** Turning space shall not be required in exterior spaces 30 inches (762 mm) maximum in depth or width.

**11B-809.3 Kitchen.** Where a kitchen is provided, it shall comply with *Section 11B-804*.

**11B-809.4 Toilet facilities and bathing facilities.** At least one bathroom shall comply with *Section 11B-603*. No fewer than one of each type of fixture provided within the bathroom shall comply with applicable requirements of *Sections 11B-*

603 through *11B-610*. Toilet and bathing fixtures required to comply with *Sections 11B-603* through *11B-610* shall be located in the same bathroom or toilet and bathing area, such that travel between fixtures does not require travel between other parts of the residential dwelling unit.

**11B-809.4.1 Subsequent bathrooms.** In residential dwelling units with more than one bathroom, when a bathtub is installed in the first bathroom in compliance with *Section 11B-809.4* and a shower compartment is provided in a subsequent bathroom, at least one shower compartment shall comply with *Section 11B-608*.

**11B-809.5 Residential dwelling units with communication features.** Residential dwelling units required to provide communication features shall comply with *Section 11B-809.5*.

**11B-809.5.1 Building fire alarm system.** Where a building fire alarm system is provided, the system wiring shall be extended to a point within the residential dwelling unit in the vicinity of the residential dwelling unit smoke detection system.

**11B-809.5.1.1 Alarm appliances.** Where alarm appliances are provided within a residential dwelling unit as part of the building fire alarm system, they shall comply with *Chapter 9, Section 907.5.2.3.3*.

**11B-809.5.1.2 Activation.** All visible alarm appliances provided within the residential dwelling unit for building fire alarm notification shall be activated upon activation of the building fire alarm in the portion of the building containing the residential dwelling unit.

**11B-809.5.2 Residential dwelling unit smoke detection system and carbon monoxide detection system.** Residential dwelling unit smoke detection systems shall comply with *Chapter 9, Section 907.2.11*. Residential dwelling unit carbon monoxide detection systems shall comply with *Chapter 4*.

**11B-809.5.2.1 Activation.** All visible alarm appliances provided within the residential dwelling unit for smoke detection notification shall be activated upon smoke detection. All visible alarm appliances provided within the residential dwelling unit for carbon monoxide detection notification shall be activated upon carbon monoxide detection.

**11B-809.5.3 Interconnection.** The same visible alarm appliances shall be permitted to provide notification of residential dwelling unit smoke detection, building fire alarm activation, and carbon monoxide detection.

**11B-809.5.4 Prohibited use.** Visible alarm appliances used to indicate residential dwelling unit smoke detection, carbon monoxide detection, or building fire alarm activation shall not be used for any other purpose within the residential dwelling unit.

**11B-809.5.5 Residential dwelling unit primary entrance.** Communication features shall be provided at the residential dwelling unit primary entrance complying with *Section 11B-809.5.5*.

**11B-809.5.5.1 Notification.** A hard-wired electric doorbell shall be provided. A button or switch shall be provided outside the residential dwelling unit primary entrance. Activation of the button or switch shall initiate an audible tone and visible signal within the residential

dwelling unit. Where visible doorbell signals are located in sleeping areas, they shall have controls to deactivate the signal.

**11B-809.5.5.2 Identification.** A means for visually identifying a visitor without opening the residential dwelling unit entry door shall be provided and shall allow for a minimum 180 degree range of view.

**11B-809.5.6 Site, building, or floor entrance.** Where a system, including a closed-circuit system, permitting voice communication between a visitor and the occupant of the residential dwelling unit is provided, the system shall comply with Section 11B-708.4.

**11B-809.6 Residential dwelling units with adaptable features.** Multi-family residential dwelling units with adaptable features shall comply with Sections 11B-809.7 through 11B-809.12.

**11B-809.7 Accessible routes.** An accessible route shall be provided complying with Section 11B-809.7. The accessible route shall pass through the primary entry door, through all rooms within the dwelling unit and exterior decks and balconies. The accessible route shall adjoin or overlap clear floor spaces and connect all exterior doors.

**Exceptions:**

1. An accessible route shall not be required from the interior of the unit into a basement.
2. An accessible route to a garage shall comply with Section 11B-208.3.3.
3. An accessible route shall not be required to rooms or spaces not located on the primary entry level of a multistory dwelling unit.

**11B-809.7.1 Width.** The clear width for the accessible route shall be 36 inches (914 mm) minimum.

**Exception:** The clear width shall be permitted to be reduced to 32 inches (813 mm) minimum at doors.

**11B-809.7.2 Changes in level.** Changes in level shall comply with Sections 11B-303.2 and 11B-303.3. Ramps complying with Section 11B-405, elevators complying with Section 11B-407 or platform lifts complying with Section 11B-410 shall be provided where changes in level exceed 1/2 inch (12.7 mm) high.

**11B-809.8 Doors.** Primary entry doors, required exit doors, secondary exterior doors and interior doors intended for user passage shall comply with this section and Section 11B-404.2. Doors to small mechanical closets specifically dedicated to furnaces or hot water heaters shall not be required to comply with this section.

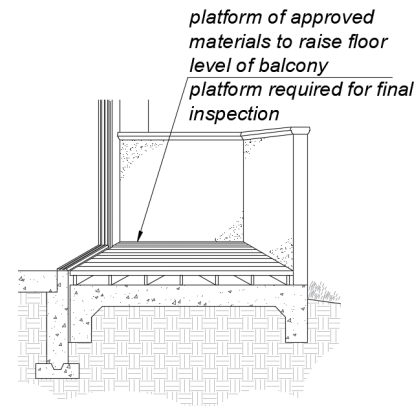
**Exceptions:** At primary entry doors, required exit doors, secondary exit doors and interior doors the following exceptions apply:

1. The floor or landing at primary entry doors, required exit doors, and secondary exit doors where a change in elevation occurs between the interior and the exterior surface of the floor or landing, shall comply with the following:
  - a. Exterior landings of impervious construction (e.g., concrete, brick, flagstone) serving primary entry doors and required exit doors are limited to

not more than 1/2 inch (12.7 mm) of change in height between floor surfaces. Changes in level shall comply with Section 11B-809.7.2.

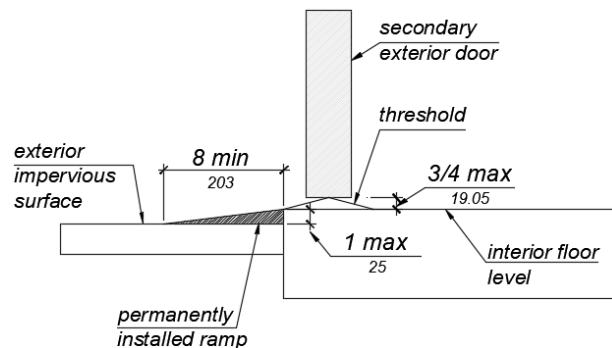
- b. Exterior landings of pervious construction (e.g., wood decking with spaces) shall be the same level as the interior landing, except that secondary exterior doors may have no more than 1/2 inch (12.7 mm) of change in height between floor surfaces. Changes in level shall comply with Section 11B-809.7.2.

- c. Secondary exterior doors onto decks, patios, or balcony surfaces constructed of impervious materials (e.g., concrete, brick, flagstone) may have a maximum change in height from the interior landing of 4 inches (102 mm). Changes in height greater than 1/2 inch (12.7 mm) shall be accomplished by means of a ramp complying with Section 11B-405 or by means of a platform constructed to the level of the floor as illustrated in Figure 11B-809.8(c).



**FIGURE 11B-809.8 Ex. 1(c)**  
**PLATFORM AT SECONDARY EXTERIOR DOOR**

- d. Secondary exterior doors onto decks, patios or balcony surfaces constructed of impervious materials (e.g., concrete, brick, flagstone) may have a maximum change in height from the interior landing of 1 inch (25 mm), provided a ramp with a maximum slope of 1:8 is permanently installed as illustrated in Figure 11B-809.8(d).



**FIGURE 11B-809.8 Ex. 1(d)**  
**RAMP AT SECONDARY EXTERIOR DOOR**

**11B-809.8.1 Door thresholds.** Secondary exterior door thresholds, including sliding door tracks, shall be  $\frac{3}{4}$  inch (19.1 mm) high maximum with a 1:2 maximum slope.

**11B-809.8.2 Door opening force.** The opening force for primary entry exterior doors and secondary exterior doors shall be 8.5 pounds (38 N) maximum.

**11B-809.8.3 Door maneuvering clearance.**

1. At the dwelling unit side of the primary entry doors, secondary exterior doors, and required exit doors maneuvering clearances shall be 44 inches (1118 mm) minimum in length measured perpendicular to the face of the door in the closed position. The width of the maneuvering clearance shall extend 18 inches (457 mm) beyond the strike edge at the pull side of the door.
2. At interior doors maneuvering clearances shall be 42 inches (1067 mm) minimum in length on both sides of the door measured perpendicular to the face of the door in the closed position. A 39-inch (991 mm) minimum length is allowed at interior doors when a clear opening width of 34 inches (864 mm) minimum is provided. The width of the maneuvering clearance shall extend 18 inches (457 mm) beyond the strike edge at the pull side of the door.

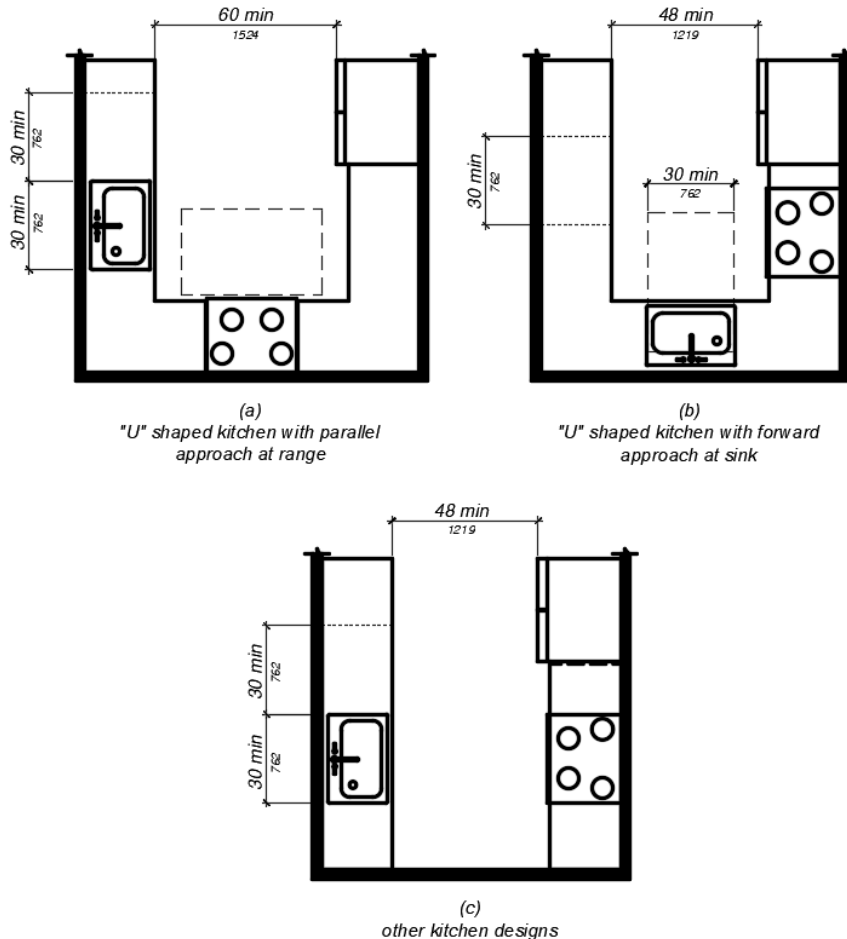
**11B-809.8.4 Door signal devices.** Every primary entrance to a residential dwelling unit with adaptable features shall be provided with a door buzzer, bell, chime or equivalent. The activating mechanism shall be mounted 48 inches (1219 mm) maximum above the floor and connected to permanent wiring.

**11B-809.9 Kitchens.** Kitchens shall be on an accessible route and shall comply with this section.

**11B-809.9.1 Clear floor space.** Clear floor spaces 30 inches (762 mm) by 48 inches (1219 mm), with centerlines aligned with the centerline of the work surface, appliance, sink or fixture, shall be provided in the following locations:

1. For a parallel approach at the range.
2. For parallel or forward approach at a cooktop.
3. For a parallel or forward approach to the sink and to the work surface required by Sections 11B-809.9.3 and 11B-809.9.4.
4. For a parallel or forward approach to all other fixtures or appliances.

**11B-809.9.2 Clear width.** Kitchens shall have a minimum clear width measured between any cabinet, work surface or the face of any appliance (excluding handles and con-



**FIGURE 11B-809.9.2 CLEAR WIDTH AT KITCHENS**

trols) and the opposing cabinet, work surface, appliance or wall as follows:

- a. U-shaped kitchens, designed with parallel approach at a sink, range, cooktop or other fixtures and appliances located at the base of the U without knee and toe clearance, shall provide a clear width of 60 inches (1524 mm) minimum.
- b. U-shaped kitchens, with a cooktop, sink or work surface located at the base of the U, that provides knee and toe space complying Sections 11B-809.9.3 and 11B-809.9.4 to allow for a forward approach, shall provide a clear width of 48 inches (1219 mm) minimum.
- c. All other kitchen designs shall provide a clear width of 48 inches (1219 mm) minimum.

**11B-809.9.3 Removable base cabinets.** Knee and toe space complying with Section 11B-306 shall be provided at sinks and work surfaces required to comply with Section 11B-809.9.4.

**Exception:** Removable base cabinets shall be permitted under sinks and work surfaces provided that all of the following conditions are met:

- a) base cabinets can be removed without the use of specialized tools or knowledge;
- b) the finish floor extends under the base cabinet; and
- c) the walls behind and surrounding the base cabinets are finished.

**11B-809.9.4 Work surfaces.** Work surfaces shall be 36 inches (914 mm) maximum above the finish floor with minimum lengths at the following locations as required by this section:

1. Linear length of 30 inches (762 mm) minimum for installation of a sink.
2. Linear length of 30 inches (762 mm) minimum for work surfaces.
3. A sink and work surface in a single integral unit 60 inches (1524 mm) minimum in length, is permitted.

**11B-809.9.5 Lower shelving.** Lower shelving and/or drawer space shall be provided at a height of 48 inches (1219 mm) maximum above the finish floor.

**11B-809.9.6 Controls.** Controls for faucets shall comply with Section 11B-309.1. Hand-operated metering faucets shall remain open for 10 seconds minimum.

**11B-809.9.7 Exposed pipes and surfaces.** Exposed water supply and drain pipes under sinks and lavatories shall comply with Section 11B-606.5.

#### **11B-809.10 Toilet and bathing rooms.**

**11B-809.10.1 General.** All toilet and bathing rooms on an accessible route within residential dwelling units with adaptable features shall comply with Sections 11B-809.7, 11B-809.8, 11B-809.10.6.4, 11B-809.10.7.3 and 11B-809.12.

**11B-809.10.2 Number of complying bathing rooms and fixtures.** One bathing room and one fixture of each type within the dwelling unit shall be designed to comply with the following:

1. Maneuvering space in toilet, bathing and shower rooms shall comply with Section 11B-809.10.4.
2. Bathtubs complying with Section 11B-809.10.5.
3. Showers complying with Section 11B-809.10.6.
4. Water closets complying with Section 11B-809.10.7.
5. Lavatories, vanities, mirrors and towel bars complying with Section 11B-809.10.8. When two or more lavatories are provided, at least one shall comply with Section 11B-809.10.8.
6. Where both a tub and shower are provided in the bathroom, at least one shall be made accessible. Where two or more bathrooms are provided, when a bathtub is installed in the first bathroom in compliance with Section 11B-809.10.5 and a shower compartment is provided in a subsequent bathroom, at least one shower compartment shall comply with Section 11B-809.10.6.

**11B-809.10.3 Powder rooms.** Powder rooms shall be designed to comply with Sections 11B-809.7, 11B-809.8, 11B-809.10.5.2, 11B-809.10.6.4, 11B-809.10.7.3, and 11B-809.12. When the powder room is the only toilet facility located on an accessible level it shall, in addition, comply with Sections 11B-809.10.4, 11B-809.10.7 and 11B-809.10.8.

**11B-809.10.4 Sufficient maneuvering space.** Where doors swing into the toilet and bathing or powder rooms required to comply with Section 11B-809.10, a clear maneuvering space of 30 inches (762 mm) by 48 inches (1219 mm) minimum shall be provided outside the arc of the door swing. The clear maneuvering space shall be permitted to include knee and toe clearance under bathroom fixtures. Doors shall be permitted to encroach into the clear floor space or clearance for fixtures where clear maneuvering space is provided outside the arc of the door swing. A turning space is not required within the room.

**11B-809.10.5 Bathtubs.** Bathtubs required by Section 11B-809.10 shall comply with this section.

**11B-809.10.5.1 Clear floor space.** A clear floor space 30 inches (762 mm) minimum by 48 inches (1219 mm) minimum shall be located with the long edge of the clear floor space parallel to the side of the bathtub or bathtub-shower combination. Controls shall be located on the wall at the foot of the bathtub. The edge of the clear floor space shall be flush with the control wall surface. The area under a lavatory, located at the control end of the tub, shall be permitted to encroach on the clear floor space provided the lavatory is 19 inches (483 mm) maximum in depth, and knee and toe clearance complying with Section 11B-306 is provided. Cabinets under lavatories and toilets shall not encroach on the clear floor space.

**11B-809.10.5.2 Reinforcement for grab bars.** Reinforcement for grab bars shall comply with the following:

1. Where bathtubs are installed without surrounding walls reinforcement shall be provided for floor-mounted grab bars.
2. Where bathtubs are installed with surrounding walls, grab bar reinforcement shall be installed as follows:
  - a. At the control end wall and head end wall, between 30 inches (762 mm) maximum to 38 inches (965 mm) minimum above the finish floor, extending 28 inches (711 mm) minimum from the front edge of the bathtub to the back wall of the bathtub. The grab bar reinforcement shall be 8 inches (203 mm) minimum in height.
  - b. At the back wall, from 5 inches (127 mm) maximum above the bathtub rim to 38 inches (965 mm) minimum above the finish floor. Grab bar backing shall be installed horizontally to permit the installation of a 48-inch (1219 mm) grab bar with each end 6 inches (152 mm) maximum from the end walls of the bathtub.

**11B-809.10.5.3 Controls.** Controls and operating mechanisms shall comply with Section 11B-309.4.

**Exception:** Shower spray units are not required in bathtubs.

**11B-809.10.5.4 Bathtub enclosures.** Doors and panels of bathtub enclosures shall be constructed from approved, shatter-resistant materials. Hinged doors shall open outward. Glazing used in doors and panels of bathtub enclosures shall be fully tempered, laminated safety glass or approved plastic. When glass is used, it shall be 1/8-inch (3.2 mm) thick minimum when fully tempered, or 1/4-inch (6.4 mm) thick minimum when laminated, and shall pass the test requirements of this part, Chapter 24 Glass and Glazing. Plastics used in doors and panels of bathtub enclosures shall be of a shatter-resistant type.

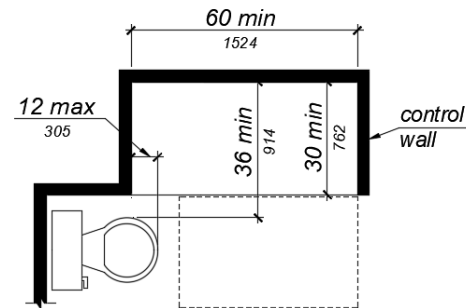
**11B-809.10.6 Showers.** Showers required by Section 11B-809.10 shall comply with this section.

**11B-809.10.6.1 Size.** When one or more shower stalls are provided within the same dwelling unit, as least one shower stall shall comply with one of the following:

1. A transfer type shower compartment 36 inches (914 mm) wide by 36 inches (914 mm) deep with

an entrance opening 36 inches (914 mm) complying with Section 11B-608.1; or

2. A shower stall 30 inches (762 mm) deep minimum by 60 inches (1524 mm) wide minimum with an entrance opening 60 inches (1524 mm) minimum. A water closet shall be permitted to project 12 inches (305 mm) maximum into the opening provided that 36 inches (914 mm) minimum clear space is maintained between the water closet and the shower wall as illustrated in Figure 11B-809.10.6.1; or
3. A shower stall 36 inches (914 mm) deep by 60 inches (1524 mm) wide minimum with an entrance 36 inches (914 mm) minimum when a wall is installed on the opening side.

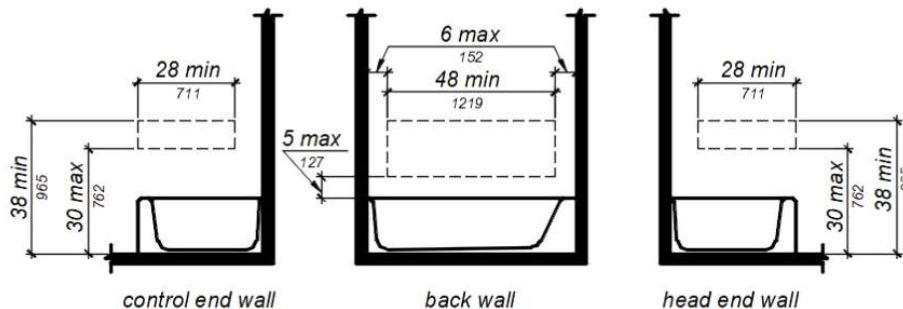


**FIGURE 11B-809.10.6.1 SHOWERS**

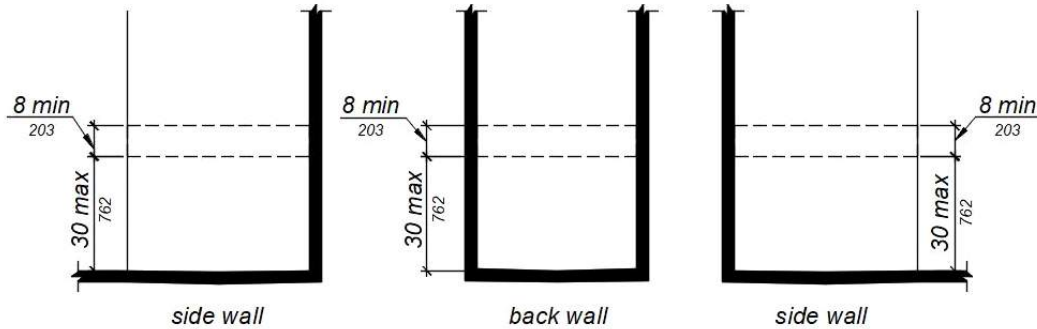
**11B-809.10.6.2 Slope.** The slope of the shower floor shall be 1/2 inch (12.7 mm) per foot maximum in any direction and shall slope to a drain. The floor surfaces shall be of Carborundum, grit-faced tile or of material providing equivalent slip resistance.

**11B-809.10.6.3 Floor space.** A clear maneuvering space 30 inches (762 mm) wide minimum by 48 inches (1219 mm) minimum in length shall be located outside the shower, with the width flush with the control wall and the length parallel to the length of the shower.

**11B-809.10.6.4 Reinforcement for grab bars.** Reinforcement for grab bars shall comply with the following: Continuous reinforcement shall be installed in the walls of showers 30 inches (762 mm) maximum to 38 inches (965 mm) minimum above the finish floor. The grab bar reinforcement shall be 8 inches (203 mm) minimum in height. Glass-walled shower stalls shall provide reinforcement for installation of floor-mounted or ceiling-mounted grab bars.



**FIGURE 11B-809.10.5.2 REINFORCEMENT FOR GRAB BARS**



**FIGURE 11B-809.10.6.4  
REINFORCEMENT FOR GRAB BARS**

**11B-809.10.6.5 Thresholds.** Where provided thresholds shall be 2 inches (51 mm) maximum in height and have a beveled or sloped angle not exceeding 1 unit vertical in 2 units horizontal (26.6 degrees from the horizontal). Thresholds 1/2 inch (12.7 mm) or less in height shall have a beveled or sloped angle not exceeding 1 unit vertical in 1 unit horizontal (45 degrees from the horizontal).

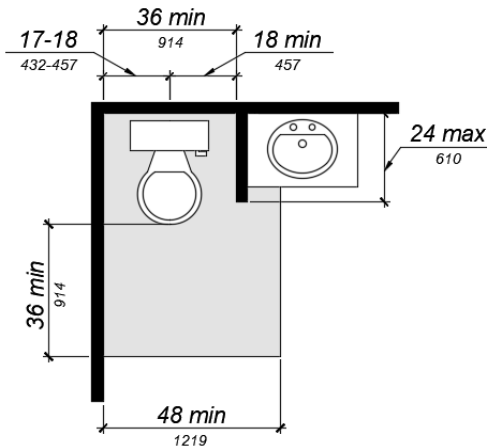
**11B-809.10.6.6 Controls.** Controls and operating mechanisms shall comply with Section 11B-309.4.

**11B-809.10.6.7 Shower enclosures.** Doors and panels of shower enclosures shall comply with Section 11B-809.10.5.4.

**11B-809.10.7 Water closets.** Water closets required by Section 11B-809.10 shall comply with this section.

**11B-809.10.7.1 Floor space.** The floor space at water closets shall be 48 inches (1219 mm) wide minimum measured perpendicular to the side wall. A floor space 48 inches (1219 mm) wide minimum by 36 inches (914 mm) deep minimum shall be provided in front of the water closet.

**Exception:** The 48-inch (1219 mm) minimum clear width may be reduced to 36 inches (914 mm) minimum for lavatories, cabinets, wing walls, or privacy walls located immediately adjacent to a water closet which extend 24 inches (610 mm) maximum in depth.



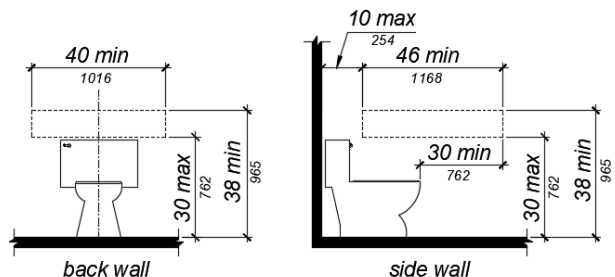
**FIGURE 11B-809.10.7.1  
FLOOR SPACE**

**11B-809.10.7.2 Location.** Water closets shall be located within bathrooms in a manner that permits a grab bar to be installed on at least one side of the fixture.

The centerline of the water closet shall be 17 inches (432 mm) minimum to 18 inches (457 mm) maximum from a wall or partition that is 54 inches (1372 mm) minimum in length. In locations where water closets are adjacent to other walls, vanities, lavatories or bathtubs, the centerline of the fixture shall be 18 inches (457 mm) minimum from the obstacle.

**11B-809.10.7.3 Reinforcement for grab bars.** Reinforcement for grab bars shall comply with the following:

1. Where water closets are not placed adjacent to a side wall capable of accommodating a grab bar, the bathroom shall have provisions for installation of floor-mounted, foldaway or similar alternative grab bars.
2. Where water closets are placed adjacent to a side wall, reinforcement shall be installed on both sides or one side and the back. Where reinforcement is installed at the back, it shall be installed between 30 inches (762 mm) maximum and 38 inches (965 mm) minimum above the finish floor. The grab bar reinforcement shall be 8 inches (203 mm) minimum in height. The backing shall be 40 inches (1016 mm) minimum in length.
3. Where the water closet is located adjacent to lavatories, cabinets, wing walls, or privacy walls the grab bar reinforcement shall be 36 inches (914 mm) in length. Reinforcement installed at the side wall of the water closet shall be between 30 inches (762 mm) minimum to 38 inches (965 mm) maximum above the finish floor. The reinforcement shall be 10 inches (254 mm) maximum from the rear wall and shall extend 30 inches (762 mm) minimum in front of the water closet. The grab bar reinforcement shall be 8 inches (203 mm) minimum in height.



**FIGURE 11B-809.10.7.3  
REINFORCEMENT FOR GRAB BARS**



**11B-809.10.7.4 Seat height.** Water closet seats shall be 15 inches (381 mm) minimum and 19 inches (483 mm) maximum measured to the top of the seat above the finish floor.

**11B-809.10.7.5 Controls.** Controls shall be mounted 44 inches (1118 mm) maximum above the finish floor. The force required to activate controls shall be 5 pounds (22.2 N) maximum.

**11B-809.10.8 Lavatories, vanities, mirrors and towel bars.** Bathing rooms or powder rooms required to comply with Section 11B-809.10 shall provide lavatories complying with this section. Where mirrors or towel bars are provided, no less than one of each shall comply with this section.

**11B-809.10.8.1 Location.** Lavatories without base cabinets shall be installed with the centerline 18 inches (457 mm) minimum from an adjoining wall or fixture to allow for forward approach. Lavatories with base cabinets shall be installed with the centerline 24 inches (610 mm) minimum from an adjoining wall or fixture to allow for a parallel approach. The top of the lavatory rim shall be 34 inches (864 mm) maximum above the finished floor.

**11B-809.10.8.2 Floor space.** A floor space 30 inches (762 mm) minimum by 48 inches (1219 mm) minimum shall be provided centered on the lavatory.

**11B-809.10.8.3 Cabinets.** Cabinets shall be removable without the use of specialized knowledge and/or tools. The finished floor shall extend to the wall under the lavatory.

**11B-809.10.8.4 Knee and toe clearance.** Knee and toe clearance shall be provided and comply with Section 11B-306.

**11B-809.10.8.5 Plumbing protection.** Plumbing protection shall comply with Section 11B-809.9.7.

**11B-809.10.8.6 Controls.** Faucet controls and operating mechanisms shall comply with Section 11B-309.4.

**11B-809.10.8.7 Mirrors and towel bars.** Where mirrors are provided the bottom edge of the reflective surface shall be 40 inches (1016 mm) maximum above the finish floor. Where towel bars are provided, they shall be installed 40 inches (1016 mm) maximum above the finish floor to the top of the bar.

**11B-809.11 Washing machines and clothes dryers.** Where washing machines and clothes dryers are provided in residential dwelling units with adaptable features, one of each type shall be provided.

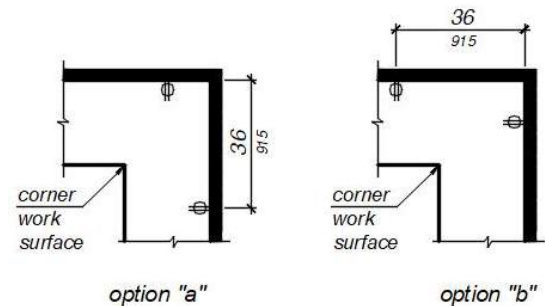
**11B-809.12 Electrical receptacles, controls and switches.** Electrical receptacles on branch circuits of 30 amperes or less, communication system receptacles, controls and switches shall be located as follows:

1. Where there is no obstruction, 48 inches (1219 mm) maximum measured from the top of the receptacle box and 15 inches (381 mm) minimum measured from the bottom of the receptacle box to the finish floor.
2. Where the reach is over an obstruction, electrical receptacles, controls and switches shall comply with Sections 11B-308.3 and 11B-309.2.
3. When the reach is over a kitchen work surface and base cabinet, the work surface shall be 36 inches (914 mm) maximum above the finish floor and 25½ inches (650 mm) maximum in depth. The base cabinet shall be 24 inches (610 mm) maximum in depth.

4. Where receptacles are provided in a kitchen at a corner work surface, one receptacle shall be located 36 inches (915 mm) from either wall at the inside corner.

**Exceptions:**

- a. Electrical receptacles installed as part of permanently installed baseboard heaters.
- b. Electrical receptacles in floors adjacent to sliding panels or walls.
- c. Baseboard electrical receptacles in relocatable partitions, window walls or other electrical convenience floor outlets.
- d. Appliances (e.g., stoves, dishwashers, range hoods, microwave ovens and similar appliances) which have controls located on the appliance.
- e. Electrical receptacles dedicated to specific appliances.
- f. Circuit breakers.



**FIGURE 11B-809.12  
ELECTRICAL RECEPTACLES AT CORNER WORKSURFACES**

**11B-810 Transportation facilities**

**11B-810.1 General.** Transportation facilities shall comply with Section 11B-810.

**11B-810.1.1 Vehicle boarding.** Stations shall not be designed or constructed so as to require persons with disabilities to board or alight from a vehicle at a location other than one used by the general public.

**11B-810.1.2 Baggage systems.** Baggage check-in and retrieval systems shall be on an accessible route complying with Section 11B-402 and shall have space immediately adjacent complying with Section 11B-302.

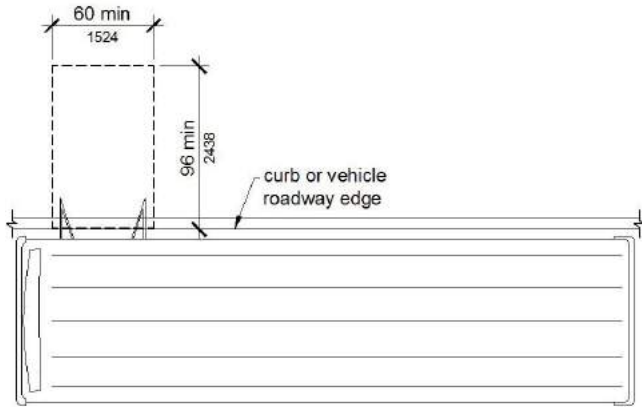
**11B-810.2 Bus boarding and alighting areas.** Bus boarding and alighting areas shall comply with Section 11B-810.2.

**11B-810.2.1 Surface.** Bus stop boarding and alighting areas shall have a firm, stable surface.

**11B-810.2.2 Dimensions.** Bus stop boarding and alighting areas shall provide a clear length of 96 inches (2438 mm) minimum, measured perpendicular to the curb or vehicle roadway edge, and a clear width of 60 inches (1524 mm) minimum, measured parallel to the vehicle roadway.

**11B-810.2.3 Connection.** Bus stop boarding and alighting areas shall be connected to streets, sidewalks, or pedestrian paths by an accessible route complying with Section 11B-402. Newly constructed bus stop boarding and alighting areas shall provide a detectable transition between the boarding/alighting area and the roadway; the detectable transition shall consist of a curb with the face sloped at 35

degrees maximum from vertical or detectable warnings complying with Sections 11B-705.1.1 and 11B-705.1.2.4.



**FIGURE 11B-810.2.2**  
**DIMENSIONS OF BUS BOARDING AND ALIGHTING AREAS**

**11B-810.2.4 Slope.** Parallel to the roadway, the slope of the bus stop boarding and alighting area shall be the same as the roadway, to the maximum extent practicable. Perpendicular to the roadway, the slope of the bus stop boarding and alighting area shall not be steeper than 1:48.

**11B-810.3 Bus shelters.** Bus shelters shall provide a minimum clear floor or ground space complying with Section 11B-305 entirely within the shelter. Bus shelters shall be connected by an accessible route complying with Section 11B-402 to a boarding and alighting area complying with Section 11B-810.2.

**11B-810.4 Bus signs.** Bus route identification signs shall comply with Sections 11B-703.5.1 through 11B-703.5.4, and Sections 11B-703.5.7 and 11B-703.5.8. In addition, to the maximum extent practicable, bus route identification signs shall comply with Section 11B-703.5.5.

**Exception:** Bus schedules, timetables and maps that are posted at the bus stop or bus bay shall not be required to comply.

**11B-810.5 Rail platforms.** Rail platforms shall comply with Section 11B-810.5.

**11B-810.5.1 Slope.** Rail platforms shall not exceed a slope of 1:48 in all directions.

**Exception:** Where platforms serve vehicles operating on existing track or track laid in existing roadway, the slope of the platform parallel to the track shall be permitted to be equal to the slope (grade) of the roadway or existing track.

**11B-810.5.2 Detectable warnings.** Platform boarding edges not protected by platform screens or guards shall have detectable warnings complying with Section 11B-705 along the full length of the public use area of the platform.

**11B-810.5.3 Platform and vehicle floor coordination.** Station platforms shall be positioned to coordinate with vehicles in accordance with the applicable requirements of 36 CFR Part 1192. Low-level platforms shall be 8 inches (203 mm) minimum above top of rail.

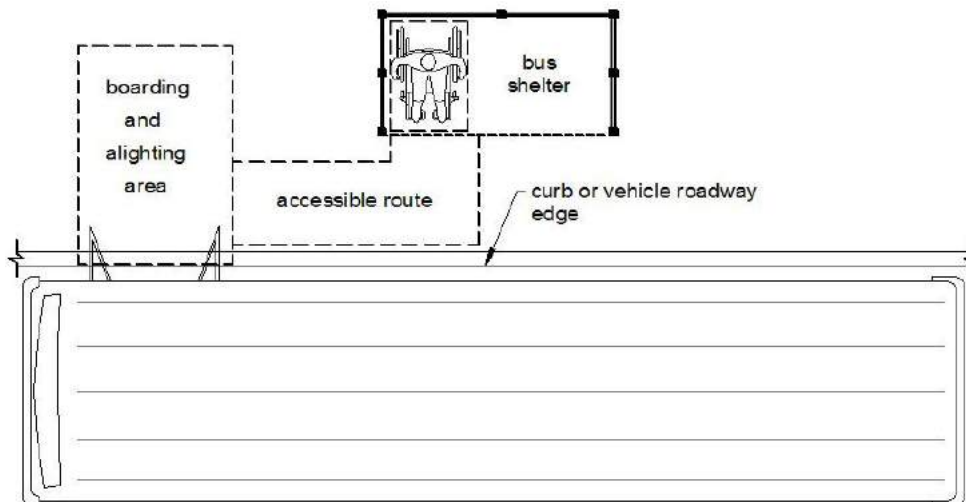
**Exception:** Where vehicles are boarded from sidewalks or street-level, low-level platforms shall be permitted to be less than 8 inches (203 mm).

**11B-810.6 Rail station signs.** Rail station signs shall comply with Section 11B-810.6.

**Exception:** Signs shall not be required to comply with Sections 11B-810.6.1 and 11B-810.6.2 where audible signs are remotely transmitted to hand-held receivers, or are user- or proximity-actuated.

**11B-810.6.1 Entrances.** Where signs identify a station or its entrance, at least one sign at each entrance shall comply with Section 11B-703.2 and shall be placed in uniform locations to the maximum extent practicable. Where signs identify a station that has no defined entrance, at least one sign shall comply with Section 11B-703.2 and shall be placed in a central location.

**11B-810.6.2 Routes and destinations.** Lists of stations, routes and destinations served by the station which are located on boarding areas, platforms, or mezzanines shall comply with Section 11B-703.5. At least one tactile sign identifying the specific station and complying with Section 11B-703.2 shall be provided on each platform or boarding area. Signs covered by this requirement shall, to the maxi-



**FIGURE 11B-810.3**  
**BUS SHELTERS**

to the maximum extent practicable, be placed in uniform locations within the system.

**Exception:** Where sign space is limited, characters shall not be required to exceed 3 inches (76 mm).

**11B-810.6.3 Station names.** Stations covered by this section shall have identification signs complying with Section 11B-703.5. Signs shall be clearly visible and within the sight lines of standing and sitting passengers from within the vehicle on both sides when not obstructed by another vehicle.

**11B-810.7 Public address systems.** Where public address systems convey audible information to the public, the same or equivalent information shall be provided in a visual format.

**11B-810.8 Clocks.** Where clocks are provided for use by the public, the clock face shall be uncluttered so that its elements are clearly visible. Hands, numerals and digits shall contrast with the background either light-on-dark or dark-on-light. Where clocks are installed overhead, numerals and digits shall comply with Section 11B-703.5.

**11B-810.9 Escalators.** Where provided, escalators shall comply with Sections 6.1.3.5.6 and 6.1.3.6.5 of ASME A17.1 and shall have a clear width of 32 inches (813 mm) minimum.

**Exception:** Existing escalators in key stations shall not be required to comply with Section 11B-810.9.

**11B-810.10 Track crossings.** Where a circulation path serving boarding platforms crosses tracks, it shall comply with Section 11B-402.

**Exception:** Openings for wheel flanges shall be permitted to be 2½ inches (64 mm) maximum.



FIGURE 11B-810.10 (EXCEPTION)  
TRACK CROSSINGS

**11B-811 Storage**

**11B-811.1 General.** Storage shall comply with Section 11B-811.

**11B-811.2 Clear floor or ground space.** A clear floor or ground space complying with Section 11B-305 shall be provided.

**11B-811.3 Height.** Storage elements shall comply with at least one of the reach ranges specified in Section 11B-308.

**11B-811.4 Operable parts.** Operable parts shall comply with Section 11B-309.

**11B-812 Electric vehicle charging stations**

**11B-812.1 General.** Electric vehicle charging stations (EVCS) shall comply with Section 11B-812 as required by Section 11B-228.3. Where vehicle spaces and access aisles are marked with lines, measurements shall be made from the centerline of the markings.

**Exception:** Where vehicle spaces or access aisles are not adjacent to another vehicle space, access aisle, or parking

space, measurements shall be permitted to include the full width of the line defining the vehicle space or access aisle.

**11B-812.2 Operable parts.** Operable parts shall comply with Section 11B-309.

**11B-812.3 Floor or ground surfaces.** Vehicle spaces and access aisles serving them shall comply with Section 11B-302. Access aisles shall be at the same level as the vehicle space they serve. Changes in level, slopes exceeding 1:48, and detectable warnings shall not be permitted.

**11B-812.4 Vertical clearance.** Vehicle spaces, access aisles serving them, and vehicular routes serving them shall provide a vertical clearance of 98 inches (2489 mm) minimum. Where provided, overhead cable management systems shall not obstruct required vertical clearance.

**11B-812.5 Accessible routes**

**11B-812.5.1 Accessible route to building or facility.** EVCS complying with Section 11B-812 that serve a particular building or facility shall be located on an accessible route to an entrance complying with Section 11B-206.4. Where EVCS do not serve a particular building or facility, EVCS complying with Section 11B-812 shall be located on an accessible route to an accessible pedestrian entrance of the EV charging facility.

**Exception:** EVCS complying with Section 11B-812 shall be permitted to be located in different EV charging facilities if substantially equivalent or greater accessibility is provided in terms of distance from an accessible entrance or entrances, charging fee, and user convenience.

**11B-812.5.2 Accessible route to EV charger.** An accessible route complying with Section 11B-402 shall connect the vehicle space and the EV charger which serves it.

**11B-812.5.3 Relationship to accessible routes.** Vehicle spaces and access aisles shall be designed so that when the vehicle space is occupied the required clear width of adjacent accessible routes is not obstructed. A curb, wheel stop, bollards, or other barrier shall be provided if required to prevent encroachment of vehicles over the required clear width of adjacent accessible routes.

**11B-812.5.4 Arrangement.** Vehicle spaces and access aisles shall be designed so that persons using them are not required to travel behind vehicle spaces or parking spaces other than the vehicle space in which their vehicle has been left to charge.

**Exceptions:**

1. Ambulatory EVCS shall not be required to comply with Section 11B-812.5.4.
2. Vehicle spaces installed in existing facilities shall comply with Section 11B-812.5.4 to the maximum extent feasible.

**11B-812.5.5 Obstructions.** EVCS shall be designed so accessible routes are not obstructed by cables or other elements.

**11B-812.6 Vehicle spaces.** Vehicle spaces serving van accessible, standard accessible, ambulatory and drive-up EVCS shall

be 216 inches (5486 mm) long minimum and shall comply with Sections 11B-812.6.1 through 11B-812.6.4 as applicable. All vehicle spaces shall be marked to define their width.

**Exceptions:**

1. Where the long dimension of vehicle spaces is parallel to the traffic flow in the adjacent vehicular way, the length of vehicle spaces shall be 240 inches (6096 mm) minimum.
2. Vehicle spaces at drive-up EVCS shall be 240 inches (6096 mm) long minimum and shall not be required to be marked to define their width.

**11B-812.6.1 Van accessible.** Vehicle spaces serving van accessible EVCS shall be 144 inches (3658 mm) wide minimum and shall have an adjacent access aisle complying with Section 11B-812.7.

**11B-812.6.2 Standard accessible.** Vehicle spaces serving standard accessible EVCS shall be 108 inches (2743 mm) wide minimum and shall have an adjacent access aisle complying with Section 11B-812.7.

**11B-812.6.3 Ambulatory.** Vehicle spaces serving ambulatory EVCS shall be 120 inches (3048 mm) wide minimum and shall not be required to have an adjacent access aisle.

**11B-812.6.4 Drive-up.** Vehicle spaces serving drive-up EVCS shall be 204 inches (5182 mm) wide minimum and shall not be required to have an adjacent access aisle.

**11B-812.7 Access aisle.** Access aisles shall adjoin an accessible route. Two vehicle spaces or one parking space and one electric vehicle charging space shall be permitted to share a common access aisle. Access aisles shall be 60 inches (1524 mm) wide minimum and shall extend the full required length of the vehicle spaces they serve.

**11B-812.7.1 Location.** Access aisles at vehicle spaces shall not overlap the vehicular way and may be placed on either side of the vehicle space they serve except for van accessible spaces which shall have access aisles located on the passenger side of the vehicle spaces.

**Exception:** Where four or fewer total EVCS are provided within a facility, the access aisle for non-angled van accessible spaces may be located on either the driver or passenger side of the vehicle space.

**11B-812.7.2 Marking.** Access aisles at vehicle spaces shall be marked with a painted borderline around their perimeter. The area within the borderlines shall be marked with hatched lines a maximum of 36 inches (914 mm) on center. The color of the borderlines, hatched lines, and letters shall contrast with that of the surface of the access aisle. The blue color required for identification of access aisles for accessible parking shall not be used. Access aisle markings may extend beyond the minimum required length.

**Exception:** Where one parking space and one electric vehicle charging space share an access aisle, access aisle marking shall comply with Section 11B-502.3.3 and shall not be required to comply with Section 11B-812.7.2.

**11B-812.7.3 Lettering.** The words “NO PARKING” shall be painted on the surface within each access aisle in letters a minimum of 12 inches (305 mm) in height and located to be visible from the adjacent vehicular way.

**11B-812.8 Identification signs.** EVCS identification signs shall be provided in compliance with Section 11B-812.8.

**11B-812.8.1 Four or fewer.** Where four or fewer total EVCS are provided, identification with an International Symbol of Accessibility (ISA) and signs identifying van accessible spaces shall not be required.

**11B-812.8.2 Five to twenty-five.** Where five to twenty-five total EVCS are provided, one van accessible EVCS shall be identified by an ISA complying with Section 11B-703.7.2.1. The required standard accessible EVCS shall not be required to be identified with an ISA.

**11B-812.8.3 Twenty-six or more.** Where twenty-six or more total EVCS are provided, all required van accessible and all required standard accessible EVCS shall be identified by an ISA complying with Section 11B-703.7.2.1.

**11B-812.8.4 Ambulatory.** Ambulatory EVCS shall not be required to be identified by an ISA.

**11B-812.8.5 Drive-up.** Drive-up EVCS shall not be required to be identified by an ISA.

**11B-812.8.6 Finish and size.** Identification signs shall be reflectorized with a minimum area of 70 square inches (45 161 mm<sup>2</sup>).

**11B-812.8.7 Location.** Required identification signs shall be visible from the EVCS it serves. Signs shall be permanently posted either immediately adjacent to the vehicle space or within the projected vehicle space width at the head end of the vehicle space. Signs identifying van accessible vehicle spaces shall contain the designation “van accessible.” Signs shall be 60 inches (1525 mm) minimum above the finish floor or ground surface measured to the bottom of the sign. Signs located within a circulation path shall be 80 inches (2032 mm) minimum above the finish floor or ground surface measured to the bottom of the sign. Signs may also be permanently posted on a wall at the interior end of the vehicle space.

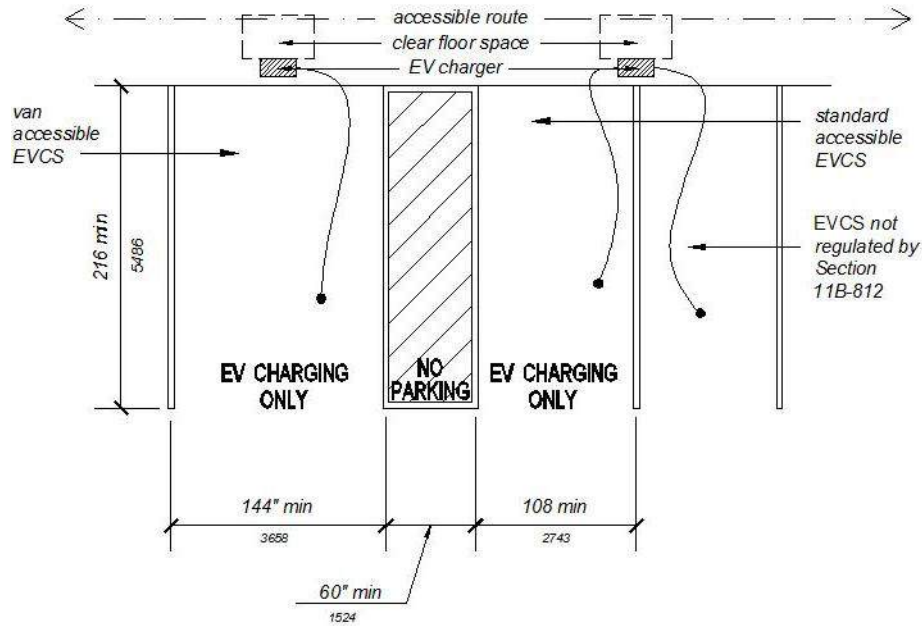
**11B-812.9 Surface marking.** EVCS vehicle spaces shall provide surface marking stating “EV CHARGING ONLY” in letters 12 inches (305 mm) high minimum. The centerline of the text shall be a maximum of 6 inches (152 mm) from the centerline of the vehicle space and its lower corner at, or lower side aligned with, the end of the vehicle space length.

**11B-812.10 Electric vehicle chargers**

**11B-812.10.1 General.** EV chargers shall comply with Section 11B-812.10.

**11B-812.10.2 Operable parts.** Operable parts and charging cord storage shall comply with Section 11B-309.

**11B-812.10.3 Point-of-sale devices.** Where provided, point-of-sale devices shall comply with Sections 11B-707.2, 11B-707.3, 11B-707.7.2, and 11B-707.9.



**FIGURE 11B-812.9  
SURFACE MARKING**

**11B-812.10.4 Location.** EV chargers shall be adjacent to, and within the projected width of, the vehicle space being served.

**Exceptions:**

1. EV chargers serving more than one EVCS shall be adjacent to, and within the combined projected width of, the vehicle spaces being served.
2. For alterations at existing facilities where an accessible route or general circulation path is not provided adjacent to the head end of the vehicle space or access aisle, the EV charger may be located within the projected width of the access aisle 36 inches (914 mm) maximum from the head end of the space.
3. Where the long dimension of a vehicle space is parallel to the vehicular way, the EV charger shall be adjacent to, and 48 inches (1219 mm) maximum from the head end or foot end of the vehicle space or access aisle being served.

**11B-813 Adult changing facilities.** Adult changing facilities shall comply with Section 11B-813.

**11B-813.1 Location.** Adult changing facilities shall be provided within a unisex (single-user or family) toilet room or other similar private room.

**11B-813.2 Features.** Adult changing facilities shall provide features in compliance with Section 11B-813.2.

**11B-813.2.1 Adult changing table.** Adult changing tables shall be fixed to the floor or a wall and shall comply with Section 11B-813.2.1.

**11B-813.2.1.1 Size.** Adult changing tables shall have a changing surface of 70 inches (1778 mm) minimum length and 30 inches (762 mm) minimum width.

**11B-813.2.1.2 Clearance.** A 36 inches (914 mm) minimum width side clearance shall be provided along the entire length of one side of adult changing tables. At both ends of adult changing tables, clearance shall be provided measuring 36 inches (914 mm) minimum wide and a minimum length as long as the table width plus the width of the side clearance. End and side clearances shall be measured from the outermost extent of the table. Floor or ground surfaces of clearances shall comply with Section 11B-302. Changes in level are not permitted.

**11B-813.2.1.3 Height and operation.** Adult changing table height shall be adjustable from 17 inches (432 mm) above the floor or ground to 38 inches (965 mm) above the floor or ground, as measured to the top of the changing surface. Height adjustability shall be powered. Operable parts shall comply with Section 11B-309.

**11B-813.2.1.4 Capacity.** Adult changing tables shall provide a minimum weight capacity of 300 pounds (136 kg).

**11B-813.2.1.5 Obstructions.** When deployed, changing tables shall not obstruct the required width of an accessible route except as allowed by Section 11B-307.2.

**11B-813.2.2 Water closet.** No fewer than one water closet in compliance with Section 11B-604.

**11B-813.2.3 Lavatory.** One lavatory in compliance with Section 11B-606.

**11B-813.2.4 Waste receptacle.** No fewer than one waste receptacle in compliance with Section 11B-603.5.

**11B-813.2.5 Coat hook.** No fewer than one coat hook shall be provided in close proximity to the changing table

and within one of the reach ranges specified in Section 11B-308.

**11B-813.2.6 Shelf.** No fewer than one shelf shall be provided in close proximity to the changing table at 40 inches (1016 mm) minimum and 48 inches (1219 mm) maximum above the finish floor.

**11B-813.2.7 Accessories.** Where provided, no fewer than one of each accessory shall comply with Section 11B-603.5.

**11B-813.2.8 Turning space.** Turning space complying with Section 11B-304 shall be provided within adult changing facilities.

**11B-813.2.9 Overlap.** Required clear floor spaces, clearance at fixtures, and turning space shall be permitted to overlap.

**11B-813.2.10 Door swing.** A door, in any position, shall be permitted to encroach into the turning space by 12 inches (305 mm) maximum. Where a clear floor space complying with Section 11B-305.3 is provided within the room beyond the arc of the door swing, doors shall be permitted to swing into the clear floor space, clearance required for any fixture, and clearance required for adult changing tables.

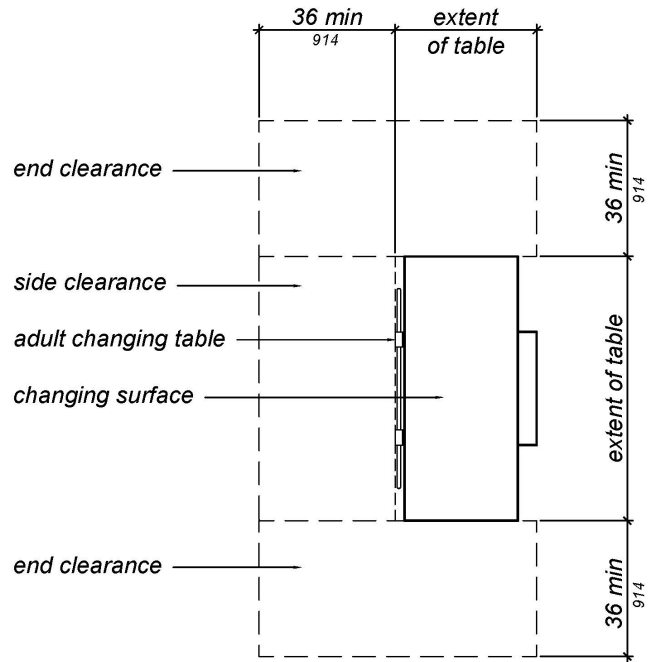
**11B-813.2.11 Privacy latch.** Each door to adult changing facilities shall have a privacy latch.

**11B-813.2.12 Signs.** A room identification sign complying with Section 11B-216 shall be provided at entrances to adult changing facilities. The text of the room identification sign shall be "ADULT CHANGING ROOM".

An informational sign complying with Section 11B-216 shall be provided within adult changing facilities and in close proximity to the changing table. The informational sign shall indicate the maximum weight capacity of the adult changing table, as determined by the table manufacturer.

Where the commercial place of public amusement has a central directory, the central directory shall indicate the location of adult changing facilities. Where other directo-

ries indicate the location of toilet facilities, the other directories shall also indicate the location of adult changing facilities.



**FIGURE 11B-813.2.1.2 CLEARANCE AROUND ADULT CHANGING TABLE**

## DIVISION 9: BUILT-IN ELEMENTS

### 11B-901 General

**11B-901.1 Scope.** The provisions of *Division 9* shall apply where required by *Division 2* or where referenced by a requirement in this *chapter*.

### 11B-902 Dining surfaces and work surfaces

**11B-902.1 General.** Dining surfaces and work surfaces shall comply with *Sections 11B-902.2* and *11B-902.3*.

**Exception:** Dining surfaces and work surfaces for children’s use shall be permitted to comply with *Section 11B-902.4*.

**11B-902.2 Clear floor or ground space.** A clear floor space complying with *Section 11B-305* positioned for a forward approach shall be provided. Knee and toe clearance complying with *Section 11B-306* shall be provided.

**11B-902.3 Height.** The tops of dining surfaces and work surfaces shall be 28 inches (711 mm) minimum and 34 inches (864 mm) maximum above the finish floor or ground.

**11B-902.4 Dining surfaces and work surfaces for children’s use.** Accessible dining surfaces and work surfaces for children’s use shall comply with *Section 11B-902.4*.

**Exception:** Dining surfaces and work surfaces that are used primarily by children 5 years and younger shall not be required to comply with *Section 11B-902.4* where a clear floor or ground space complying with *Section 11B-305* positioned for a parallel approach is provided.

**11B-902.4.1 Clear floor or ground space.** A clear floor space complying with *Section 11B-305* positioned for forward approach shall be provided. Knee and toe clearance complying with *Section 11B-306* shall be provided, except that knee clearance 24 inches (610 mm) minimum above the finish floor or ground shall be permitted.

**11B-902.4.2 Height.** The tops of tables and counters shall be 26 inches (660 mm) minimum and 30 inches (762 mm) maximum above the finish floor or ground.

### 11B-903 Benches

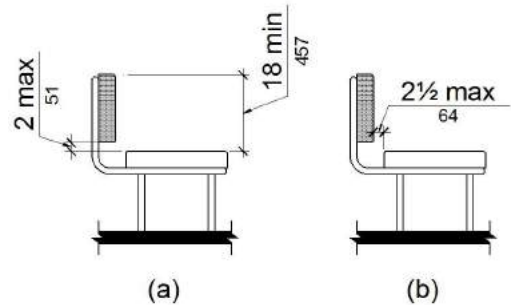
**11B-903.1 General.** Benches shall comply with *Section 11B-903*.

**11B-903.2 Clear floor or ground space.** Clear floor or ground space complying with *Section 11B-305* shall be provided and shall be positioned at the end of the bench seat and parallel to the short axis of the bench.

**11B-903.3 Size.** Benches shall have seats that are 48 inches (1219 mm) long minimum and 20 inches (508 mm) deep minimum and 24 inches (610 mm) deep maximum.

**11B-903.4 Back support.** The bench shall provide for back support or shall be affixed to a wall *along its long dimension*. Back support shall be 48 inches (1219 mm) long minimum and shall extend from a point 2 inches (51 mm) long minimum above the seat surface to a point 18 inches (457 mm) minimum above the seat surface. Back support shall be 2½ inches (64 mm) maximum from the rear edge of the seat measured horizontally.

**11B-903.5 Height.** The top of the bench seat surface shall be 17 inches (432 mm) minimum and 19 inches (483 mm) maximum above the finish floor or ground.



**FIGURE 11B-903.4  
BENCH BACK SUPPORT**

**11B-903.6 Structural strength.** Benches shall be affixed to the wall or floor. Allowable stresses shall not be exceeded for materials used when a vertical or horizontal force of 250 pounds (1112 N) is applied at any point on the seat, fastener, mounting device, or supporting structure.

**11B-903.7 Wet locations.** Where installed in wet locations, the surface of the seat shall be slip resistant and shall not accumulate water.

### 11B-904 Check-out aisles and sales and service counters

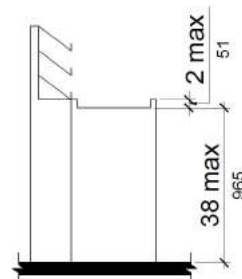
**11B-904.1 General.** Check-out aisles and sales and service counters shall comply with the applicable requirements of *Section 11B-904*.

**11B-904.2 Approach.** All portions of counters required to comply with *Section 11B-904* shall be located adjacent to a walking surface complying with *Section 11B-403*.

**11B-904.3 Check-out aisles.** Check-out aisles shall comply with *Section 11B-904.3*.

**11B-904.3.1 Aisle.** Aisles shall comply with *Section 11B-403*.

**11B-904.3.2 Counter.** The counter surface height shall be 38 inches (965 mm) maximum above the finish floor or ground. The top of the counter edge protection shall be 2 inches (51 mm) maximum above the top of the counter surface on the aisle side of the check-out counter.



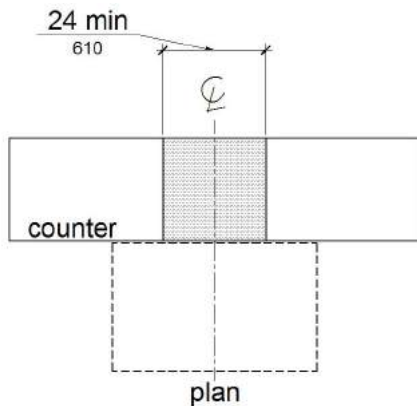
**FIGURE 11B-904.3.2  
CHECK-OUT AISLE COUNTERS**

**11B-904.3.3 Check writing surfaces.** Where provided, check writing surfaces shall comply with *Section 11B-902.3*.

**11B-904.3.4 Identification sign.** When not all check-out aisles are accessible, accessible check-out aisles shall be identified by a sign clearly visible to a person in a wheelchair displaying the International Symbol of Accessibility complying with *Section 11B-703.7.2.1*. The sign shall be a minimum of 4 inches by 4 inches (102 mm by 102 mm).

**11B-904.4 Sales and service counters.** Sales counters and service counters shall comply with *Section 11B-904.4.1* or *11B-904.4.2*. The accessible portion of the counter top shall extend the same depth as the sales or service counter top.

**Exception:** In alterations, when the provision of a counter complying with *Section 11B-904.4* would result in a reduction of the number of existing counters at work stations or a reduction of the number of existing mail boxes, the counter shall be permitted to have a portion which is 24 inches (610 mm) long minimum complying with *Section 11B-904.4.1* provided that the required clear floor or ground space is centered on the accessible length of the counter.



**FIGURE 11B-904.4 (EXCEPTION)  
ALTERATION OF SALES AND SERVICE COUNTERS**

**11B-904.4.1 Parallel approach.** A portion of the counter surface that is 36 inches (914 mm) long minimum and 34 inches (864 mm) high maximum above the finish floor shall be provided. A clear floor or ground space complying with *Section 11B-305* shall be positioned for a parallel approach adjacent to the 36 inch (914 mm) minimum length of counter.

**Exception:** Where the provided counter surface is less than 36 inches (914 mm) long, the entire counter surface shall be 34 inches (864 mm) high maximum above the finish floor.

**11B-904.4.2 Forward approach.** A portion of the counter surface that is 36 inches (914 mm) long minimum and 34 inches (864 mm) high maximum shall be provided. Knee and toe space complying with *Section 11B-306* shall be provided under the counter. A clear floor or ground space complying with *Section 11B-305* shall be positioned for a forward approach to the counter.

**11B-904.5 Food service lines.** Counters in food service lines shall comply with *Section 11B-904.5*.

**11B-904.5.1 Self-service shelves and dispensing devices.** Self-service shelves and dispensing devices for tableware, dishware, condiments, food and beverages shall comply with *Section 11B-308*.

**11B-904.5.2 Tray slides.** The tops of tray slides shall be 28 inches (711 mm) minimum and 34 inches (864 mm) maximum above the finish floor or ground.

**11B-904.6 Security glazing.** Where counters or teller windows have security glazing to separate personnel from the public, a method to facilitate voice communication shall be provided. Telephone handset devices, if provided, shall comply with *Section 11B-704.3*.



## DIVISION 10: RECREATION FACILITIES

### 11B-1001 General

**11B-1001.1 Scope.** The provisions of *Division 10* shall apply where required by *Division 2* or where referenced by a requirement in this *chapter*.

### 11B-1002 Amusement rides

**11B-1002.1 General.** Amusement rides shall comply with *Section 11B-1002*.

**11B-1002.2 Accessible routes.** Accessible routes serving amusement rides shall comply with *Division 4*.

#### Exceptions:

1. In load or unload areas and on amusement rides, where compliance with *Section 11B-405.2* is not structurally or operationally feasible, ramp slope shall be permitted to be 1:8 maximum.
2. In load or unload areas and on amusement rides, handrails provided along walking surfaces complying with *Section 11B-403* and required on ramps complying with *Section 11B-405* shall not be required to comply with *Section 11B-505* where compliance is not structurally or operationally feasible.

**11B-1002.3 Load and unload areas.** A turning space complying with *Sections 11B-304.2* and *11B-304.3* shall be provided in load and unload areas.

**11B-1002.4 Wheelchair spaces in amusement rides.** Wheelchair spaces in amusement rides shall comply with *Section 11B-1002.4*.

**11B-1002.4.1 Floor or ground surface.** The floor or ground surface of wheelchair spaces shall be stable and firm.

**11B-1002.4.2 Slope.** The floor or ground surface of wheelchair spaces shall have a slope not steeper than 1:48 when in the load and unload position.

**11B-1002.4.3 Gaps.** Floors of amusement rides with wheelchair spaces and floors of load and unload areas shall be coordinated so that, when amusement rides are at rest in the load and unload position, the vertical difference between the floors shall be within plus or minus  $\frac{5}{8}$  inches (15.9 mm) and the horizontal gap shall be 3 inches (76 mm) maximum under normal passenger load conditions.

**Exception:** Where compliance is not operationally or structurally feasible, ramps, bridge plates, or similar devices complying with the applicable requirements of 36 CFR 1192.83(c) shall be provided.

**11B-1002.4.4 Clearances.** Clearances for wheelchair spaces shall comply with *Section 11B-1002.4.4*.

#### Exceptions:

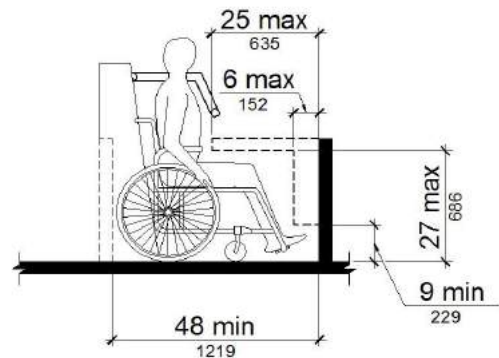
1. Where provided, securement devices shall be permitted to overlap required clearances.
2. Wheelchair spaces shall be permitted to be mechanically or manually repositioned.

3. Wheelchair spaces shall not be required to comply with *Section 11B-307.4*.

**11B-1002.4.4.1 Width and length.** Wheelchair spaces shall provide a clear width of 30 inches (762 mm) minimum and a clear length of 48 inches (1219 mm) minimum measured to 9 inches (229 mm) minimum above the floor surface.

**11B-1002.4.4.2 Side entry.** Where wheelchair spaces are entered only from the side, amusement rides shall be designed to permit sufficient maneuvering clearance for individuals using a wheelchair or mobility aid to enter and exit the ride.

**11B-1002.4.4.3 Permitted protrusions in wheelchair spaces.** Objects are permitted to protrude a distance of 6 inches (152 mm) maximum along the front of the wheelchair space, where located 9 inches (229 mm) minimum and 27 inches (686 mm) maximum above the floor or ground surface of the wheelchair space. Objects are permitted to protrude a distance of 25 inches (635 mm) maximum along the front of the wheelchair space, where located more than 27 inches (686 mm) above the floor or ground surface of the wheelchair space.



**FIGURE 11B-1002.4.4.3  
PROTRUSIONS IN WHEELCHAIR  
SPACES IN AMUSEMENT RIDES**

**11B-1002.4.5 Ride entry.** Openings providing entry to wheelchair spaces on amusement rides shall be 32 inches (813 mm) minimum clear.

**11B-1002.4.6 Approach.** One side of the wheelchair space shall adjoin an accessible route when in the load and unload position.

**11B-1002.4.7 Companion seats.** Where the interior width of the amusement ride is greater than 53 inches (1346 mm), seating is provided for more than one rider, and the wheelchair is not required to be centered within the amusement ride, a companion seat shall be provided for each wheelchair space.

**11B-1002.4.7.1 Shoulder-to-shoulder seating.** Where an amusement ride provides shoulder-to-shoulder seating, companion seats shall be shoulder-to-shoulder with the adjacent wheelchair space.

**Exception:** Where shoulder-to-shoulder companion seating is not operationally or structurally feasible, compliance with this requirement shall be required to the maximum extent practicable.

**11B-1002.5 Amusement ride seats designed for transfer.** Amusement ride seats designed for transfer shall comply with *Section 11B-1002.5* when positioned for loading and unloading.

**11B-1002.5.1 Clear floor or ground space.** A clear floor or ground space complying with *Section 11B-305* shall be provided in the load and unload area adjacent to the amusement ride seats designed for transfer.

**11B-1002.5.2 Transfer height.** The height of amusement ride seats designed for transfer shall be 14 inches (356 mm) minimum and 24 inches (610 mm) maximum measured from the surface of the load and unload area.

**11B-1002.5.3 Transfer entry.** Where openings are provided for transfer to amusement ride seats, the openings shall provide clearance for transfer from a wheelchair or mobility aid to the amusement ride seat.

**11B-1002.5.4 Wheelchair storage space.** Wheelchair storage spaces complying with *Section 11B-305* shall be provided in or adjacent to unload areas for each required amusement ride seat designed for transfer and shall not overlap any required means of egress or accessible route.

**11B-1002.6 Transfer devices for use with amusement rides.** Transfer devices for use with amusement rides shall comply with *Section 11B-1002.6* when positioned for loading and unloading.

**11B-1002.6.1 Clear floor or ground space.** A clear floor or ground space complying with *Section 11B-305* shall be provided in the load and unload area adjacent to the transfer device.

**11B-1002.6.2 Transfer height.** The height of transfer device seats shall be 14 inches (356 mm) minimum and 24 inches (610 mm) maximum measured from the load and unload surface.

**11B-1002.6.3 Wheelchair storage space.** Wheelchair storage spaces complying with *Section 11B-305* shall be provided in or adjacent to unload areas for each required transfer device and shall not overlap any required means of egress or accessible route.

### **11B-1003 Recreational boating facilities**

**11B-1003.1 General.** Recreational boating facilities shall comply with *Section 11B-1003*.

**11B-1003.2 Accessible routes.** Accessible routes serving recreational boating facilities, including gangways and floating piers, shall comply with *Division 4* except as modified by the exceptions in *Section 11B-1003.2*.

**11B-1003.2.1 Boat slips.** Accessible routes serving boat slips shall be permitted to use the exceptions in *Section 11B-1003.2.1*.

#### **Exceptions:**

1. Where an existing gangway or series of gangways is replaced or altered, an increase in the

length of the gangway shall not be required to comply with *Section 11B-1003.2* unless required by *Section 11B-202.4*.

2. Gangways shall not be required to comply with the maximum rise specified in *Section 11B-405.6*.
3. Where the total length of a gangway or series of gangways serving as part of a required accessible route is 80 feet (24384 mm) minimum, gangways shall not be required to comply with *Section 11B-405.2*.
4. Where facilities contain fewer than 25 boat slips and the total length of the gangway or series of gangways serving as part of a required accessible route is 30 feet (9144 mm) minimum, gangways shall not be required to comply with *Section 11B-405.2*.
5. Where gangways connect to transition plates, landings specified by *Section 11B-405.7* shall not be required.
6. Where gangways and transition plates connect and are required to have handrails, handrail extensions shall not be required. Where handrail extensions are provided on gangways or transition plates, the handrail extensions shall not be required to be parallel with the ground or floor surface.
7. The cross slope specified in *Sections 11B-403.3* and *11B-405.3* for gangways, transition plates, and floating piers that are part of accessible routes shall be measured in the static position.
8. Changes in level complying with *Sections 11B-303.3* and *11B-303.4* shall be permitted on the surfaces of gangways and boat launch ramps.

**11B-1003.2.2 Boarding piers at boat launch ramps.** Accessible routes serving boarding piers at boat launch ramps shall be permitted to use the exceptions in *Section 11B-1003.2.2*.

#### **Exceptions:**

1. Accessible routes serving floating boarding piers shall be permitted to use Exceptions 1, 2, 5, 6, 7 and 8 in *Section 11B-1003.2.1*.
2. Where the total length of the gangway or series of gangways serving as part of a required accessible route is 30 feet (9144 mm) minimum, gangways shall not be required to comply with *Section 11B-405.2*.
3. Where the accessible route serving a floating boarding pier or skid pier is located within a boat launch ramp, the portion of the accessible route located within the boat launch ramp shall not be required to comply with *Section 11B-405*.

**11B-1003.3 Clearances.** Clearances at boat slips and on boarding piers at boat launch ramps shall comply with *Section 11B-1003.3*.

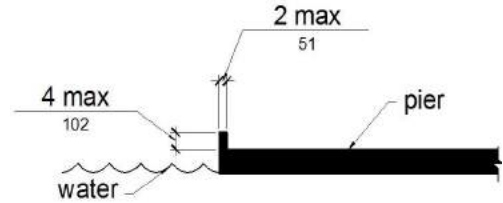
**11B-1003.3.1 Boat slip clearance.** Boat slips shall provide clear pier space 60 inches (1524 mm) wide minimum and at least as long as the boat slips. Each 10 feet (3048 mm) max-

imum of linear pier edge serving boat slips shall contain at least one continuous clear opening 60 inches (1524 mm) wide minimum.

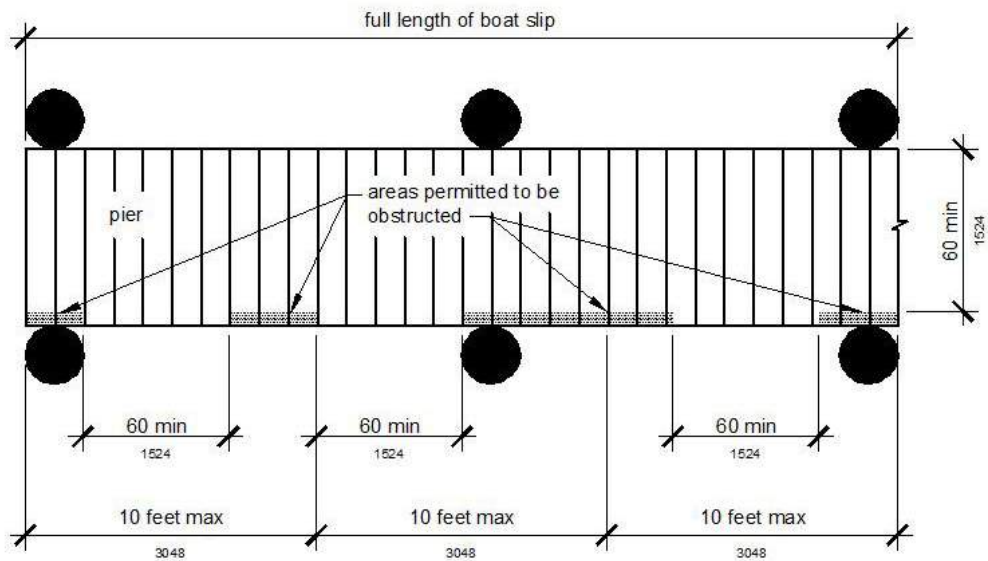
**Exceptions:**

1. Clear pier space shall be permitted to be 36 inches (914 mm) wide minimum for a length of 24 inches (610 mm) maximum, provided that multiple 36 inch (914 mm) wide segments are separated by segments that are 60 inches (1524 mm) wide minimum and 60 inches (1524 mm) long minimum.
2. Edge protection shall be permitted at the continuous clear openings, provided that it is 4 inches (102 mm) high maximum and 2 inches (51 mm) wide maximum.
3. In existing piers, clear pier space shall be permitted to be located perpendicular to the boat slip

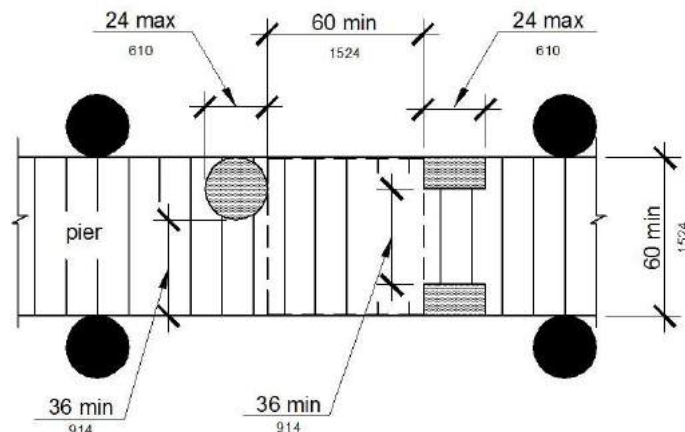
and shall extend the width of the boat slip, where the facility has at least one boat slip complying with Section 11B-1003.3, and further compliance with Section 11B-1003.3 would result in a reduction in the number of boat slips available or result in a reduction of the widths of existing slips.



**FIGURE 11B-1003.3.1 (EXCEPTION 2)  
EDGE PROTECTION AT BOAT SLIPS**



**FIGURE 11B-1003.3.1  
BOAT SLIP CLEARANCE**



**FIGURE 11B-1003.3.1 (EXCEPTION 1)  
CLEAR PIER SPACE REDUCTION AT BOAT SLIPS**

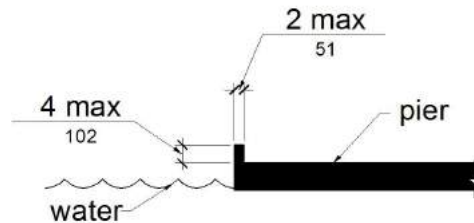
**11B-1003.3.2 Boarding pier clearances.** Boarding piers at boat launch ramps shall provide clear pier space 60 inches (1524 mm) wide minimum and shall extend the full length of the boarding pier. Every 10 feet (3048 mm) maximum of linear pier edge shall contain at least one continuous clear opening 60 inches (1524 mm) wide minimum.

**Exceptions:**

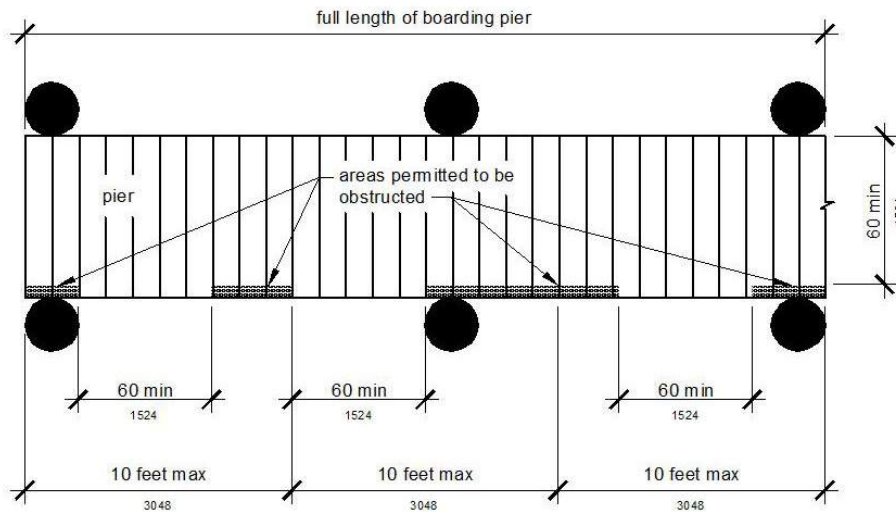
1. The clear pier space shall be permitted to be 36 inches (914 mm) wide minimum for a length of 24 inches (610 mm) maximum provided that multiple 36 inch (914 mm) wide segments are separated by segments that are 60 inches (1524 mm) wide minimum and 60 inches (1524 mm) long minimum.
2. Edge protection shall be permitted at the continuous clear openings provided that it is 4 inches (102 mm) high maximum and 2 inches (51 mm) wide maximum.

**11B-1004 Exercise machines and equipment**

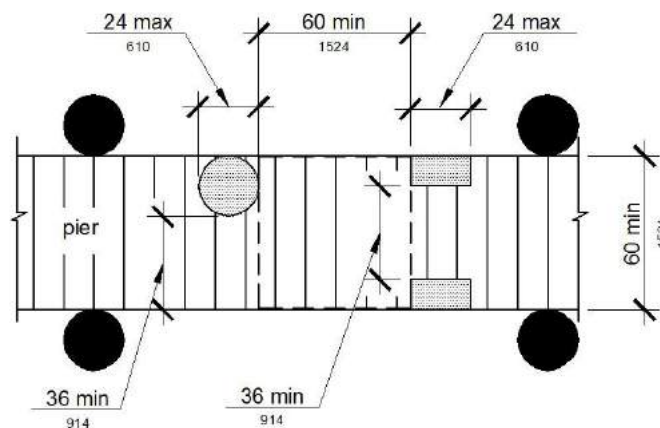
**11B-1004.1 Clear floor space.** Exercise machines and equipment shall have a clear floor space complying with Section 11B-305 positioned for transfer or for use by an individual seated in a wheelchair. Clear floor or ground spaces required at exercise machines and equipment shall be permitted to overlap.



**FIGURE 11B-1003.3.2 (EXCEPTION 2)  
EDGE PROTECTION AT BOARDING PIERS**



**FIGURE 11B-1003.3.2  
BOARDING PIER CLEARANCE**



**FIGURE 11B-1003.3.2 (EXCEPTION 1)  
CLEAR PIER SPACE REDUCTION AT BOARDING PIERS**

**11B-1005 Fishing piers and platforms**

**11B-1005.1 Accessible routes.** Accessible routes serving fishing piers and platforms, including gangways and floating piers, shall comply with *Division 4*.

**Exceptions:**

1. Accessible routes serving floating fishing piers and platforms shall be permitted to use Exceptions 1, 2, 5, 6, 7 and 8 in *Section 11B-1003.2.1*.
2. Where the total length of the gangway or series of gangways serving as part of a required accessible route is 30 feet (9144 mm) minimum, gangways shall not be required to comply with *Section 11B-405.2*.

**11B-1005.2 Railings.** Where provided, railings, guards, or handrails shall comply with *Section 11B-1005.2*.

**11B-1005.2.1 Height.** At least 25 percent of the railings, guards, or handrails shall be 34 inches (864 mm) maximum above the ground or deck surface.

**Exception:** Where a guard complying with *Chapter 10, Sections 1015.2 through 1015.4* is provided, the guard shall not be required to comply with *Section 11B-1005.2.1*.

**11B-1005.2.1.1 Dispersion.** Railings, guards, or handrails required to comply with *Section 11B-1005.2.1* shall be dispersed throughout the fishing pier or platform.

**11B-1005.3 Edge protection.** Where railings, guards, or handrails complying with *Section 11B-1005.2* are provided, edge protection complying with *Section 11B-1005.3.1* or *11B-1005.3.2* shall be provided.

**11B-1005.3.1 Curb or barrier.** Curbs or barriers shall extend 2 inches (51 mm) minimum above the surface of the fishing pier or platform.

**11B-1005.3.2 Extended ground or deck surface.** The ground or deck surface shall extend 12 inches (305 mm) minimum beyond the inside face of the railing. Toe clearance shall be provided and shall be 30 inches (762 mm)

wide minimum and 9 inches (229 mm) minimum above the ground or deck surface beyond the railing.

**11B-1005.4 Clear floor or ground space.** At each location where there are railings, guards, or handrails complying with *Section 11B-1005.2.1*, a clear floor or ground space complying with *Section 11B-305* shall be provided. Where there are no railings, guards, or handrails, at least one clear floor or ground space complying with *Section 11B-305* shall be provided on the fishing pier or platform.

**11B-1005.5 Turning space.** At least one turning space complying with *Section 11B-304.3* shall be provided on fishing piers and platforms.

**11B-1006 Golf facilities**

**11B-1006.1 General.** Golf facilities shall comply with *Section 11B-1006*.

**11B-1006.2 Accessible routes.** Accessible routes serving teeing grounds, practice teeing grounds, putting greens, practice putting greens, teeing stations at driving ranges, course weather shelters, golf car rental areas, bag drop areas, and course toilet rooms shall comply with *Division 4* and shall be 48 inches (1219 mm) wide minimum. Where handrails are provided, accessible routes shall be 60 inches (1524 mm) wide minimum.

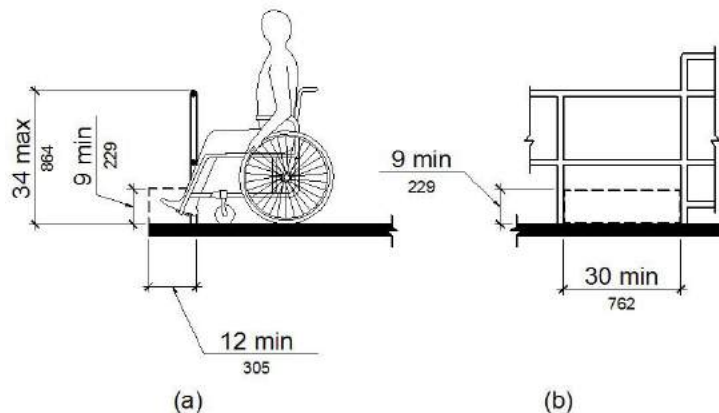
**Exception:** Handrails shall not be required on golf courses. Where handrails are provided on golf courses, the handrails shall not be required to comply with *Section 11B-505*.

**11B-1006.3 Golf car passages.** Golf car passages shall comply with *Section 11B-1006.3*.

**11B-1006.3.1 Clear width.** The clear width of golf car passages shall be 48 inches (1219 mm) minimum.

**11B-1006.3.2 Barriers.** Where curbs or other constructed barriers prevent golf cars from entering a fairway, openings 60 inches (1524 mm) wide minimum shall be provided at intervals not to exceed 75 yards (69 m).

**11B-1006.4 Weather shelters.** A clear floor or ground space 60 inches (1524 mm) minimum by 96 inches (2438 mm) minimum shall be provided within weather shelters.



**FIGURE 11B-1005.3.2  
EXTENDED GROUND OR DECK SURFACE AT FISHING PIERS AND PLATFORMS**

**11B-1007 Miniature golf facilities**

**11B-1007.1 General.** Miniature golf facilities shall comply with *Section 11B-1007*.

**11B-1007.2 Accessible routes.** Accessible routes serving holes on miniature golf courses shall comply with *Division 4*. Accessible routes located on playing surfaces of miniature golf holes shall be permitted to use the exceptions in *Section 11B-1007.2*.

**Exceptions:**

1. Playing surfaces shall not be required to comply with *Section 11B-302.2*.
2. Where accessible routes intersect playing surfaces of holes, a 1 inch (25 mm) maximum curb shall be permitted for a width of 32 inches (813 mm) minimum.
3. A slope not steeper than 1:4 for a 4 inch (102 mm) maximum rise shall be permitted.
4. Ramp landing slopes specified by *Section 11B-405.7.1* shall be permitted to be 1:20 maximum.
5. Ramp landing length specified by *Section 11B-405.7.3* shall be permitted to be 48 inches (1219 mm) long minimum.
6. Ramp landing size specified by *Section 11B-405.7.4* shall be permitted to be 48 inches (1219 mm) minimum by 60 inches (1524 mm) minimum.
7. Handrails shall not be required on holes. Where handrails are provided on holes, the handrails shall not be required to comply with *Section 11B-505*.

**11B-1007.3 Miniature golf holes.** Miniature golf holes shall comply with *Section 11B-1007.3*.

**11B-1007.3.1 Start of play.** A clear floor or ground space 48 inches (1219 mm) minimum by 60 inches (1524 mm) minimum with slopes not steeper than 1:48 shall be provided at the start of play.

**11B-1007.3.2 Golf club reach range area.** All areas within holes where golf balls rest shall be within 36 inches (914 mm) maximum of a clear floor or ground space 36 inches (914 mm) wide minimum and 48 inches (1219 mm) long minimum having a running slope not steeper than 1:20. The clear floor or ground space shall be served by an accessible route.

**11B-1008 Play areas**

**11B-1008.1 General.** Play areas shall comply with *Section 11B-1008*.

**11B-1008.2 Accessible routes.** Accessible routes serving play areas shall comply with *Division 4* and *Section 11B-1008.2* and shall be permitted to use the exceptions in *Sections 11B-1008.2.1* through *11B-1008.2.3*. Where accessible routes serve ground level play components, the vertical clearance shall be 80 inches high (2032 mm) minimum.

**11B-1008.2.1 Ground level and elevated play components.** Accessible routes serving ground level play components and elevated play components shall be permitted to use the exceptions in *Section 11B-1008.2.1*.

**Exceptions:**

1. Transfer systems complying with *Section 11B-1008.3* shall be permitted to connect elevated play components except where 20 or more elevated play components are provided no more than 25 percent of the elevated play components shall be permitted to be connected by transfer systems.
2. Where transfer systems are provided, an elevated play component shall be permitted to connect to another elevated play component as part of an accessible route.

**11B-1008.2.2 Soft contained play structures.** Accessible routes serving soft contained play structures shall be permitted to use the exception in *Section 11B-1008.2.2*.

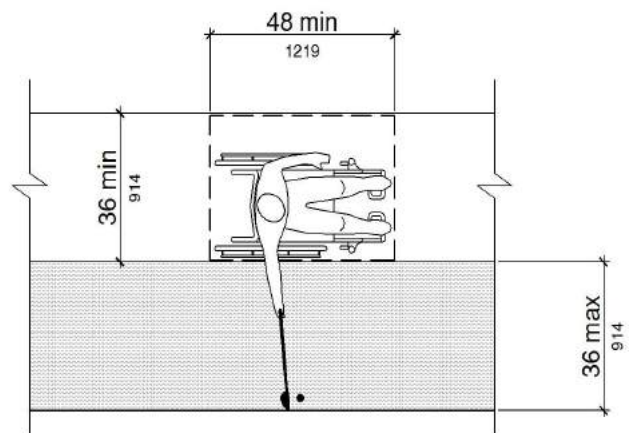
**Exception:** Transfer systems complying with *Section 11B-1008.3* shall be permitted to be used as part of an accessible route.

**11B-1008.2.3 Water play components.** Accessible routes serving water play components shall be permitted to use the exceptions in *Section 11B-1008.2.3*.

**Exceptions:**

1. Where the surface of the accessible route, clear floor or ground spaces, or turning spaces serving water play components is submerged, compliance with *Sections 11B-302*, *11B-403.3*, *11B-405.2*, *11B-405.3*, and *11B-1008.2.6* shall not be required.
2. Transfer systems complying with *Section 11B-1008.3* shall be permitted to connect elevated play components in water.

**11B-1008.2.4 Clear width.** Accessible routes connecting play components shall provide a clear width complying with *Section 11B-1008.2.4*.



Note: Running Slope of Clear Floor or Ground Space Not Steeper Than 1:20

**FIGURE 11B-1007.3.2 GOLF CLUB REACH RANGE AREA**

**11B-1008.2.4.1 Ground level.** At ground level, the clear width of accessible routes shall be 60 inches (1524 mm) minimum.

**Exceptions:**

1. In play areas less than 1000 square feet (93 m<sup>2</sup>), the clear width of accessible routes shall be permitted to be 44 inches (1118 mm) minimum, if at least one turning space complying with *Section 11B-304.3* is provided where the restricted accessible route exceeds 30 feet (9144 mm) in length.
2. The clear width of accessible routes shall be permitted to be 36 inches (914 mm) minimum for a distance of 60 inches (1524 mm) maximum provided that multiple reduced width segments are separated by segments that are 60 inches (1524 mm) wide minimum and 60 inches (1524 mm) long minimum.

**11B-1008.2.4.2 Elevated.** The clear width of accessible routes connecting elevated play components shall be 36 inches (914 mm) minimum.

**Exceptions:**

1. The clear width of accessible routes connecting elevated play components shall be permitted to be reduced to 32 inches (813 mm) minimum for a distance of 24 inches (610 mm) maximum provided that reduced width segments are separated by segments that are 48 inches (1219 mm) long minimum and 36 inches (914 mm) wide minimum.
2. The clear width of transfer systems connecting elevated play components shall be permitted to be 24 inches (610 mm) minimum.

**11B-1008.2.5 Ramps.** Within play areas, ramps connecting ground level play components and ramps connecting elevated play components shall comply with *Section 11B-1008.2.5*.

**11B-1008.2.5.1 Ground level.** Ramp runs connecting ground level play components shall have a running slope not steeper than 1:16.

**11B-1008.2.5.2 Elevated.** The rise for any ramp run connecting elevated play components shall be 12 inches (305 mm) maximum.

**11B-1008.2.5.3 Handrails.** Where required on ramps serving play components, the handrails shall comply with *Section 11B-505* except as modified by *Section 11B-1008.2.5.3*.

**Exceptions:**

1. Handrails shall not be required on ramps located within ground level use zones.
2. Handrail extensions shall not be required.

**11B-1008.2.5.3.1 Handrail gripping surfaces.** Handrail gripping surfaces with a circular cross section shall have an outside diameter of 0.95 inch (24 mm) minimum and 1.55 inches (39 mm) maximum. Where the shape of the gripping surface is non-circular, the handrail shall provide an equivalent gripping surface.

**11B-1008.2.5.3.2 Handrail height.** The top of handrail gripping surfaces shall be 20 inches (508 mm) minimum and 28 inches (711 mm) maximum above the ramp surface.

**11B-1008.2.6 Ground surfaces.** Ground surfaces on accessible routes, clear floor or ground spaces, and turning spaces shall comply with *Section 11B-1008.2.6*.

**11B-1008.2.6.1 Accessibility.** Ground surfaces shall comply with ASTM F1951. Ground surfaces shall be inspected and maintained regularly and frequently to ensure continued compliance with ASTM F1951.

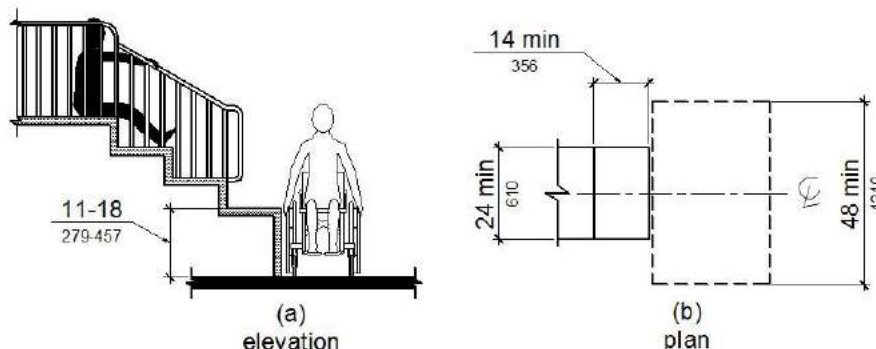
**11B-1008.2.6.2 Use zones.** Ground surfaces located within use zones shall comply with ASTM F1292 (1999 edition or 2004 edition).

**11B-1008.3 Transfer systems.** Where transfer systems are provided to connect to elevated play components, transfer systems shall comply with *Section 11B-1008.3*.

**11B-1008.3.1 Transfer platforms.** Transfer platforms shall be provided where transfer is intended from wheelchairs or other mobility aids. Transfer platforms shall comply with *Section 11B-1008.3.1*.

**11B-1008.3.1.1 Size.** Transfer platforms shall have level surfaces 14 inches (356 mm) deep minimum and 24 inches (610 mm) wide minimum.

**11B-1008.3.1.2 Height.** The height of transfer platforms shall be 11 inches (279 mm) minimum and 18 inches (457 mm) maximum.



**FIGURE 11B-1008.3.1  
TRANSFER PLATFORMS**

inches (457 mm) maximum measured to the top of the surface from the ground or floor surface.

**11B-1008.3.1.3 Transfer space.** A transfer space complying with Sections 11B-305.2 and 11B-305.3 shall be provided adjacent to the transfer platform. The 48 inch (1219 mm) long minimum dimension of the transfer space shall be centered on and parallel to the 24 inch (610 mm) long minimum side of the transfer platform. The side of the transfer platform serving the transfer space shall be unobstructed.

**11B-1008.3.1.4 Transfer supports.** At least one means of support for transferring shall be provided.

**11B-1008.3.2 Transfer steps.** Transfer steps shall be provided where movement is intended from transfer platforms to levels with elevated play components required to be on accessible routes. Transfer steps shall comply with Section 11B-1008.3.2.

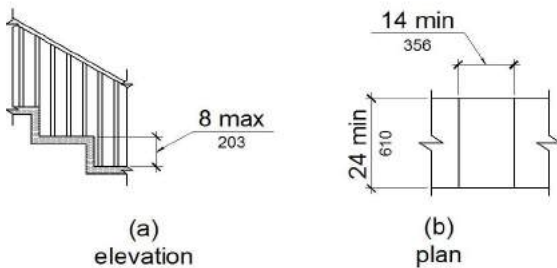


FIGURE 11B-1008.3.2  
TRANSFER STEPS

**11B-1008.3.2.1 Size.** Transfer steps shall have level surfaces 14 inches (356 mm) deep minimum and 24 inches (610 mm) wide minimum.

**11B-1008.3.2.2 Height.** Each transfer step shall be 8 inches (203 mm) high maximum.

**11B-1008.3.2.3 Transfer supports.** At least one means of support for transferring shall be provided.

**11B-1008.3.2.4 Contrasting stripe.** Striping complying with Section 11B-504.4.1 shall be provided at each transfer step.

**11B-1008.4 Play components.** Ground level play components on accessible routes and elevated play components connected by ramps shall comply with Section 11B-1008.4.

**11B-1008.4.1 Turning space.** At least one turning space complying with Section 11B-304 shall be provided on the same level as play components. Where swings are provided, the turning space shall be located immediately adjacent to the swing.

**11B-1008.4.2 Clear floor or ground space.** Clear floor or ground space complying with Sections 11B-305.2 and 11B-305.3 shall be provided at play components.

**11B-1008.4.3 Play tables.** Where play tables are provided, knee clearance 24 inches (610 mm) high minimum, 17 inches deep (432 mm) minimum, and 30 inches (762 mm) wide minimum shall be provided. The tops of rims,

curbs, or other obstructions shall be 31 inches (787 mm) high maximum.

**Exception:** Play tables designed and constructed primarily for children 5 years and younger shall not be required to provide knee clearance where the clear floor or ground space required by Section 11B-1008.4.2 is arranged for a parallel approach.

**11B-1008.4.4 Entry points and seats.** Where play components require transfer to entry points or seats, the entry points or seats shall be 11 inches (279 mm) minimum and 24 inches (610 mm) maximum from the clear floor or ground space.

**Exception:** Entry points of slides shall not be required to comply with Section 11B-1008.4.4.

**11B-1008.4.5 Transfer supports.** Where play components require transfer to entry points or seats, at least one means of support for transferring shall be provided.

**11B-1009 Swimming pools, wading pools, and spas**

**11B-1009.1 General.** Where provided, pool lifts, sloped entries, transfer walls, transfer systems, and pool stairs shall comply with Section 11B-1009.

**11B-1009.2 Pool lifts.** Pool lifts shall comply with Section 11B-1009.2.

**11B-1009.2.1 Pool lift location.** Pool lifts shall be located where the water level is 36 inches (914 mm) minimum and 48 inches (1219 mm) maximum.

**Exceptions:**

1. Where the entire pool depth is less than 36 inches (914 mm) or greater than 48 inches (1219 mm), compliance with Section 11B-1009.2.1 shall not be required.
2. Where multiple pool lift locations are provided, no more than one pool lift shall be required to be located in an area where the water level is 48 inches (1219 mm) maximum.

**11B-1009.2.2 Seat location.** In the raised position, the centerline of the seat shall be located over the deck and 16 inches (406 mm) minimum from the edge of the pool. The deck surface between the centerline of the seat and the pool edge shall have a slope not steeper than 1:48.

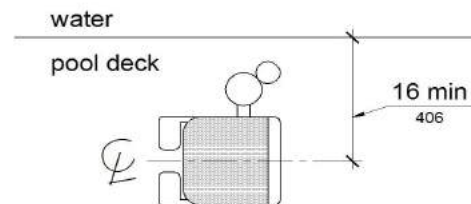
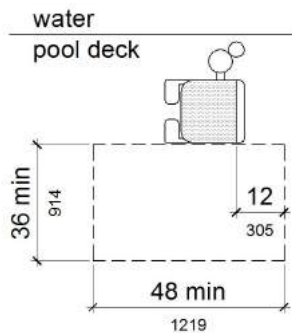


FIGURE 11B-1009.2.2  
POOL LIFT SEAT LOCATION

**11B-1009.2.3 Clear deck space.** On the side of the seat opposite the water, a clear deck space shall be provided parallel with the seat. The space shall be 36 inches (914 mm) wide minimum and shall extend forward 48 inches

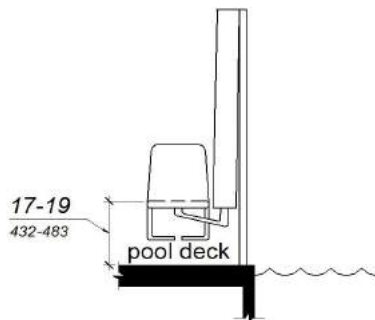


(1219 mm) minimum from a line located 12 inches (305 mm) behind the rear edge of the seat. The clear deck space shall have a slope not steeper than 1:48.



**FIGURE 11B-1009.2.3**  
CLEAR DECK SPACE AT POOL LIFTS

**11B-1009.2.4 Seat.** The seat shall be rigid and shall have a back support that is at least 12 inches (305 mm) tall. The height of the lift seat shall be designed to allow a stop at 17 inches (432 mm) minimum to 19 inches (483 mm) maximum measured from the deck to the top of the seat surface when in the raised (load) position. The seat shall have a restraint for the use of the occupant with operable parts complying with Section 11B-309.



**FIGURE 11B-1009.2.4**  
POOL LIFT SEAT HEIGHT

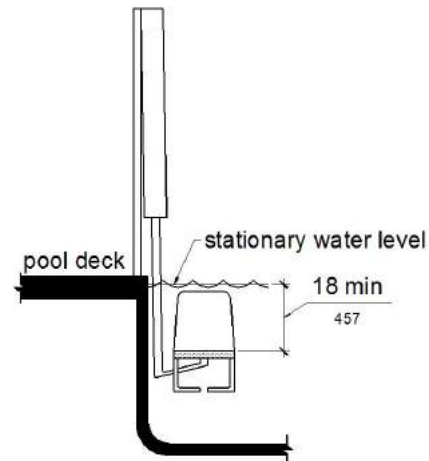
**11B-1009.2.5 Seat width.** The seat shall be 16 inches (406 mm) wide minimum.

**11B-1009.2.6 Footrests and armrests.** Footrests shall be provided and shall move with the seat. The seat shall have two armrests. The armrest positioned opposite the water shall be removable or shall fold clear of the seat when the seat is in the raised (load) position.

**Exception:** Footrests shall not be required on pool lifts provided in spas.

**11B-1009.2.7 Operation.** The lift shall be capable of unassisted operation from both the deck and water levels. Controls and operating mechanisms shall be unobstructed when the lift is in use and shall comply with Section 11B-309.4. The lift shall be stable and not permit unintended movement when a person is getting into or out of the seat.

**11B-1009.2.8 Submerged depth.** The lift shall be designed so that the seat will submerge to a water depth of 18 inches (457 mm) minimum below the stationary water level.



**FIGURE 11B-1009.2.8**  
POOL LIFT SUBMERGED DEPTH

**11B-1009.2.9 Lifting capacity.** Single person pool lifts shall have a weight capacity of 300 pounds (136 kg) minimum and be capable of sustaining a static load of at least one and a half times the rated load.

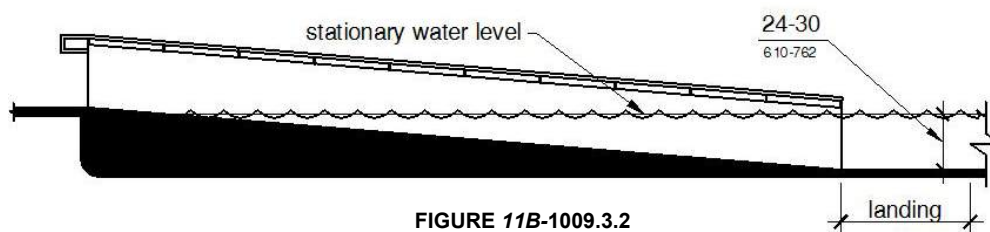
**11B-1009.3 Sloped entries.** Sloped entries shall comply with Section 11B-1009.3.

**11B-1009.3.1 Sloped entries.** Sloped entries shall comply with Division 4 except as modified in Sections 11B-1009.3.1 through 11B-1009.3.3.

**Exception:** Where sloped entries are provided, the surfaces shall not be required to be slip resistant.

**11B-1009.3.2 Submerged depth.** Sloped entries shall extend to a depth of 24 inches (610 mm) minimum and 30 inches (762 mm) maximum below the stationary water level. Where landings are required by Section 11B-405.7, at least one landing shall be located 24 inches (610 mm) minimum and 30 inches (762 mm) maximum below the stationary water level.

**Exception:** In wading pools, the sloped entry and landings, if provided, shall extend to the deepest part of the wading pool.

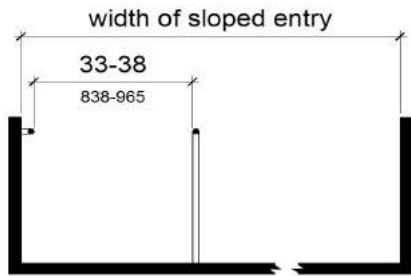


**FIGURE 11B-1009.3.2**  
SLOPED ENTRY SUBMERGED DEPTH

**11B-1009.3.3 Handrails.** At least two handrails complying with *Section 11B-505* shall be provided on the sloped entry. The clear width between required handrails shall be 33 inches (838 mm) minimum and 38 inches (965 mm) maximum.

**Exceptions:**

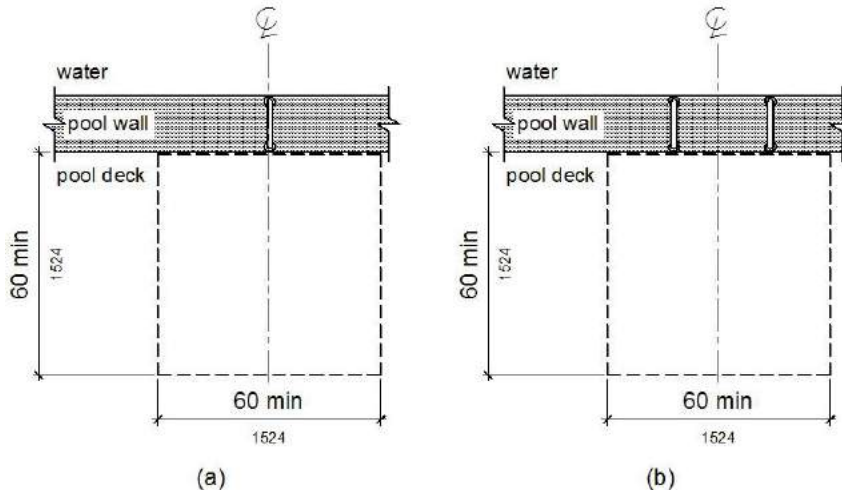
1. Handrail extensions specified by *Section 11B-505.10.1* shall not be required at the bottom landing serving a sloped entry.
2. Where a sloped entry is provided for wave action pools, leisure rivers, sand bottom pools, and other pools where user access is limited to one area, the handrails shall not be required to comply with the clear width requirements of *Section 11B-1009.3.3*.
3. Sloped entries in wading pools shall not be required to provide handrails complying with *Section 11B-1009.3.3*. If provided, handrails on sloped entries in wading pools shall not be required to comply with *Section 11B-505*.



**FIGURE 11B-1009.3.3  
HANDRAILS FOR SLOPED ENTRY**

**11B-1009.4 Transfer walls.** Transfer walls shall comply with *Section 11B-1009.4*.

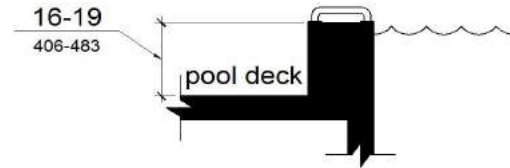
**11B-1009.4.1 Clear deck space.** A clear deck space of 60 inches (1524 mm) minimum by 60 inches (1524 mm) minimum with a slope not steeper than 1:48 shall be provided at the base of the transfer wall. Where one grab bar is provided,



**FIGURE 11B-1009.4.1  
CLEAR DECK SPACE AT TRANSFER WALLS**

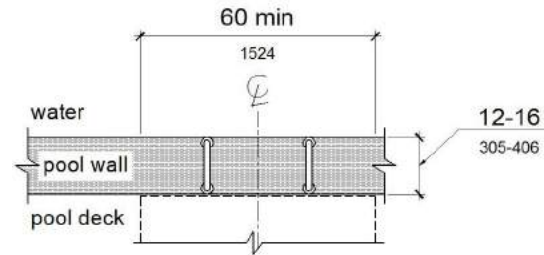
vided, the clear deck space shall be centered on the grab bar. Where two grab bars are provided, the clear deck space shall be centered on the clearance between the grab bars.

**11B-1009.4.2 Height.** The height of the transfer wall shall be 16 inches (406 mm) minimum and 19 inches (483 mm) maximum measured from the deck.



**FIGURE 11B-1009.4.2  
TRANSFER WALL HEIGHT**

**11B-1009.4.3 Wall depth and length.** The depth of the transfer wall shall be 12 inches (305 mm) minimum and 16 inches (406 mm) maximum. The length of the transfer wall shall be 60 inches (1524 mm) minimum and shall be centered on the clear deck space.



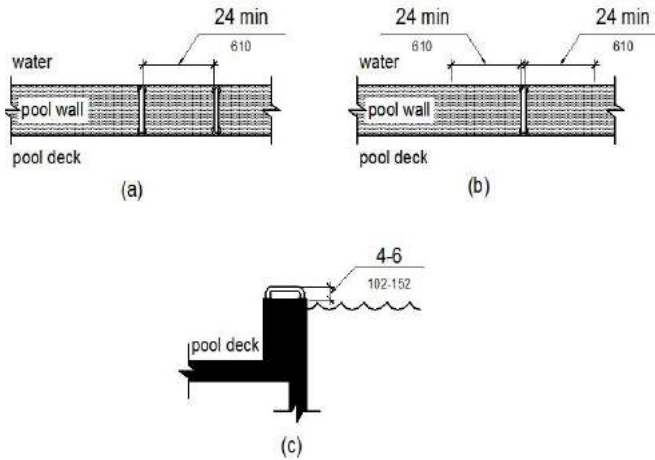
**FIGURE 11B-1009.4.3  
DEPTH AND LENGTH OF TRANSFER WALLS**

**11B-1009.4.4 Surface.** Surfaces of transfer walls shall not be sharp and shall have rounded edges.

**11B-1009.4.5 Grab bars.** At least one grab bar complying with *Section 11B-609* shall be provided on the transfer wall. Grab bars shall be perpendicular to the pool wall and

shall extend the full depth of the transfer wall. The top of the gripping surface shall be 4 inches (102 mm) minimum and 6 inches (152 mm) maximum above transfer walls. Where one grab bar is provided, clearance shall be 24 inches (610 mm) minimum on both sides of the grab bar. Where two grab bars are provided, clearance between grab bars shall be 24 inches (610 mm) minimum.

**Exception:** Grab bars on transfer walls shall not be required to comply with Section 11B-609.4.

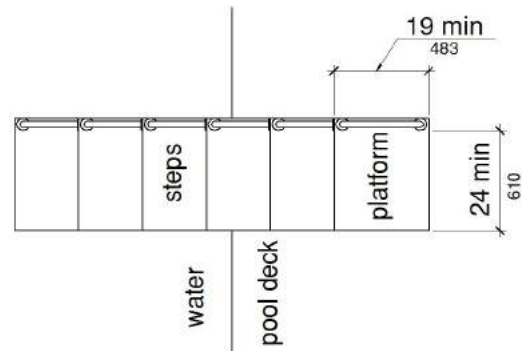


**FIGURE 11B-1009.4.5**  
**GRAB BARS FOR TRANSFER WALLS**

**11B-1009.5 Transfer systems.** Transfer systems shall comply with Section 11B-1009.5.

**11B-1009.5.1 Transfer platform.** A transfer platform shall be provided at the head of each transfer system.

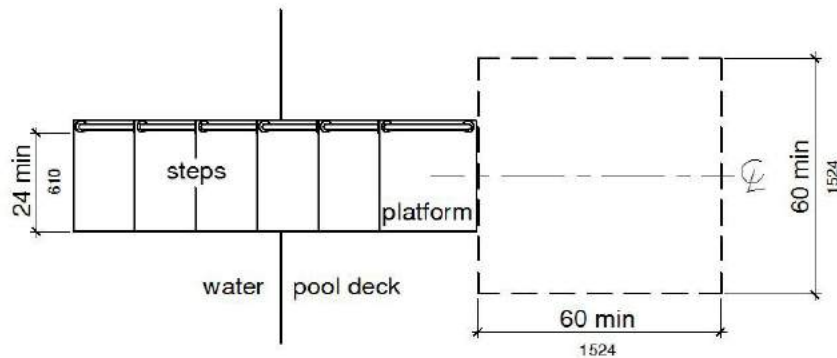
Transfer platforms shall provide 19 inches (483 mm) minimum clear depth and 24 inches (610 mm) minimum clear width.



**FIGURE 11B-1009.5.1**  
**SIZE OF TRANSFER PLATFORM**

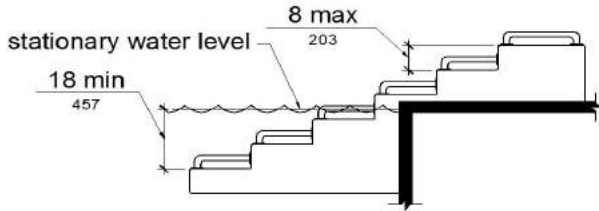
**11B-1009.5.2 Transfer space.** A transfer space of 60 inches (1524 mm) minimum by 60 inches (1524 mm) minimum with a slope not steeper than 1:48 shall be provided at the base of the transfer platform surface and shall be centered along a 24 inch (610 mm) minimum side of the transfer platform. The side of the transfer platform serving the transfer space shall be unobstructed.

**11B-1009.5.3 Height.** The height of the transfer platform shall comply with Section 11B-1009.4.2.



**FIGURE 11B-1009.5.2**  
**CLEAR DECK SPACE AT TRANSFER PLATFORM**

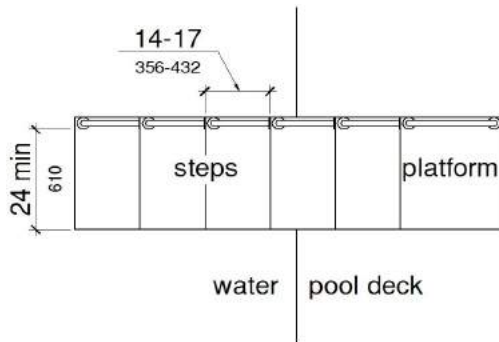
**11B-1009.5.4 Transfer steps.** Transfer step height shall be 8 inches (203 mm) maximum. The surface of the bottom tread shall extend to a water depth of 18 inches (457 mm) minimum below the stationary water level.



**FIGURE 11B-1009.5.4 TRANSFER STEPS**

**11B-1009.5.5 Surface.** The surface of the transfer system shall not be sharp and shall have rounded edges.

**11B-1009.5.6 Size.** Each transfer step shall have a tread clear depth of 14 inches (356 mm) minimum and 17 inches (432 mm) maximum and shall have a tread clear width of 24 inches (610 mm) minimum.



**FIGURE 11B-1009.5.6 SIZE OF TRANSFER STEPS**

**11B-1009.5.7 Grab bars.** At least one grab bar on each transfer step and the transfer platform or a continuous grab bar serving each transfer step and the transfer platform shall be provided. Where a grab bar is provided on each step, the tops of gripping surfaces shall be 4 inches (102 mm) minimum and 6 inches (152 mm) maximum above each step and transfer platform. Where a continuous grab bar is provided, the top of the gripping surface shall be 4 inches (102 mm) minimum and 6 inches (152 mm) maximum above the step nosing and transfer platform. Grab bars shall comply with Section 11B-609 and be located on at least one side of the transfer system. The grab bar located at the transfer platform shall not obstruct transfer.

**Exception:** Grab bars on transfer systems shall not be required to comply with Section 11B-609.4.

**11B-1009.6 Pool stairs.** Pool stairs shall comply with Section 11B-1009.6.

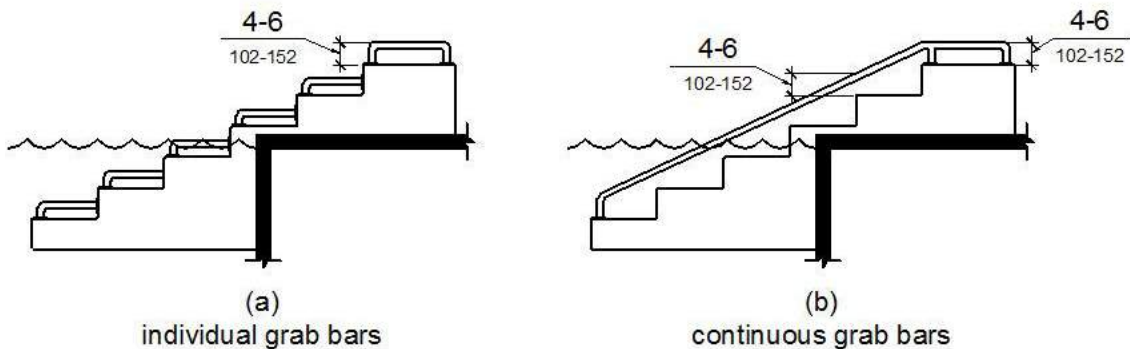
**11B-1009.6.1 Pool stairs.** Pool stairs shall comply with Section 11B-504.

**Exception:** Pool step riser heights shall not be required to be 4 inches (102 mm) high minimum and 7 inches (178 mm) high maximum provided that riser heights are uniform.

**11B-1009.6.2 Handrails.** The width between handrails shall be 20 inches (508 mm) minimum and 24 inches (610 mm) maximum. Handrail extensions required by Section 11B-505.10.3 shall not be required on pool stairs.

**11B-1010 Shooting facilities with firing positions**

**11B-1010.1 Turning space.** A circular turning space 60 inches (1524 mm) diameter minimum with slopes not steeper than 1:48 shall be provided at shooting facilities with firing positions.



**FIGURE 11B-1009.5.7 GRAB BARS**

## CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE CHAPTER 12 – INTERIOR ENVIRONMENT

(Matrix Adoption Tables are nonregulatory, intended only as an aid to the code user.

See Chapter 1 for state agency authority and building applications.)

Adopting agency	BSC	BSC-CG	SFM	HCD			DSA			OSHPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4								
Adopt entire chapter								X	X													
Adopt entire chapter as amendeded (amended sections listed below)	X			X	X					X	X	X	X	X	X							
Adopt only those sections that are listed below		X	X												X	X	X			X		
Chapter / Section																						
1202.1				X	X																	
1202.2.1				X	X																	
1202.3				X	X																	
Table 1202.3				X	X																	
1202.4.1.3																					X	
1202.5				X	X																	
1202.5.2.1				X	X																	
1202.6			X																			
1203.1, Exceptions 2 & 4				X	X																	
1203.1, Exception 3										X	X	X	X	X	X							
1203.4.1.1																					X	
1203.4.2																					X	
1204.1				X	X																	
1204.6		X																				
1204.7	X																					
1204.7.1	X																					
1205			X																			
1206.3, Exception				X	X																	
1206.4				X	X																	
1206.5		X																				
1207.1				X																		
1207.2										X	X	X	X	X	X							
1207.2, Exception 5										X		X	X		X							
1207.2, Exception 6														X								
1207.4				X																		
1208			X																			
1208.1.1																					X	
1209.2										X		X	X	X	X							
1210-1210.6				X	X																	
1211				X																		
Table 1224.4.6.5										X	X	X	X	X	X							
1224										X												
1225												X										
1226													X									
1227														X								
1228															X							
1230															X							
1231															X							
1235																	X					
1236																	X					
1237																	X					

(continued)

**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE  
CHAPTER 12 – INTERIOR ENVIRONMENT—continued**

Adopting agency	BSC	BSC- CG	SFM	HCD			DSA			OSHDPD					BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4								
Adopt entire chapter								X	X													
Adopt entire chapter as amended (amended sections listed below)	X			X	X						X	X	X	X	X	X						
Adopt only those sections that are listed below		X	X													X	X	X			X	
Chapter / Section																						
1240																		X				
1241																		X				
1242																		X				
1243																		X				
1250																					X	
1251																					X	
1252																					X	
1253																					X	
1254																					X	

*The Office of the State Fire Marshal's adoption of this chapter or individual sections is applicable to structures regulated by other state agencies pursuant to Section 1.11.*

- 2.1. *Medium-level activity usage when medium usage is present.*
- 2.2. *High-level activity usage when high usage is present.*

**SECTION 1205  
YARDS OR COURTS**

**1205.1 General.** This section shall apply to yards and courts adjacent to exterior openings that provide natural light or ventilation. Such yards and courts shall be on the same lot as the building.

**1205.2 Yards.** Yards shall be not less than 3 feet (914 mm) in width for buildings two stories or less above grade plane. For buildings more than two stories above grade plane, the minimum width of the yard shall be increased at the rate of 1 foot (305 mm) for each additional story. For buildings exceeding 14 stories above grade plane, the required width of the yard shall be computed on the basis of 14 stories above grade plane.

**1205.3 Courts.** Courts shall be not less than 3 feet (914 mm) in width. Courts having windows opening on opposite sides shall be not less than 6 feet (1829 mm) in width. Courts shall be not less than 10 feet (3048 mm) in length unless bounded on one end by a public way or yard. For buildings more than two stories above grade plane, the court shall be increased 1 foot (305 mm) in width and 2 feet (610 mm) in length for each additional story. For buildings exceeding 14 stories above grade plane, the required dimensions shall be computed on the basis of 14 stories above grade plane.

**1205.3.1 Court access.** Access shall be provided to the bottom of courts for cleaning purposes.

**1205.3.2 Air intake.** Courts more than two stories in height shall be provided with a horizontal air intake at the bottom not less than 10 square feet (0.93 m<sup>2</sup>) in area and leading to the exterior of the building unless abutting a yard or public way.

**1205.3.3 Court drainage.** The bottom of every court shall be properly graded and drained to a public sewer or other approved disposal system complying with the *California Plumbing Code*.

**SECTION 1206  
SOUND TRANSMISSION**

**1206.1 Scope.** This section shall apply to common interior walls, partitions and floor/ceiling assemblies between adjacent dwelling units and sleeping units or between dwelling units and sleeping units and adjacent public areas such as halls, corridors, stairways or service areas.

**1206.2 Airborne sound.** Walls, partitions and floor-ceiling assemblies separating dwelling units and sleeping units from each other or from public or service areas shall have a sound transmission class of not less than 50, or not less than 45 if field tested, for airborne noise where tested in accordance with ASTM E90. Alternatively, the sound transmission class of walls, partitions and floor-ceiling assemblies shall be established by engineering analysis based on a comparison of walls, partitions and floor-ceiling assemblies having sound

transmission class ratings as determined by the test procedures set forth in ASTM E90. Penetrations or openings in construction assemblies for piping; electrical devices; recessed cabinets; bathtubs; soffits; or heating, ventilating or exhaust ducts shall be sealed, lined, insulated or otherwise treated to maintain the required ratings. This requirement shall not apply to entrance doors; however, such doors shall be tight fitting to the frame and sill.

**1206.2.1 Masonry.** The sound transmission class of concrete masonry and clay masonry assemblies shall be calculated in accordance with TMS 0302 or determined through testing in accordance with ASTM E90.

**1206.3 Structure-borne sound.** Floor-ceiling assemblies between dwelling units and sleeping units or between a dwelling unit or sleeping unit and a public or service area within the structure shall have an impact insulation class rating of not less than 50, or not less than 45 if field tested, where tested in accordance with ASTM E492. Alternatively, the impact insulation class of floor-ceiling assemblies shall be established by engineering analysis based on a comparison of floor-ceiling assemblies having impact insulation class ratings as determined by the test procedures in ASTM E492.

*Exception: Impact sound insulation is not required for floor-ceiling assemblies over nonhabitable rooms or spaces not designed to be occupied, such as garages, mechanical rooms or storage areas.*

**1206.4 Allowable interior noise levels.** Interior noise levels attributable to exterior sources shall not exceed 45 dB in any habitable room. The noise metric shall be either the day-night average sound level (*L<sub>dn</sub>*) or the community noise equivalent level (*CNEL*), consistent with the noise element of the local general plan.

**1206.5 Acoustical control.** [BSC-CG] See California Green Building Standards Code, Chapter 5, Division 5.5 for additional sound transmission requirements.

**SECTION 1207  
INTERIOR SPACE DIMENSIONS**

**1207.1 Minimum room widths.** Habitable spaces, other than a kitchen, shall be not less than 7 feet (2134 mm) in any plan dimension. Kitchens shall have a clear passageway of not less than 3 feet (914 mm) between counter fronts and appliances or counter fronts and walls.

[HCD 1] *For limited-density owner-built rural dwellings, there shall be no requirements for room dimensions, provided there is adequate light and ventilation and adequate means of egress.*

**1207.2 Minimum ceiling heights.** Occupiable spaces, habitable spaces and corridors shall have a ceiling height of not less than 7 feet 6 inches (2286 mm) above the finished floor. Bathrooms, toilet rooms, kitchens, storage rooms and laundry rooms shall have a ceiling height of not less than 7 feet (2134 mm) above the finished floor.

**Exceptions:**

- 1. In one- and two-family dwellings, beams or girders spaced not less than 4 feet (1219 mm) on center

## INTERIOR ENVIRONMENT

shall be permitted to project not more than 6 inches (152 mm) below the required ceiling height.

- If any room in a building has a sloped ceiling, the prescribed ceiling height for the room is required in one-half the area thereof. Any portion of the room measuring less than 5 feet (1524 mm) from the finished floor to the ceiling shall not be included in any computation of the minimum area thereof.
- The height of mezzanines and spaces below mezzanines shall be in accordance with Section 505.2.
- Corridors contained within a dwelling unit or sleeping unit in a Group R occupancy shall have a ceiling height of not less than 7 feet (2134 mm) above the finished floor.
- [OSHPD 1, 2, 3 & 5]** Minimum ceiling heights shall comply with Section 1224.4.10.
- [OSHPD 4]** Minimum ceiling heights shall comply with Section 1227.8.

**1207.2.1 Furred ceiling.** Any room with a furred ceiling shall be required to have the minimum ceiling height in two-thirds of the area thereof, but in no case shall the height of the furred ceiling be less than 7 feet (2134 mm).

**1207.3 Room area.** Every dwelling unit shall have not less than one room that shall have not less than 120 square feet (11.2 m<sup>2</sup>) of net floor area. Other habitable rooms shall have a net floor area of not less than 70 square feet (6.5 m<sup>2</sup>).

**Exception:** Kitchens are not required to be of a minimum floor area.

**1207.4 Efficiency dwelling units. [HCD 1]** Unless modified by local ordinance pursuant to Health and Safety Code Section 17958.1, efficiency dwelling units shall comply with the following:

- The unit shall have a living room of not less than 220 square feet (20.4 m<sup>2</sup>) of floor area. An additional 100 square feet (9.3 m<sup>2</sup>) of floor area shall be provided for each occupant of such unit in excess of two.
- The unit shall be provided with a separate closet.
- The unit shall be provided with a kitchen sink, cooking appliance and refrigeration facilities, each having a clear working space of not less than 30 inches (762 mm) in front. Light and ventilation conforming to this code shall be provided.
- The unit shall be provided with a separate bathroom containing a water closet, lavatory and bathtub or shower.

## SECTION 1208 ACCESS TO UNOCCUPIED SPACES

**1208.1 Crawl spaces.** Crawl spaces shall be provided with not less than one access opening that shall be not less than 18 inches by 24 inches (457 mm by 610 mm).

**1208.1.1 [SPCB]** Accessible under-floor areas shall be provided with an 18-inch by 24-inch (457 mm by 610 mm) access crawl hole. Pipes, ducts and other nonstructural

construction shall not interfere with the accessibility to or within under-floor areas.

**1208.2 Attic spaces.** An opening not less than 20 inches by 30 inches (559 mm by 762 mm) shall be provided to any attic area having a clear height of over 30 inches (762 mm). Clear headroom of not less than 30 inches (762 mm) shall be provided in the attic space at or above the access opening.

**1208.3 Mechanical appliances.** Access to mechanical appliances installed in under-floor areas, in attic spaces and on roofs or elevated structures shall be in accordance with the *California Mechanical Code*.

## SECTION 1209 TOILET AND BATHROOM REQUIREMENTS

**[P] 1209.1 Required fixtures.** The number and type of plumbing fixtures provided in any occupancy shall comply with the *California Plumbing Code*.

**1209.2 Finish materials.** Walls, floors and partitions in toilet and bathrooms shall comply with Sections 1209.2.1 through 1209.2.4.

**[OSHPD 1, 2, 3 & 5]** Facilities subject to OSHPD 1, 2, 3 & 5 shall also comply with Section 1224.4.11. <

**[OSHPD 4]** Facilities subject to OSHPD 4 shall also comply with Section 1227.9.

**1209.2.1 Floors and wall bases.** In other than dwelling units, toilet, bathing and shower room floor finish materials shall have a smooth, hard, nonabsorbent surface. The intersections of such floors with walls shall have a smooth, hard, nonabsorbent vertical base that extends upward onto the walls not less than 4 inches (102 mm).

**1209.2.2 Walls and partitions.** Walls and partitions within 2 feet (610 mm) of service sinks, urinals and water closets shall have a smooth, hard, nonabsorbent surface, to a height of not less than 4 feet (1219 mm) above the floor, and except for structural elements, the materials used in such walls shall be of a type that is not adversely affected by moisture.

**Exception:** This section does not apply to the following buildings and spaces:

- Dwelling units and sleeping units.
- Toilet rooms that are not accessible to the public and that have not more than one water closet.

Accessories such as grab bars, towel bars, paper dispensers and soap dishes, provided on or within walls, shall be installed and sealed to protect structural elements from moisture.

**1209.2.3 Showers.** Shower compartments and walls above bathtubs with installed shower heads shall be finished with a smooth, nonabsorbent surface to a height not less than 72 inches (1829 mm) above the drain inlet.

**1209.2.4 Waterproof joints.** Built-in tubs with showers shall have waterproof joints between the tub and adjacent wall.



**[P] 1209.3 Privacy.** Privacy at water closets and urinals shall be provided in accordance with Sections 1209.3.1 and 1209.3.2.

**[P] 1209.3.1 Water closet compartment.** Each water closet utilized by the public or employees shall occupy a separate compartment with walls or partitions and a door enclosing the fixtures to ensure privacy.

**Exceptions:**

1. Water closet compartments shall not be required in a single-occupant toilet room with a lockable door.
2. Toilet rooms located in child day care facilities and containing two or more water closets shall be permitted to have one water closet without an enclosing compartment.
3. This provision is not applicable to toilet areas located within Group I-3 occupancy housing areas.

**[P] 1209.3.2 Urinal partitions.** Each urinal utilized by the public or employees shall occupy a separate area with walls or partitions to provide privacy. The walls or partitions shall begin at a height not more than 12 inches (305 mm) from and extend not less than 60 inches (1524 mm) above the finished floor surface. The walls or partitions shall extend from the wall surface at each side of the urinal not less than 18 inches (457 mm) or to a point not less than 6 inches (152 mm) beyond the outermost front lip of the urinal measured from the finished backwall surface, whichever is greater.

**Exceptions:**

1. Urinal partitions shall not be required in a single-occupant or family or assisted-use toilet room with a lockable door.
2. Toilet rooms located in child day care facilities and containing two or more urinals shall be permitted to have one urinal without partitions.

**SECTION 1210 [HCD 1 & HCD 2]  
GARAGE DOOR SPRINGS**

**1210.1 General.** This section shall apply to applications listed in Sections 1.8.2.1.1 and 1.8.2.1.3 regulated by the Department of Housing and Community Development.

**1210.1.1 Garage door extension springs.** Every garage door extension spring sold or offered for sale, whether new or as a replacement, or installed in any garage or carport which is accessory to an apartment house, hotel, motel or dwelling shall conform to the following requirements:

*Hard-drawn spring wire shall conform to ASTM A227/A227M-17 or a more current version, and shall be made by the steel processes described therein, conforming to the chemical composition requirements listed and meeting the standards of steel heat as set forth by the ladle analysis. Wire tensile strength and dimension variations shall meet the prescribed properties of established standards.*

*Oil-tempered wire shall conform to ASTM A229/A229M-17 or a more current version, and shall be made by the steel processes described therein, conforming to the chemical composition requirements listed and meeting the standards of steel heat as set forth by the ladle analysis. Wire tensile strength and dimension variations shall meet the prescribed properties of established standards.*

*Extension springs shall be fabricated from either hard-drawn spring wire or oil-tempered wire as specified above.*

**1210.2 Design standards.** Minimum design standard shall be 9,000 cycles. (One cycle is an action on the door from the fully closed position, to the fully open position, and returned to the fully closed position.)

**1210.3 Certification.** Mill certification of wire physical tests and chemical properties shall be kept on file by the spring manufacturer.

*Physical cycling tests shall be performed for each extension spring design and shall be certified by an approved testing agency acceptable to the department and reports kept on file by the spring manufacturer.*

**1210.4 Restraining devices.** Each extension spring shall be equipped with an approved device capable of restraining the spring or any part thereof in the event it breaks. Restraining devices shall be physically tested for each extension spring family of products in accordance with ANSI/DASMA 103-2017 or an equivalent standard. Tests shall be certified by an approved testing agency acceptable to the department. Test reports shall be kept on file by the manufacturer responsible for the restraining device.

**1210.5 Identification.** Extension springs, or door systems with extension springs, and restraining devices shall be permanently identified as to manufacturer and shall indicate maximum recommended stretch. Both extension springs and restraining devices shall bear information stating that they have been manufactured in accordance with requirements of the California Department of Housing and Community Development.

**1210.6 Installation.** Installation of extension springs, restraining devices and hardware shall be in accordance with the door manufacturer's installation instructions. Instructions shall be provided by the door manufacturer and shall specify the approved method of restraint and maximum recommended stretch. Unless otherwise permitted by the door manufacturer's installation instructions, the hardware and extension springs shall be mounted to nominal 2 by 6 framing members, conforming to the applicable provisions of Section 2303.

**SECTION 1211 [HCD 1]  
POLLUTANT CONTROL**

**1211.1 Finish material pollutant control.** Finish materials, including adhesives, sealants, caulks, paints and coatings, aerosol paints and coatings, carpet systems, carpet cushion, carpet adhesive, resilient flooring systems, and composite wood products shall meet the volatile organic compound (VOC) emission limits in accordance with the California Green Building Standards Code (CALGreen), Chapter 4, Division 4.5.

**SECTION 1212**  
**Reserved**

**SECTION 1213**  
**Reserved**

**SECTION 1214**  
**Reserved**

**SECTION 1215**  
**Reserved**

**SECTION 1216**  
**Reserved**

**SECTION 1217**  
**Reserved**

**SECTION 1218**  
**Reserved**

**SECTION 1219**  
**Reserved**

**SECTION 1220**  
**Reserved**

**SECTION 1221**  
**Reserved**

**SECTION 1222**  
**Reserved**

**SECTION 1223**  
**Reserved**

**SECTION 1224 [OSHPD 1]**  
**HOSPITALS**

**1224.1 Scope. [OSHPD 1]** *The provisions of this section shall apply to general acute-care hospitals and general acute-care hospitals providing only acute medical rehabilitation center services. The provisions of Section 1225 shall apply to distinct part skilled nursing and intermediate-care services on a general acute-care hospital license provided in a separate unit.*

**[OSHPD 1R]** *This section shall apply to buildings removed from acute care service, in compliance with Part 10, California Existing Building Code, Chapter 3A, and remain under OSHPD jurisdiction.*

**1224.2 Application.** *New buildings and additions, alterations or repairs to existing buildings subject to licensure shall comply with applicable provisions of the California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Fire Code, California Existing Building Code (Parts 3, 4, 5, 6, 9 and 10 of Title 24) and this section.*

**Exceptions:**

1. *Facilities licensed and in operation prior to the effective date of this section shall not be required to institute corrective alterations or construction to comply with any new requirements imposed thereby*

*or subsequently, except where specifically required or where the enforcing agency determines that a definite hazard to health and safety exists. Facilities for which preliminary drawings have been submitted to the enforcing agency prior to the effective date of this change shall not be required to comply with such new requirements, provided working drawings are submitted within one year of the effective date of such new requirements.*

2. *A change in function shall require compliance with all the functional requirements for new construction in this code, including requirements in Sections 1224, 1225, 1226, 1227 and 1228.*
3. *The provisions of this section do not prohibit the use of alternate space utilization, new concepts of design, treatment techniques, equipment and alternate finish materials provided the intent of this section is accommodated and written approval for such alternative is granted by the enforcing agency. Written substantiating evidence in support of the alternate and a written request for consideration shall be submitted to the enforcing agency.*
4. *Nothing in this section shall prohibit the provisions of required services from a centralized service facility serving two or more licensed facilities when approved in writing by the licensing agency. Buildings and required spaces for services provided in a separate centralized services facility shall comply with all applicable provisions of these regulations and applicable local codes and ordinances for the services so provided.*
5. *Acute psychiatric hospitals and general acute-care hospitals providing only acute medical rehabilitation center services may provide for surgical and anesthesia services to be provided by an outside licensed facility when approved by the licensing agency.*
6. *When the Corrections Standards Authority, the Department of Corrections or the Department of Youth Authority determines that a particular requirement for hospitals located in a correctional facility may compromise the safety, security or protection of staff, inmates or property, the enforcement agency shall consider an alternate design.*

**1224.2.1 Removed from acute care service [OSHPD 1R].** *Hospital buildings removed from acute care service in accordance with Part 10, California Existing Building Code, Section 309A may provide outpatient services and other uses. Required Basic or Supplemental Services on the hospital's license may not be provided.*

**Exceptions:**

1. *Duplicative hospital services when permitted by California Department of Public Health.*
2. *Skilled Nursing Services may be provided in conformance with Section 1225.*
3. *Acute Psychiatric Services may be provided in conformance with Section 1228.*

**1224.3 Definitions.** Specific terms and definitions are provided to facilitate consistency in the interpretation and application of these requirements. Some of these terms may have a broader definition in other contexts, but the definitions provided here reflect the use of the terms for OSHPD requirements.

**AIR CONDITIONING.** The process or system by which simultaneously the temperature, humidity, air motion and quality are maintained within required limits.

**AIRBORNE INFECTION ISOLATION ROOM.** A single-occupancy patient room where environmental factors are controlled in an effort to minimize the transmission of those infectious agents usually spread from person to person by droplet nuclei associated with coughing and inhalation.

**AMBULATORY CARE.** A defined health care encounter(s) of less than 24 hours in duration that requires direct professional health care support within a specific facility.

**AMBULATORY SURGICAL FACILITY.** Any surgical facility organized for the purpose of providing procedural, invasive surgical care to patients with the expectation that they will be recovered sufficiently to be discharged in less than a 24-hour period.

**ANGIOGRAPHY.** The radiographic visualization of blood vessels following introduction of contrast material for purposes of diagnosis.

**BASIC SERVICES.** Those essential services required for licensure as a hospital, including medical, nursing, surgical, anesthesia, laboratory, radiology, pharmacy, dietary services and support services. See "SUPPLEMENTAL SERVICES."

**BIOTERRORISM.** The use, or threat of use, of biological agents to intimidate a political entity or population group.

**CENTRAL AIR-HANDLING SYSTEMS.** Any units requiring ductwork on the supply or inlet side and serving more than one room.

**CHANGE IN FUNCTION.** A change in function is a change in activity, service or licensed service provided, within the project limits, that does not necessarily change the use, specific use, and/or occupancy. Conversion of a space that results in a change in activity such that the space will be required to satisfy the functional requirements under a different code sub-section than that of the prior use is considered a change in function.

**CLEAR DIMENSION.** An unobstructed room dimension exclusive of built-in casework and equipment and available for functional use.

**COURT.** An open exterior space bounded on three or more sides by the walls of a structure.

**ENVIRONMENT OF CARE.** Those features in a built health care entity that are created, structured, and maintained to support quality health care.

**EXAM ROOM.** A room with a bed, stretcher, or examination table and capability for periodic monitoring (e.g., measurement of blood pressure or pulse oximetry) in which procedures that do not require a specialized suite can be performed (e.g., pelvic examination, blood transfusion).

**FLOOR AREA, CLEAR.** The actual occupied area exclusive of fixed or wall-mounted cabinets, fixed beds and furnishings,

built-in shelves, toilet rooms, closets, lockers, wardrobes, alcoves, anterooms or vestibules.

**GENERAL ACUTE-CARE HOSPITAL.** A hospital, licensed by the California Department of Public Health, having a duly constituted governing body with overall administrative and professional responsibility and an organized medical staff which provides 24-hour inpatient care, including the basic services.

**HANDWASHING STATION.** A clinical staff-use area that provides a handwashing fixture, cleansing agents and means for drying hands. Handwashing stations shall be immediately accessible to the patient care area they serve without requiring passage through a doorway, unless hands-free door operation is provided. Refer to the California Plumbing Code, Section 210.0 for the definition of handwashing fixture.

**HOSPITAL.** A general acute-care hospital, including those providing only acute medical rehabilitation center services and acute psychiatric hospitals.

**HOUSEKEEPING.** Services anywhere within a health care facility that include general cleaning and tidying and the provision and positioning of identified materials, e.g., soaps, towels, etc. (While routine disinfection protocols can be included in such a definition, the definition is not intended to include complex, nonroutine disinfection procedures nor the nonroutine disposition of hazardous materials such as potentially toxic drugs or other chemicals and radioactive wastes.)

**LDR.** Labor, Delivery, Recovery (an unlicensed patient bed)

**LDRP.** Labor, Delivery, Recovery, Postpartum (a licensed patient bed)

**LICENSING AGENCY.** The Department of Public Health, Licensing and Certification.

**LOCATION TERMINOLOGY** (terms for relationship to an area or room)

**ADJACENT.** Located next to but not necessarily connected to the identified area or room.

**DIRECTLY ACCESSIBLE.** Connected to the identified area or room through a doorway or other opening without going through an intervening room or public space.

**IMMEDIATELY ACCESSIBLE.** Available either in the identified area or room, or directly accessible from a room or area located within the same department or service space.

**IN.** Located within the identified area or room.

**READILY ACCESSIBLE.** Located within the same department or service space as the identified area or room, or located in and shared with an adjacent directly accessible unit.

**MONOLITHIC.** A surface free of fissures, cracks, perforations, and crevices.

**MONOLITHIC CEILING.** A ceiling constructed with a surface free of fissures, cracks, and crevices. Any penetrations such as lights, diffusers, and access panels shall be sealed or gasketed. Lay-in ceilings are not considered "monolithic."

**NURSING UNIT.** A designated patient care area of the hospital which is planned, organized, operated and maintained to function as a unit. It includes patient rooms with adequate

support facilities, services and personnel providing nursing care and necessary management of patients.

**OPERATING ROOM.** A room specifically designed for the performance of surgical procedures. (In common understanding, this means most types of surgical procedures, especially those involving the administration of anesthesia, multiple personnel, recovery room access, and a fully controlled environment.)

**HYBRID OPERATING ROOM.** A room that meets the definition of an operating room and is also equipped to enable diagnostic imaging before, during, and after surgical procedures. Imaging equipment is permanently installed in the room and may include MRI, fixed single-plane and bi-plane tomographic imaging systems, and computed tomographic equipment.

*Note:* Use of portable imaging technology does not make an operating room a hybrid operating room.

**OUTPATIENT SERVICE.** An organizational unit of the hospital, which provides nonemergency healthcare services to patients.

**PATIENT CARE LOCATIONS.** Multi-patient treatment rooms, where allowed, may provide patient care stations in bays or cubicles as follows:

**BAY (patient).** A space for human occupancy with one hard wall at the headwall and up to one hard wall at either side, with two to three soft walls (e.g., cubicle curtains or portable privacy screen). The required area for the specific patient care space shall be provided within the cubicle curtain and not overlap with access circulation aisle.

**CUBICLE.** A space intended for human occupancy that has at least one opening and no door and is enclosed on three sides with full-height or partial-height partitions.

**PATIENT CARE STATION.** A designated space for a specific patient care function. This term does not imply any structural requirement (e.g., a Post-anesthesia Care Unit (PACU) can have 10 patient care stations of which three are rooms, three are cubicles, and four are bays).

**PATIENT ROOM.** Licensed patient bed rooms. Also referred to as a patient bedroom.

**PERIOPERATIVE.** Patient care and other related supportive activities before, during or after the operative event.

**PROTECTIVE ENVIRONMENT.** A bedded unit or patient room where severely immunosuppressed patients are cared for.

**RESTRICTED AREA.** A designated space with limited access eligibility. Such space has one or more of the following attributes: specific signage, physical barriers, security controls and protocols that delineate requirements for monitoring, maintenance, attire, and use. The term is often applied to specialized procedure suites, such as operating rooms and suites, interventional imaging, cardiac catheterization labs, angiography suites, etc.

**ROOM.** A space enclosed by hard walls and having a door. Where the word “room” or “office” is used, a separate, enclosed space for the one named function is intended. Otherwise, the described area may be a specific space in another room or common area.

**SCRUB SINK.** A sink used to wash and scrub the hands and arms during the aseptic preparation for surgery, and

equipped with a supply spout and controls as required for a handwashing fixture. Refer to the California Plumbing Code Sections 210.0 and 221.0.

**SERVICE SINK.** A sink located in a housekeeping room and designed for the purpose of cleaning mops and the disposal of waste water.

**SERVICE SPACE.** Service Space refers to the distinct area of a health facility where a licensed Basic Service or Supplemental Service is provided. The Service Space shall include all the functional area requirements required to deliver the specific Service. Basic Service Spaces are identified in Sections 1224.14 through 1224.27. Supplemental Service Spaces are identified in Sections 1224.28 through 1224.41. Similar distinctions are made between Basic and Supplemental or Optional Services in Section 1225 through Section 1228. Required functional areas may be a portion of a larger space, one or more Patient Care Locations, support areas or separate Rooms as defined in Section 1224.3. See departmental boundary requirements under Section 1224.4.4.7.6.

**SUB-ACUTE CARE.** A segment within a continuum of levels of care determined by patient acuity, clinical stability, and resource needs.

**SUPPLEMENTAL SERVICE.** An inpatient or outpatient service which is not required to be provided by law or regulation for licensure. A supplemental service, when provided, must accommodate the provisions of this section.

*Note:* See “BASIC SERVICES.”

**SURGICAL SERVICE SPACE.** A space that includes the operating room(s) and service areas.

**1224.4 GENERAL CONSTRUCTION.**

**1224.4.1 Jurisdiction.**

**1224.4.1.1 Services/systems and utilities.**

**[OSHPD 1J]** Services/systems and utilities shall comply with California Existing Building Code Section 307A.

**[OSHPD 1R]** Services/systems and utilities shall only originate in, or pass through or under structures which are under the jurisdiction of the Office of Statewide Health Planning and Development (OSHPD).

**1224.4.1.2 Means of egress.**

**[OSHPD 1J]** Means of egress shall comply with Part 10, California Existing Building Code, Section 308A.

**[OSHPD 1R]** Means of egress shall only pass through structures that are under the jurisdiction of the Office of Statewide Health Planning and Development (OSHPD).

**1224.4.2 Environmental engineering and support service spaces.** Spaces for dietary, laundry, morgue, ambulance entrance, receiving areas, power plants, mechanical equipment, incinerator, garbage can cleaning, automobile parking and storage areas for garbage, trash and medical gases shall be located and constructed to minimize noise, steam, odors, hazards and unsightliness in patient-care areas and bedrooms.

**1224.4.3 Treatment spaces.** Radiology, laboratory, pharmacy, physical therapy and service spaces serving only outpatients and similar outpatient service departments shall

**1224.4.4.6.1 Clean supply room.** If the room is used only for storage and holding as part of a system for distribution of clean and sterile materials, the work counter or a handwashing station may be omitted.

**1224.4.4.7 Soiled utility/workroom.** The soiled workroom or soiled holding room shall be separate from and have no connection with either clean workrooms or clean supply rooms. The soiled utility/workroom shall contain:

1. Clinical sink (or equivalent flushing-rim fixture).
2. Handwashing station
3. Work counter
4. Space for separate covered containers for soiled linen and/or waste

**1224.4.4.7.1 Soiled holding room.** Rooms used only for temporary holding soiled material may omit the clinical sink and work counter. If the flushing-rim clinical sink is eliminated, facilities for cleaning bedpans shall be provided elsewhere.

**1224.4.4.8 Toilet rooms.** Separate toilet rooms shall be provided for the use of patients, staff, and public.

**1224.4.4.8.1 Staff toilets.** The number of staff toilets provided in a health facility shall comply with the requirements of the California Plumbing Code, Tables 4-2 and 4-3. When staff toilet rooms are required to be dedicated to a specific Service Space, the number of staff toilet rooms provided under the California Plumbing Code shall be based on the number of staff within the specific Service Space served. Satellite service spaces do not require dedicated toilet rooms.

**1224.4.4.8.2 Signage.** When provided, single-user toilets shall include a door-mounted geometric symbol, as identified in Section 11B-703.7.2.6.3, Unisex toilet and bathing facilities, and wall signage designating use for patients, staff or public. When existing toilet rooms are not compliant with Section 11B-603, Toilet and bathing rooms, directional signage in compliance with Section 11B-216.8, Toilet rooms and bathing rooms, shall also be provided.

**Exception:** Patient toilet rooms accessed directly from patient bedrooms are not required to include signage.

**1224.4.5 Outpatient waiting rooms.** Waiting rooms for outpatients shall provide a seating area and space for wheelchairs and have public corridor access. Public toilets, drinking fountains and telephones shall be readily accessible.

**Note:** One waiting area may serve more than one department or service.

**1224.4.5.1 Outpatient access.** Outpatient access to services shall not traverse a nursing unit.

**1224.4.6 Miscellaneous requirements.**

**1224.4.6.1 Station outlets.** Station outlets for oxygen, vacuum, and medical air shall comply with Table 1224.4.6.1.

**1224.4.6.2 Gas and vacuum systems.** The design, installation and testing of medical gas and vacuum systems shall conform to Table 1224.4.6.1 and NFPA 99.

**1224.4.6.3 Hyperbaric facilities.** The design and construction of hyperbaric facilities shall conform to NFPA 99; Health Care Facilities and Section 1224.39.5.

**1224.4.6.4 Laboratories.** The design and construction of hospital laboratories shall conform to NFPA 99.

**1224.4.6.5 Nurse call systems.** The location of nurse call devices shall comply with Table 1224.4.6.5. The design of call systems shall comply with the California Electrical Code, Part 3 of Title 24.

**1224.4.7 Corridors.**

**1224.4.7.1 Width.** The minimum width of corridors and hallways shall be 8 feet (2438 mm).

**Exception:** Patient-care corridors and hallways in hospitals for psychiatric care of patients who are not bedridden shall have a minimum clear and unobstructed width of 6 feet (1829 mm). For the purposes of this section, bedridden patients shall be defined as patients confined to beds who would be transported or evacuated in beds or litters.

**1224.4.7.2 Light traffic.** Service corridors and hallways with anticipated light traffic volume for nonpatient use may be reduced to a width of 5 feet (1524 mm) if approved by the enforcing agency.

**Exception:** Corridors and hallways in administrative and business areas may be reduced to a width of 44 inches (1118 mm).

**1224.4.7.3 Outpatient services.** Outpatient clinics or outpatient departments which contain facilities for outpatient use only, such as laboratory, x-ray, physical therapy or occupational therapy, shall have a minimum corridor or hallway width of 5 feet (1524 mm). Corridors serving gurney or stretcher traffic shall comply with minimum width requirements of Section 1020.2. Outpatient clinics and outpatient departments consisting only of waiting rooms, business offices, doctor's offices, and examining rooms, where there is no traffic through such area to other services or to exits from the building, shall have a minimum corridor or hallway width of 44 inches (1118 mm).

**1224.4.7.4 Handrails.** Corridors for patient traffic in areas providing skilled nursing, intermediate care or rehabilitation services shall be furnished with a handrail on both sides at a height not less than 30 inches (762 mm) or greater than 36 inches (914 mm).

**1224.4.7.5 Connections.** Corridor systems shall connect all patient rooms and basic services.

**Exception:** Covered pedestrian walkways connecting separate buildings are permitted for ambulatory, psychiatric or chemical dependency patients.

**INTERIOR ENVIRONMENT**

**TABLE 1224.4.6.1  
STATION OUTLETS FOR OXYGEN, VACUUM (SUCTION), AND MEDICAL AIR SYSTEMS<sup>1, 6</sup>**

	<b>LOCATIONS</b>	<b>OXYGEN</b>	<b>VACUUM</b>	<b>MEDICAL AIR</b>	<b>WAGD<sup>3</sup></b>
1	Patient rooms (medical/surgical unit)	1/bed	1/bed	—	—
2	Examination or treatment (medical/surgical unit and postpartum care)	1/room	1/room	—	—
3	Airborne infection isolation or protective environment rooms (medical/surgical unit)	1/bed	1/bed	—	—
4	Seclusion room (medical/surgical unit and postpartum care)	1/bed	1/bed	—	—
5	Intensive care (general)	3/bed	3/bed	1/bed	—
6	Airborne infection isolation	3/bed	3/bed	1/bed	—
7	Coronary-care service space	3/bed	2/bed	1/bed	—
8	Pediatric intensive care	3/bed	3/bed	1/bed	—
9	Newborn intensive care	3/bassinet	3/bassinet	3/bassinet	—
10	Newborn nursery (full term)	1/4 bassinets <sup>2</sup>	1/4 bassinets <sup>2</sup>	1/4 bassinets <sup>2</sup>	—
11	Pediatric and adolescent	1/bed	1/bed	1/bed	—
12	Pediatric nursery	1/bassinet	1/bassinet	1/bassinet	—
13	Psychiatric patient room	—	—	—	—
14	Seclusion treatment room (psychiatric unit)	—	—	—	—
15	General operating room	2/room	5/room	1/room	1/room
16	Cardio and special procedures	2/room	5/room	1/room	1/room
17	Orthopedic surgery	2/room	5/room	1/room	1/room
18	Surgical cystoscopic and other endo-urologic procedures	1/room	3/room	—	—
19	Post-anesthesia care unit	2/bed	3/bed	1/bed	—
20	Anesthesia workroom	1/workstation	—	1/workstation	—
21	Endoscopy procedure room	1/room	3/room	—	—
22	Postpartum bedroom	1/bed	1/bed	—	—
23	Cesarean operating/delivery room	2/room	4/room	1/room	1/room
24	Recovery space for cesarean delivery	1/bed	3/bed	1/bed	—
25	Infant resuscitation space <sup>4</sup>	3/bassinet	3/bassinet	3/bassinet	—
26	Labor room	1/room	1/room	—	—
27	OB recovery room	1/bed	3/bed	—	—
28	Labor/delivery/recovery (LDR) <sup>5</sup>	1/bed	1/bed	—	—
29	Labor/deliver/recovery/postpartum (LDRP) <sup>5</sup>	1/bed	1/bed	—	—
30	Initial emergency management	1/bed	1/bed	1/bed	—
31	Triage area (definitive emergency care)	1/station	1/station	—	—
32	Definitive emergency care examination or treatment rooms	1/bed	1/bed	1/bed	—
33	Observation unit <sup>8</sup>	1/bed	1/bed	—	—
34	Trauma/cardiac room(s)	2/bed	3/bed	1/bed	—
35	Orthopedic and cast room	1/room	1/room	—	—
36	Cardiac catheterization lab	2/bed	2/bed	2/bed	—
37	Autopsy room	—	1/workstation	—	—
38	MRI	1/room	1/room	1/room	—
39	Interventional imaging procedure room	2/room	2/room	1/room	—
40	Hyperbaric suite pre-procedure/patient holding area	2/station	2/station	—	—
41	Electroconvulsive therapy procedure room	1/room <sup>7</sup>	1/room <sup>7</sup>	—	—

1. For any area or room not described above, the facility clinical staff shall determine outlet requirements after consultation with the enforcing agency.
2. Four bassinets may share one outlet that is accessible to each bassinet.
3. WAGD stands for “waste anesthesia gas disposal” system.
4. When infant resuscitation takes place in a room such as cesarean section/delivery or LDRP, then the infant resuscitation services shall be provided in that room in addition to the minimum service required for the mother.
5. One outlet for mother and one for each bassinet.
6. Renovation projects of existing spaces where the existing function is not changed, are not required to comply with the requirements of this table.
7. Use of portable equipment shall be permitted.
8. Use of portable equipment is permitted in outpatient observation units provided under Section 1224.39.6.

**TABLE 1224.4.6.5**  
**[OSHPD 1, 2, 3, 4 & 5] LOCATION OF NURSE CALL DEVICES**  
 • = Required

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AREA DESIGNATION	STATION TYPE	1224	1225	1226	1227	1228
<b>Nursing Units</b>						
Patient toilet room	B	•	•		•	
Patient bathing	B	•	•		•	
Special bathing	E	•				
Patient bed (nursing service)	P,E,C	•			•	
Patient bed (intensive care)	P,E,C	•			•	
Patient bed (LDR/LDRP)	P,E,C	•			•	
Patient bed (Dementia Unit)	P	•	•		•	
Patient bed (SNF/ICF)	P	•	•		•	
NICU	E,C	•			•	
Nursery	E,C	•			•	
<b>Support Areas</b>						
Nurse/control station	M	•	•	•	•	•
Medication preparation room	D	•			•	
Soiled workroom/utility/holding	D	•			•	
Clean workroom/utility/holding	D	•			•	
<b>Diagnostic and Treatment Areas</b>						
Seclusion room or vestibule	E	•				•
Emergency exam, treatment, triage rooms	P,E	•			•	
Operating room/Cesarean	E,C	•		•	•	
Delivery room/Birthing room	E,C	•		•	•	
Observation unit bed/gurney	P,E,C	•			•	
Pre-op patient care	P,E,C	•		•	•	
Post-op patient care/PACU	P,E,C	•		•	•	
Imaging exam/procedure room	E,C	•		•	•	
Procedure Room, including Endoscopy	E,C	•		•	•	
Patient toilet room	B	•		•	•	
Electroconvulsive therapy	E,C	•			•	•

**Station Types**

P = Patient Station, B = Bath Station, E = Staff Emergency, C = Code Call, M = Master, D = Duty

**1224.4.7.6 Departmental boundaries.** Department/service space areas shall be contiguous and include internal circulation to access each of the rooms/spaces associated with it, as identified under the specific Service Space requirements. Identifiable spaces are required for each of the indicated functions for all service areas, including their support spaces. Where the words “room” or “offices” are used, a separate, enclosed space for the one named function is intended; otherwise, the described area may be specific space in another room or common area.

**Exceptions:**

1. Satellite radiology, laboratory, pharmacy, and physical and occupational therapy space serving inpatients may be located in nursing units and inpatient treatment areas.

2. Rooms and functional areas specifically noted under the Service Space requirements that may be shared with other units and departments.

**1224.4.8 Doors and door openings.**

**1224.4.8.1 Toilet room doors.** Doors to toilet rooms shall have an opening of not less than 32 inches (813 mm) clear in width and shall be equipped with hardware which will permit the door to swing outward or in a manner to negate the need to push against a patient who may have collapsed within the toilet room.

**1224.4.8.2 Pocket doors.** Pocket sliding doors are not permitted.

**Exception:** Administration and business areas.

**1224.4.9 Windows and screens.**

**1224.4.9.1 Windows.** Rooms approved for the housing of patients shall be provided with natural light by means of exterior glazed openings excluding clerestory windows, obscure glass and skylights, with an area not less than one tenth of the total floor area.

**1224.4.9.2 Operation and sills.** Patient room windows shall have sills not more than 36 inches (914 mm) above the floor. If operable windows are provided that require the use of tools or keys for operation, the tools or keys shall be located at the nurses' station.

**Exception:** Window sills in intensive-care units may be 60 inches (1524 mm) above the floor.

**1224.4.9.2.1 Airborne infection isolation or protective environment rooms.** If operable windows are provided in airborne infection isolation or protective environment rooms, they shall only be operable by the use of tools or keys which shall be located at the nurses' station.

**1224.4.9.3 Psychiatric unit windows.** Safety glass or plastic glazing materials shall be used in windows in psychiatric patient areas.

**1224.4.9.4 Screens.** Windows which may be frequently left in an open position shall be provided with insect screens of 16 meshes to the inch.

**1224.4.9.5 Light and ventilation.** All portions of a building used by patients, personnel or other persons shall be provided with artificial light and a mechanically operated ventilating system as specified in the California Electrical Code and the California Mechanical Code.

**1224.4.10 Ceiling heights.**

**1224.4.10.1 Minimum height.** The minimum height of ceilings shall be 8 feet (2438 mm).

**Exception:** Closet, toilet room and bathroom minimum ceiling heights, and soffits over fixed cabinets and work surfaces, shall not be less than 7 feet (2134 mm).

**1224.4.10.2 Minimum height with fixed ceiling equipment.** Operating rooms, emergency rooms, delivery rooms, radiographic rooms and other rooms containing ceiling-mounted, major fixed equipment or ceiling-mounted surgical light fixtures shall have ceiling heights to accommodate the equipment or fixtures and their normal movement. Suspended tracks, rails and pipes located in the traffic path for patients in beds and/or on stretchers, including those in inpatient service areas, shall be not less than 7 feet (2134 mm) above the floor.

**Exception:** Mobile suspended tracks such as traverse rails for overhead patient lifts that may be moved out of the traffic path shall provide a clear-

ance of not less than 6 feet, 8 inches (2032mm) above the floor when in use.

**1224.4.11 Interior finishes.**

**1224.4.11.1 Floor finishes.** Floor finishes shall be smooth, waterproof and durable. Flooring surfaces shall provide smooth transitions between different floor materials. Slip-resistant flooring products shall be used for flooring surfaces in wet areas (e.g., kitchens, shower and bath areas), ramps, stairways, entries from exterior to interior space, and other areas as determined by the functional program. Joints for floor openings for pipes, ducts and conduits shall be tightly sealed. Joints of structural elements shall be similarly sealed.

**Exception:** Upon written appropriate documented requests, the licensing agency may grant approval of the installation of carpets. See Table 1224.4.11.

**1224.4.11.1.1 Coved base.** Resilient flooring, if used in toilet and bathing rooms, shall be continuous and extend upward onto the wall at least 5 inches (127 mm) to minimize moisture infiltration. Wood bases are prohibited except in waiting areas and administration departments.

**1224.4.11.1.2 Food preparation areas.** Floors in areas used for food preparation and assembly shall be water-resistant. Floor surfaces, including tile joints, shall be resistant to food acids. Floor construction in dietary and food preparation areas shall be free of spaces that can harbor pests.

**1224.4.11.1.3 Wet cleaning.** In all areas subject to frequent wet-cleaning methods, flooring materials shall not be physically affected by germicidal or other types of cleaning solutions.

**1224.4.11.1.4 Airborne infection isolation, airborne infection isolation exam/treatment and protective environment rooms.** These rooms and anterooms shall have seamless flooring with integral coved base.

**1224.4.11.2 Wall bases.**

**1224.4.11.2.1 Material.** The material and textures of bases and the installation thereof shall be such as to minimize dust-catching surfaces, moisture, infiltration and the harboring of vermin.

**Exception:** In locations where carpet is permitted as a floor finish material, the use of carpeted base (coved or strip base) up to a maximum height of 5 inches (127 mm) is also permissible.



b) Ceiling tiles that weigh at least one pound per square foot and are smooth, scrubbable, nonabsorptive, nonperforated and able to withstand cleaning with chemicals.

8. Ceiling finish requirements of Section 1224.4.11.4.1 do not apply to boiler rooms, mechanical equipment rooms, administration departments, other offices, enclosed stairways, maintenance shops and similar spaces.

**1224.4.12 Courts.** Where one or more walls of a court contain a door or window of one or more patients' bedrooms, the least dimension of the court shall be 20 feet (6096 mm) between facing structures.

**1224.4.13 Elevators.**

**1224.4.13.1 Patient.** Patient elevators shall have minimum inside platform dimensions of 5 feet by 8 feet (1524 mm by 2438 mm), and a minimum clear door opening of 4 feet 0 inches (1219 mm).

**1224.4.13.2 Passenger.** Passenger elevators shall have minimum inside platform dimensions of 4 feet 8 inches by 7 feet 4 inches (1422 mm by 2236 mm).

**1224.4.13.3 Patient services.** Buildings over one story in height with accommodations or services for patients on floors without grade-level entrance shall provide at least one patient elevator.

**1224.4.13.4 Low patient capacity.** If bed patients are accommodated on one or more floors, other than the main entrance floor or where operating rooms or delivery rooms are above or below the main entrance floor, at least one patient elevator shall be provided.

**1224.4.13.5 Medium patient capacity.** At least one patient elevator and one service elevator shall be provided in hospitals with a capacity of from 60 to 149 beds on floors other than the main entrance floor.

**1224.4.13.6 High patient capacity.** At least one patient elevator, one passenger elevator and one service elevator shall be provided in hospitals with a capacity of 150 or more beds on floors other than the main entrance floor.

**1224.4.14 Garbage, solid waste and trash storage.** Rooms or screening enclosures shall be provided for the washing and cleaning of garbage containers and for the storage of garbage, trash and other solid wastes. Such rooms or screening enclosures shall include the following:

1. A concrete floor with a curb and with a drain connected to the sewer.
2. Steam or hot-water and cold-water supply.
3. A minimum floor area of 1/2 square foot (0.046 m<sup>2</sup>) per bed, but not less than 25 square feet (2.3 m<sup>2</sup>), the least dimension of which shall be 4 feet (1219 mm).
4. A method of limiting access to the material except by authorized persons.

**1224.4.15 Housekeeping room.** This room shall be a minimum floor area of 15 square feet (1.4 m<sup>2</sup>). It shall contain

a service sink or floor receptor and provisions for storage of supplies and housekeeping equipment.

**1224.4.16 Laundry and trash chutes.** Gravity-type laundry and trash chutes shall have a minimum diameter of 2 feet (610 mm) and shall be designed to prevent distribution of airborne contaminating elements to all floors served.

**1224.4.17 Telephone.** Each floor accommodating patients shall have a telephone installed for patient use. Such telephones shall be readily accessible to patients who are limited to wheel chairs and stretchers. This may not be required in separate buildings having six or fewer beds which are restricted to occupancy by ambulatory patients.

**1224.4.18 Grab bars.** Each toilet, bathtub and shower serving patients in rooms not required to provide mobility features, shall have conveniently placed grab bars that shall comply with Chapter 11B, Sections 11B-609.2, 11B-609.3, 11B-609.5, 11B-609.6 and 11B-609.8.

**Exception:** Excluding facilities designed for use by persons with disabilities, grab bars may be deleted from those facilities serving chemical dependency recovery and psychiatric patients.

**1224.4.19 Noise control.**

**1224.19.1 Impact noises.** Recreation rooms, exercise rooms, equipment rooms and similar spaces where impact noises may be generated, shall not be located directly over patient bed areas or delivery and operating suites, unless special provisions are made to minimize such noise.

**1224.19.2 Noise reduction.** The noise reduction criteria shown in Table 1224.4.19 shall apply to partitions, floors, and ceiling construction in patient areas.

**1224.5 Communications Systems.** Technology and medical communication rooms shall comply with the California Electrical Code, California Mechanical Code, California Plumbing Code and the requirements of this section.

**1224.5.1 Telecommunications service entrance room.** The telecommunications service entrance room houses the point at which outside carrier data and voice circuits and services enter the facility and outdoor cabling interfaces with the building's internal cabling infrastructure. Each hospital facility shall have at least one telecommunications service entrance room, and each room that is provided shall be dedicated to the telecommunications function with related support facilities and meet the requirements of this section.

**1224.5.2 Technology equipment center.**

**1224.5.2.1 Number.** Each hospital shall have at least one technology equipment center space that is not used for any purpose other than electronic data storage, processing, and networking.

**1224.5.2.2 Size.** The technology equipment center shall be sized to provide space to meet the service requirements for the required equipment.

**TABLE 1224.4.19  
SOUND TRANSMISSION LIMITATIONS IN HOSPITALS**

NEW CONSTRUCTION	AIRBORNE SOUND TRANSMISSION CLASS (STC) <sup>1</sup>	
	Partitions	Floors
Patient room to patient room	45	50
Public space to patient room <sup>3</sup>	50	40
Service areas to patient room <sup>4</sup>	60	45
Patient room access corridor <sup>5</sup>	35	45
Exam room to corridor	35	
Exam room to exam room	50 <sup>2</sup>	
Exam room to public space <sup>3</sup>	50	
Treatment room to room	50	
Treatment room to corridor	35	
Toilet room to public space <sup>3</sup>	45	
Consultation rooms/conference rooms to public space	50	
Consultation rooms/conference rooms to patient rooms	50	
Consultation room to corridor	35	
Patient room to MRI room	60	
Exam room to MRI room	60	
Public space to MRI room	50	
Staff lounges to patient rooms	45	

1. Sound Transmission Class (STC) shall be determined by tests in accordance with methods set forth in ASTM 90 and ASTM 413. Where partitions do not extend to the structure above, sound transmission through ceilings and composite STC performance shall be considered.
2. Treatment rooms shall be treated the same as patient rooms. STC rating may be reduced to 40 dBA for rooms with electronic masking. Electronic masking shall provide a maximum background level of 48 dBA.
3. Public space includes corridors (except patient room access corridors), lobbies, dining rooms, recreation rooms, and similar space.
4. Service areas for the purposes of this table include kitchens, elevators, elevator machine rooms, laundries, garages, maintenance rooms, boiler and mechanical equipment rooms, and similar spaces of high noise. Mechanical equipment located on the same floor or above patient rooms, offices, nurses stations, and similar occupied space shall be effectively isolated from the floor.
5. Patient room access corridors contain composite walls with doors/windows and have direct access to patient rooms.
6. Renovation projects of existing spaces where the existing function is not changed, are not required to comply with the requirements of Table 1224.4.19.

**1224.5.2.3 Location.** The technology equipment center shall be located to minimize the risk of water damage, both from internal and external sources. The technology equipment center shall be located above any floodways or flood hazard areas as described in the National Flood Insurance Program.

**1224.5.3 Technology distribution room.**

**1224.5.3.1 Number.** There shall be a minimum of one technology distribution room on each floor of the facility.

**Exception:** For existing facilities not undergoing major renovation, a technology distribution room may serve adjacent floors.

**1224.5.3.2 Size.**

1. Technology distribution rooms shall be sized based on the area of the floor being served, with minimum clear dimensions as follows:

Area Served in Square Feet (m <sup>2</sup> )	Minimum Technology Distribution Room Size
≤ 8,000 square feet (740 m <sup>2</sup> )	10 feet by 10 feet (3.05 m by 3.05 m)
8,001 – 15,000 square feet (1400 m <sup>2</sup> )	10 feet by 12 feet (3.05 m by 3.66 m)
15,001 – 25,000 square feet (2325 m <sup>2</sup> )	10 feet by 14 feet (3.05 m by 4.27 m)
> 25,000 square feet (2325 m <sup>2</sup> )	12 feet by 14 feet (3.66 m by 4.27 m)

2. Where ceilings are provided, the minimum clear height shall be 9 feet (2.75 m).

**Exception:** Existing buildings shall be permitted to have a minimum clear height of 8 feet (2.44 m).

**1224.5.3.3 Location.** Technology distribution rooms shall be provided throughout the facility as necessary to meet the maximum cable distance requirement for the cabling system specified.

**1224.5.4 SPC/NPC compliance.** The location of spaces required by this section shall meet the requirements of California Building Code, Section 3416A Compliance Alternatives for Services/Systems and Utilities.

**1224.5.5 Access.** Access to the spaces required by this section shall be controlled and not require passage through patient-care or sterile space.

**1224.5.6 Combining spaces.** The combining of the telecommunications service entrance room, technology equipment center and technology distribution room shall be permitted, provided that the requirements for each of the individual spaces are met.

**BASIC SERVICES**

**1224.6 Reserved**

**1224.7 Reserved**

**1224.8 Reserved**

**1224.9 Reserved**

**1224.10 Reserved**

**1224.11 Reserved**

**1224.12 Reserved**

**1224.13 Reserved**

**1224.14 NURSING SERVICE SPACE.**

**1224.14.1 Patient rooms.**

**1224.14.1.1 Capacity.** No patient room shall be designed to accommodate more than four beds.

**Exception:** Where renovation of existing individual patient rooms is undertaken in facilities built under the 2013, or prior, California Building Code, maximum room capacity shall be no more than the pres-

4. An office or other suitable area for viewing and reporting radiographic examination.
5. Storage spaces for all image equipment, supplies and copies of reports.
6. Handwashing stations located within the unit.
7. Dressing room facilities.

**1224.18.1.1 Radiation protection.** A certified physicist or other qualified expert shall specify the type, location, and amount of radiation protection to be installed in accordance with the final approved department layout and equipment selections. Where protected alcoves with view windows are required, a minimum of 1'-6" (0.45 meter) between the view window and the outside partition edge shall be provided. Radiation protection requirements shall be incorporated into the construction documents and comply with Chapter 31C and the requirements of California Radiation Control Regulations, California Code of Regulations, Title 17, Division 1, Chapter 5, and Subchapter 4.

**1224.18.2 Angiography.** If provided, diagnostic angiography space shall accommodate the following:

1. A control room with a view window to permit full view of the patient.
2. A scrub sink located outside the staff entry to the procedure room.
3. Patient holding area shall accommodate at least one patient gurney with a minimum of 3-foot (914 mm) clearance on the long side.
4. Storage for portable equipment and catheters shall be provided.

**1224.18.2.1 Interventional angiography procedures.** If interventional angiography procedures are to be performed in the angiography room, the suite shall comply with interventional imaging requirements in Section 1224.28.4. If cardiac catheterization procedures are performed refer to Section 1224.28.2.

**1224.18.3 Computerized tomography (CT) scanning.** If provided, CT space shall accommodate the following:

**1224.18.3.1 Spaces required.** If provided, CT scan spaces shall accommodate the equipment with a minimum of 3 feet (914 mm) on all sides of the equipment, together with the following:

1. A control room or alcove shall be provided that is designed to accommodate the computer and other controls for the equipment. A view window shall be provided to permit view of the patient.
2. A patient toilet room readily accessible to the procedure room.

**1224.18.3.2 Intraoperative computerized tomography.** If provided, intraoperative CT scanning spaces shall comply with Section 1224.28.5.

**1224.18.4 Magnetic resonance imaging (MRI).** If provided, the MRI room shall accommodate the equipment

with a minimum of 3 feet (914 mm) on all sides of the equipment, together with the following:

1. A control room shall be provided with full view of the patient in the MRI scanner. The control console shall be positioned so the operator has a full view of the approach and entrance to the MRI scanner room.
2. An anteroom or area visible from the control room shall be located outside the MRI scanner room so that patients, health care personnel, and other employees must pass through it before entering the scanning area and control room. The room or area shall be outside the restricted areas of the MRI's magnetic field.
3. A computer room shall be provided.

**1224.18.4.1 Handwashing station.** Handwashing station(s) shall be immediately accessible to the MRI scanner room.

**1224.18.4.2 Wall, floor, and ceiling assemblies.** Wall, floor, and ceiling assemblies shall accommodate the installation of required radio frequency (RF)-shielded assemblies. All doors, windows, and penetrations into the RF-shielded enclosure shall be RF-shielded. As well as RF shielding, individual sites may also require magnetic shielding on some or all surfaces to contain portions of the magnetic field not contained by the RF shield.

**1224.18.4.3 Lighted sign.** MRI rooms shall be clearly marked with a red light and lighted sign stating, "The Magnet Is On". This light and sign are to be lighted at all times and have a backup energy source to remain illuminated for at least 24 hours in the event of a loss of power.

**1224.18.4.4 Magnetic field strength identification.** Facilities shall use finishes or markings to identify the critical values of the magnetic field surrounding the MRI scanner, including the 5-gauss exclusion zone or other magnetic field strength values that may impair the operation of equipment.

**1224.18.4.5 Special ventilation requirements.** Where superconducting MRI scanners are installed, an insulated cryogen quench exhaust pipe as well as room exhaust and pressure equalization shall be provided to protect occupants in the event of a cryogen breach.

**1224.18.4.6 Intraoperative magnetic resonance imaging.** If provided, the intraoperative magnetic resonance imaging (iMRI) suite shall comply with Section 1224.28.5.

**1224.18.5 Ultrasound.** When provided, the ultrasound room shall comply with the following:

**1224.18.5.1 Space requirements.**

1. Area. Rooms used for ultrasound examination/treatment shall have a minimum clear floor area of 120 square feet (11.15 m<sup>2</sup>).
2. Clearances. A minimum clear dimension of 3 feet (914 mm) shall be provided on three sides of the table/stretcher.

**1224.18.5.2 Handwashing station.** A handwashing station shall be provided within the procedure room.

**1224.18.5.3 Patient toilet(s).** A patient toilet shall be directly accessible to the ultrasound procedure room. The patient toilet may be permitted to serve more than one ultrasound procedure room.

**1224.18.6 Mammography.** When provided, the mammography room shall comply with the following:

**1224.18.6.1 Space requirements.**

1. *Area.* Mammography rooms shall be a minimum of 100 square feet (9.3 m<sup>2</sup>).
2. *Shielded alcove.* Each x-ray room shall include a shielded control alcove. For mammography machines with built-in shielding for the operator, omission of the alcove shall be permitted when approved by the certified physicist.

**1224.18.6.2 Handwashing station.** A handwashing station shall be provided within the procedure room.

**1224.18.7 Support spaces.** The following spaces are common to the imaging service area and are minimum requirements unless stated otherwise:

**1224.18.7.1 Patient's toilet room(s).** In service spaces with procedure rooms that do not have dedicated patient toilets, provide a minimum of one patient toilet room within the service space.

**1224.18.7.2 Patient dressing areas.** Dressing areas shall be provided adjacent to the imaging rooms.

**1224.18.7.3 Staff facilities.** In service space of three or more procedure rooms, staff toilet room(s) internal to the service space shall be provided.

**1224.18.7.4 Film storage (active).** If film systems are used, provide the following:

1. A room with cabinet or shelves for filing patient film for immediate retrieval shall be provided.
2. Storage facilities for unexposed film which shall include protection of film against exposure or damage.

**1224.18.7.5 Locked storage.** Provision shall be made for locked storage of medications and drugs.

**1224.19 PHARMACEUTICAL SERVICE SPACE**

**1224.19.1 General.** Facilities shall be provided to accommodate services and equipment associated with the drug distribution system used, the number of patients to be served, and the extent of shared or purchased services as licensed by the California Board of Pharmacy. Hospital pharmacies shall comply with the requirements of Section 1250 and include the functional spaces under Sections 1224.19.2 through 1224.19.7. Exempt hospitals shall provide a drug room, and the supporting spaces, in compliance with Section 1224.19.1.2.

**1224.19.1.1 Licensed pharmacy.** All hospitals having a licensed capacity of 100 or more beds shall have a

pharmacy on the premises licensed by the California Board of Pharmacy.

**Note:** See General Acute Care Hospitals §70263(a), Article 3, Chapter 1, Division 5, Title 22, California Code of Regulations, for requirements concerning hospitals with fewer than 100 beds. The pharmacy room or service space shall conform to the requirements of § 1751, Article 7, Division 17, Title 16, California Code of Regulations as enforced by the California Board of Pharmacy.

**1224.19.1.2 Less than 100-bed exemption.** Hospitals under a Hospital Pharmacy Permit Exemption issued by the Board of Pharmacy, associated with Business and Professions Code Section 4056, shall provide all basic pharmaceutical services in compliance with Section 1224.19.1.2.

**1224.19.1.2.1 Drug room.** Licensed pharmaceutical space with drug distribution shall be under the supervision of a physician and be monitored by a pharmacist consultant. The drug room shall include the following:

- 1224.19.1.2.1.1.** A room or area for receiving, breakout, and inventory control of drugs used in the hospital.
- 1224.19.1.2.1.2.** Cleanable work counters and space for automated and/or manual dispensing activities.
- 1224.19.1.2.1.3.** Reserved.
- 1224.19.1.2.1.4.** An area for reviewing and recording.
- 1224.19.1.2.1.5.** An area for storage, exchange, and restocking of carts.
- 1224.19.1.2.1.6.** Security provisions for drugs and personnel in the dispensing counter area.

**1224.19.1.2.2 Handwashing station.** A hand-washing station shall be provided in the area where medication(s) are handled or be immediately accessible, without going through a door unless the door is equipped with hands-free operation.

**1224.19.1.2.3 Storage.** Cabinets, shelves, and/or separate rooms or closets shall be provided for the following:

- 1224.19.1.2.3.1.** Bulk storage.
- 1224.19.1.2.3.2.** Active storage.
- 1224.19.1.2.3.3.** Refrigerated storage.
- 1224.19.1.2.3.4.** Storage for volatile fluids and alcohol in accordance with applicable fire safety codes for the substances involved.
- 1224.19.1.2.3.5.** Secured lockable storage for controlled drugs.
- 1224.19.1.2.3.6.** Equipment and supply storage for general supplies and equipment not in use.

2. **Clean work area.** A clean work area which shall contain work space and equipment for sterilizing medical and surgical equipment and supplies.

3. **Sterilizing space.**

4. **Storage.** Provide storage space for sterile supplies and unsterile supplies.

**Exception:** Section 1224.22.1 does not apply to hospitals which serve psychiatric or alcoholism patients exclusively.

**1224.22.2** All sterilizers and autoclaves which emit steam exhaust shall be vented to the outside of the building. Such vents shall be independent from the plumbing vent system.

**Exception:** Small instrument sterilizers.

**1224.23 STORAGE.**

**1224.23.1 General storage.** Hospitals shall provide general storage space of at least 20 square feet (1.86 m<sup>2</sup>) per bed in addition to specialized storage spaces. All storage spaces shall be located within a conforming hospital building and readily accessible to the connecting corridor required under Section 1224.4.7.5. Required storage, including but not limited to patient, dietary, etc., shall accommodate at least 72 hours of storage capacity in a conforming building. Storage beyond this requirement may be in a non-hospital or nonconforming building.

**1224.23.2 Specialized storage.** Specialized storage spaces shall include the following:

**1224.23.2.1 Linen.** Provide separate and enclosed facilities for clean and soiled linen in each nursing unit. The clean linen storage space shall have a minimum area of 10 square feet (0.93 m<sup>2</sup>) and may be within the clean utility room. The soiled linen collection space shall have an area of no less than 10 square feet (0.93 m<sup>2</sup>), except where linen chutes are provided, and may be within the soiled utility room.

**1224.23.2.2 Supply.** One supply storage space having a minimum area of 15 square feet (1.39 m<sup>2</sup>) shall be provided in each nursing unit. Supply storage may be within the clean utility room used only as part of a system for distributing clean and sterile supplies.

**1224.23.2.3 Wheelchairs.** A room or space shall be provided in each nursing unit for wheelchairs and gurneys. The wheelchair and gurney space shall have a minimum area of 15 square feet (1.39 m<sup>2</sup>).

**1224.23.2.4 Sterile and unsterile supplies** shall be stored separately.

**1224.23.2.5 Food storage** shall be as described in Section 1224.20.

**1224.24 MORGUE AND AUTOPSY FACILITIES.**

**1224.24.1** General acute-care hospitals with a licensed bed capacity of 50 or more beds shall provide a morgue with autopsy facilities.

**Exception:** This may not be required if it can be demonstrated to the licensing agency that morgue and autopsy facilities are available locally.

**1224.24.2 Minimum requirements.** The morgue and autopsy space shall have a minimum of 250 square feet (23.23 m<sup>2</sup>) of floor area, no dimension of which shall be less than 10 feet (3048 mm), and provide for:

1. Handwashing station.

2. Space for refrigerated compartments if human remains are held unembalmed. Refrigerated rooms and prefabricated body refrigerator temperatures shall not be higher than 45°F (25°C).

**1224.25 EMPLOYEE DRESSING ROOMS AND LOCKERS.**

**1224.25.1 Minimum facilities.** Hospitals shall provide the following:

1. Separate dressing rooms for male and female personnel with lockers, lavatory and toilet.

2. Additional dressing rooms for the surgical service and as required within any of the supplemental services.

**1224.26 HOUSEKEEPING ROOMS.** Shall be provided to serve each department and nursing unit, and may be shared by compatible departments, except when specifically required by other sections.

**1224.27 LAUNDRY.**

**1224.27.1** If a laundry is to be provided, the following is required in addition to the laundry room:

1. A separate soiled linen receiving, holding and sorting room with handwashing fixture.

2. A separate clean linen storage, issuing and holding room.

3. Storage for laundry supplies.

**1224.27.2 Outside service.** If linen is processed off site, the following shall be provided within the hospital:

1. Soiled linen holding room.

2. Clean linen receiving room.

3. Clean linen storage room.

**SUPPLEMENTAL SERVICES**

**1224.28 SUPPLEMENTAL SURGERY AND SPECIAL PROCEDURE SERVICES.** When provided, the following supplemental surgery and special procedure services shall meet the requirements below:

**1224.28.1 Cardiovascular and other special procedures.** When provided, the cardiovascular room shall have a minimum clear floor area of 650 square feet (60.39 m<sup>2</sup>), with a minimum of 20 feet (6096 mm) clear dimension. Orthopedic surgical and other special procedure rooms shall have a minimum clear floor area of 600 square feet (55.74 m<sup>2</sup>), with a minimum of 20 feet (6096 mm) clear dimension. When open-heart surgery is performed, an additional room in the restricted area of the surgical service space, that is directly accessible to this operating room, shall be designated as a pump room where extra corporeal pump(s), supplies and accessories are stored and serviced. Appropriate plumbing and electrical connections shall be provided in the cardiovascular, pump, and storage rooms.

**1224.28.1.1 Service areas.** Shall be provided in accordance with Section 1224.15.3.

**Exception:** Where renovation work is undertaken in facilities built under the 2001 or prior California Building Code, existing rooms for cardiovascular, and other special procedures may have a minimum clear floor area of 500 square feet (46.45 m<sup>2</sup>). Orthopedic surgical rooms shall have a minimum clear floor area of 360 square feet (33.44 m<sup>2</sup>) and a minimum dimension of 18 feet (5486 mm).

**1224.28.2 Cardiac catheterization.**

**1224.28.2.1 Procedure room.** A procedure room with a minimum clear floor area of 400 square feet (37.16 m<sup>2</sup>) for the procedure room in addition to spaces for control, monitoring and recording equipment, and x-ray power and controls, and a minimum of one scrub sink for each catheterization laboratory. This space does not include the control room.

**1224.28.2.1.1 Emergency response space.** Where electrophysiology studies are performed, dedicated space and equipment for emergency resuscitation and stabilization shall be immediately accessible to the procedure room.

**1224.28.2.2 Control room.** A control room or area shall be provided. A view window permitting full view of the patient from the control console shall be provided.

**1224.28.2.3 Equipment space.** An equipment space or enclosure large enough to contain x-ray transformers, power modules, and associated electronics and electrical gear shall be provided.

**1224.28.2.4 Scrub facilities.** Scrub facilities with hands-free operable controls shall be provided adjacent to the entrance of procedure rooms.

**1224.28.2.5 Staff clothing change areas.** Appropriate areas shall be provided for male and female staff working within the surgical service space. The areas shall contain lockers, showers, toilets, handwashing stations, and space for donning surgical attire. These areas shall be arranged to ensure a traffic pattern so that personnel entering from outside the service space can enter, change their clothing, and move directly into the cardiac catheterization service space. The staff change area may be combined with the surgical staff change area.

**1224.28.2.6 Patient holding.** A patient preparation, holding, and recovery area or room shall be provided and arranged to provide visual observation before and after the procedure. This may occur in a unit outside of the catheterization service space.

**1224.28.2.7 Clean utility room.** A clean utility room shall be provided. If the room is used for preparing patient care items, it shall contain a work counter and handwashing station. If the room is used only for storage and holding of clean and sterile supply materials, the work counter and handwashing station shall be permitted to be omitted. The clean utility room may be shared with an adjacent surgical unit.

**1224.28.2.8 Soiled utility room.** A soiled utility room shall be provided which shall contain a handwashing station and a clinical sink (or equivalent flushing rim fixtures). When the room is used for temporary holding or soiled materials, the clinical sink and handwashing station shall be permitted to be omitted. The soiled utility may be shared with an adjacent surgical unit.

**1224.28.2.9 Housekeeping room.** Shall be a minimum floor area of 15 square feet (1.4 m<sup>2</sup>). It shall contain a service sink or floor receptor and provisions for storage of supplies and housekeeping equipment. This may be shared with an adjacent surgical unit.

**1224.28.3 Freestanding cardiac catheterization laboratory service space.** A general acute care hospital referenced in Health and Safety Code Section 1255 (d)(3)(E) may provide cardiac catheterization laboratory service in a freestanding nonhospital building in conformance with this section and Section 1226.2.2. In addition, the service space shall comply with Section 1224.28.2 and applicable requirements in Section 1224.15.3 that are not covered by this section.

**1224.28.3.1 Outpatient support areas.** Outpatient support areas shall include outpatient waiting rooms in compliance with Section 1224.4.5. A separate space shall be provided where outpatients change from street clothing and are prepared for a procedure. This space shall include provisions for clothing storage, toilet room(s), sink and an area for clothing change and gowning.

**1224.28.3.2 Connection to hospital.** The freestanding cardiac catheterization laboratory service space shall be located in the nonhospital building such that the service space has a direct connection to the general acute care hospital providing cardiac surgery by a patient corridor link in compliance with Section 1224.4.7. The corridor link shall have a minimum width of 8 feet (2438 mm) as required under Section 1224.4.7.1. The corridor link shall connect to the hospital corridor system with access to all basic services as required under Section 1224.4.7.5.

**1224.28.3.3 Control station.** Control station(s) shall be located to permit visual observation of all traffic into the semi-restricted service space from unrestricted corridors and/or passageways.

**1224.28.3.4 Essential electrical system.** Cardiac catheterization laboratories shall meet the provisions for ambulatory surgical clinics required in the California Electrical Code including the requirements of Article 517.45 for an essential electrical system.

**1224.28.3.5 Services/systems and utilities.** Services/systems and utilities that support the catheterization laboratory space include, but are not limited to: normal power; emergency power; nurse call; communication and data systems; space heating systems; cooling systems; domestic hot and cold water systems; building drain and sewer systems; and medical gas systems. When these systems serve other portions of the building, any alteration to the system shall be subject to

with a minimum of 8 feet (2438 mm) between beds. The space shall be designed so that all beds shall be placed in relation to the nurse's station or work area to permit, enable or allow maximum observance of patients.

**1224.29.1.3 Private rooms.** When private rooms or cubicles are provided, view panels to the corridor shall be required with a means to provide visual privacy. Where only one door is provided to a bed space, it shall be arranged to minimize interference with movement of beds and large equipment. Sliding doors shall not have floor tracks. Where sliding doors are used for access to cubicles within a service space, a 3-foot-wide (914 mm) swinging door may also be provided for personnel communication.

**1224.29.1.4 Modular toilet.** Modular toilet/sink combination units located within a privacy curtain may be used within each patient space or private room. The toilet fixture shall be completely contained within cabinetry when not in use. This fixture shall not be equipped with a bedpan washing attachment. Exhaust ventilation requirements shall comply with the California Mechanical Code.

**1224.29.1.5 Visitors and visual privacy.** Each patient bed area shall have space at each bedside for visitors, and provisions for visual privacy from casual observation by other patients and visitors. For both adult and pediatric units, there shall be a minimum of 8 feet (2438 mm) between beds.

**1224.29.1.6 Outside environment.** Each patient bed shall have visual access, other than clerestory windows and skylights, to the outside environment with not less than one outside window in each patient bed area.

**1224.29.1.6.1 Distance.** The distance from the patient bed to the outside window shall not exceed 50 feet (15 240 mm). When partitioned cubicles are used, patients' view to outside windows may be through no more than two separate clear vision panels.

**1224.29.1.7 Handwashing stations.** Handwashing stations shall be directly accessible to nurse stations and patient bed areas. There shall be at least one handwashing station for every three beds in open plan areas, and one in each patient room. The handwashing station shall be located near the entrance to the patient cubicle or room.

**1224.29.1.8 Nurse station.** This area shall have space for counters and storage. It may be combined with or include centers for reception and communication.

**1224.29.1.9 Nurses' work area.** There shall be direct visual observation between either a centralized or distributed nurse station or work station and the heads of all patient beds in the intensive care unit.

**1224.29.1.10 Monitoring.** Each unit shall contain equipment for continuous monitoring. Monitors shall be located to permit easy viewing but not interfere with access to the patient.

**1224.29.1.11 Emergency equipment storage.** Space that is easily accessible to the staff shall be provided for emergency equipment such as a CPR cart.

**1224.29.1.12 Medication station.** A medication station shall be provided in accordance with Section 1224.4.4.4.

**1224.29.1.13 Airborne infection isolation room.** At least one airborne infection isolation room shall be provided per unit. The room shall comply with the requirements of Section 1224.14.3; however, the adjoining toilet room is not required. Modular toilet units located within a privacy curtain may be used within the airborne infection isolation room. The modular toilet fixture shall comply with Section 1224.29.1.4.

**Exception:** When approved by the licensing agency an airborne infection isolation room is not required for small or rural hospitals.

**1224.29.1.14 Additional service spaces.** The following additional service spaces shall be immediately accessible within each intensive care service space. These may be shared by more than one intensive care unit provided that direct access is available from each.

**1224.29.1.14.1 Clean utility/workroom.** Clean utility/workroom shall be provided in accordance with Section 1224.4.4.6.

**1224.29.1.14.2 Clean linen storage.** There shall be a designated area for clean linen storage. This may be within the clean utility room or a separate closet.

**1224.29.1.14.3 Soiled utility/workroom.** Soiled workroom or soiled holding room shall be provided in accordance with Section 1224.4.4.7.

**1224.29.1.14.4 Nourishment area.** A nourishment area or room shall be provided in accordance with Section 1224.4.4.5.

**1224.29.1.14.5 Ice machine.** Each unit shall have equipment to provide ice for treatments and nourishment. Ice-making equipment may be in the clean utility room or at the nourishment station. Ice intended for human consumption shall be from self-dispensing icemakers.

**1224.29.1.14.6 Equipment storage room.** Appropriate room(s) shall be provided for storage of large items of equipment necessary for patient care. Each intensive care unit shall provide not less than 20 square feet (1.86 m<sup>2</sup>) per patient bed.

**1224.29.1.15 Support.** The following shall be provided and shall be located immediately accessible to the unit:

1. **Visitors' waiting room.**
2. **Office space.**
3. **Staff lounge(s) and toilet room(s).**
4. **Multipurpose room(s).** Provide for staff, patients, and patients' families for patient conferences, reports, education, training sessions, and consultation.
5. **Housekeeping room.** Provide within or immediately adjacent to the intensive care unit. It shall not be shared with other nursing units or departments.

6. **Gurney and wheelchair storage.** Provide a minimum 15 square feet (1.39 m<sup>2</sup>) per each nursing unit.

**1224.29.2 Newborn intensive care units (NICU).** The NICU shall comply with all the requirements of Section 1224.29.1 except as supplemented, amended or modified below.

**1224.29.2.1 Entrance.** The NICU shall have a clearly identified entrance and reception area for families. The area shall permit visual observation and contact with all traffic entering the unit.

**1224.29.2.2 Handwashing station(s).** Provide one handwashing station for each four infants and for each major fraction thereof. In a multiple-bed room, every bed position shall be within 20 feet (6096 mm) of a handwashing station. Where an individual room concept is used, a handwashing station shall be provided within each infant care room.

**1224.29.2.3 Doors.** At least one door to each patient room shall be a minimum of 44 inches (1118 mm) wide.

**1224.29.2.4 View windows.** When viewing windows are provided, provision shall be made to control casual viewing of infants. Controls shall be provided to enable lighting to be adjusted over individual patient care spaces. Darkening sufficient for transillumination shall be available when necessary.

**1224.29.2.5 Control station.** A central area shall serve as a control station, and shall have space for counters and storage, and direct access to a handwashing station. It may be combined with or include centers for reception, communication and patient monitoring.

**1224.29.2.6 Area.** Each patient care space shall contain a minimum of 120 square feet (11.15 m<sup>2</sup>) of clear floor area per bassinet excluding handwashing fixtures and aisles. There shall be an aisle for circulation adjacent to each patient care space with a minimum width of 4 feet (1219 mm). Where multi-patient rooms are used, a separate treatment area of 120 square feet (15.15 m<sup>2</sup>) shall be provided in compliance with Section 1224.4.4.1.2.

**Exception:** Where renovation of existing NICUs is undertaken in facilities built under the 2001 or prior California Building Code, patient care areas shall have no less than 80 square feet (7.43 m<sup>2</sup>) of clear floor area per bassinet exclusive of space for nurse control, scrubbing and gowning, and reception area.

**1224.29.2.6.1 Treatment area/room.** A treatment area/room, with temperature control, shall be provided immediately accessible to the general patient care space.

**1224.29.2.7 Ceilings.** Ceilings shall have a noise reduction coefficient (NRC) of at least 0.90.

**1224.29.2.8 Airborne infection isolation room.** Shall comply with the requirements of Section 1224.29.1.13 except for separate toilet, bathtubs or shower. The room shall be enclosed and separated from the nursery unit with provisions for observation of the infant from adjacent nurseries or control area(s).

**1224.29.2.9 Lactation.** Space shall be provided for lactation support and consultation in or immediately adjacent to the NICU.

**1224.29.2.10 Infant formula facilities.** Nourishment area required under Section 1224.29.1.14.4 not required. Newborn intensive care units shall include infant formula facilities complying with the following requirements:

**1224.29.2.10.1 Location.**

1. Where infant formula is prepared on site, direct access from the formula preparation room to any infant care room is prohibited.
2. The formula preparation room shall be located in or adjacent to the NICU. The formula preparation room may be located at another location as approved by the Licensing Agency.

**1224.29.2.10.2 Formula preparation room.** The formula preparation room shall be securable, facilitate workflow that supports aseptic technique, and include the following:

1. A separate cleanup area for washing and sanitizing. This area shall include a handwashing station, a work counter, and work space and equipment for washing, rinsing, and sanitizing bottles, other feeding utensils, and equipment.
2. A separate area for preparing infant formula. This area shall contain a refrigerator, a freezer, a work counter, a formula sterilizer, storage facilities and a handwashing station.

**1224.29.2.10.3 Refrigerated storage and warming facilities for infant formula.** Shall be accessible for use by NICU personnel at all times.

**1224.29.2.10.4 Commercial infant formula.** Where only commercially prepared infant formula is used, omission of the formula preparation room may be permitted. Storage and handling may occur in the NICU workroom or in a formula preparation area adjacent to the nursing unit. The preparation area shall not have direct access to any infant care room and shall include the following:

1. A work counter
2. A hand-washing station
3. Storage facilities

**1224.29.2.10.5 Cleaning equipment and supplies storage.** Separate provisions for dedicated cleaning equipment and supplies shall be readily available to the formula preparation room and the formula preparation area.

**1224.29.2.11 Emergency equipment storage.** Space shall be provided for emergency equipment that is under direct control of the nursing staff, such as a CPR cart.

**1224.29.2.12 Housekeeping room.** Shall be directly accessible from the unit and be dedicated for the exclusive use of the neonatal intensive care unit.



trol) for use of patients in labor shall be provided. Windows in labor rooms, if provided, shall be located, draped, or otherwise arranged, to preserve patient privacy from casual observation from outside the labor room.

**Exception:** Where renovation of labor rooms is undertaken in facilities built under the 2001 or prior California Building Code, existing labor rooms shall have a minimum clear floor area of 100 square feet (9.29 m<sup>2</sup>) per bed.

**1224.32.3.7 Recovery room(s) (LDR or LDRP rooms may be substituted).** Each recovery room shall contain at least two patient care stations and have a nurse station, with charting facilities, located to permit visual observation of all beds. Each room shall include a handwashing station and a medication station. A clinical sink with bedpan flushing device shall be directly accessible, as shall storage for supplies and equipment. Provide visual privacy of the new family.

**1224.32.3.8 Service areas.** Individual rooms shall be provided as indicated in the following standards; otherwise, alcoves or other open spaces that do not interfere with traffic may be used.

**1224.32.3.8.1 Services.** The following services shall be provided:

1. Control/nurse station. This shall be located to restrict unauthorized traffic into the service space.
2. Soiled workroom or soiled holding room. See Section 1224.4.4.7.
3. Fluid waste disposal.

**1224.32.3.8.2 Shared services.** The following services shall be provided and may be shared with the surgical facilities. Where shared, areas shall be arranged to avoid direct traffic between the delivery and operating rooms

**1224.32.3.8.2.1 Supervisor's office or station.** Office or station shall be a minimum of 80 square feet (7.43 m<sup>2</sup>) and have a desk.

**1224.32.3.8.2.2 Waiting room.** This room shall have toilet rooms, telephone(s) and drinking fountains that are immediately accessible. The toilet rooms shall contain a lavatory.

**1224.32.3.8.2.3 Drug distribution station.** The drug distribution station shall have a handwashing station and provisions for controlled storage, preparation and distribution of medication.

**1224.32.3.8.2.4 Scrub facilities for cesarean operating or delivery rooms(s).** Two positions shall be provided adjacent to entrance to the first cesarean operating room. Provide one additional scrub sink per cesarean or delivery operating room. Scrub facilities shall be arranged to minimize any splatter on nearby personnel or supply carts. In new construction, provide view windows at scrub stations to permit the observation of room interiors.

**1224.32.3.8.2.5 Clean utility room.** A clean utility room shall be provided if clean materials are assembled within the obstetrical service space prior to use. If a clean utility room is provided see Section 1224.4.4.6.

**1224.32.3.8.2.6 Storage.**

1. Clean sterile storage area readily accessible to the delivery room.
2. Equipment storage room(s) for equipment and supplies used in the obstetrical service space.

**1224.32.3.8.2.7 Workroom.** An anesthesia workroom for cleaning, testing and storing anesthesia equipment. It shall contain a work counter, sink, and provisions for separation of clean and soiled items.

**1224.32.3.8.2.8 Male and female staff clothing change areas.** The clothing change area shall be designed to ensure a traffic pattern so that personnel entering from unrestricted area outside the delivery service space enter, change their clothing, and move directly into the delivery service semi-restricted area, and eliminate cross-traffic between clean and contaminated personnel. The area shall contain lockers, showers, toilets, handwashing stations, and space for donning and disposing scrub suits and booties.

**1224.32.3.8.2.9 Staff lounge.** Lounge and toilet room facilities for obstetrical staff shall be readily accessible to cesarean operating rooms(s), delivery room(s), labor rooms(s) and recovery room(s). Each toilet room shall contain a handwashing station.

**1224.32.3.8.2.10 On-call room.** An on-call room(s) for physician and/or staff shall be provided, but may be located elsewhere in the facility.

**1224.32.3.8.2.11 Housekeeping room.**

**1224.32.4 LDR and LDRP facilities.**

**1224.32.4.1 Location.** LDR room(s) may be located in a separate LDR service space or as part of the cesarean/delivery service space. The postpartum unit may contain LDRP rooms.

**1224.32.4.2 Space requirements.** These rooms shall have a minimum of 250 square feet (23.23 m<sup>2</sup>) of clear floor area with a minimum dimension of 13 feet (3962 mm). There shall be space for crib and sleeping space for support person. An area within the room but distinct from the mother's area shall be provided for infant stabilization and resuscitation. The medical gas outlets shall be located in the room so that they are accessible to the mother's delivery area and infant resuscitation area.

**1224.32.4.3 Occupancy.** Each LDR or LDRP room shall be for single occupancy.

**1224.32.4.4 Shower or tub.** Each LDR or LDRP room shall have direct access to a private toilet room with shower or tub.

**1224.32.4.5 Handwashing stations.** Each LDR or LDRP room shall be equipped with handwashing stations.

**1224.32.5 Newborn/well baby nurseries**

**1224.32.5.1 General.** Infants shall be housed in nurseries that comply with the standards below. All nurseries shall be immediately accessible to the postpartum unit and obstetrical facilities. The nurseries shall be located and arranged to preclude the need for unrelated pedestrian traffic. No nursery shall open directly onto another nursery. Each nursery shall contain the following:

**1224.32.5.1.1 Handwashing stations.** At least one handwashing station shall be provided for each six infant bassinets.

**1224.32.5.1.2 Storage.** Storage for linens and infant supplies at each nursery room.

**1224.32.5.1.3 Lactation.** A consultation/demonstration/breast feeding or pump room shall be provided in a location that is readily accessible to the nursery. Provisions shall be made, either within the room or immediately accessible to the room, for a sink, counter, refrigeration and freezing, storage for pump and attachments, and educational materials. This area may be shared between units.

**1224.32.5.1.4 Workroom(s).** Each nursery shall be served by a connecting workroom. The workroom shall contain gowning facilities at the entrance for staff and housekeeping personnel, work counter, refrigerator, storage for supplies, and a handwashing station. One workroom may serve more than one nursery room provided that required services are convenient to each. Adequate provision shall be made for storage of emergency cart(s) and equipment out of traffic and for the sanitary storage and disposal of soiled waste.

**1224.32.5.1.5 Housekeeping room.** A housekeeping room shall be provided for the exclusive use of the nursery unit. It shall be directly accessible from the unit.

**1224.32.5.1.6 Charting space.** Charting facilities shall have linear surface space to ensure that staff and physicians may chart and have simultaneous access to information and communication systems.

**1224.32.5.2 Space requirements.** Each newborn nursery room shall contain no more than 16 infant stations. Nurseries shall provide a minimum of 25 square feet (2.32 m<sup>2</sup>) of floor area per bassinet, with at least 3 feet (914 mm) between bassinets and at least 6 inches (152 mm) from a wall.

**1224.33 EMERGENCY SERVICE.**

**1224.33.1 Definition.** Levels of emergency care range from initial emergency management as Standby Emergency Medical Service, with a Physician on call; to definitive emergency care as Basic Emergency Medical Service,

with a Physician on duty; to a Comprehensive Emergency Medical Service as an Emergency Department.

**1224.33.2 Standby Emergency Medical Service.** If provided, initial emergency management shall be provided in a specifically designated area of the hospital which shall include the following elements:

**1224.33.2.1 Exterior entrance.** A well-marked, illuminated and covered entrance, at grade level. The emergency vehicle entry cover shall provide shelter for both the patient and the emergency medical crew during transfer from an emergency vehicle into the building. This exterior entrance shall not be substituted for the required accessible entrance to the hospital, protected from the weather by canopy or roof overhang assigned for passengers loading zone. Ambulance entrances shall provide a minimum of 6 feet (183 mm) in clear width to accommodate bariatric stretchers, mobile patient lift devices, and accompanying attendants. Reception shall be located to permit staff observation and control of access to treatment area, pedestrian and ambulance entrances, and public waiting area.

**1224.33.2.2 Treatment room.** Standby emergency service shall include at least one treatment room with the following elements:

1. The area shall not be less than 120 square feet (11.15 m<sup>2</sup>) of clear floor area, exclusive of toilet room(s), waiting area and storage.
2. Each treatment room shall contain an examination light, work counter, and handwashing station.
3. Medical equipment, cabinets, medication storage and counter space for writing.
4. The dimensions and arrangement of treatment rooms shall be such that there is a minimum of 3 feet (914 mm) between the sides and foot of the bed/gurney and any wall or any other fixed obstruction. The treatment room may have additional space and provisions for several patients with cubicle curtains for privacy.
5. Multiple-station treatment rooms shall provide a minimum of 80 square feet (7.43 m<sup>2</sup>) per patient gurney, with a minimum 8 foot width (2,438 mm) and 3 feet (914 mm) at the foot of the bed/gurney, with a minimum of 3 feet to any wall or fixed obstruction, and a minimum of 5 feet (1524 mm) between patient gurneys. Patient gurneys shall be separated from adjoining bays by curtains. Handwashing stations shall be provided for each four treatment stations and for each major fraction thereof in multiple-station areas. These shall be uniformly distributed to provide equal access from each patient station.

**Exception:** Where renovation of existing treatment rooms is undertaken in facilities approved under the 2001 or prior California Building Code, existing treatment rooms may be renovated, or replaced in

kind one for one in the renovated space. Such treatment rooms shall have no less than 80 square feet (7.43 m<sup>2</sup>) of clear floor area, the least dimension of which shall be 8 feet (2438 mm).

**1224.33.2.3 Storage.** Equipment and supply storage shall be provided and be sized for general medical/surgical emergency supplies, medications and equipment such as ventilator, defibrillator, splints, etc. This storage shall be located in an alcove or room, out of corridor or hallway traffic, and under staff control.

**1224.33.2.4 Lobby.** Provisions for reception, control, and public waiting, including a public toilet room(s) with handwashing fixture(s), and public telephone.

**1224.33.2.5 Toilet room(s).** Patient toilet room(s) with handwashing station(s) shall be immediately accessible to the treatment room(s).

**1224.33.2.6 Communication.** Communication connections to the Poison Control Center and local EMS system shall be provided.

**1224.33.2.7 Observation area.** A patient cubicle with a minimum clear floor area of 100 square feet (9.29 m<sup>2</sup>) shall be provided under the visual control of an emergency service staff work area. The patient station shall have space at bedside for visitors and shall have provision for visual privacy from casual observation by other patients and visitors. A handwashing station shall be located in each room, and at least one handwashing station shall be provided for every four patient stations, and for each major fraction thereof, in open-bay areas. These shall be uniformly distributed to provide equal access from each patient station.

**Exception:** For small and rural hospitals, the observation area need not be dedicated solely for that purpose.

**1224.33.2.8 Airborne infection isolation exam/treatment room.** If provided, the airborne infection isolation exam/treatment room shall comply with the requirements of Section 1224.4.4.1.3.

**1224.33.3 Basic Emergency Medical Service.** When 24-hour basic emergency service is to be provided, at a minimum, all the provisions of Standby Emergency Service under Section 1224.33.2 and the following shall be provided:

**1224.33.3.1 Exterior entrance.** In addition to the requirements of Section 1224.33.2.1 the emergency entrance shall have direct access from public roads for ambulance and vehicle traffic conforming with the requirements of the local authorities having jurisdiction. Entrance and driveway shall be clearly marked. If a raised platform is used for ambulance discharge, provide a ramp for pedestrian and wheelchair access.

**1224.33.3.2 Patient access.** Paved emergency access shall be provided to permit discharge of patients from automobiles and ambulances, and temporary parking convenient to the entrance.

**1224.33.3.3 Reception, triage, and control station(s).** This area shall be located to permit staff observation and control of access to treatment areas, pedestrian and ambulance entrances, and public waiting area.

**1224.33.3.4 Wheelchair and gurney storage.** Storage for wheelchairs and gurneys for arriving patients shall be located out of circulation paths with access to emergency entrances.

**1224.33.3.5 Public waiting area.** A public waiting area shall be provided in compliance with Section 1224.4.5 and include provision of public toilet room(s), drinking fountains, and telephone adjacent to the waiting area, dedicated to, and within, the Emergency Service Space.

**1224.33.3.6 Examination and treatment room(s).** Examination and treatment rooms shall meet the requirements under Section 1224.33.2.2.

**1224.33.3.7 Trauma/cardiac rooms.** These rooms are for emergency procedures, including emergency surgery, and shall have at least 250 square feet (23.23 m<sup>2</sup>) of clear floor space. A minimum clearance of 5 feet (152 mm) shall be provided around all sides of the procedure table or gurney. Each room shall have cabinets and emergency supply shelves, image viewing capability, examination lights, and counter space for writing. Additional space with cubicle curtains for privacy may be provided to accommodate more than one patient at a time in the trauma room with a minimum clear floor area of 200 square feet (18.58 m<sup>2</sup>) for each patient bay defined by the privacy curtains. There shall be storage provided for immediate access to attire used for universal precautions. Doors leading from the ambulance entrance to the cardiac trauma room shall have an opening with a minimum width of 5 feet (1524 mm). At least one scrub sink shall be located outside the entrance to each trauma room. One scrub station consisting of two scrub positions is permitted to serve two trauma rooms if located adjacent to the entrance of each procedure room. The placement of scrub sinks shall not restrict the minimum required corridor width. If a handwashing station is provided within the trauma room, it does not satisfy the requirement for a scrub sink. The handwashing station shall have a minimum of 5 feet (1524 mm) clearance from the procedure table and not located between any curtained procedure area and the entrance to a multi-bay trauma room.

**1224.33.3.8 Orthopedic and cast work.** At least one orthopedic or cast room shall be provided within the emergency service space. Provisions shall include storage for splints and other orthopedic supplies, traction hooks, image viewing capability, and examination lights. If a sink is used for the disposal of plaster of paris, a plaster trap shall be provided. The clear floor space for this area shall be a minimum of 180 square feet (16.7 m<sup>2</sup>)

**1224.33.3.9 Poison Control Center and EMS communications center.** Communication connections shall be

provided as required under Section 1224.33.2.6. The communications center may be a part of the staff work and charting area.

**1224.33.3.10 Emergency equipment storage space.** Equipment and supply storage shall be provided as required under Section 1224.33.2.3.

**1224.33.3.11 Patients' toilet room.** A patient toilet room with a lavatory shall be immediately accessible to the treatment room(s). Where there are more than eight treatment stations, a minimum of two toilet rooms, with a lavatory in each toilet room, shall be required.

**1224.33.3.12 Storage.** Provide rooms for clean, soiled or used supplies.

**1224.33.3.12.1 Soiled workroom or soiled holding room.** See Section 1224.4.4.7. This room is for the exclusive use of the emergency service space.

**1224.33.3.12.2 Clean utility room.** See Section 1224.4.4.6.

**1224.33.3.13 Administrative center or nurses' station for staff work and charting.** These areas shall have space for counters, cabinets and shall be provided with handwashing stations. They may be combined with or include centers for reception and communication.

**1224.33.3.14 Medication preparation room.** A medication preparation room shall be provided in accordance with Section 1224.4.4.4.1.

**1224.33.3.15 Staff lounge.** A staff lounge shall be located within the Emergency Department and include staff clothing change areas with lockers, showers, toilets and handwashing stations for male and female staff.

**1224.33.3.16 Housekeeping room.** A housekeeping room, compliant with Section 1224.4.15, shall be located within the unit and dedicated to the emergency service space.

**1224.33.3.17 Airborne infection isolation exam/treatment room.** If provided shall comply with the requirements of Section 1224.4.4.1.3.

**1224.33.3.18 Secured holding room.** When a secure holding room is provided, it shall meet the following requirements. The location of the secure holding room(s) shall facilitate staff observation and monitoring of patients in these areas. The secure holding room shall have a minimum clear floor area of 60 square feet (5.57 square meters) with a minimum wall length of 7 feet (2.13 meters) and a maximum wall length of 11 feet (3.35 meters). This room shall be designed to prevent injury to patients:

1. All finishes, light fixtures, vents, diffusers, and fire protection/alarm components shall be tamper resistant and ligature resistant.
2. There shall not be any electrical outlets, medical gas outlets, or similar devices.

3. There shall be no sharp corners, edges, or protrusions, and the walls shall be free of objects or accessories of any kind.

4. Patient room doors shall swing out and shall have hardware on the exterior side of the door only. The minimum width shall be 44 inches (1120 mm).

5. A small impact-resistant view panel or window shall be provided in the door for discreet staff observation of the patient.

**1224.33.4 Comprehensive Emergency Medical Service.** When 24-hour comprehensive emergency service is to be provided, an Emergency Department shall be provided. At a minimum, all the provisions of Stand-by Emergency Service under Section 1224.33.2, the provisions of Basic Emergency Service under Section 1224.33.3, and all of the following shall be provided:

**1224.33.4.1 Triage stations.** In addition to the requirements of Section 1224.33.3.3, the triage area shall include triage station(s) with the following minimum requirements:

1. 100 square feet (9.29 m<sup>2</sup>) minimum clear floor area for each private triage room and 80 square feet (7.4 m<sup>2</sup>) minimum clear floor area for each station in open-bay triage areas.
2. Provisions for patient privacy.
3. Handwashing station in each triage room. In open-bay triage areas, one handwashing station shall be provided for every four triage stations.
4. Immediate access to emergency call and code call stations.
5. Medical gas outlets for triage areas in compliance with Table 1224.4.6.1.

**1224.33.4.2 Fast-track area.** A fast-track area may be used for treating patients presenting simple and less serious conditions. If a fast-track area is provided, it shall meet the following requirements:

1. Space requirements – each fast-track station shall have a minimum 100 square feet (9.29 m<sup>2</sup>) of clear floor area.
2. Each station shall include a handwashing station, work/documentation counter, examination table light.
3. Storage areas for supplies and medication.
4. A separate procedure room may be provided. It shall have a minimum clear floor area of 120 square feet (11.15 m<sup>2</sup>).

**1224.33.4.3 Pre-screening stations.** A pre-screening area may be used prior to admission to the Emergency Department. If pre-screening is provided, each station must have a minimum of 80 square feet (7.4 m<sup>2</sup>) of clear floor area, a handwashing station, documentation counter, and a storage cabinet. Pre-screening stations, whether private rooms or open bays, are considered a

part of the waiting area and must meet the same ventilation requirements.

**1224.33.4.4 Diagnostic service areas.** Radiological/Imaging services shall be readily accessible. The Emergency Department shall be supported by Clinical Laboratory services. A STAT lab may be provided within the emergency medical service space in addition to more comprehensive support provided by the Clinical Lab.

**1224.33.4.5 On-call room(s).** Provisions shall be made to accommodate on-call sleeping room(s) for physicians and/or medical staff within the Emergency Department.

**1224.33.4.6 Police and press room.** Provisions shall be made to accommodate police briefing/debriefing and press releases. This may be located outside the Emergency Department.

**1224.33.5 Other space considerations.**

**1224.33.5.1 Observation units.** Observation rooms for the monitoring of patients up to 24 hours may be provided as a distinct unit within, the emergency department. If provided the unit shall have the following:

1. Handwashing stations shall be provided in each patient room and for each four treatment stations, and for each major fraction thereof. These shall be uniformly distributed to provide equal access from each patient station. Handwashing stations shall be directly accessible to nurse stations and patient care areas.
2. Each patient station shall have a minimum of 120 square feet (11.15 m<sup>2</sup>) of clear floor area including space at each bedside for visitors and provision for visual privacy from casual observation by other patients and visitors.
3. One toilet room shall be provided for each six treatment stations and for each major fraction thereof.
4. An administrative center/nurse station, in compliance with Section 1224.4.4.2, positioned to allow staff to observe each patient care station or room.
5. A nourishment area in compliance with Section 1224.4.4.5.

**1224.34 NUCLEAR MEDICINE**

**1224.34.1 General.** If nuclear medicine is provided, the following shall be provided:

**1224.34.1.1 Radiation protection.** A certified physicist shall specify the type, location and amount of radiation protection to be installed in accordance with final approved department layout and equipment selection. A physicist report shall also address dosing areas and circulation paths of dosed patients, including within multi-bay scanner rooms. Radiation protection requirements shall be incorporated into the construction documents and comply with Chapter 31C and the requirements of California Radiation Control Regulations, California Code of Regulations, Title 17, Division 1, Chapter 5, and Subchapter 4.

**1224.34.1.2 Nuclear medicine room.** Shall be sized to accommodate the equipment and a gurney.

When provided, the following facilities shall meet the requirements below:

**1224.34.1.2.1 Scintigraphy (Gamma Camera) Facilities.** Shall include the following:

1. Scanner room. The scanner room shall provide a minimum clearance of 4 feet (1218 mm) at each side and the foot of the table.
2. Handwashing stations shall be provided throughout the gamma camera suite at locations of patient contact and at locations where radiopharmaceutical materials are handled, prepared, or disposed of.

**1224.34.1.2.2 Positron Emission Tomography (PET).** Shall include the following:

1. Scanner room shall provide a minimum clearance of 4 feet (1218 mm) at each side and the foot of the table. Additional space shall be provided when PET is combined with CT, and include compliance with Section 1224.18.3 and shielding requirements in Section 1224.34.1.1.
2. Cyclotron room. Where radiopharmaceuticals are prepared on-site, a cyclotron shall be provided. Cyclotron facilities shall be located in access-restricted areas. Shielding requirements for cyclotron facilities shall comply with Section 1224.34.1.1.
3. Control room. A control room shall be provided with a full direct view of the patient in the PET scanner.
4. Patient uptake/cool-down room. A shielded room with access to a dedicated patient toilet, to accommodate radioactive waste, and lavatory shall be provided.
5. Handwashing stations shall be provided throughout the PET suite at locations of patient contact and at locations where radiopharmaceutical materials are handled, prepared, or disposed of.
6. Pre-procedure patient care and recovery area shall be provided to accommodate at least two stretchers. This area shall comply with Section 1224.34.2.6.
7. Computer equipment room shall be provided in support of the equipment provided.
8. Contaminated (hot) soiled holding shall be provided and operationally integrated to minimize incidental exposure to ionizing radiation.

**1224.34.1.2.3 Single-Photon Emission Computed Tomography (SPECT) Facilities.** When provided shall include the following:

1. Scanner room. Scanner room shall provide a minimum clearance of 4 feet (1218 mm) at each side and the foot of the table. In multi-bay scanner rooms, a minimum clearance of 4 feet

(1218 mm) shall be provided between each scanner and any mobile screen used between bays.

2. Control room. A control room shall be provided with a full view of the patient in the SPECT scanner.
3. Computer equipment room shall be provided in support of the equipment provided.
4. Handwashing stations shall be provided throughout the SPECT suite at locations of patient contact and at locations where radiopharmaceutical materials are handled, prepared, or disposed.

**1224.34.1.3 Radiopharmacy.** If radiopharmaceutical preparation is performed, an area adequate to house a radiopharmacy shall be provided with appropriate shielding. This area shall include adequate space for storage of radionuclides, chemicals for preparation, dose calibrators, and record keeping. If preprepared materials are used, storage and calculation area may be considerably smaller than that for on-site preparation. Space shall provide adequately for dose calibration, quality assurance, and record keeping. The area may still require shielding from other portions of the facilities.

**1224.34.2 Support areas for nuclear medicine services.** The nuclear medicine area shall provide the following support areas. If nuclear medicine is provided within the imaging department, compatible areas may be shared with other imaging modalities:

**1224.34.2.1 Entrance.** Space shall be adequate to permit entry of gurneys, beds, and able to accommodate imaging equipment, electronic consoles, and if present, computer terminals.

**1224.34.2.2 Cleanup.** Provisions for cleanup shall be located within the service space and be readily accessible. They shall include a service sink or floor receptacle as well as storage space for equipment and supplies.

**1224.34.2.3 Consultation.** A consultation area may be provided.

**1224.34.2.4 Waiting.** Waiting areas shall be provided out of traffic, under staff control. If the department is routinely used for outpatients and inpatients at the same time, separate waiting areas shall be provided with screening or visual privacy between the waiting areas.

**1224.34.2.5 Dose administration area.** Provide a dose administration area that is immediately accessible to the preparation area. Since as much as several hours may elapse for the dose to take effect, the area shall provide for visual privacy from other areas.

**1224.34.2.6 Pre-procedure/holding area.** A pre-procedure/holding area for patients on gurneys or beds shall be provided out of traffic and under control of staff and may be combined with the dose administration area with visual privacy between the areas.

**1224.34.2.7 Patient dressing rooms.** Patient dressing rooms shall be immediately accessible to the waiting area and procedure rooms. Each dressing room shall include a seat or bench, a mirror, and provisions for hanging patients' clothing and for securing valuables.

**1224.34.2.8 Patient toilet room(s).** Patient toilet rooms shall be reserved for nuclear medicine patients and shall be immediately accessible to waiting and procedure rooms.

**1224.34.2.9 Staff toilet rooms.** Staff toilet rooms shall be readily accessible to the nuclear medicine laboratory.

**1224.34.2.10 Handwashing stations.** Handwashing stations shall be located within each procedure room.

**1224.34.2.11 Control desk and reception.**

**1224.34.2.12 Storage area for clean linen.**

**1224.34.2.13 Soiled and contaminated material.** Provisions with handwashing stations shall be made for holding soiled material. Separate provisions shall be made for holding contaminated material.

**1224.34.2.14 Hot lab for scintigraphy (gamma camera), PET, and SPECT facilities.** A securable area or room shall be provided in which radiopharmaceuticals can be safely stored and doses can be calculated and prepared.

1. A single hot lab shall be permitted to serve multiple scanners and nuclear medicine modalities.
2. The hot lab shall be shielded in compliance with Section 1224.34.1.1.
3. A source storage area, a dose area, and a storage area for syringe shields shall be provided.

**1224.34.3 Radiotherapy service space.**

**1224.34.3.1 Radiation therapy space.** If radiation therapy is provided, the following shall be accommodated:

1. Patient reception and waiting areas.
2. Space for medical and physics staff functions.
3. Space for equipment and supplies.
4. Housekeeping room.
5. Direct access to space provided for radiation measurement and calibration equipment, including a calibration constancy instrument and access to a secondary standard dose meter.
  - 5.1. A megavoltage treatment unit capable of delivering x-rays or gamma rays of effective energy 500 KeV or more and conforming to the requirements of Chapter 31C and the California Radiation Control Regulations, California Code of Regulations, Title 17, Division 1, Chapter 5, Subchapter 4.
  - 5.2. Access to a medium voltage or superficial treatment unit delivering 500 KeV or less, but otherwise having the same functional characteristics as the above mega-voltage units and conforming to the requirements of Chapter 31C and the California Radiation

Control Regulations, California Code of Regulations, Title 17, Division 1, Chapter 5, Subchapter 4.

5.3. Direct access to space provided for brachytherapy equipment which shall meet the requirements of Chapter 31C and the California Radiation Control Regulations, California Code of Regulations, Title 17, Division 1, Chapter 5, Subchapter 4.

5.4. Shielding of the rooms shall meet the requirements of Chapter 31C and the California Radiation Control Regulations, California Code of Regulations, Title 17, Division 1, Chapter 5, Subchapter 4.

**1224.34.3.2 Radiation protection.** Cobalt, linear accelerators, hot lab and high dose rate brachytherapy rooms and simulation rooms require radiation protection. All rooms that provide radiation treatment shall be appropriately shielded. A certified physicist shall specify the type, location, and amount of protection to be installed in accordance with final approved department layout and equipment selection. Radiation protection requirements shall be incorporated into the construction documents and comply with Chapter 31C and the requirements of California Radiation Control Regulations, California Code of Regulations, Title 17, Division 1, Chapter 5, and Subchapter 4.

**1224.34.3.3 Room sizes.** Rooms shall be sized as follows:

1. Cobalt rooms and linear accelerators shall be sized in accordance with equipment requirements and shall accommodate a gurney for litter borne patients. Layouts shall provide for preventing the escape of radioactive particles. Openings into the room, including doors, ductwork, vents and electrical raceways and conduits, shall be baffled to prevent direct exposure to other areas of the facility.
2. Simulator, accelerator and cobalt rooms shall be sized to accommodate the equipment with patient access on a gurney, medical staff access to the equipment and patient, and service access.
3. Where a table is used, the room shall be sized to provide a minimum clearance of 4 feet (1218 mm) on three sides of the table to facilitate bed transfer and provide access to the patient. The door swing shall not encroach on the equipment space, patient circulation space, or transfer space.
4. Minimum room size shall be 260 square feet (24.15 m<sup>2</sup>) for the simulator room; 680 square feet (63.17 m<sup>2</sup>), including the maze, for accelerator rooms; 200 square feet (18.58 m<sup>2</sup>) for brachytherapy rooms; and 450 square feet (41.81 m<sup>2</sup>) for cobalt rooms.

**1224.34.3.4 General support area.** The following areas shall be provided:

1. A gurney hold area adjacent to the treatment rooms, screened for privacy, and combined with a seating area for outpatients.

2. Exam or treatment room shall be provided with a minimum of 100 square feet (9.29 m<sup>2</sup>) with a minimum dimension of 8 feet (2438 mm). Each exam room shall be equipped with a handwashing station.

**Exceptions:**

1. Where renovation of existing treatment rooms is undertaken in facilities built under the 2001 or prior California Building Code, treatment rooms shall have no less than 80 square feet (7.43 m<sup>2</sup>) of clear floor area.
2. Darkroom is optional. If provided, shall be readily accessible to the treatment room(s)
3. Patient gowning area with provision for safe storage of valuables and clothing and with direct access to toilet room(s). At least one space shall be large enough for staff-assisted dressing.
4. Film files area is optional. If provided shall have storage for unprocessed film.

**1224.34.4 Additional support areas for linear accelerator.**

**1224.34.4.1** Mold room with exhaust hood and handwashing fixture.

**1224.34.4.2** Block room with storage. The block room may be combined with the mold room.

**1224.34.5 Additional support areas for cobalt room.**

**1224.34.5.1 Hot lab.** A hot lab shall be provided in accordance with Section 1224.34.2.14.

**1224.34.6 Radiosurgery suite.** If radiosurgery (gamma knife/cyber knife) is provided, the following shall be provided:

**1224.34.6.1 General.** The radiosurgery suite shall be located near the imaging services suite to facilitate image acquisition prior to radiosurgery treatment. Location of gamma knife or cyber knife treatment rooms in a radiation therapy suite shall be permitted.

**1224.34.6.2 Radiosurgery treatment rooms.** Radiosurgery (gamma knife/cyber knife) treatment rooms shall provide a minimum clearance of 4 feet (1218 mm) shall be provided on all sides of the treatment table/chair. The door shall not encroach on the equipment or on patient circulation or transfer space. A handwashing station shall be provided in each radiosurgery treatment room.

**1224.34.6.3 Pre-procedure/recovery accommodations.** If provided, pre-procedure/recovery patient care stations shall meet the following requirements:

1. Pre-procedure and recovery area(s) shall be immediately accessible to procedure rooms and separate from corridors. The pre-procedure and recovery patient area or room shall be arranged to permit visual observation of the patient by staff before and after the procedure. Bays, cubicles, or single-bed rooms shall be permitted to serve as patient care stations.
2. Area. Where open bays are used, each patient care station shall have a minimum clear floor area of 80 square feet (7.43 m<sup>2</sup>).

3. Clearances. Each bay or cubicle shall have a minimum clearance of 3 feet (914 mm) between walls or partitions and the sides and foot of gurneys or patient beds. Each bay shall have a minimum clearance of 4 feet (1218 mm) between sides of gurneys or patient beds.
4. Patient privacy. Provisions such as cubicle curtains shall be provided for patient privacy.
5. Handwashing station. A handwashing station shall be provided within the pre-procedure/recovery area.

**1224.34.6.4 Support areas for radiosurgery treatment rooms.** The following shall be provided:

1. Space for sterilization of head-frames.
2. Area for target planning.
3. Medication station.
4. Nourishment area.
5. Head-frame storage.
6. Toilet room(s) for patients, staff and the public.
7. Area for sedation of pediatric patients.

**1224.35 REHABILITATION THERAPY DEPARTMENT.**

Where two or more rehabilitation services are provided, facilities and equipment between services may be shared. Rehabilitation therapy services may be provided as part of a dedicated inpatient nursing unit in a rehabilitation center or as outpatient services, or both.

**1224.35.1 Rehabilitation center space.** If provided, a rehabilitation center space shall be designed to meet the requirements of Section 1224.14, except as follows:

1. Patient bedrooms shall contain a minimum of 110 square feet (10.22 m<sup>2</sup>) of clear floor area per bed, exclusive of toilet room(s), closets, lockers, wardrobes, alcoves or vestibules, with greater space provided for special needs such as circ-o-electric beds.
2. Space for group dining shall be provided at the minimum rate of 20 square feet (1.86 m<sup>2</sup>) per bed.
3. Space for group recreation or patient's lounge shall be provided at the minimum rate of 20 square feet (1.86 m<sup>2</sup>) per bed.
4. Space for staff conferences, patient evaluation, and progress reports.
5. A classroom space.
6. If outpatient rehabilitation services are provided, an examination and treatment room, adjacent or directly accessible to an office for the physician in charge of the outpatient service.
7. If outpatient rehabilitation services are provided, a patient waiting area with access to telephone, drinking fountain, and men's and women's toilet room facilities in or adjacent to the rehabilitation outpatient service area. Outpatients shall not traverse an inpatient nursing unit.
8. Access to an outside area to be used for therapeutic procedures for patients.

9. At least one training toilet room in each patient unit with minimum dimensions of 5 feet by 6 feet (1524 mm by 1829 mm).
10. Patient bathtubs, where provided, of standard height and located to provide access to both sides and one end of the tub.
11. Patient showers, where provided in centralized bathing facilities, shall comply with Section 11B-608.2.2, no dimension of which shall be less than 4 feet (1219 mm), be equipped with handrails, privacy curtains, and designed for ease of accessibility. The floor shall be sloped to provide drainage.

**1224.35.2 Physical therapy service space.** If physical therapy is part of the service, the following shall be included:

1. The minimum floor area for a physical therapy space shall be 300 square feet (27.87 m<sup>2</sup>) with no dimensions less than 12 feet (3658 mm). Each individual patient care station shall have a minimum clear floor area of 60 square feet (5.57 m<sup>2</sup>), except individual patient care stations formed with permanent partitions shall have a minimum clear floor area of 80 square feet (7.43 m<sup>2</sup>). Each individual patient care station shall have privacy screens or curtains.
2. Handwashing stations for staff shall be provided in each treatment room. At least one handwashing station shall be provided for every four patient care stations, and for every major fraction thereof, in an open treatment area. One handwashing station may serve several treatment stations.
3. Exercise area and facilities.
4. Clean linen and towel storage.
5. Storage for equipment and supplies.
6. Separate storage for soiled linen, towels, and supplies.

**Exception:** When approved by the licensing agency small or rural hospitals are exempt from Sections 1224.35.2.1 through 1224.35.2.6.

**1224.35.3 Occupational therapy service space.** If this service is provided, the following shall be included:

1. Work areas and counters suitable for wheelchair access.
2. Handwashing stations.
3. Storage for supplies and equipment.
4. An area for teaching daily living activities shall be provided. It shall contain an area for a bed, kitchen counter with appliances and sink, bathroom, and a table/chair.

**1224.35.4 Speech pathology and/or audiology service space.** If a speech pathology service is provided, space shall be provided for:

1. Tables and chairs to conduct interviews, consultations and treatment, and to accommodate patients in wheelchairs and stretchers.
2. A waiting area with access to public toilet room(s) if outpatients are being served.



- 3. Handwashing stations.
- 4. Testing unit. If an audiology service is provided, there shall be, in addition to Items 1, 2 and 3 above, a minimum of one two-room testing unit that meets the American National Standards Institute, ANSI/ASA S-3.1, 1999, (2008) Maximum Permissible Ambient Noise Levels for Audiometric Test Rooms.

**1224.36 RENAL DIALYSIS SERVICE SPACE (ACUTE AND CHRONIC)**

**1224.36.1 General.** If provided, renal dialysis service shall comply with the following:

**1224.36.2 Treatment area.**

**1224.36.2.1 Location.** The treatment area may be an open area and shall be separate from administrative and waiting areas.

**1224.36.2.2 Nurses' station(s).** Shall be located within the dialysis treatment area and designed to provide visual observation of all patient stations.

**1224.36.2.3 Individual patient treatment areas.** Shall contain at least 80 square feet (7.44 m<sup>2</sup>). There shall be at least a 4-foot (1219 mm) space around and between beds and/or lounge chairs.

**1224.36.2.4 Handwashing stations.** Handwashing stations shall be directly accessible to the nurses' station and to patient treatment areas. Handwashing stations shall be provided for each four treatment stations, and for each major fraction thereof. These shall be uniformly distributed to provide equal access from each patient station.

**1224.36.2.5 Privacy.** The open unit shall be designed to provide privacy for each patient.

**1224.36.2.6 Bloodborne infection isolation room.** A minimum of one bloodborne infection isolation room of at least 120 square feet (11.15 m<sup>2</sup>) of clear floor space shall be provided for patients. This room shall contain a counter and handwashing station.

**1224.36.2.7 Medication station.** There shall be a medication station for the dialysis center. The medication station shall comply with the provisions of Section 1224.4.4.4.

**1224.36.2.8 Home training.** If provided in the unit, a private treatment area of at least 120 square feet (11.15 m<sup>2</sup>) shall be provided for patients who are being trained to use dialysis equipment at home. This room shall contain a counter, handwashing station, and a separate drain for fluid disposal.

**1224.36.2.9 Examination room.** An examination room with a handwashing station shall be provided with at least 100 square feet (9.29 m<sup>2</sup>).

**1224.36.2.10 Clean utility room.** A clean utility room shall be provided. If the room is used for preparing patient care items, it shall contain a work counter, a handwashing station, and storage facilities for clean and sterile supplies. If the room is used only for storage and holding as part of a system for distribution of clean and sterile materials, the work counter and handwash-

ing fixture may be omitted. Soiled and clean utility rooms or holding rooms shall be separated and have no direct connection.

**1224.36.2.11 Soiled utility room.** A soiled workroom shall be provided and contain a sink, handwashing station, work counter, storage cabinets, waste receptacles and a soiled linen receptacle.

**1224.36.2.12 Reprocessing room.** If dialyzers are reused, a reprocessing room is required and sized to perform the functions required and include one-way flow of materials from soiled to clean with provisions for a refrigerator (temporary storage or dialyzer), decontamination/cleaning areas, sinks, processors, computer processors and label printers, packaging area and dialyzer storage and disinfectants cabinets.

**1224.36.2.13 Nourishment station.** If a nourishment station for the dialysis service is provided, the nourishment station shall contain a sink, a work counter, a refrigerator, storage cabinets and equipment for serving nourishments as required.

**1224.36.2.14 Housekeeping room.** Provide a housekeeping room that is immediately accessible to, and for the exclusive use of the unit

**1224.36.2.15 Repair room.** If required, an equipment repair and breakdown room shall be equipped with a handwashing fixture, deep service sink, work counter and storage cabinet. Needs water supply and drain connection for testing machines.

**1224.36.2.16 Supplies.** Supply areas or supply carts shall be provided.

**1224.36.2.17 Storage.** Storage space shall be available for wheelchairs and gurneys, if gurneys are provided, out of direct line of traffic.

**1224.36.2.18 Clean linen storage.** A clean linen storage area shall be provided. This may be within the clean utility room, a separate closet, or an approved distribution system. If a closed cart system is used, storage may be in an alcove. It must be out of the path of normal traffic and under staff control.

**1224.36.2.19 Mixing room.** Each facility using a central batch delivery system shall provide, either on the premises or through written arrangements, individual delivery systems for the treatment of any patient requiring special dialysis solutions. The mixing room shall also include a sink, storage space and holding tanks.

**1224.36.2.20 Water treatment room.** The water treatment equipment shall be located in an enclosed room.

**1224.36.2.21 Patient toilet.** A patient toilet room with a lavatory shall be provided.

**1224.36.3 Ancillary facilities.**

**1224.36.3.1 Staff lounge, lockers and toilet(s).** Space shall be available for male and female personnel for staff clothing change area and lounge. The areas shall contain lockers, shower, toilet(s), and handwashing stations.

**1224.36.3.2 Patient storage.** Storage for patients' belongings shall be provided.

**1224.36.3.3 Waiting room.** A waiting room, toilet room(s) with handwashing stations, drinking fountain, public telephone, and seating accommodations for waiting periods shall be available or accessible to the dialysis unit.

**1224.36.3.4 Administrative services.** Provide office and clinical work space.

**1224.37 RESPIRATORY THERAPY SERVICE SPACE.** If respiratory service is provided, the following elements shall be included:

1. **Storage for equipment and supplies.**
2. **Space and utilities for cleaning and disinfecting equipment.** Provide physical separation of the space for receiving and cleaning soiled materials from the space for storage of clean equipment and supplies. Appropriate local exhaust ventilation shall be provided if gluteraldehyde or other noxious disinfectants are used in the cleaning process. This space may be co-located with other reprocessing functions within the hospital.
3. **Additional facilities.** If respiratory services such as testing and demonstration for outpatients are part of the program, additional facilities and equipment shall be provided including but not limited to:
  - 3.1. Patient waiting.
  - 3.2. A reception and control station.

**1224.38 INTERMEDIATE-CARE SERVICE SPACE.** An intermediate-care service unit shall be housed in a separate and distinct nursing unit and shall comply with the applicable requirements of Section 1225.

**1224.39 OUTPATIENT SERVICE SPACE.**

**1224.39.1 Waiting area(s).** Provide with access to public toilet room facilities, a public telephone and a drinking fountain. These facilities may be shared with other services.

**1224.39.2 Outpatient surgery.** If outpatient surgery is performed in the out patient service space, the following shall be provided:

**1224.39.2.1 Operating rooms.** An operating room(s) with a minimum clear floor area of 270 square feet (25.08 m<sup>2</sup>), no dimension of which shall be less than 15 feet (4572 mm).

**1224.39.2.2 Perioperative services.** Preoperative patient holding and postanesthesia recovery area(s) shall be provided which meet the requirements of Section 1224.16.

**1224.39.2.3 Service areas.** Each surgical unit shall provide the service areas required under Section 1224.15.3 as modified by the following:

**1224.39.2.3.1 Soiled workroom.** A separate soiled workroom separated from any surgical sterilizing facilities. The soiled workroom shall provide 24 square feet (2.2 m<sup>2</sup>) per operating room up to eight operating rooms and shall have the minimum area of 48 square feet (4.5 m<sup>2</sup>), with no dimension less than 6 feet (1829 mm).

**1224.39.2.3.2 Housekeeping.** A housekeeping room shall be provided for the exclusive use of outpatient surgery. It shall be directly accessible from the service area.

**1224.39.3 Gastrointestinal endoscopy.** If gastrointestinal endoscopy is performed in the outpatient service area, the endoscopy suite shall be divided into a minimum of three major functional areas: the procedure room(s), instrument processing room(s), and patient holding/preparation and recovery room or area and the following shall be provided:

**1224.39.3.1 Procedure room(s).**

**1224.39.3.1.1 Space requirements.** Procedure room shall have a minimum clear floor area of 200 square feet (18.6 m<sup>2</sup>). Room arrangement shall permit a minimum clearance of 3 feet, 6 inches (1067 mm) at each side, head, and foot of the gurney/table.

**1224.39.3.1.2 Handwashing stations.** A separate dedicated handwashing station with hands-free controls shall be provided in the procedure room.

**1224.39.3.2 Processing room.**

**1224.39.3.2.1 Dedicated processing room(s)** for cleaning and decontaminating instruments shall be provided. The cleaning area shall allow for flow of instruments from the contaminated area to the clean assembly area and then to storage.

**1224.39.3.2.2 The decontamination area** shall be equipped with the following:

1. Utility sink(s) shall be provided as appropriate to the method of decontamination used.
2. One freestanding handwashing station.
3. Work counter space(s).
4. Eyewash station.

**1224.39.3.3 Preoperative patient holding.** A preoperative patient holding area shall be provided in accordance with Section 1224.16.2.

**1224.39.3.4 Post-anesthesia recovery area.** A post-anesthesia recovery area shall meet the requirements of Section 1224.16.3.

**1224.39.3.5 Communication system.** A system for emergency communication shall be provided.

**1224.39.4 CANCER TREATMENT/INFUSION THERAPY SERVICE SPACE.**

**1224.39.4.1 General.** If provided, cancer treatment/infusion therapy service shall comply with the following:

**1224.39.4.2 Treatment area.**

**1224.39.4.2.1 Location.** The treatment area may be an open area and shall be separated from administrative and waiting areas.

**1224.39.4.2.2 Nurses' station(s).** Shall be located within the cancer treatment/infusion therapy area and designed to provide visual observation of all patient stations.

**1224.39.4.2.3 Individual patient treatment areas.** Shall contain at least 80 square feet (7.4 m<sup>2</sup>).

and spaces shall accommodate the following services and equipment:

1. *Soiled work area.* A receiving and gross cleaning area which shall contain work space and equipment for cleaning medical and surgical equipment and for disposal of or processing of soiled material.
2. *Clean work area.* A clean work area which shall contain work space and equipment for sterilizing medical and surgical equipment and supplies.
3. *Sterilizing space.*
4. *Storage.* Space for sterile supplies and unsterile supplies.

**1225.4.4.2.2 Sterilizers.** All sterilizers and autoclaves which emit steam exhaust shall be vented to the outside of the building. Such vents shall be independent from the plumbing vent system.

*Exception:* Small instrument sterilizers.

**1225.4.5 STORAGE.**

**1225.4.5.1 Required areas.** Facilities shall provide combined general and specialized storage in accordance with the following schedule:

<b>Licensed Bed Capacity</b>	<b>Storage Area</b>
1 to 10 beds	120 square feet (11.15 m <sup>2</sup> ) minimum
11 to 100 beds	12 square feet (1.11 m <sup>2</sup> ) per bed
Over 100 beds	1,200 square feet (111.48 m <sup>2</sup> ) plus 5 square feet (0.46 m <sup>2</sup> ) per bed for each bed over 100

**1225.4.5.2 Specialized storage.** Shall include those spaces identified in the dietetic food storage of Section 1225.4.2.2.10 and as follows:

**1225.4.5.2.1 Linen.** Separate and enclosed facilities for clean and soiled linen in each nursing unit. The clean linen storage space shall have a minimum area of 10 square feet (0.93 m<sup>2</sup>) and may be within the clean utility room. The soiled linen collection space shall have an area of no less than 10 square feet (0.93 m<sup>2</sup>), except where linen chutes are provided, and may be within the soiled utility room.

**1225.4.5.2.2 Supply.** One supply storage space having a minimum area of 15 square feet (1.39 m<sup>2</sup>) shall be provided in each nursing unit. Supply storage may be within the clean utility room used only as part of a system for distributing clean and sterile supplies.

**1225.4.5.2.3 Wheelchairs.** A room or space shall be provided in each nursing unit for wheelchairs and stretchers. The wheelchair and stretcher space shall have a minimum area of 15 square feet (1.39 m<sup>2</sup>).

**1225.4.5.2.4 Separate supplies.** Sterile and unsterile supplies shall be stored separately.

**1225.4.5.2.5 Location.** All storage spaces shall be readily accessible in the licensed facility.

**1225.4.6 HOUSEKEEPING ROOMS.** Housekeeping rooms shall be provided to serve each department and nursing unit, and may be shared by compatible departments, except when specifically required by other sections.

**1225.4.7 LAUNDRY.** If a laundry is to be provided, the following is required in addition to the laundry room:

1. A separate soiled linen receiving, holding and sorting room with handwashing station.
2. A separate clean linen storage, issuing and holding room.
3. Storage for laundry supplies.

**1225.4.7.1 Outside service.** If linen is processed off site, the following shall be provided within the facility:

1. A soiled linen holding room.
2. A separate clean linen receiving and storage room.

**1225.4.8 EMPLOYEE DRESSING ROOMS AND LOCKERS.** Separate dressing rooms with toilet(s), lavatories, and lockers for male and female personnel shall be provided.

*Exception:* Small house skilled nursing facilities, with a peak shift of less than five staff, may provide a single toilet room serving both male and female personnel in compliance with the California Plumbing Code Table 4-3, footnote 7.

**1225.5 SKILLED NURSING UNIT MODELS.** The requirements of the Medical Model or the Household Model shall apply to the Nursing Unit(s) in its entirety.

**1225.5.1 MEDICAL MODEL.**

**1225.5.1.1 General construction.** Skilled nursing and intermediate-care facilities shall comply with Sections 1224.4 through 1224.13 whenever applicable.

**1225.5.1.2 NURSING SERVICE SPACE.**

**1225.5.1.2.1 Patient bedrooms.** Patients shall be accommodated only in rooms with the following minimum floor area, exclusive of toilet rooms, ward-ropes, entrance vestibules, and fixed furnishings or equipment.

1. Single-patient rooms: 110 square feet (10.21 m<sup>2</sup>).
2. Multi-patient rooms: 80 square feet (7.43 m<sup>2</sup>) per bed.

**1225.5.1.2.2 Bed clearance.** The dimensions and arrangement shall be such that there is a minimum distance of 3 feet (914 mm) between the sides and foot of the beds and any wall or any other fixed obstruction. In multiple-bed rooms, in addition to the above, a minimum clearance of 3 feet (914 mm) shall be provided between beds and a clearance of 4 feet (1219 mm) shall be available at the foot of each bed to permit the passage of equipment and beds.

**1225.5.1.2.3 Patient room beds.** Patient rooms shall be of such shape and dimensions to allow for the performance of routine functions, including the easy

transfer of patients to and from bed to wheelchair or wheeled stretcher. Patient rooms shall provide direct access to a toilet room without entering or passing through a patient bed area. Maximum occupancy shall be two patients per patient room.

**Exception:** Where renovation of existing individual patient rooms is undertaken in facilities built under the 2013, or prior, California Building Code, maximum room capacity shall be no more than the present capacity, to a maximum of four patients per patient room. Placement of beds shall not be more than three deep from the exterior window. This exception is not permitted for patient rooms providing subacute care.

**1225.5.1.2.4 Outside exposure.** Each patient bed area shall have an outside exposure and shall not be below ground level. The window or glazed opening shall provide an unobstructed view from the head of each patient bed to the outdoors and shall be accessible to approach using a wheelchair or other patient-operated mobility device.

**1225.5.1.2.5 Patient storage.** Each patient room shall be provided with wardrobe or locker spaces for clothing, toilet articles, or other personal belongings for each patient.

**Exception:** Pediatric and psychiatric patient rooms.

**1225.5.1.2.6 Patient toilet room.** Each patient room shall have its own patient toilet room. Each patient shall have direct access to a toilet room without entering a general corridor or patient bed area in a shared patient room.

**1225.5.1.3 PHARMACEUTICAL SERVICE SPACE.**

**1225.5.1.3.1 Drug space and storage.** Adequate space shall be provided at each nursing station for the storage of drugs and preparation of medication doses.

**1225.5.1.3.2 Drug access.** All spaces and areas used for the storage of drugs shall be lockable and accessible to authorized personnel only.

**1225.5.1.3.3 Narcotics.** Specific space shall be designed for safe storage of narcotics and other dangerous drugs.

**1225.5.1.3.4 Drug refrigeration.** Facilities shall provide for storage of drugs requiring refrigeration.

**1225.5.1.3.5 Pharmacy.** The pharmacy shall not serve the general public unless a separate public entrance or a separate public serving window is utilized.

**1225.5.1.4 ACTIVITY PROGRAMMING SPACE.**

Designated activity areas appropriate to independent and group needs of patients shall be provided as follows:

**1225.5.1.4.1 Skilled nursing facilities.**

1. Recreation room. Each floor of each building accommodating six or more patients shall be provided with a recreation room with a minimum of 100 square feet (9.29 m<sup>2</sup>).

2. Recreation and dining. A minimum of 100 square feet (9.29 m<sup>2</sup>) plus 12 square feet (1.11 m<sup>2</sup>) per bed shall be provided for recreation and dining activities.

**1225.5.1.4.2 Intermediate-care facilities.**

1. Recreation room. Each floor of each building accommodating five or more patients shall be provided with a recreation room with a minimum of 150 square feet (13.94 m<sup>2</sup>).
2. Recreation and dining. A minimum of 30 square feet (2.79 m<sup>2</sup>) per bed for recreation and dining activities.
3. Outdoor space for activities and recreation.

**1225.5.1.4.3 Equipment and supplies.** Recreation and dining spaces shall be provided with space to store equipment and supplies.

**1225.5.2 HOUSEHOLD MODEL.**

**1225.5.2.1 General construction.** Skilled nursing and intermediate-care facilities and small house skilled nursing facilities shall comply with Sections 1224.4 through 1224.13 whenever applicable, and the following sections:

**1225.5.2.1.1 Door thresholds.** Door thresholds, except where required at exterior doors and expansion joint covers, shall be designed to facilitate use of wheelchairs and carts and to prevent tripping, and shall provide a smooth and level transition from surface-to-surface.

**1225.5.2.1.2 Seating area.** A seating area(s) located out of the required egress width shall be provided along the access corridor that is used by patients.

**1225.5.2.1.3 Towel bars.** Towel bars shall be provided at each bathing facility.

**1225.5.2.1.4 Hardware.** All patient use plumbing fixtures and door operating hardware shall be equipped with lever type hardware for easy gripping and turning.

**1225.5.2.1.5 Drinking fountain.** A minimum of one drinking fountain shall be provided per resident floor, unless drinking water is available from the resident dietary area.

**1225.5.2.2 Cluster/household unit and resident unit.**

**1225.5.2.2.1 Design.** Each resident unit shall consist of the resident rooms, resident support areas, and resident living areas. The unit shall be designed as a cluster/household resident unit or as a resident unit with double or single loaded access corridors. If the cluster/household unit design is utilized, it shall be designed around resident support and living areas with a maximum of 20 patients per cluster/household unit. If the double or single loaded corridor resident unit design is utilized, the access corridor shall be designed so that travel distance from the entrance of the resident unit to the furthest resident room door is no more than 60 feet (18.29 m).

**1226.4.13.2.2 Self-contained medicine-dispensing unit.** When provided, the location of a self-contained medicine-dispensing unit shall be permitted in the clean workroom or at the administrative center or nurses' station, provided there is adequate security for medications and adequate lighting to easily identify drugs. Immediate access to a handwashing station shall be provided.

**1226.4.13.3 Clean utility room.** A clean utility room shall be provided. If the room is used for preparing patient care items, it shall contain:

1. Work counter
2. Handwashing station
3. Storage facilities for clean and sterile supplies

If the room is used only for storage and holding as part of a system for distribution of clean and sterile materials from a central sterile supply, the work counter and handwashing station may be omitted. Soiled and clean utility rooms or holding rooms shall be separated and have no direct connection.

**1226.4.13.4 Soiled workroom or soiled holding room.** Soiled workroom or soiled holding room shall be provided and contain:

1. Clinic sink

**Exception:** For primary care clinics, a utility sink or patient toilet room equipped with a bedpan flushing device may be provided in lieu of a clinic sink. A utility sink may be used for soaking or rinsing and shall be provided as appropriate to the method of decontamination used.

2. Handwashing station
3. Work counter
4. Storage cabinets
5. A designated area for waste receptacle(s)
6. A designated area for soiled linen receptacle(s)

If the clinic includes a central sterile supply that complies with Section 1224.22 and the soiled holding room is used only for temporary holding of soiled materials, the clinic sink and work counter may be omitted. Where rooms are used for temporary holding of materials, provisions shall be made for separate collection, storage, and disposal of soiled materials. Soiled and clean utility rooms or holding rooms shall be separated and have no direct connection.

**1226.4.13.5 Sterile and pharmaceutical supply storage.** Separate storage for sterile supplies and pharmaceutical supplies shall be provided.

**1226.4.13.6 Sterilization facilities.** When provided, a sterilization facility shall meet the following applicable requirements:

**1226.4.13.6.1 Storage.** Each facility shall provide space for the storage of disposable sterile supplies

or provide space for sterilization and disinfection equipment.

**Exception:** Facilities with contractual arrangements for outside autoclaving and sterilizing services.

**1226.4.13.6.2 Central sterile supply and sterilizing area.** When provided, rooms and spaces of the central supply and sterilizing area shall comply with the following:

1. **Soiled work area.** A receiving and gross cleaning area which shall contain work space and equipment for cleaning medical and surgical equipment and for disposal of or processing of soiled materials.
2. **Clean work area.** A clean work area which shall contain work space and equipment for sterilizing medical and surgical equipment and supplies.
3. **Sterilizing and equipment disinfection space.**
4. **Storage.** Space for sterile supplies and unsterile supplies.

**1226.4.13.6.3 Sterilizers.** When provided, all sterilizers and autoclaves which emit system steam exhaust shall be vented to the outside of the building. Such vents shall be independent from the plumbing vent system.

**Exception:** Small instrument sterilizers.

**1226.4.13.7 Nourishment room.** When provided, the nourishment room or area shall have all of the following:

1. Sink
2. Work counter
3. Refrigerator
4. Storage cabinets
5. Equipment for serving nourishment
6. A handwashing station, as defined in Section 1224.3, shall be located in the nourishment room or be immediately accessible without going through a door.

**1226.4.14 Support areas for patients.**

**1226.4.14.1 Patient toilet room(s).** Toilet room(s) with a lavatory shall be provided separate from public use toilet(s) and shall be located to permit access from patient care areas without passing through publicly accessible areas.

**Exception:** For primary care clinics where the facility contains no more than three examination and/or treatment rooms, the patient toilet room shall be permitted to serve outpatient waiting room(s).

**1226.4.14.2 Specimen and/or blood collection facilities.** When provided, refer to Section 1224.4.4.2. Use of patient toilet room(s) shall be permitted for specimen collection.

**1226.4.15 General support services and facilities.**

**1226.4.15.1 Areas for off-site laundry services.** If linen is to be processed off site, the following shall be provided:

1. Soiled linen holding area or designated and dedicated area for soiled laundry cart.
2. Clean linen storage area that protects linen from soil or damage.

**1226.4.16 Public and administrative areas.**

**1226.4.16.1 Public.**

**1226.4.16.1.1 Reception.** A reception and information counter or desk shall be provided.

**1226.4.16.1.2 Outpatient waiting rooms.** Refer to Section 1224.4.5.

**1226.4.16.2 Administrative services.**

**1226.4.16.2.1 Medical records storage.** Outpatient clinics shall provide a health record service which shall comply with the following:

1. Work area for sorting and recording records for either paper or electronic media.
2. Storage area for records for either paper or electronic media.

**1226.4.16.2.2 Equipment and supply storage.** General storage facilities for office supplies and equipment shall be provided.

**1226.4.17 Support areas for staff.**

**1226.4.17.1 Staff toilet(s).** Provide staff toilet(s) in addition to and separate from, public and patient facilities. The areas shall contain toilet(s) and handwashing stations pursuant to the California Plumbing Code, Table 4-2.

**1226.4.17.2 Storage for employees.** Provide storage for staff personal effects with locking drawers or cabinets (may be individual desks or cabinets). Such storage shall be readily accessible to individual workstations and shall be staff controlled.

**1226.4.17.3 Staff lounge.** When provided, the lounge shall have adequate space to accommodate staff.

**OUTPATIENT CLINICAL SERVICES OF A HOSPITAL**

**1226.5 OUTPATIENT CLINICAL SERVICES OF A HOSPITAL.** A licensed hospital may elect to locate certain outpatient services in a freestanding building. To be considered a freestanding building, refer to the California Administrative Code Section 7-111. See Section 309A.5.1 of the California Existing Building Code for eligibility for jurisdiction of the local enforcement agency over freestanding buildings adjacent to hospital buildings.

Outpatient clinical services of a hospital provided in a freestanding building are regulated under the banner [OSHPD 3] instead of [OSHPD 1]. These services shall comply with Sections 1226.4.2 through 1226.4.8 and the provisions of this section. Outpatient clinical services of a hospital that are not addressed in the provisions of Section 1226 shall

comply with applicable provisions of Section 1224 and/or Section 1228 as if those provisions were repeated in Section 1226.5.

**GENERAL SUPPORT AREAS FOR OUTPATIENT CLINICAL SERVICES - Requirements for all service types.**

**1226.5.1 Support areas for patients.**

**1226.5.1.1 Patient toilet room(s).** Refer to Section 1226.4.14.1.

**1226.5.1.2 Specimen and/or blood collection facilities.** When provided, refer to Section 1224.4.4.2.

**1226.5.2 General support services and facilities.**

**1226.5.2.1 Garbage, solid waste, medical waste, and trash storage.** Refer to Section 1226.4.9.

**1226.5.2.2 Housekeeping room.** Refer to Section 1224.4.15.

**1226.5.3 Public and administrative areas.**

**1226.5.3.1 Public area.**

**1226.5.3.1.1 Reception.** Refer to Section 1226.4.16.1.1.

**1226.5.3.1.2 Outpatient waiting room.** Refer to Section 1224.4.5.

**1226.5.3.1.3 Public toilet(s).** Refer to Section 1224.4.5.

**1226.5.3.1.4 Public telephone access.** Refer to Section 1224.4.5.

**1226.5.3.1.5 Drinking fountain(s).** Refer to Section 1224.4.5.

**1226.5.3.2 Administrative services.**

**1226.5.3.2.1 Medical records storage.** Refer to Section 1226.4.16.2.1.

**1226.5.3.2.2 Equipment and supply storage.** Refer to Section 1226.4.16.2.2.

**1226.5.4 Support areas for staff.**

**1226.5.4.1 Staff toilet(s).** Refer to Section 1226.4.17.1.

**1226.5.4.2 Storage for employees.** Refer to Section 1226.4.17.2.

**RADIOLOGICAL/IMAGING SERVICE SPACE**

**1226.5.5 Radiological/imaging service space.** When x-ray examination services, computerized tomography scanning, magnetic resonance imaging, ultrasound, and/or mammography services are provided, the radiological/imaging services space shall comply with the provisions of this section.

**1226.5.5.1 Support spaces for radiological/imaging services.** The following spaces are common to the imaging service area and are minimum requirements:

**1226.5.5.1.1 Patient toilet room(s).** In service spaces with procedure rooms that do not require dedicated patient toilets, provide a minimum of one patient toilet room within the service space, refer to Section 1226.4.14.1.

**1226.5.5.1.2 Outpatient change area.** A separate space shall be provided where outpatients change from street clothing. This shall include provisions for clothing storage, space for clothing change and gowning area. Dressing rooms shall be readily accessible to the imaging rooms.

**1226.5.5.1.3 Staff facilities.** In service space of three or more procedure rooms, staff toilet room(s) internal to the service space.

**1226.5.5.1.4 Handwashing stations.** Handwashing stations shall be located within the unit.

**1226.5.5.1.5 Imaging storage (active).** If imaging storage systems are used, provide a means of sorting and filing patient film or electronic media for immediate retrieval shall be provided.

**1226.5.5.1.6 Medication station.** Provision shall be made for locked storage of medications and drugs. Refer to Section 1226.4.13.2.

**1226.5.5.1.7 Areas for off-site laundry services.** Refer to Section 1226.4.15.1.

**1226.5.5.2 Radiation protection.** Radiation protection requirements for equipment refer to Section 1224.18.1.1.

**1226.5.6 X-ray examination services.** When provided, x-ray examination services space shall comply with the following:

1. X-ray room.
2. When shielded control alcove with protective view windows is provided, refer to Section 1224.18.1.1.
3. Fluoroscopy room, when provided, shall have a toilet room directly accessible to the fluoroscopy room. This toilet room is in addition to common patient toilet room facilities located in the radiological/imaging service space.
4. Space for processing images.
5. An office or other suitable area for viewing and reporting radiographic examination.

**1226.5.7 Computerized tomography (CT) scanning.** When provided, CT services space shall comply with the requirements of Section 1224.18.3.

**1226.5.8 Magnetic resonance imaging (MRI).** When provided, MRI services space shall comply with the requirements of Section 1224.18.4.

**1226.5.9 Ultrasound.** When ultrasound is provided, refer to Section 1224.18.5.

**1226.5.10 Mammography.** When mammography is provided, refer to Section 1224.18.6.

#### **GASTROINTESTINAL ENDOSCOPY**

**1226.5.11 Gastrointestinal endoscopy.** When provided, gastrointestinal endoscopy services space shall comply with Section 1224.39.3 and the provisions of this section:

**1226.5.11.1 Procedure Room(s).**

**1226.5.11.1.1 Space requirements.** Refer to Section 1224.39.3.1.1.

**1226.5.11.1.2 Handwashing station.** Refer to Section 1224.39.3.1.2.

**1226.5.11.2 Processing room.** Refer to Section 1224.39.3.2.

**1226.5.11.3 Preoperative patient holding.** Refer to Section 1224.16.2.

**1226.5.11.4 Post-anesthesia recovery area.** Refer to Section 1224.16.

**1226.5.11.5 Communication system.** Refer to Section 1224.39.3.5.

**1226.5.11.6 Support areas for outpatient gastrointestinal endoscopy.**

**1226.5.11.6.1 Control station.** Refer to Section 1224.15.3.1.

**1226.5.11.6.2 Medication station.** Refer to Section 1226.4.13.2.

**1226.5.11.6.3 Soiled workroom.** Refer to Section 1224.15.3.7.

**1226.5.11.6.4 Clean utility room.** Refer to Section 1224.15.3.8.

**1226.5.11.6.5 Anesthesia workroom.** Refer to Section 1224.15.3.9.

**1226.5.11.6.6 Storage room(s) for equipment and supplies used in gastrointestinal endoscopy service space.** Refer to Section 1224.15.3.10.

**1226.5.11.6.7 Staff clothing change areas.** Refer to Section 1224.15.3.11.

**1226.5.11.6.8 Housekeeping room.** Refer to Section 1224.39.2.3.2.

**1226.5.11.6.9 Sterile and pharmaceutical supply storage.** Refer to Section 1226.4.13.5.

**1226.5.11.7 Additional support areas for patients.**

**1226.5.11.7.1 Outpatient change area.** A separate space shall be provided where patients change out of their street clothing and are prepared for the procedure. This space shall include provisions for clothing storage, toilet room(s), sink, space for clothing change and gowning area.

#### **NUCLEAR MEDICINE**

**1226.5.12 Nuclear medicine.** When provided, nuclear medicine services space shall comply with Section 1224.34 and the provisions of this section:

**1226.5.12.1 Radiation protection.** When provided, refer to Section 1224.34.1.1.

**1226.5.12.2 Nuclear medicine room.** Refer to Section 1224.34.1.2.

**1226.5.12.3 Radiopharmacy.** When provided, refer to Section 1224.34.1.3.

**1226.5.12.4 Support areas for nuclear medicine services.**

- 1226.5.12.4.1 Cleanup.** Refer to Section 1224.34.2.2.
- 1226.5.12.4.2 Dose administration area.** Refer to Section 1224.34.2.5.
- 1226.5.12.4.3 Holding.** Refer to Section 1224.34.2.6.
- 1226.5.12.4.4 Patient dressing rooms.** Refer to Section 1224.34.2.7.
- 1226.5.12.4.5 Patient toilet room(s).** Refer to Section 1224.34.2.8.
- 1226.5.12.4.6 Staff toilet room(s).** Refer to Section 1224.34.2.9.
- 1226.5.12.4.7 Handwashing stations.** Refer to Section 1224.34.2.10.
- 1226.5.12.4.8 Control desk and reception.** Refer to Section 1226.5.3.
- 1226.5.12.4.9 Clean linen storage.** A storage area for clean linen shall be provided.
- 1226.5.12.4.10 Soiled and contaminated material.** Refer to Section 1224.34.2.13.

**1226.5.12.5 Radiotherapy service space.** When provided, radiotherapy service space shall comply with the following provisions of this section:

- 1226.5.12.5.1 Radiation protection.** Refer to Section 1224.34.3.2.
- 1226.5.12.5.2 Room sizes.** Refer to Section 1224.34.3.3.
- 1226.5.12.5.3 General support area.** Refer to Section 1224.34.3.4.

**1226.5.12.6 Additional support areas for linear accelerator.**

- 1226.5.12.6.1 Mold room.** Refer to Section 1224.34.4.1.
- 1226.5.12.6.2 Block room.** Refer to Section 1224.34.4.2.

**1226.5.12.7 Additional support areas for cobalt room.**

- 1226.5.12.7.1 Hot lab.**

**1226.5.12.8 High dose rate brachytherapy room.**

**CANCER TREATMENT/INFUSION THERAPY**

**1226.5.13 Cancer treatment/infusion therapy service space.** When provided, cancer treatment/infusion therapy service space shall comply with the provisions of this section:

**1226.5.13.1 Treatment area.**

- 1226.5.13.1.1 Location.** Refer to Section 1224.39.4.2.1.
- 1226.5.13.1.2 Nurses' station(s).** Refer to Section 1224.39.4.2.2.
- 1226.5.13.1.3 Individual patient treatment areas.** Refer to Section 1224.39.4.2.3.
- 1226.5.13.1.4 Handwashing stations.** Refer to Section 1224.39.4.2.4.

**1226.5.13.1.5 Privacy.** Refer to Section 1224.39.4.2.5.

**1226.5.13.1.6 Medication dispensing.** Refer to Section 1224.39.4.2.6.

**1226.5.13.1.7 Examination room.** Refer to Section 1224.39.4.2.7.

**1226.5.13.1.8 Clean utility room.** Refer to Section 1224.39.4.2.8.

**1226.5.13.1.9 Soiled utility room.** Refer to Section 1224.39.4.2.9.

**1226.5.13.1.10 Nourishment station.** Refer to Section 1224.39.4.2.10.

**1226.5.13.1.11 Housekeeping room.** Refer to Section 1224.39.4.2.11.

**1226.5.13.1.12 Supplies.** Refer to Section 1224.39.4.2.12.

**1226.5.13.1.13 Storage.** Refer to Section 1224.39.4.2.13.

**1226.5.13.1.14 Clean linen storage.** Refer to Section 1224.39.4.2.14.

**1226.5.13.1.15 Patient storage.** Refer to Section 1224.39.4.3.2.

**HYPERBARIC THERAPY**

**1226.5.14 Hyperbaric therapy service space.** When provided, hyperbaric therapy service space shall comply with Section 1224.39.5 and the provisions of this section:

**1226.5.14.1 General.** Refer to Section 1224.39.5.1.

**1226.5.14.2 Hyperbaric chambers.** Refer to Section 1224.39.5.2.

**1226.5.14.3 Pre-procedure patient holding area(s).** Refer to Section 1224.39.5.3.

**1226.5.14.4 Medical gas station outlets.** Refer to Section 1224.39.5.4.

**1226.5.14.5 Support areas for the hyperbaric suite.**

**1226.5.14.5.1 Reception/control desk.** Refer to Section 1224.39.5.5.1.

**1226.5.14.5.2 Examination/treatment room(s).** Refer to Section 1224.39.5.5.2.

**1226.5.14.5.3 Clean linen storage.** Refer to Section 1224.39.5.5.3.

**1226.5.14.5.4 Clean supply room.** Refer to Section 1224.39.5.5.4.

**1226.5.14.5.5 Gas cylinder room.** Refer to Section 1224.39.5.5.5.

**1226.5.14.5.6 Gurney and wheelchair storage.** Refer to Section 1224.39.5.5.6.

**1226.5.14.5.7 Housekeeping room.** Refer to Section 1224.39.5.5.7.

**1226.5.14.5.8 Compressor room.** Refer to Section 1224.39.5.5.8.

**1226.5.14.6 Support areas for staff.** Refer to Section 1224.39.5.6.



**1228.4.21 Building systems.**

**1228.4.21.1 Lighting.** Lighting in areas identified in the Patient Safety Risk Assessment as high- and medium-risk areas shall be tamper resistant. Refer to California Electrical Code.

**1228.4.21.2 Receptacles.** When electrical receptacles are provided in a patient bedroom, the receptacles shall be in compliance with California Electrical Code.

**1228.4.22 Handwashing stations.** All handwashing fixtures that are accessible to patients, including those located in patient rooms and patient toilet rooms, shall include ligature-resistant features that do not compromise compliance with the hot and cold water supply controls, laminar flow, and sink requirements of the California Plumbing Code. Handwashing fixtures within patient rooms and patient toilet rooms in psychiatric nursing units are not required to be equipped with gooseneck spouts and the discharge point may be less than 5 inches (127 mm) above the fixture rim.

**1228.5 Communication system.** Refer to Section 1224.5.

**BASIC SERVICES**

**1228.6 Reserved.**

**1228.7 Reserved.**

**1228.8 Reserved.**

**1228.9 Reserved.**

**1228.10 Reserved.**

**1228.11 Reserved.**

**1228.12 Reserved.**

**1228.13 PSYCHIATRIC REHABILITATION ACTIVITIES SERVICE SPACE.** The psychiatric rehabilitation activities service space may be centralized for common use or may be located in each nursing unit in response to the Patient Safety Risk Assessment. The following areas are required in the psychiatric rehabilitation activities service space:

**1228.13.1 Patient care areas.**

**1228.13.1.1 Indoor activity rooms.**

1. At least two separate activity rooms, one appropriate for group recreation and one for quiet activities to serve as a patient lounge, shall be provided.
2. Space requirements. The combined area of these rooms shall have a minimum of 25 square feet (2.32 m<sup>2</sup>) per patient bed, with at least 120 square feet (11.15 m<sup>2</sup>) of clear floor area for each of the two spaces.

**1228.13.1.2 Outdoor activity area.** An outdoor activity area shall be provided. Outdoor areas shall meet the following requirements:

1. Fences and walls shall be designed to:
  - 1.1. Be installed with tamper-resistant hardware.
  - 1.2. Have a minimum height of 10 feet (3048 mm) above the outdoor area elevation.

- 1.3. Be anchored and constructed to withstand the body force of a 350-pound (158-kg) person.
2. If provided, gates or doors in the fence or wall shall:
  - 2.1. Swing away from the outdoor activity area.
  - 2.2. Have the hinge installed on the outside of the outdoor activity area.
  - 2.3. Be provided with a locking mechanism that has been coordinated with egress requirements of Section 1004.5, Outdoor areas.
3. Lights shall not be accessible to patients. Lighting in the outdoor activity area shall not be pole mounted.
4. If provided, security cameras shall not be accessible to patients and cameras shall view the entire outdoor activity area.
5. If provided, furniture shall be secured from movement. Furniture shall not be placed in locations where it can be used to climb the fence or wall.

**1228.13.1.3 General support areas.**

1. Space for staff conferences, patient evaluation and progress reports.
  - 1.1. Staff conference room. A conference and treatment planning room shall be provided.
  - 1.2. Office space separate from the activities area.
2. Where outpatients are treated, there shall be a waiting area compliant with the requirements of Section 1228.4.5.

**1228.13.2 Physical therapy service space.** Where provided, the physical therapy service space shall comply with Section 1224.35.2.

**1228.13.3 Occupational therapy service space.** Where provided, occupational therapy service space shall comply with Section 1224.35.3.

**1228.13.4 Speech pathology and/or audiology service space.** Where provided, the speech pathology service space shall comply with Section 1224.35.4.

**1228.14 PSYCHIATRIC NURSING SERVICE SPACE.** Psychiatric nursing units shall comply with the requirements of this section. If the nursing unit is a locked unit, the primary access point to the unit shall be through a sally port. For “secure treatment facilities,” alternate designs for locked unit access without individual sally ports may be approved by the enforcement agency when it can be demonstrated that the alternate design meets performance requirements without compromising any health or life-safety requirement.

**1228.14.1 Patient rooms.** Each patient bedroom shall meet the following standards:

**1228.14.1.1 Capacity.** Maximum room capacity shall be two patients.

**Exception:** Where renovation of existing individual acute psychiatric hospital patient rooms is under-

taken in facilities built under the 2013, or prior, California Building Code, maximum room capacity shall be no more than the present capacity, to a maximum of eight patients per patient room. Placement of beds shall not be more than three deep from the exterior window.

**1228.14.1.2 Space requirements.** Patient bedrooms shall have a minimum clear floor area of 100 square feet (9.29 m<sup>2</sup>) for single-bed rooms and 80 square feet (7.43 m<sup>2</sup>) per bed for multiple-bed rooms.

**1228.14.1.3 Windows.** Each patient bedroom shall have a window in accordance with Section 1228.4.9.

**1228.14.1.4 Reserved.**

**1228.14.1.5 Outside exposure.** Refer to Section 1224.14.1.5.

**1228.14.1.6 Handwashing stations.** Handwashing stations shall comply with Section 1228.4.22. Handwashing stations are required in patient toilet rooms. Handwashing stations are not required in patient bedrooms.

**1228.14.1.7 Patient toilet room.**

1. Each patient shall have access to a toilet room without having to enter a corridor.

**Exception:** Corridor access to the patient toilet room shall be permitted at pediatric or adolescent patient bedrooms and in specific patient bedrooms where the use of corridor access is part of the hospital's written Patient Safety Risk Assessment and management program.

2. One toilet room shall serve no more than two patient bedrooms and no more than four patients.
3. The toilet room shall contain a toilet and a handwashing station.

**1228.14.1.8 Patient storage.** Each patient shall have in their room a separate wardrobe, locker, or closet for storing personal effects. Shelves for folded garments shall be used instead of arrangements for hanging garments.

**1228.14.1.9 Privacy.** Visual privacy in multibed rooms (e.g., cubicle curtains) is not required in psychiatric nursing units.

**1228.14.1.10 Grab bars.** Grab bars provided in accessible patient toilet rooms shall comply with Section 1228.4.18.

**1228.14.1.11 Room identification.** Each patient room shall be labeled with an identification number, letter or combination of the two.

**1228.14.2 Service areas.** Provision for the services listed below shall be in or immediately accessible to each psychiatric nursing unit. The size and location of each service area will depend upon the numbers and types of beds served. Identifiable spaces are required for each of the indicated functions. If a service area is specifically permitted to serve more than one nursing unit, there shall be at least one such service area located on each nursing unit floor.

**1228.14.2.1 Administrative center(s) or nurse station(s).** Refer to Section 1224.4.4.2.

**1228.14.2.1.1 Documentation area.** A separate charting area with provisions for acoustic and patient file privacy shall be provided.

**1228.14.2.1.2 Handwashing station(s).** Refer to Section 1228.4.22 for the definition of handwashing station. Handwashing stations in high- or medium-patient-risk areas shall be ligature resistant.

**1228.14.2.2 Office(s) for staff.** Office(s) for staff shall be provided.

**1228.14.2.3 Support areas for staff.**

1. Staff lounge facilities. Staff lounge facilities may be combined between units.
2. Staff toilet rooms.
3. Staff storage locations. Securable closets or cabinet compartments for the personal effects of nursing personnel shall be immediately accessible to the administrative center or nurse station.

**1228.14.2.4 Multipurpose room(s).** Multipurpose rooms shall be provided for staff, patients, patients' families for patient visits, conferences, reports, education, training sessions, and consultation. These rooms shall be readily accessible to each nursing unit. One such room may serve several psychiatric nursing units.

**1228.14.2.5 Examination and treatment room.** Refer to Section 1228.4.4.1.1.

**1228.14.2.6 Clean utility/workroom.** Refer to Section 1228.4.4.6.

**1228.14.2.7 Soiled utility/workroom.** Refer to Section 1228.4.4.7.

**1228.14.2.8 Medication station.** Refer to Section 1228.4.4.4.

**1228.14.2.9 Clean linen storage.** Each psychiatric nursing unit shall contain a designated area for clean linen storage. This may be within the clean utility room or a separate closet.

**1228.14.2.10 Nourishment area.** Refer to Section 1228.4.4.5.

**1228.14.2.11 Ice-making equipment.** Each nursing unit shall have equipment to provide ice for treatments and nourishment. Ice-making equipment may be in the clean utility/workroom or at the nourishment station. Ice intended for human consumption shall be from self-dispensing icemakers.

**1228.14.2.12 Equipment and supply storage.** Equipment and supply storage is required, refer to Section 1224.14.2.12. Location of the storage areas shall not present a risk to the patient population as indicated in the functional program.

**1228.14.2.13 Gurneys or wheel chairs.** Storage for gurneys or wheelchairs is required, refer to Section 1224.14.2.13. Storage areas may be located within the nursing unit or outside but readily accessible to the unit.

**1228.14.2.14 Patient bathing facilities.** A bathtub or shower shall be provided for each six patient beds not otherwise served by bathing facilities at patient bedrooms.

**1228.14.2.15 Common patient toilet room(s).** In addition to the toilet rooms serving bed areas, common patient toilet rooms shall be located adjacent to multi-purpose room(s) and within or directly accessible to each common patient bathing facility.

**1228.14.2.16 Emergency equipment storage.** Emergency equipment storage shall be provided at each nursing unit that is under visual observation of staff.

**1228.14.2.17 Housekeeping room.** One housekeeping room shall be permitted to serve more than one nursing unit on a floor. Refer to Section 1228.4.15.

**1228.14.2.18 Grab bars.** Grab bars in common patient toilets and bathing facilities shall be installed in accordance with Section 1228.4.18.

**SPECIAL PATIENT CARE ROOMS**

**1228.14.3 Airborne Infection Isolation (AII) room(s).** There shall be at least one airborne infection isolation (AII) room provided for each 50 beds, and for each major fraction thereof. Airborne infection isolation rooms for pediatric/adolescent and forensic supplemental service nursing units shall be calculated independently from, and shall not be shared with each other or any other psychiatric nursing unit. Refer to Section 1224.14.3 and the general construction requirements of Section 1228.4. A bedpan flushing attachment is not required.

**1228.14.4 Protective environment room(s).** If provided, refer to Section 1224.14.4 and the general construction requirements of Section 1228.4.

**1228.14.5 Seclusion room(s).** There shall be at least one seclusion room provided for each 24 licensed beds, and for each major fraction thereof. At least one seclusion room shall be provided. A seclusion room may be shared by psychiatric nursing units. Seclusion rooms for pediatric/adolescent and forensic supplemental service nursing units shall be calculated independently from, and shall not be shared with each other or any other psychiatric nursing unit. Refer to the general construction requirements of Section 1228.4.

**1228.14.6 Quiet room.** A quiet room shall be provided in each psychiatric nursing unit for a patient who needs to be alone for a short period of time but does not require a seclusion room. Refer to Section 1228.4.4.1.5.

**1228.14.7 Visitor/consultation room(s).** Visitor/consultation rooms shall be provided at a room-to-bed ratio of one consultation room for each 12 psychiatric beds, or major fraction thereof with a minimum of one, in each psychiatric nursing unit. Additionally, the following requirements shall be met:

1. Visitor/consultation room(s) shall have a minimum clear floor area of 100 square feet (9.29 m<sup>2</sup>).
2. The room(s) shall be designed for acoustical and visual privacy. Refer to Table 1224.4.19, Sound Transmission Limitations in Hospitals.

**1228.14.8 Conference room.** A conference and treatment planning room shall be provided for use by the psychiatric nursing unit.

**1228.14.9 Space for group therapy.** An enclosed private space with a minimum clear floor area of at least 225 square feet (20.90 m<sup>2</sup>) shall be available for group therapy activities.

**1228.15 Reserved.**

**1228.16 Reserved.**

**1228.17 Reserved.**

**1228.18 Reserved.**

**1228.19 PHARMACEUTICAL SERVICE SPACE.** Pharmaceutical service space shall comply with the provisions of Section 1224.19.

**1228.20 DIETETIC SERVICE SPACE.** Refer to Section 1224.20, Dietetic Service Space for requirements, as modified below:

**1228.20.1 Dining area.** Provide dining space(s) for ambulatory patients, staff, and visitors. Separate patient dining room(s) of 20 square feet (1.86 m<sup>2</sup>) per patient bed shall be provided. These spaces shall be separate from the food preparation and distribution areas.

**SUPPORT SERVICES**

**1228.21 ADMINISTRATIVE SPACE.** Refer to Section 1224.21.

**1228.22 CENTRAL STERILE SUPPLY.** Refer to Section 1224.22.

**1228.23 STORAGE.** Refer to Section 1224.23, Storage, for requirements and the additional requirements below:

**1228.23.1 Patient storage facilities.** A staff-controlled secured storage area shall be provided for patient's effects that are determined to be potentially harmful (e.g., razors, nail files, cigarette lighters).

**1228.24 MORGUE.**

**1228.24.1 Acute-care Psychiatric Hospitals with a licensed bed capacity of 50, or more, shall provide a morgue with autopsy facilities.**

**Exception:** This may not be required if it can be demonstrated to the licensing agency that morgue and autopsy facilities are available locally.

**1228.24.2 Minimum requirements.** Refer to Section 1224.24.2.

**1228.25 EMPLOYEE DRESSING ROOMS AND LOCKERS.** Refer to Section 1224.25.

**1228.26 HOUSEKEEPING ROOMS.** Refer to Section 1224.26.

**1228.27 LAUNDRY.** Refer to Section 1224.27.

**SUPPLEMENTAL SERVICES**

**1228.28 ELECTROCONVULSIVE THERAPY SERVICE SPACE.** If electroconvulsive therapy (ECT) is provided in the facility, the requirements in Section 1224.28.6 shall be met.

**1228.29 Reserved.**

**1228.30 PEDIATRIC AND ADOLESCENT PSYCHIATRIC SERVICE SPACE.** Pediatric and adolescent psychiatric service space patient areas shall be separate and distinct from adult psychiatric service space patient areas. The requirements of Section 1228.14, Psychiatric Nursing Service Space shall apply to pediatric and adolescent units as amended below:

**1228.30.1 Patient bedroom.**

**1228.30.1.1 Capacity.** Maximum bedroom capacity shall be four patients.

**1228.30.1.2 Space requirements.** Patient bedroom areas (with beds or cribs) shall meet the following requirements:

1. For single-bed rooms, a minimum clear floor area of 100 square feet (9.29 m<sup>2</sup>).
2. For multiple-bed rooms, a minimum clear floor area of 80 square feet (7.43 m<sup>2</sup>) per bed and 60 square feet (5.57 m<sup>2</sup>) minimum clear floor area per crib.

**1228.30.2 Patient toilet room.**

1. Each patient shall have access to a toilet room, either from the patient room or from the corridor outside the patient room.
2. Where access is provided via a corridor, the following requirements shall be met:
  - 2.1. The toilet room shall be located in the nursing unit.
  - 2.2. The toilet room shall be located no more than 150 feet (45.72 m) from the bedroom.

**1228.30.3 Activity areas.** The pediatric and adolescent activities space may be centralized for common use by multiple pediatric and adolescent psychiatric units or may be located in each individual unit, in response to the Patient Safety Risk Assessment. Centralized activity areas shall be readily accessible without traversing adult patient areas.

**1228.30.3.1 Space requirements.**

1. The combined area for activity space shall have 35 square feet (3.25 m<sup>2</sup>) of clear floor area per patient bed.
2. A separate dining space shall be provided and shall have a minimum of 15 square feet (1.39 m<sup>2</sup>) of clear floor area per patient bed.

**1228.30.3.2 Outdoor areas.** Pediatric and adolescent outdoor areas shall be separate from adult outdoor areas. Refer to Section 1228.13.1.2.

**1228.30.4 Support areas for the pediatric and adolescent psychiatric unit.** Storage space shall be provided for toys, equipment, extra cribs and beds, and cots or recliners for parents who may stay overnight.

**1228.31 FORENSIC PSYCHIATRIC UNIT.** Where provided, a forensic psychiatric unit shall be separate and distinct from other patient areas. The requirements of Section 1228.14, Psychiatric Nursing Service Space shall apply to forensic units as amended below:

**1228.31.1 Sally port.** Forensic units shall have security vestibules or sally ports at the unit entrance. For “secure treatment facilities,” alternate designs for locked unit access without individual sally ports, may be approved by the enforcement agency when it can be demonstrated that the alternate design meets performance requirements, without compromising any health or life-safety requirement.

**1228.31.2 Pediatrics and adolescents.** Forensic unit areas for pediatrics and adolescents shall be separated from adult areas. Refer to Section 1228.30.

**1228.31.3 Space requirements.** Specialized program requirements may result in additional treatment areas, police and courtroom space, and security considerations. When a forensic unit is provided, the needs of the patient population and special requirements shall be specifically addressed in the Patient Safety Risk Assessment.

**1228.32 Reserved.**

**1228.33 Reserved.**

**1228.34 Reserved.**

**1228.35 Reserved.**

**1228.36 Reserved.**

**1228.37 Reserved.**

**1228.38 INTERMEDIATE-CARE SERVICE SPACE.** Where provided, an intermediate-care service unit shall be housed in a separate and distinct nursing unit and shall comply with the applicable requirements of Section 1225 and the general construction provisions of Section 1228.4.

**1228.39 OUTPATIENT SERVICE SPACE.** Where provided, outpatient service space shall comply with the applicable requirements of Section 1224.39 and the general construction provisions of Section 1228.4.

**1228.40 SKILLED NURSING SERVICE SPACE.** Where provided, the skilled nursing service unit shall be housed in a separate and distinct nursing unit and shall comply with the applicable requirements of Section 1225 and the general construction provisions of Section 1228.4.

**1228.41 Reserved.**

**1228.42 CLINICAL LABORATORY SERVICE SPACE.** Where provided, clinical laboratory service space shall comply with the requirements of Section 1224.17, Clinical Laboratory Service Space.

**1228.43 RADIOLOGICAL SERVICE SPACE.** Where provided, Radiology/Imaging Service Space shall comply with the requirements of Section 1224.18, Radiological/Imaging Service Space and the general construction provisions of Section 1228.4.

**SECTION 1229  
Reserved**

**SECTION 1230 [BSCC]  
MINIMUM STANDARDS FOR JUVENILE FACILITIES**

**1230.1 Design criteria for required spaces.**

**1230.1.1 Reception/intake admission.** In each juvenile hall, space used for the reception of youth pending admis-

**1230.2.8 Seating.** Seating shall be designed to the level of security. When bench seating is used, 18 inches (457 mm) of bench is seating for one person.

**1230.2.9 Weapons lockers.** Weapons lockers are required in all secure juvenile facilities and shall be located outside the secure area of the facility. Weapons lockers shall be equipped with individual compartments, each with an individual locking device.

**1230.2.10 Security glazing.** Security glazing shall comply with the minimum requirements of one of the following test standards: American Society for Testing and Materials, ASTM F1233-98, Class III glass, or; California Department of Corrections and Rehabilitation, CDCR 860-94d, Appendix H, Class C glass or; H.P. White Laboratory, Inc., HPW-TP-0500.02, Forced Entry Level III.

**1230.2.11 Mirrors.** A mirror of a material appropriate to the level of security must be provided near each wash basin specified in these regulations.

**SECTION 1231 [BSCC]  
LOCAL DETENTION**

**1231.1 Definitions.**

**BOARD OF STATE & COMMUNITY CORRECTIONS** means the Board of State & Community Corrections, which acts by and through its executive officer, deputy directors and field representatives.

**LIVING AREAS** means those areas of a facility utilized for the day-to-day housing and activities of inmates. These areas do not include special-use cells such as sobering, safety and holding or staging cells normally located in receiving areas.

**LOCAL DETENTION FACILITY** is any city, county, city and county, or regional jail, camp, court holding facility or other correctional facility, whether publicly or privately operated, and court holding facility used for the confinement of adults or of both adults and minors, but does not include that portion of a facility for the confinement of both adults and minors which is devoted only to the confinement of minors. The types of local detention facilities are as follows:

**Court holding facility** means a local detention facility constructed within a court building after January 1, 1978, used for the confinement of persons solely for the purpose of a court appearance for a period not to exceed 12 hours.

**Temporary holding facility** means a local detention facility constructed after January 1, 1978, used for the confinement of persons for 24 hours or less pending release, transfer to another facility or appearance in court.

**Type I facility** means a local detention facility used for the detention of persons usually pending arraignment for not more than 96 hours, excluding holidays, after booking. Such a Type I facility may also detain persons on court order either for their own safe-keeping or sentenced to a city jail as an inmate worker, and may house

inmate workers sentenced to the county jail provided such placement in the facility is made on a voluntary basis on the part of the inmate. As used in this section, an inmate worker is defined as a person assigned to perform designated tasks outside of his or her cell or dormitory, pursuant to the written policy of the facility, for a minimum of four hours each day on a five-day scheduled work week.

**TYPE II FACILITY** means a local detention facility used for the detention of persons pending arraignment, after arraignment, during trial and upon a sentence of commitment.

**TYPE III FACILITY** means a local detention facility used only for the detention of convicted and sentenced persons.

**TYPE IV FACILITY** means a local detention facility or portion thereof designated for the housing of inmates eligible, under Penal Code Section 1208, for work/education furlough and/or other programs involving inmate access into the community.

**RATED CAPACITY** means the number of inmate occupants for which a facility's single-and double-occupancy cells or dormitories, except those dedicated for medical or disciplinary isolation housing, were planned and designed in conformity to the standards and requirements contained herein and in Title 15, C.C.R.

**1231.2 Design criteria for required spaces.**

**1231.2.1 Reception and booking.** Facilities where booking and housing occur shall have the following space and equipment:

1. Weapons locker as specified in Section 1231.3.12.
2. A cell or room for the confinement of inmates pending their booking, complying with Section 1231.2.2.
3. A sobering cell as described in Section 1231.2.4 if intoxicated, inmates who may pose a danger to themselves or others are held. For those facilities that accept male and female intoxicated inmates two sobering cells shall be provided.
4. Access to a shower within the secure portion of the facility.
5. Provide access to a secure vault or storage space for inmate valuables.
6. A safety cell or cells as described in Section 1231.2.5 if the program statement identifies the need for such a cell.
7. Telephones which are accessible to the inmates.
8. Unobstructed access to hot and cold running water for staff use.

**1231.2.2 Temporary holding cell or room.** A temporary holding cell or room shall:

1. Contain a minimum of 10 square feet (0.93 m<sup>2</sup>) of floor area per inmate;
2. Be limited to no more than 16 inmates;
3. Be no smaller than 40 square feet (3.7 m<sup>2</sup>) and have a clear ceiling height of 8 feet (2438 mm) or more;

4. Contain seating to accommodate all inmates as required in Section 1231.3;
5. Contain a toilet, wash basin and drinking fountain as specified in Section 1231.3;
6. Maximize visual supervision of inmates by staff; and
7. When located in a temporary holding facility, the cell or room shall be equipped with a bunk if inmates are to be held longer than 12 hours.

**1231.2.3 Temporary staging cell or room.** A temporary staging cell or room shall:

1. Be constructed for the purpose of holding inmates who have been classified and segregated in accordance with Sections 1050 and 1053 of Title 15, Division 1, California Code of Regulations.
2. Be limited to holding inmates up to four hours.
3. Be limited to no more than 80 inmates.
4. Contain a minimum of 10 square feet (0.93 m<sup>2</sup>) of floor area per inmate and a clear ceiling height of 8 feet (2438 mm) or more.
5. Be no smaller than 160 square feet (14.9 m<sup>2</sup>).
6. Contain seating to accommodate all inmates as required in Section 1231.3.
7. Contain toilet, wash basin and drinking fountain as specified in Section 1231.3.
8. Maximize visual supervision of inmates by staff.

**1231.2.4 Sobering cell.** A sobering cell shall:

1. Contain a minimum of 20 square feet (1.9 m<sup>2</sup>) of floor area per inmate;
2. Be limited to eight inmates;
3. Be no smaller than 60 square feet (5.6 m<sup>2</sup>) and have a clear ceiling height of 8 feet (2438 mm) or more;
4. Contain a toilet, wash basin and drinking fountain as specified in Section 1231.3;
5. Have padded partitions located next to toilet fixture in such a manner that they provide support to the user;
6. Maximize visual supervision of inmates by staff;
7. Be padded on the floor as specified in Section 1231.3; and,
8. Have accessible a shower in the secure portion of the facility.

**1231.2.5 Safety cell.** A safety cell shall:

1. Contain a minimum of 48 square feet (4.5 m<sup>2</sup>) of floor area with no one floor dimension being less than 6 feet (1829 mm) and a clear ceiling height of 8 feet (2438 mm) or more;
2. Be limited to one inmate;
3. Contain a flushing ring toilet, capable of accepting solid waste, mounted flush with the floor, the controls for which must be located outside of the cell;
4. Be padded as specified in Section 1231.3;
5. Be equipped with a variable intensity, security-type lighting fixture which is inaccessible to the inmate

occupant, control of which is located outside of the cell;

6. Provide one or more vertical view panels not more than 4 inches (102 mm) wide nor less than 24 inches (610 mm) long which shall provide a view of the entire room;
7. Provide a food pass with lockable shutter, no more than 4 inches (102 mm) high, and located between 26 inches (660 mm) and 32 inches (813 mm) as measured from the bottom of the food pass to the floor; and,
8. Any wall or ceiling mounted devices must be inaccessible to the inmate occupant.

**1231.2.6 Single-occupancy cells.** Single-occupancy cells shall:

1. Have a maximum capacity of one inmate;
2. Contain a minimum of 60 square feet (5.6 m<sup>2</sup>) of floor area in Type I facilities and 70 square feet (6.5 m<sup>2</sup>) of floor area in Type II and Type III facilities;
3. Have a minimum clear ceiling height of 8 feet (2438 mm) and a minimum width of 6 feet (1829 mm);
4. Contain a toilet, wash basin and drinking fountain as specified in Section 1231.3; and
5. Contain a bunk, desk and seat as specified in Section 1231.3.

**Exception:** A Type I facility does not require a desk and seat.

**1231.2.7 Double-occupancy cells.** Double-occupancy cells shall:

1. Have a maximum capacity of two inmates;
2. Contain a minimum of 60 square feet (5.6 m<sup>2</sup>) of floor area in Type I facilities and 70 square feet (6.5 m<sup>2</sup>) of floor area in Type II and Type III facilities;
3. Have a minimum clear ceiling height of 8 feet (2438 mm) and a minimum width of 6 feet (1829 mm);
4. Contain a toilet, wash basin and drinking fountain as specified in Section 1231.3; and
5. Contain two bunks, and at least one desk and seat as specified in Section 1231.3.

**Exception:** A Type I facility does not require a desk and seat.

**1231.2.8 Dormitories.** Dormitories shall:

1. Contain a minimum of 50 square feet (4.7 m<sup>2</sup>) of floor area per inmate for a single-bed unit; a minimum of 70 square feet (7 m<sup>2</sup>) for a double-bed unit; and a minimum of 90 square feet (9.3 m<sup>2</sup>) for triple-bed unit and have a minimum ceiling height of 8 feet (2438 mm);
2. Be designed for no more than 64 inmates and no fewer than four inmates;
3. Provide access to water closets separate from the wash basin and drinking fountains as specified in Section 1231.3; and

forced membranes or breaking strength for reinforced membranes when tested as herein required.

**1504.7 Impact resistance.** Roof coverings installed on low-slope roofs (roof slope < 2:12) in accordance with Section 1507 shall resist impact damage based on the results of tests conducted in accordance with ASTM D3746, ASTM D4272 or the “Resistance to Foot Traffic Test” in Section 4.6 of FM 4470.

**1504.8 Surfacing and ballast materials in hurricane-prone regions.** For a building located in a hurricane-prone region as defined in Section 202, or on any other building with a mean roof height exceeding that permitted by Table 1504.8 based on the exposure category and basic wind speed at the site, the following materials shall not be used on the roof:

1. Aggregate used as surfacing for roof coverings.
2. Aggregate, gravel or stone used as ballast.

**TABLE 1504.8  
MAXIMUM ALLOWABLE MEAN ROOF HEIGHT  
PERMITTED FOR BUILDINGS WITH AGGREGATE ON THE  
ROOF IN AREAS OUTSIDE A HURRICANE-PRONE REGION**

NOMINAL DESIGN WIND SPEED, $V_{asd}$ (mph) <sup>b, d</sup>	MAXIMUM MEAN ROOF HEIGHT (ft) <sup>a, c</sup>		
	Exposure category		
	B	C	D
85	170	60	30
90	110	35	15
95	75	20	NP
100	55	15	NP
105	40	NP	NP
110	30	NP	NP
115	20	NP	NP
120	15	NP	NP
Greater than 120	NP	NP	NP

For SI: 1 foot = 304.8 mm; 1 mile per hour = 0.447 m/s.

- a. Mean roof height as defined in ASCE 7.
- b. For intermediate values of  $V_{asd}$ , the height associated with the next higher value of  $V_{asd}$  shall be used, or direct interpolation is permitted.
- c. NP = gravel and stone not permitted for any roof height.
- d.  $V_{asd}$  shall be determined in accordance with Section 1609.3.1.

**SECTION 1505  
FIRE CLASSIFICATION**

**[BF] 1505.1 General.** Roof assemblies shall be divided into the classes defined in this section. Class A, B and C roof assemblies and roof coverings required to be listed by this section shall be tested in accordance with ASTM E108 or UL 790. In addition, fire-retardant-treated wood roof coverings shall be tested in accordance with ASTM D2898. The minimum roof coverings installed on buildings shall comply with Table 1505.1 based on the type of construction of the building.

**Exception:** Skylights and sloped glazing that comply with Chapter 24 or Section 2610.

**TABLE 1505.1<sup>a</sup>  
MINIMUM ROOF COVERING CLASSIFICATION  
FOR TYPES OF CONSTRUCTION**

IA	IB	IIA	IIB	IIIA	IIIB	IV	VA	VB
B	B	B	C	B	C	B	B	C

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m<sup>2</sup>.

a. Unless otherwise required in accordance with Chapter 7A.

**1505.1.1 Roof coverings within fire hazard severity zones.** The entire roof covering of every existing structure where more than 50 percent of the total roof area is replaced within any one-year period, the entire roof covering of every new structure, and any roof covering applied in the alteration, repair or replacement of the roof of every existing structure, shall be a fire-retardant roof covering that is at least Class A.

**Exception:** The requirements shall not apply in any jurisdiction that adopts the model ordinance approved by the State Fire Marshal pursuant to Section 51189 of the Government Code or an ordinance that substantially conforms to the model ordinance and transmits a copy to the State Fire Marshal.

**1505.1.2 Roof coverings within all other areas.** The entire roof covering of every existing structure where more than 50 percent of the total roof area is replaced within any one-year period, the entire roof covering of every new structure, and any roof covering applied in the alteration, repair or replacement of the roof of every existing structure, shall be a fire-retardant roof covering that is at least Class C.

**1505.1.3 Roofing requirements in a Wildland-Urban Interface Fire Area.** Roofing requirements for structures located in a Wildland-Urban Interface Fire Area shall also comply with Section 705A.

**[BF] 1505.2 Class A roof assemblies.** Class A roof assemblies are those that are effective against severe fire test exposure. Class A roof assemblies and roof coverings shall be listed and identified as Class A by an approved testing agency. Class A roof assemblies shall be permitted for use in buildings or structures of all types of construction.

**Exceptions:**

1. Class A roof assemblies include those with coverings of brick, masonry or an exposed concrete roof deck.
2. Class A roof assemblies also include ferrous or copper shingles or sheets, metal sheets and shingles, clay or concrete roof tile or slate installed on non-combustible decks or ferrous, copper or metal sheets installed without a roof deck on noncombustible framing.
3. Class A roof assemblies include minimum 16 ounce per square foot (0.0416 kg/m<sup>2</sup>) copper sheets installed over combustible decks.
4. Class A roof assemblies include slate installed over ASTM D226, Type II underlayment over combustible decks.

**[BF] 1505.3 Class B roof assemblies.** Class B roof assemblies are those that are effective against moderate fire-test exposure. Class B roof assemblies and roof coverings shall be listed and identified as Class B by an approved testing agency.

**[BF] 1505.4 Class C roof assemblies.** Class C roof assemblies are those that are effective against light fire-test exposure. Class C roof assemblies and roof coverings shall be listed and identified as Class C by an approved testing agency.

**[BF] 1505.5 Nonclassified roofing.** Nonclassified roofing is approved material that is not listed as a Class A, B or C roof covering.

**[BF] 1505.6 Fire-retardant-treated wood shingles and shakes.** Fire-retardant-treated wood shakes and shingles are wood shakes and shingles complying with UBC Standard 15-3 or 15-4 which are impregnated by the full-cell vacuum-pressure process with fire-retardant chemicals, and which have been qualified by UBC Standard 15-2 for use on Class A, B or C roofs.

*Fire-retardant-treated wood shakes and shingles shall comply with ICC-ES EG107 and with the weathering requirements contained in Health and Safety Code Section 13132.7(j). Each bundle shall bear labels from an ICC accredited quality control agency identifying their roof-covering classification and indicating their compliance with ICC-ES EG107 and with the weathering requirements contained in Health and Safety Code Section 13132.7(j).*

*Health and Safety Code Section 13132.7(j). No wood roof covering materials shall be sold or applied in this state unless both of the following conditions are met:*

- (1) The materials have been approved and listed by the State Fire Marshal as complying with the requirements of this section.*
- (2) The materials have passed at least five years of the 10-year natural weathering test. The 10-year natural weathering test required by this subdivision shall be conducted in accordance with standard 15-2 of the 1994 edition of the Uniform Building Code at a testing facility recognized by the State Fire Marshal.*

**[BF] 1505.7 Special purpose roofs.** Special purpose wood shingle or wood shake roofing shall conform to the grading and application requirements of Section 1507.8 or 1507.9. In addition, an underlayment of  $\frac{5}{8}$ -inch (15.9 mm) Type X water-resistant gypsum backing board or gypsum sheathing shall be placed under minimum nominal  $\frac{1}{2}$ -inch-thick (12.7 mm) wood structural panel solid sheathing or 1-inch (25 mm) nominal spaced sheathing.

**[BF] 1505.8 Building-integrated photovoltaic products.** Building-integrated photovoltaic products installed as the roof covering shall be tested, listed and labeled for fire classification in accordance with Section 1505.1.

**[BF] 1505.9 Rooftop mounted photovoltaic panel systems.** Rooftop rack-mounted photovoltaic panel systems shall be tested, listed and identified with a fire classification in accordance with UL 1703 and UL 2703. The fire classification shall comply with Table 1505.1 based on the type of construction of the building.

**[BF] 1505.10 Roof gardens and landscaped roofs.** Roof gardens and landscaped roofs shall comply with Section 1505.1 and 1507.16 and shall be installed in accordance with ANSI/SPRI VF-1.

## SECTION 1506 MATERIALS

**1506.1 Scope.** The requirements set forth in this section shall apply to the application of roof-covering materials specified herein. Roof coverings shall be applied in accordance with this chapter and the manufacturer's installation instructions. Installation of roof coverings shall comply with the applicable provisions of Section 1507.

**1506.2 Material specifications and physical characteristics.** Roof-covering materials shall conform to the applicable standards listed in this chapter.

**1506.3 Product identification.** Roof-covering materials shall be delivered in packages bearing the manufacturer's identifying marks and approved testing agency labels required in accordance with Section 1505. Bulk shipments of materials shall be accompanied with the same information issued in the form of a certificate or on a bill of lading by the manufacturer.

## SECTION 1507 REQUIREMENTS FOR ROOF COVERINGS

**1507.1 Scope.** Roof coverings shall be applied in accordance with the applicable provisions of this section and the manufacturer's installation instructions.

**1507.1.1 Underlayment.** Underlayment for asphalt shingles, clay and concrete tile, metal roof shingles, mineral-surfaced roll roofing, slate and slate-type shingles, wood shingles, wood shakes, metal roof panels and photovoltaic shingles shall conform to the applicable standards listed in this chapter. Underlayment materials required to comply with ASTM D226, D1970, D4869 and D6757 shall bear a label indicating compliance with the standard designation and, if applicable, type classification indicated in Table 1507.1.1(1). Underlayment shall be applied in accordance with Table 1507.1.1(2). Underlayment shall be attached in accordance with Table 1507.1.1(3).

### Exceptions:

1. As an alternative, self-adhering polymer modified bitumen underlayment complying with ASTM D1970 and installed in accordance with



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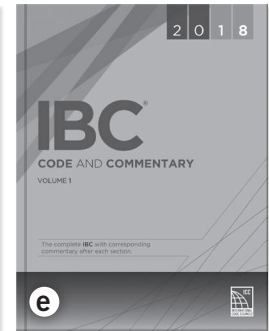
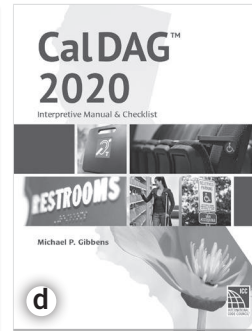
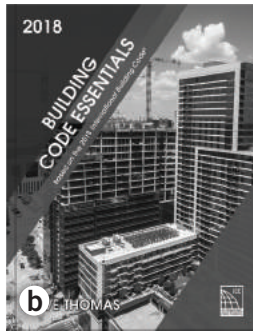
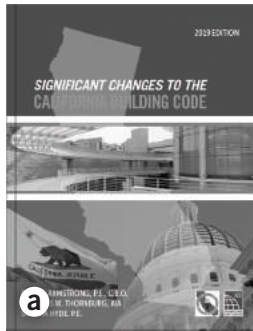
## 2019 California Building Code California Code of Regulations, Title 24, Part 2 Volume 1

### HISTORY:

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1. BSC 02/18, HCD 03/18, DSA-SS/CC 02/18, DSA/AC 01/18, SFM 01/18, OSHPD 02/18 and OSHPD 03/18, CDPH 01/18, SLC 01/18, BSCC 01/18 -- Adoption of the 2018 edition of the *International Building Code* published by the International Code Council, for incorporation into the 2019 *California Building Code*, CCR Title 24, Part 2 with amendments for state-regulated occupancies effective on January 1, 2020.
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The only publication that compiles all applicable scoping and technical requirements for disabled access including the specific exceptions and exclusions that apply to a project. Author Michael P. Gibbens has updated this popular time-saving resource to the 2019 California Building Code cross-referenced with the federal ADA regulations and the 2010 ADA Standards for Accessible Design requirements, making CalDAG the most comprehensive, detailed and user-friendly resource available.

Features:

- 250+ superb illustrations
- Valuable flow charts breaking down complex compliance procedures
- Applicable CBC and ADA/ADA Standards section numbers for legal/technical reference
- Easy-to-follow checklist format perfect for survey, inspection or design
- Selected California statutes defining disabled accessibility compliance obligations

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## e. 2018 IBC® Code and Commentary, Volumes 1 & 2 (Chapters 1–35)

This helpful set contains the full text of 2018 IBC, including tables and figures, followed by corresponding commentary at the end of each section to help code users understand the intent of the code provisions and learn how to apply them effectively. Volumes also sold separately.

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