

# REVISION RECORD FOR THE STATE OF CALIFORNIA

## ERRATA

January 1, 2026

### 2025 Title 24, Part 2, Volume 1, California Building Code

#### General Information:

1. The date of this erratum is for identification purposes only. See the History Note Appendix on the backside or accompanying page.
2. This erratum is issued by the California Building Standards Commission to correct non-substantive printing errors or omissions in the 2025 California Building Code, California Code of Regulations, Title 24, Part 2, Volume 1. 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. An erratum to Title 24 is a non-regulatory correction because of a printing error or omission that does not differ substantively from the official adoption by the California Building Standards Commission. Accordingly, the corrected code text provided by this erratum may be applied on and after the stated effective date.
4. You may wish to retain the superseded material with this revision record so that the prior wording of any section can be easily ascertained.

#### Title 24, Part 2, Volume 1

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# CALIFORNIA CODE OF REGULATIONS, TITLE 24

## California State Agency Contact List

The following state agencies may propose building standards for buildings, structures and applications under their authority for publication in Title 24. Notice of such proposals may be requested from each agency. See Sections 1.2 through 1.14 of the California Building Code (Part 2, T24) for detailed information on the regulatory authority of most state agencies summarized below. Note [agency acronyms] shown in banners/Matrix Adoption Tables in T24.

### **Board of State and Community Corrections** [BSCC]

bscc.ca.gov  
(916) 445-5073

BSCC-Mail@bscc.ca.gov  
*Local Detention Facilities*

### **Building Standards Commission** [BSC, BSC-CG]

dgs.ca.gov/BSC  
(916) 263-0916

cbsc@dgs.ca.gov

*State Buildings including UC & CSU  
Nonresidential Green Building Standards*

### **Department of Consumer Affairs Boards/Bureaus:**

#### **Acupuncture Board** [CA]

acupuncture.ca.gov  
(916) 515-5200

AcuPolicy@dca.ca.gov  
*Acupuncture Offices*

#### **Board of Pharmacy** [CA]

pharmacy.ca.gov  
(916) 518-3100

*Pharmacies*

#### **Board of Barbering and Cosmetology** [CA]

barbercosmo.ca.gov  
(916) 574-7570

barbercosmo@dca.ca.gov  
*Barber, Cosmetology &  
Electrolysis Establishments*

#### **Bureau of Household Goods and Services** [CA]

bhgs.dca.ca.gov  
(916) 999-2041

*Insulation Testing*

#### **Structural Pest Control Board** [CA]

pestboard.ca.gov  
(800) 737-8188

pestboard@dca.ca.gov  
*Structural Pest Control Locations*

#### **Veterinary Medical Board** [CA]

vmb.ca.gov  
(916) 515-5220

vmb@dca.ca.gov  
*Veterinary Facilities*

### **Department of Food and Agriculture** [AGR]

cdfa.ca.gov  
(916) 900-5004  
(916) 900-5064  
(916) 900-5008

*Rendering & Collection Centers  
Meat & Poultry Packing Plants  
Milk & Dairy Food Safety*

### **Department of Health Care Access and Information**

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

[OSHPD 1, 1R, 2, 3, 4, 5, 6]  
hcai.ca.gov  
(916) 440-8300

regsunit@hcai.ca.gov  
*Hospital Standards,*

*Skilled Nursing Facility Standards  
& Clinic Standards*

#### **Department of Public Health** [DPH]

cdph.ca.gov (Recreational Health)  
(916) 449-5661

*Food Establishments, Organized  
Camps, Public Swimming Pools*

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

[HCD 1, 2, 1-AC]  
hcd.ca.gov  
(800) 952-8356

Option 5 > Option 2

*State Housing Law: including  
Housing Accessibility, Hotels/Motels,  
Apartments/Condominiums, Dormitories,  
Single-Family Dwellings, ADUs, Permanent  
Structures in Mobile Home Parks*

Option 5 > Option 4  
Option 5 > Option 5

*Factory-Built Housing  
Employee Housing*

### **Department of Water Resources** [DWR]

water.ca.gov  
(916) 653-5791

DWRwebcomment@water.ca.gov  
*Plumbing for Recycled Water,  
Floodplain Construction*

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

dgs.ca.gov/DSA  
(916) 445-8100

#### **Access Compliance** [DSA-AC]

(916) 445-5827

DSAaccess@dgs.ca.gov  
*Access for Persons with Disabilities*

#### **Structural Safety** [DSA-SS, DSA-SS/CC]

*Public Schools & Community Colleges,  
State Essential Services Buildings*

#### **State Historical Building Safety Board** [SHBSB]

(916) 445-7627

shbsb@dgs.ca.gov  
*Historical Building Rehabilitation, Preservation,  
Restoration or Relocation*

### **Energy Commission** [CEC]

energy.ca.gov  
(800) 772-3300

Title24@energy.ca.gov  
*Building Energy Efficiency,  
Compliance Manual & Compliance Forms*

### **Office of the State Fire Marshal** [SFM]

osfm.fire.ca.gov  
(916) 568-3800

codedevelopment@fire.ca.gov  
*Fire & Life Safety*

### **State Lands Commission** [SLC]

slc.ca.gov  
(510) 741-4950

MOTEMS.Public@slc.ca.gov  
*Marine Oil Terminals*

### **State Librarian** [SL]

library.ca.gov  
(916) 323-9843

csllaw@library.ca.gov  
*Public Library  
Construction & Renovation*

# How to Distinguish Between Model Code Language and California Amendments

To distinguish between model code language and the incorporated California amendments, including exclusive California standards, California amendments will appear in *italics*.

**[BSC]** This is an example of a state agency acronym used to identify an adoption or amendment by the agency. The acronyms will appear at California Amendments and in the Matrix Adoption Tables. Sections 1.2 through 1.14 in Chapter 1, Division 1 of this code, explain the used acronyms, the application of state agency adoptions to building occupancies or building features, the enforcement agency as designated by state law (may be the state adopting agency or local building or fire official), the authority in state law for the state agency to make the adoption, and the specific state law being implemented by the agency's adoption. The following acronyms are used in Title 24 to identify the state adopting agency making an adoption.

## Legend of Acronyms of Adopting State Agencies

BSC	California Building Standards Commission (see Section 1.2)
BSC-CG	California Building Standards Commission-CALGreen (see Section 1.2.2)
BSCC	Board of State and Community Corrections (see Section 1.3)
SFM	Office of the State Fire Marshal (see Section 1.11)
HCD 1	Department of Housing and Community Development (see Section 1.8.2.1.1)
HCD 2	Department of Housing and Community Development (see Section 1.8.2.1.3)
HCD 1/AC	Department of Housing and Community Development (see Section 1.8.2.1.2)
DSA-AC	Division of the State Architect-Access Compliance (see Section 1.9.1)
DSA-SS	Division of the State Architect-Structural Safety (see Section 1.9.2)
DSA-SS/CC	Division of the State Architect-Structural Safety/Community Colleges (see Section 1.9.2.2)
OSHPD 1	Office of Statewide Hospital Planning and Development (see Section 1.10.1)
OSHPD 1R	Office of Statewide Hospital Planning and Development (see Section 1.10.1)
OSHPD 2	Office of Statewide Hospital Planning and Development (see Section 1.10.2)
OSHPD 3	Office of Statewide Hospital Planning and Development (see Section 1.10.3)
OSHPD 4	Office of Statewide Hospital Planning and Development (see Section 1.10.4)
OSHPD 5	Office of Statewide Hospital Planning and Development (see Section 1.10.5)
OSHPD 6	Office of Statewide Hospital Planning and Development (see Section 1.10.6)
DPH	Department of Public Health (see Section 1.7)
AGR	Department of Food and Agriculture (see Section 1.6)
CEC	California Energy Commission (see Section 100 in Part 6, the California Energy Code)
CA	Department of Consumer Affairs (see Section 1.4): Board of Barbering and Cosmetology Board of Examiners in Veterinary Medicine Board of Pharmacy Acupuncture Board Bureau of Household Goods & Services Structural Pest Control Board (SPCB)
SL	State Library (see Section 1.12)
SLC	State Lands Commission (see Section 1.14)
DWR	Department of Water Resources (see Section 1.13 of Chapter 1 of the California Plumbing Code in Part 5 of Title 24)

The state agencies are available to answer questions about their adoptions. Contact information is provided on page v of this code.

To learn more about the use of this code, refer to pages vii through ix. Training materials on the application and use of this code are available at the website of the California Building Standards Commission [www.dgs.ca.gov/bsc](http://www.dgs.ca.gov/bsc).

## MARGINAL MARKINGS

Symbols in the margin indicate the status of code changes as follows:

- || This symbol indicates that a change has been made to a California amendment.
- > This symbol indicates deletion of California amendment language.
- | This symbol indicates that a change has been made to International Code Council model language.
- ➔ This symbol indicates deletion of International Code Council model language.

A single asterisk [\*] placed in the margin indicates that text or a table has been relocated within the code. A double asterisk [\*\*] placed in the margin indicates that the text or table immediately following it has been relocated there from elsewhere in the code.

## RELOCATION OF TEXT OR TABLES

The following table indicates relocation of sections and tables in the 2024 edition of the IBC from the 2021 edition.

RELOCATIONS	
2024 LOCATION	2021 LOCATION
104.2.3	104.11
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104.2.3.6	104.11.1
104.2.4	104.10
104.2.4.1	104.10.1
104.4	104.6
705.1	705.9
705.11	705.1
1110.6	E105.2
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1110.6.2	E105.2.2
1110.15	1110.12.2
1110.15.1	1110.12.2.1
1112.6	E107.2
1402.3.1	1403.14
1403.9	1403.10
1404.5	1404.17
1404.5.1	2603.11
1404.5.2	2603.12
1404.5.2.1	2603.12.1
Table 1404.5.2.1	Table 2603.12.1
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1404.5.3.1	2603.13.1
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1607.19	1607.20

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2308.11	2308.7
3301.3	3301.2.1
3301.4	3302.1

### ABOUT THE I-CODES

The 2024 I-Codes, published by the ICC, are 15 fully compatible titles intended to establish provisions that adequately protect public health, safety and welfare; that do not unnecessarily increase construction costs; that do not restrict the use of new materials, products or methods of construction; and that do not give preferential treatment to particular types or classes of materials, products or methods of construction.

The I-Codes are updated on a 3-year cycle to allow for new construction methods and technologies to be incorporated into the codes. Alternative materials, designs and methods not specifically addressed in the I-Code can be approved by the building official where the proposed materials, designs or methods comply with the intent of the provisions of the code.

The I-Codes are used as the basis of laws and regulations in communities across the US and in other countries. They are also used in a variety of nonregulatory settings, including:

- Voluntary compliance programs.
- The insurance industry.
- Certification and credentialing for building design, construction and safety professionals.
- Certification of building and construction-related products.
- Facilities management.
- “Best practices” benchmarks for designers and builders.
- College, university and professional school textbooks and curricula.
- Reference works related to building design and construction.

### Code Development Process

The code development process regularly provides an international forum for building professionals to discuss requirements for building design, construction methods, safety, performance, technological advances and new products. Proposed changes to the I-Codes, submitted by code enforcement officials, industry representatives, design professionals and other interested parties are deliberated through an open code development process in which all interested and affected parties may participate.

Openness, transparency, balance, due process and consensus are the guiding principles of both the ICC Code Development Process and OMB Circular A-119, which governs the federal government’s use of private-sector standards. The ICC process is open to anyone without cost. Remote participation is available through cdpAccess®, the ICC’s cloud-based app.

In order to ensure that organizations with a direct and material interest in the codes have a voice in the process, the ICC has developed partnerships with key industry segments that support the ICC’s important public safety mission. Some code development committee members were nominated by the following industry partners and approved by the ICC Board:

- American Gas Association (AGA)
- American Institute of Architects (AIA)
- American Society of Plumbing Engineers (ASPE)
- International Association of Fire Chiefs (IAFC)
- National Association of Home Builders (NAHB)
- National Association of State Fire Marshals (NASFM)
- National Council of Structural Engineers Association (NCSEA)
- National Multifamily Housing Council (NMHC)
- Plumbing Heating and Cooling Contractors (PHCC)
- Pool and Hot Tub Alliance (PHTA), formerly The Association of Pool and Spa Professionals (APSP)

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**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE**  
**CHAPTER 1 – 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	6									
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	X	X	
Chapter / Section																									
<i>Division 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	X	
1.2	X																								
1.2.3	X							X																	
1.3																		X							
1.4																								X	
1.6																					X				
1.7																			X						
1.8				X	X	X																			
1.9																									
1.9.1 – 1.9.1.8							X																		
1.9.2								X	X																
1.9.2.1									X																
1.9.2.2										X															
1.10.1											X	X													
1.10.2												X													
1.10.3													X												
1.10.4														X											
1.10.5														X											
1.10.6															X										
1.11				X																					
1.12																							X		
1.14																								X	
<i>Division II – Scope and Administration</i>																									
101											X	X	X	X	X	X	X	X	X	X					
101.4.8				X																					
102							X	X	X	X	X	X	X	X	X	X	X	X	X	X					
102.4.3							X	X	X	X	X	X	X	X	X	X	X	X	X	X					
102.4.4							X	X	X	X	X	X	X	X	X	X	X	X	X	X					
102.6							†	†																	
104											X	X	X	X	X	X	X	X	X	X	X				
104.2.3 – 104.2.4							X	X																	
104.2.3.8									X									X							
104.9								X	X																
105.1 – 105.2											X	X	X	X	X	X	X	X	X	X	X				
105.2 Building: 1-13				X	X	X					†	†	†	†	†	†	†	†	†	†					
105.2.1 – 105.3.1				X							X	X	X	X	X	X	X	X	X	X	X				
105.3.2											X	X	X	X	X	X	X	X	X	X	X				

**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE**  
**CHAPTER 1 – 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	X	X
Chapter / Section																							
<i>Division II – Scope and Administration-cont'd</i>																							
105.4				X						X	X	X	X	X	X								
105.5										X	X	X	X	X	X								
105.5.1	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								
106.1.2								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 – 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	X	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					X	X	X			X	X	X	X	X	X								
110.3.4.1					X																		
110.3.5	X			X	X	X			X	X													
110.3.6				X	X	X				X	X	X	X	X	X								
110.3.7				X	X	X			X	X	X	X	X	X	X								
110.3.8					X	X				X	X	X	X	X	X								
110.3.10 – 110.3.11				X	X	X				X	X	X	X	X	X								
110.3.12 – 110.3.12.1					X	X																	
110.3.12.2					X	X																	
110.4 – 110.6				X						X	X	X	X	X	X								
111 – 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								
114.3										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.

**1.10.4.1 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 adopted in Chapter 1, Division II.

**1.10.4.2 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 1.10.4.*

*OSHPD 4 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.*

**1.10.4.3 Identification of amendments.** For applications listed in Section 1.10.4, amendments appear in this code preceded with the acronym [OSHPD 4], unless the entire chapter is applicable.**1.10.4.4 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.

**Authority**—Health and Safety Code Sections 127010, 127015 and 129790.

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

**1.10.5 OSHPD 5.** 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**—Acute psychiatric hospital buildings.

**Enforcing agency**—Health Care Access and Information/Office of Statewide Hospital Planning and Development (OSHPD). The office shall also enforce the California Energy Commission—Energy Regulations, 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.

**1.10.5.1 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 adopted in Chapter I, Division II.

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

*The provision of Title 24, Part 2, as adopted and amended by OSHPD, shall apply to the applications listed in Section 1.10.5.*

*OSHPD 5 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.*

**1.10.5.3 Identification of amendments.** For applications listed in Section 1.10.5, amendments appear in this code preceded with the acronym [OSHPD 5].

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

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

**1.10.6 OSHPD 6.** 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**—Chemical dependency recovery hospital not within an acute care hospital building or an acute psychiatric facility.**Enforcing agency**—Local building department.**1.10.6.1 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 adopted in Chapter I, Division II.

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

*The provision of Title 24, Part 2, as adopted and amended by OSHPD, shall apply to the applications listed in Section 1.10.6.*

*OSHPD 6 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.*

**1.10.6.3 Identification of amendments.** For applications listed in Section 1.10.6, amendments appear in this code preceded with the acronym [OSHPD 6].

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

**References**—Health and Safety Code Sections 1250.3, 129680 and 129675 through 130070.

## **SECTION 1.11—OFFICE OF THE STATE FIRE MARSHAL**

**1.11.1 SFM—Office of the State Fire Marshal.** 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.**Application:**

**Institutional, educational or any similar occupancy.** Any building or structure used or intended for use as an asylum, jail, prison, mental hospital, hospital, sanitarium, home for the elderly, children's nursery, children's home or institution, school or any similar occupancy of any capacity.

**Authority cited**—Health and Safety Code Section 13143.

**Reference**—Health and Safety Code Section 13143.

**Assembly or similar place of assemblage.** Any theater, dancehall, skating rink, auditorium, assembly hall, meeting hall, nightclub, fair building or similar place of assemblage where 50 or more persons may gather together in a building, room or structure for the purpose of amusement, entertainment, instruction, deliberation, worship, drinking or dining, awaiting transportation, or education.

**Authority cited**—Health and Safety Code Section 13143.

**Reference**—Health and Safety Code Section 13143.

**Small family day-care homes.**

**Authority cited**—Health and Safety Code Sections 1597.45, 1597.54, 13143 and 17921.

**Reference**—Health and Safety Code Section 13143.

**Large family day-care homes.**

**Authority cited**—Health and Safety Code Sections 1597.46, 1597.54 and 17921.

**Reference**—Health and Safety Code Section 13143.

**Residential facilities and residential facilities for the elderly.**

**Authority cited**—Health and Safety Code Section 13133.

**Reference**—Health and Safety Code Section 13143.

**Any state institution or other state-owned or specified state-occupied building.**

**Specified state-occupied buildings.** Any building, structure or area that meets any of the following criteria:

1. A building where the state has contracted into a build-to-suit lease.
2. A courthouse holding facility or trial court with a detention area.
3. A building used by the Department of Corrections and Rehabilitation (CDCR) as a community correctional reentry center.
4. 100 percent state occupied.
5. State-occupied areas in a state-leased building that is a high-rise and is 75 percent of the net area floor space or more occupied by state entities.
6. State-occupied areas in a building that contains 5,000 square feet ( $465\text{ m}^2$ ) or more space of state-leased Group H or Group L occupancy.
7. A state-leased building with facilities with the primary purpose of housing state records and/or state artifacts of historical significance.
8. Properties leased by California State University (CSU).
9. State institutions and their real property.
10. CAL FIRE occupied areas in leased buildings.
11. State-leased facilities where the governing body's fire protection services rely on an all-volunteer fire department.

**Authority cited**—Health and Safety Code Sections 13108, 13145, 13146, 16022.5 and 17921.

**Reference**—Health and Safety Code Sections 13108, 13143, 13145, 13146, 16022.5 and 17921.

**High-Rise structures.**

**Authority cited**—Health and Safety Code Section 13211.

**Reference**—Health and Safety Code Section 13143.

**Motion picture production studios.**

**Authority cited**—Health and Safety Code Section 13143.1.

**Reference**—Health and Safety Code Section 13143.

**Organized camps.**

**Authority cited**—Health and Safety Code Section 18897.3.

**Reference**—Health and Safety Code Section 13143.

**Residential.** All hotels, motels, lodging houses, apartment houses and dwellings, including congregate residences and buildings and structures accessory thereto.

Multiple-story structures existing on January 1, 1975, let for human habitation, including and limited to, hotels, motels and apartment houses, less than 75 feet (22 860 mm) above the lowest floor level having building access, wherein rooms used for sleeping are let above the ground floor.

**Authority cited**—Health and Safety Code Sections 13143.2 and 17921.

**Reference**—Health and Safety Code Section 13143.

**Residential care facilities.** Certified family care homes, out-of-home placement facilities, halfway houses, drug and/or alcohol rehabilitation facilities and any building or structure used or intended for use as a home or institution for the housing of any person of any age

## 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.

**[A] 104.2 Determination of compliance.** The building official shall have the authority to determine compliance with this code, 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:

1. Shall be in compliance with the intent and purpose of this code.
2. Shall not have the effect of waiving requirements specifically provided for in this code.

**[A] 104.2.1 Listed compliance.** Where this code or a referenced standard requires equipment, materials, products or services to be listed and a listing standard is specified, the listing shall be based on the specified standard. Where a listing standard is not specified, the listing shall be based on an approved listing criteria. Listings shall be germane to the provision requiring the listing. Installation shall be in accordance with the listing and the manufacturer's instructions, and where required to verify compliance, the listing standard and manufacturer's instructions shall be made available to the building official.

**[A] 104.2.2 Technical assistance.** To determine compliance with this code, the building official is authorized to require the owner or owner's authorized agent to provide a technical opinion and report.

**[A] 104.2.2.1 Cost.** A technical opinion and report shall be provided without charge to the jurisdiction.

**[A] 104.2.2.2 Preparer qualifications.** The technical opinion and report shall be prepared by a qualified engineer, specialist, laboratory or specialty organization acceptable to the building official. The building official is authorized to require design submittals to be prepared by, and bear the stamp of, a registered design professional.

**[A] 104.2.2.3 Content.** The technical opinion and report shall analyze the properties of the design, operation or use of the building or premises and the facilities and appurtenances situated thereon to identify and propose necessary recommendations.

**[A] 104.2.2.4 Tests.** Where there is insufficient evidence of compliance with the provisions of this code, the building official shall have the authority to require tests as evidence of compliance. Test methods shall be as specified in this code or by other recognized test standards. In the absence of recognized test standards, the building official shall approve the testing procedures. Such tests shall be performed by a party acceptable to the building official.

**[A] 104.2.3 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.

**Exception:** Performance-based alternative materials, designs or methods of construction and equipment complying with the *International Code Council Performance Code*. This exception shall not apply to alternative structural materials or to alternative structural designs. **[DSA-SS, DSA-SS/CC]** *The International Code Council Performance Code is not permitted by DSA.*

**[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] 104.2.3.1 Approval authority.** An alternative material, design or method of construction shall be approved where the building official finds that the proposed alternative is satisfactory and complies with Sections 104.2.3 through 104.2.3.7, as applicable.

**[A] 104.2.3.2 Application and disposition.** Where required, a request to use an alternative material, design or method of construction shall be submitted in writing to the building official for approval. Where the alternative material, design or method of construction is not approved, the building official shall respond in writing, stating the reasons the alternative was not approved.

**[A] 104.2.3.3 Compliance with code intent.** An alternative material, design or method of construction shall comply with the intent of the provisions of this code.

**[A] 104.2.3.4 Equivalency criteria.** An alternative material, design or method of construction shall, for the purpose intended, be not less than the equivalent of that prescribed in this code with respect to all of the following, as applicable:

1. Quality.
2. Strength.
3. Effectiveness.
4. Durability.
5. Safety, other than fire safety.
6. Fire safety.

**[A] 104.2.3.5 Tests.** Tests conducted to demonstrate equivalency in support of an alternative material, design or method of construction application shall be of a scale that is sufficient to predict performance of the end use configuration. Tests shall be performed by a party acceptable to the building official.

**[A] 104.2.3.5.1 Fire Tests.** Tests conducted to demonstrate equivalent fire safety in support of an alternative material, design or method of construction application shall be of a scale that is sufficient to predict fire safety performance of the end use configuration. Tests shall be performed by a party acceptable to the building official.

**[A] 104.2.3.6 Reports.** Supporting data, where necessary to assist in the approval of materials or assemblies not specifically provided for in this code, shall comply with Sections 104.2.3.6.1 and 104.2.3.6.2.

**[A] 104.2.3.6.1 Evaluation reports.** Evaluation reports shall be issued by an approved agency and use of the evaluation report shall require approval by the building official for the installation. The alternate material, design or method of construction and product evaluated shall be within the scope of the building official's recognition of the approved agency. Criteria used for the evaluation shall be identified within the report and, where required, provided to the building official.

**[A] 104.2.3.6.2 Other reports.** Reports not complying with Section 104.2.3.6.1 shall describe criteria, including but not limited to any referenced testing or analysis, used to determine compliance with code intent and justify code equivalence. The report shall be prepared by a qualified engineer, specialist, laboratory or specialty organization acceptable to the building official. The building official is authorized to require design submittals to be prepared by, and bear the stamp of, a registered design professional.

**[A] 104.2.3.7 Peer review.** The building official is authorized to require submittal of a peer review report in conjunction with a request to use an alternative material, design or method of construction, prepared by a peer reviewer that is approved by the building official.

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

**104.2.3.8 Earthquake monitoring instruments. [OSHPD 1 & 4]** The enforcement agency shall be permitted to 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 "MAINTAIN 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 Section L101.3 of this code.*

**[A] 104.2.4 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, provided that the building official shall first find that one or more special individual reasons make the strict letter of this code impractical, and that 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 the written request for and action granting modifications shall be recorded and entered in the files of the department of building safety.

**[A] 104.2.4.1 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 inappropriate.
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 or 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] 104.3 Applications and permits.** The building official shall receive applications, review construction documents, issue permits, inspect the premises for which such permits have been issued and enforce compliance with the provisions of this code.

**[A] 104.3.1 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, or Section R306 of the *California Residential Code*, as applicable.

**[A] 104.4 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 all reasonable times to inspect or to perform the duties imposed by this code. If such structure or premises is occupied, the building official shall present credentials to the occupant and request entry. If such structure or premises is unoccupied, the building official shall first make a reasonable effort to locate the owner, the owner's authorized agent 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 every remedy provided by law to secure entry.

**[A] 104.4.1 Warrant.** Where the building official has first obtained a proper inspection warrant or other remedy provided by law to secure entry, an owner, the owner's authorized agent, occupant or person having charge, care or control of the structure or premises shall not fail or neglect, after a proper request is made as herein provided, to permit entry therein by the building official for the purposes of inspection and examination pursuant to this code.

**[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 Notices and orders.** The building official shall issue necessary notices or orders to ensure compliance with this code. Notices of violations shall be in accordance with Section 114.

**[A] 104.7 Official records.** The building official shall keep official records as required by Sections 104.7.1 through 104.7.5. Such official records shall be retained for not less than 5 years or for as long as the building or structure to which such records relate remains in existence, unless otherwise provided by other regulations.

**[A] 104.7.1 Approvals.** A record of approvals shall be maintained by the building official and shall be available for public inspection during business hours in accordance with applicable laws.

**[A] 104.7.2 Inspections.** The building official shall keep a record of each inspection made, including notices and orders issued, showing the findings and disposition of each.

**[A] 104.7.3 Code alternatives and modifications.** Application for alternative materials, design and methods of construction and equipment in accordance with Section 104.2.3; modifications in accordance with Section 104.2.4; and documentation of the final decision of the building official for either shall be in writing and shall be retained in the official records.

**[A] 104.7.4 Tests.** The building official shall keep a record of tests conducted to comply with Sections 104.2.2.4 and 104.2.3.5.

**[A] 104.7.5 Fees.** The building official shall keep a record of fees collected and refunded in accordance with Section 109.

**[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 rendered personally liable, either civilly or criminally, 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 any act or omission in the discharge of official duties.

**[A] 104.8.1 Legal defense.** Any suit or criminal complaint instituted against any officer or employee because of an act performed by that officer or employee in the lawful discharge of duties under the provisions of this code or other laws or ordinances implemented through the enforcement 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 costs in an 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 Materials and equipment reuse.** Materials, equipment and devices shall not be reused unless such elements are in good working condition and approved.

## 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 ordinances of this jurisdiction. Permits shall not be required for the following:

**Building:**

1. One-story detached accessory structures used as tool and storage sheds, playhouses and similar uses, provided that the floor area *does not exceed than 120 square feet (11.15 m<sup>2</sup>)*. *It is permissible that these structures still be regulated by Part 7, California Wildland-Urban Interface Code, despite exemption from permit.*
2. Fences, other than swimming pool barriers, not over 7 feet (2134 mm) high.
3. Oil derricks.
4. Retaining walls that are not over 4 feet (1219 mm) in height measured from the bottom of the footing to the top of the wall, unless supporting a surcharge or impounding Class I, II or IIIA liquids.
5. Water tanks supported directly on grade if the capacity is not greater than 5,000 gallons (18 925 L) and the ratio of height to diameter or width is not greater than 2:1.
6. Sidewalks and driveways not more than 30 inches (762 mm) above adjacent grade, and not over any basement or story below and are not part of an accessible route.
7. Painting, papering, tiling, carpeting, cabinets, countertops and similar finish work.
8. Temporary motion picture, television and theater stage sets and scenery.
9. Prefabricated swimming pools accessory to a Group R-3 occupancy that are less than 24 inches (610 mm) deep, are not greater than 5,000 gallons (18 925 L) and are installed entirely above ground.
10. Shade cloth structures constructed for nursery or agricultural purposes, not including service systems.
11. Swings and other playground equipment accessory to detached one- and two-family dwellings.
12. Window awnings in Group R-3 and U occupancies, supported by an exterior wall that do not project more than 54 inches (1372 mm) from the exterior wall and do not require additional support.
13. Nonfixed and movable fixtures, cases, racks, counters and partitions not over 5 feet 9 inches (1753 mm) in height.

**Electrical:**

1. **Repairs and maintenance:** Minor repair work, including the replacement of lamps or the connection of approved portable electrical equipment to approved permanently installed receptacles.
2. **Radio and television transmitting stations:** The provisions of this code shall not apply to electrical equipment used for radio and television transmissions, but do apply to equipment and wiring for a power supply and the installations of towers and antennas.
3. **Temporary testing systems:** A permit shall not be required for the installation of any temporary system required for the testing or servicing of electrical equipment or apparatus.

**Gas:**

1. Portable heating appliance.
2. Replacement of any minor part that does not alter approval of equipment or make such equipment unsafe.

**Mechanical:**

1. Portable heating appliance.
2. Portable ventilation equipment.
3. Portable cooling unit.
4. Steam, hot or chilled water piping within any heating or cooling equipment regulated by this code.
5. Replacement of any part that does not alter its approval or make it unsafe.
6. Portable evaporative cooler.
7. Self-contained refrigeration system containing 10 pounds (4.54 kg) or less of refrigerant and actuated by motors of 1 horsepower (0.75 kW) or less.

**Plumbing:**

1. The stopping of leaks in drains, water, soil, waste or vent pipe, provided, however, that if any concealed trap, drain pipe, water, soil, waste or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material, such work shall be considered as new work and a permit shall be obtained and inspection made as provided in this code.
2. The clearing of stoppages or the repairing of leaks in pipes, valves or fixtures and the removal and reinstallation of water closets, provided that such repairs do not involve or require the replacement or rearrangement of valves, pipes or fixtures.

**[A] 105.2.1 Emergency repairs.** Where equipment replacements and repairs must be performed in an emergency situation, the permit application shall be submitted within the next working business day to the building official.

**[A] 105.2.2 Public service agencies.** A permit shall not be required for the installation, alteration or repair of generation, transmission, distribution or metering or other related equipment that is under the ownership and control of public service agencies by established right.

**[A] 105.3 Application for permit.** To obtain a permit, the applicant shall first file an application therefor in writing on a form furnished by the department of building safety for that purpose. Such application shall:

1. Identify and describe the work to be covered by the permit for which application is made.
2. Describe the land on which the proposed work is to be done by legal description, street address or similar description that will readily identify and definitely locate the proposed building or work.
3. Indicate the use and occupancy for which the proposed work is intended.
4. Be accompanied by construction documents and other information as required in Section 107.
5. State the valuation of the proposed work.
6. Be signed by the applicant, or the applicant's authorized agent.
7. Give such other data and information as required by the building official.

**[A] 105.3.1 Action on application.** The building official shall examine or cause to be examined applications for permits and amendments thereto within a reasonable time after filing. If the application or the construction documents do not conform to the requirements of pertinent laws, the building official shall reject such application in writing, stating the reasons therefor. If the building official is satisfied that the proposed work conforms to the requirements of this code and laws and ordinances applicable thereto, the building official shall issue a permit therefor as soon as practicable.

**[A] 105.3.2 Time limitation of application.** An application for a permit for any proposed work shall be deemed to have been abandoned 180 days after the date of filing, unless such application has been pursued in good faith or a permit has been issued; except that the building official is authorized to grant one or more extensions of time for additional periods not exceeding 90 days each. The extension shall be requested in writing and justifiable cause demonstrated. *[OSHPD 1, 1R, 2, 4 & 5] Time limitation shall be in accordance with the California Administrative Code, Chapter 7, Section 7-129.*

**[A] 105.4 Validity of permit.** The issuance or granting of a permit shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of any other ordinance of the jurisdiction. Permits presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction shall not be valid. The issuance of a permit based on construction documents and other data shall not prevent the building official from requiring the correction of errors in the construction documents and other data. The building official is authorized to prevent occupancy or use of a structure where in violation of this code or of any other ordinances of this jurisdiction.

**[A] 105.5 Expiration.** Every permit issued shall become invalid unless the work on the site authorized by such permit is commenced within 180 days after its issuance, or if the work authorized on the site by such permit is suspended or abandoned for a period of 180 days after the time the work is commenced. The building official is authorized to grant, in writing, one or more extensions of time, for periods not more than 180 days each. The extension shall be requested in writing and justifiable cause demonstrated.

**105.5.1 Expiration.** *On or after January 1, 2019, every permit issued shall become invalid unless the work on the site authorized by such permit is commenced within 12 months after its issuance, or if the work authorized on the site by such permit is suspended or abandoned for a period of 12 months after the time the work is commenced. The building official is authorized to grant, in writing, one or more extensions of time, for periods not more than 180 days each. The extension shall be requested in writing and justifiable cause demonstrated. (See Health and Safety Code Section 18938.5 and 18938.6.)*

**[A] 105.6 Suspension or revocation.** The building official is authorized to suspend or revoke a permit issued under the provisions of this code wherever the permit is issued in error or on the basis of incorrect, inaccurate or incomplete information, or in violation of any ordinance or regulation or any of the provisions of this code.

**[A] 105.7 Placement of permit.** The building permit or copy shall be kept on the site of the work until the completion of the project.

## SECTION 106—FLOOR AND ROOF DESIGN LOADS

**[A] 106.1 Live loads posted.** In commercial or industrial buildings, for each floor or portion thereof designed for live loads exceeding 50 psf (2.40 kN/m<sup>2</sup>), such design live loads shall be conspicuously posted by the owner or the owner's authorized agent in that part of each story in which they apply, using durable signs. It shall be unlawful to remove or deface such notices. *[DSA-SS, DSA-SS/CC] These posting requirements also apply to school and state-owned essential services buildings as regulated by DSA.*

**106.1.1 Snow load posting.** *[OSHPD 1, 1R, 2, 4 & 5] Snow loads used in design shall be posted as for live loads.*

**106.1.2 Snow load posting.** *[DSA-SS, DSA-SS/CC] When design snow loads at exterior balconies, decks and other elevated walking surfaces exceed 50 psf, the design snow loads shall be posted as for live loads. When design roof (not ground) snow loads exceed 20 psf, the roof design snow loads for each roof level of the building shall similarly be conspicuously posted with signs stating the maximum design roof snow loads.*

**[A] 106.2 Issuance of certificate of occupancy.** A certificate of occupancy required by Section 111 shall not be issued until the floor load signs, required by Section 106.1, have been installed.

**[A] 106.3 Restrictions on loading.** It shall be unlawful to place, or cause or permit to be placed, on any floor or roof of a building, structure or portion thereof, a load greater than is permitted by this code.

## SECTION 107—CONSTRUCTION DOCUMENTS

**[A] 107.1 General.** Submittal documents consisting of construction documents, statement of special inspections, geotechnical report and other data shall be submitted in two or more sets, or in a digital format where allowed by the building official, with each

permit application. The construction documents shall be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed. Where special conditions exist, the building official is authorized to require additional construction documents to be prepared by a registered design professional.

**Exception:** The building official is authorized to waive the submission of construction documents and other data not required to be prepared by a registered design professional if it is found that the nature of the work applied for is such that review of construction documents is not necessary to obtain compliance with this code.

**[A] 107.2 Construction documents.** Construction documents shall be in accordance with Sections 107.2.1 through 107.2.8.

**[A] 107.2.1 Information on construction documents.** Construction documents shall be dimensioned and drawn on suitable material. Electronic media documents are permitted to be submitted where approved by the building official. Construction documents shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code and relevant laws, ordinances, rules and regulations, as determined by the building official.

**[A] 107.2.2 Fire protection system shop drawings.** Shop drawings for the fire protection systems shall be submitted to indicate conformance to this code and the construction documents and shall be approved prior to the start of system installation. Shop drawings shall contain all information as required by the referenced installation standards in Chapter 9.

**[A] 107.2.3 Means of egress.** The construction documents shall show in sufficient detail the location, construction, size and character of all portions of the means of egress including the path of the exit discharge to the public way in compliance with the provisions of this code. In other than occupancies in Groups R-2, R-2.1 and R-3, the construction documents shall designate the number of occupants to be accommodated on every floor, and in all rooms and spaces.

**[A] 107.2.4 Exterior wall envelope.** Construction documents for all buildings shall describe the exterior wall assembly in sufficient detail to determine compliance with this code. The construction documents shall provide details of the exterior wall assembly as required, including flashing, intersections with dissimilar materials, corners, end details, control joints, intersections at roof, eaves or parapets, means of drainage, water-resistive barrier and details around openings.

The construction documents shall include manufacturer's installation instructions that provide supporting documentation that the proposed penetration and opening details described in the construction documents maintain the weather resistance of the exterior wall assembly. The supporting documentation shall fully describe the exterior wall assembly that was tested, where applicable, as well as the test procedure used.

**[A] 107.2.5 Exterior balconies and elevated walking surfaces.** Where balconies or other elevated walking surfaces have weather-exposed surfaces, and the structural framing is protected by an impervious moisture barrier, the construction documents shall include details for all elements of the impervious moisture barrier system. The construction documents shall include manufacturer's installation instructions.

**[A] 107.2.6 Site plan.** The construction documents submitted with the application for permit shall be accompanied by a site plan showing to scale the size and location of new construction and existing structures on the site, distances from lot lines, the established street grades and the proposed finished grades and, as applicable, flood hazard areas, floodways, and design flood elevations; and it shall be drawn in accordance with an accurate boundary line survey. In the case of demolition, the site plan shall show construction to be demolished and the location and size of existing structures and construction that are to remain on the site or plot. The building official is authorized to waive or modify the requirement for a site plan where the application for permit is for alteration or repair or where otherwise warranted.

**[A] 107.2.6.1 Design flood elevations.** Where design flood elevations are not specified, they shall be established in accordance with Section 1612.3.1.

**[A] 107.2.7 Structural information.** The construction documents shall provide the information specified in Section 1603.

**[A] 107.2.8 Relocatable buildings.** Construction documents for relocatable buildings shall comply with Section 3113.

**[A] 107.3 Examination of documents.** The building official shall examine or cause to be examined the accompanying submittal documents and shall ascertain by such examinations whether the construction indicated and described is in accordance with the requirements of this code and other pertinent laws or ordinances.

**[A] 107.3.1 Approval of construction documents.** When the building official issues a permit, the construction documents shall be approved, in writing or by stamp, as "Reviewed for Code Compliance." One set of construction documents so reviewed shall be retained by the building official. The other set shall be returned to the applicant, shall be kept at the site of work and shall be open to inspection by the building official or a duly authorized representative.

**[A] 107.3.2 Previous approvals.** This code shall not require changes in the construction documents, construction or designated occupancy of a structure for which a lawful permit has been heretofore issued or otherwise lawfully authorized, and the construction of which has been pursued in good faith within 180 days after the effective date of this code and has not been abandoned.

**[A] 107.3.3 Phased approval.** The building official is authorized to issue a permit for the construction of foundations or any other part of a building or structure before the construction documents for the whole building or structure have been submitted, provided that adequate information and detailed statements have been filed complying with pertinent requirements of this code. The holder of such permit for the foundation or other parts of a building or structure shall proceed at the holder's own risk with the building operation and without assurance that a permit for the entire structure will be granted.

**[A] 107.3.4 Design professional in responsible charge.** Where it is required that documents be prepared by a registered design professional, the building official shall be authorized to require the owner or the owner's authorized agent to engage and design-

nate on the building permit application a registered design professional who shall act as the registered design professional in responsible charge. If the circumstances require, the owner or the owner's authorized agent shall designate a substitute registered design professional in responsible charge who shall perform the duties required of the original registered design professional in responsible charge. The building official shall be notified in writing by the owner or the owner's authorized agent if the registered design professional in responsible charge is changed or is unable to continue to perform the duties.

The registered design professional in responsible charge shall be responsible for reviewing and coordinating submittal documents prepared by others, including phased and deferred submittal items, for compatibility with the design of the building.

**[A] 107.3.4.1 Deferred submittals.** Deferral of any submittal items shall have the prior approval of the building official. The registered design professional in responsible charge shall list the deferred submittals on the construction documents for review by the building official.

Documents for deferred submittal items shall be submitted to the registered design professional in responsible charge who shall review them and forward them to the building official with a notation indicating that the deferred submittal documents have been reviewed and found to be in general conformance to the design of the building. The deferred submittal items shall not be installed until the deferred submittal documents have been approved by the building official. **[OSHPD 1, 1R, 2, 4 & 5]** *Deferred submittals shall be in accordance with the California Administrative Code, Chapter 7, Section 7-126.*

**[A] 107.4 Amended construction documents.** Work shall be installed in accordance with the approved construction documents, and any changes made during construction that are not in compliance with the approved construction documents shall be resubmitted for approval as an amended set of construction documents.

**[A] 107.5 Retention of construction documents.** One set of approved construction documents shall be retained by the building official for a period of not less than 180 days from date of completion of the permitted work, or as required by state or local laws.

## SECTION 108—TEMPORARY STRUCTURES, EQUIPMENT AND SYSTEMS

**[A] 108.1 General.** The building official is authorized to issue a permit for temporary structures, equipment or systems. Such permits shall be limited as to time of service, but shall not be permitted for more than 180 days. The building official is authorized to grant extensions for demonstrated cause. Structures designed to comply with Section 3103.6 shall not be in service for a period of more than 1 year unless an extension of time is granted. **[OSHPD 1, 1R, 2, 4 & 5]** *OSHPD shall grant only one extension when cause is demonstrated.*

**[A] 108.2 Conformance.** Temporary structures shall comply with the requirements in Section 3103.

**[A] 108.3 Temporary service utilities.** The building official is authorized to give permission to temporarily supply service utilities in accordance with Section 112.

**[A] 108.4 Termination of approval.** The building official is authorized to terminate such permit for a temporary structure, equipment or system and to order the same to be discontinued.

## SECTION 109—FEES

**[A] 109.1 Payment of fees.** A permit shall not be valid until the fees prescribed by law have been paid, nor shall an amendment to a permit be released until the additional fee, if any, has been paid.

**[A] 109.2 Schedule of permit fees.** Where a permit is required, a fee for each permit shall be paid as required, in accordance with the schedule as established by the applicable governing authority.

**[A] 109.3 Permit valuations.** The applicant for a permit shall provide an estimated value of the work for which the permit is being issued at time of application. Such estimated valuations shall include the total value of work, including materials and labor, for which the permit is being issued, such as electrical, gas, mechanical, plumbing equipment and permanent systems. Where, in the opinion of the building official, the valuation is underestimated, the permit shall be denied, unless the applicant can show detailed estimates acceptable to the building official. The building official shall have the authority to adjust the final valuation for permit fees.

**[A] 109.4 Work commencing before permit issuance.** Any person who commences any work before obtaining the necessary permits shall be subject to a fee established by the building official that shall be in addition to the required permit fees.

**[A] 109.5 Related fees.** The payment of the fee for the construction, alteration, removal or demolition for work done in connection to or concurrently with the work authorized by a building permit shall not relieve the applicant or holder of the permit from the payment of other fees that are prescribed by law.

**[A] 109.6 Refunds.** The building official is authorized to establish a refund policy.

## SECTION 110—INSPECTIONS

**[A] 110.1 General.** 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 visible and able to be accessed 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 of other ordinances of the jurisdiction. Inspections presuming to give authority to violate or cancel the provisions of this code or of other ordinances of the jurisdiction shall not be valid. It shall be the duty of the owner or the owner's authorized agent to cause the work to remain visible and able to be accessed for inspection purposes. Neither the building official nor the jurisdiction shall be liable for expense entailed in the removal or replacement of any material required to allow inspection.

**[A] 110.2 Preliminary inspection.** Before issuing a permit, the building official is authorized to examine or cause to be examined buildings, structures and sites for which an application has been filed.

**[A] 110.3 Required inspections.** The building official, upon notification, shall make the inspections set forth in Sections 110.3.1 through 110.3.12.

**[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 or the *California Residential Code*, as applicable, 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 Types IV-A, IV-B and IV-C connection protection inspection.** In buildings of Types 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, inspection of the wood cover shall be made after the cover is installed, but before any other coverings or finishes are installed.

**[A] 110.3.6 Lath and gypsum panel product inspection.** Lath and gypsum panel product inspections shall be made after lathing and gypsum panel products, interior and exterior, are in place, but before any plastering is applied or gypsum panel product joints and fasteners are taped and finished.

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

**[A] 110.3.7 Weather-exposed balcony and walking surface waterproofing.** Where balconies or other elevated walking surfaces have weather-exposed surfaces, 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] 110.3.8 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] 110.3.9 Energy efficiency inspections.** Inspections shall be made to determine compliance with Chapter 13 and shall include, but not be limited to, inspections for: building thermal envelope insulation R- and U-values, fenestration U-value, duct system R-value, and HVAC and water-heating equipment efficiency.

**[A] 110.3.10 Other inspections.** In addition to the inspections specified in Sections 110.3.1 through 110.3.9, 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] 110.3.11 Special inspections.** For special inspections, see Chapter 17.

**[A] 110.3.12 Final inspection.** The final inspection shall be made after all work required by the building permit is completed.

**[A] 110.3.12.1 Flood hazard documentation.** If located in a flood hazard area, documentation of the elevation of the lowest floor or the elevation of dry floodproofing, if applicable, as required in Section 1612.4 shall be submitted to the building official prior to the final inspection.

**110.3.12.2 [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.

**[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 the permit holder's 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.

**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	5								
Adopt entire chapter	X															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																							
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															
Accessory Dwelling Unit			X	X																			
Active Earthquake Fault								X	X	X	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 (Amendment 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																			X				
Backwash																			X				
Base									X	X	X	X	X		X	X							

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**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	5	6									
Adopt entire chapter	X																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																									
<i>Bather</i>																				X					
<i>Bathroom</i>								X	X																
<i>Bedridden Person</i>			X																						
<i>Blended Transition</i>										X															
<i>Boarding Pier</i>											X														
<i>Boat Launch Ramp</i>											X														
<i>Boat Slip</i>											X														
<i>Bottle-Filling Station</i>											X														
<i>Building</i>		X																							
<i>Building (with exception)</i>				X	X	X																			
<i>Building (w/o notes)</i>										X															
<i>Building Entrance on an Accessible Route</i>											X														
<i>Building, Existing</i>				X	X																				
<i>Building Official</i>												X													
<i>Care and Supervision</i>		X																							
<i>Carriage Unit</i>								X																	
<i>Catastrophically Injured</i>		X																							
<i>Catch Pool</i>										X															
<i>CCR</i>											X														
<i>CCDR</i>		X																							
<i>Cell</i>		X																							
<i>Cell Complex</i>		X																							
<i>Cell Tiers</i>		X																							
<i>Cellular Concrete</i>			X	X																					
<i>Central Control Building</i>		X																							
<i>Characters</i>				X	X	X	X																		
<i>Charter School</i>		X																							
<i>Child Care</i>		X																							
<i>Child-Care Center</i>		X																							
<i>Child or Children</i>		X																							
<i>Children's Use</i>									X																
<i>Chronically Ill</i>		X																							
<i>Circulation Path</i>										X															
<i>Clean Pool Water</i>																				X					
<i>Clear</i>											X														
<i>Clear Floor Space</i>								X	X																
<i>Clear Pool Water</i>																				X					
<i>Climate Zone</i>																						X			
<i>Clinic, Outpatient</i>		X																							
<i>Closed-Circuit Telephone</i>										X															
<i>Commercial Facilities</i>											X														
<i>Commercial Place of Public Amusement</i>											X														
<i>Common Use</i>					†	†	†	X																	
<i>Common Use Areas</i>					†			X																	
<i>Community Care Facility</i>			X																						

**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	5	6								
Adopt entire chapter	X																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																								
<i>Community Correctional Reentry Centers</i>			X																					
<i>Comply With</i>								X																
<i>Concrete, Cellular</i>					X	X																		
<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														
<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	X	X	X	X	X					
<i>District Agricultural Associations</i>										X														
<i>Dormitory</i>					X				X															

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**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	5									
Adopt entire chapter	X															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																								
Drain																			X					
Drive Aisle								X																
Drive-up Electric Vehicle Charging Station								X																
Driveway									X															
Dwelling Unit									X															
Dwelling Unit, Efficiency					†	†	†																	
Effective Particle Size																		X						
Efficiency Dwelling Unit							X																	
Electric Vehicle (EV)							X			X														
Electric Vehicle (EV) Charger									X															
Electric Vehicle Charging Space (EV Space)									X															
Electric Vehicle Charging Station (EVCS)									X															
Electric Vehicle (EV) Connector										X														
Element										X														
Elevated Play Component										X														
Elevator, Passenger							X	X		X														
Employee Work Area										X														
Enforcement							X	X																
Enforcement Agent										X	X	X	X	X	X	X	X							
Enforcing Agency							X	X	X	X										X				
Entrance							X	X	X	X														
Equipment										X	X	X	X	X	X	X	X	X						
Countertop Equipment										X	X	X	X	X	X	X	X	X						
Essential Equipment										X	X	X	X	X	X	X	X	X						
Fixed Equipment										X	X	X	X	X	X	X	X	X						
Interim Equipment											X													
Mobile Equipment											X	X	X	X	X	X	X	X	X					
Movable Equipment											X	X	X	X	X	X	X	X	X					
Other Equipment											X	X	X	X	X	X	X	X	X					
Temporary Equipment												X												
Equipment Area																					X			
Equivalent Facilitation										X	X													
Existing Building or Facility											X													
Exit											X													
Facility											X													
Family							X																	
Fire Appliance							X																	
Fire-Retardant Treated Wood							X																	
Fire-Smoke Barrier							X																	
Fireworks							X																	
Flammable Gas							X																	
Freestanding Acute Psychiatric Building (APB)																	X							

**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	5	6								
Adopt entire chapter	X																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																								
<i>Freestanding Building or Structure</i>											X	X	X		X	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														
<i>Ground Level Play Component</i>										X														
<i>Group Home</i>			X																					
<i>Guard (or Guardrail)</i>				X	X	X	X																	
<i>Hall Call Console</i>									X															
<i>Handrail</i>										X														
<i>Handwashing Fixture</i>												X		X	X	X	X							
<i>Hazardous Substance</i>			X																					
<i>Health Care Provider</i>									X															
<i>High-Rise Building</i>			X																					
<i>High-Rise Building Access</i>			X																					
<i>Historic Buildings</i>										X														
<i>Holding Facility</i>			X																					
<i>Hospitals and Psychiatric Hospitals</i>			X																					
<i>Hotel or Motel</i>				X	X																			
<i>Housing at a Place of Education</i>							X	X																
<i>Housing Pod</i>			X																					
<i>Housing Unit</i>			X																					
<i>If, If... Then</i>									X															
<i>Incidental Structural Alterations, Additions or Repairs</i>												X	X	X		X	X							
<i>Infant</i>			X																					
<i>Inflatable Amusement Device</i>			X																					
<i>Inlet</i>																				X				
<i>Intake and Release Areas</i>			X																					
<i>Intended to be occupied as a Residence</i>					†	†	†																	
<i>International Symbol of Accessibility</i>							X	X																

**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	5	6							
Adopt entire chapter	X																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																							
<i>Irregular Structure</i>								X	X	X	X	X	X	X	X								
<i>Key Station</i>								X															
<i>Kick Plate</i>				X	X	X	X																
<i>Kitchen or Kitchenette</i>								X															
<i>Labeled</i>				X	X																		
<i>Laboratory</i>			X																				
<i>Laboratory Suite</i>			X																				
<i>Ladder</i>																		X					
<i>Lavatory</i>							X	X															
<i>Level Area</i>							X																
<i>Licensing Agency</i>																X	X	X	X	X	X		
<i>Lift, Platform (Wheelchair)</i>							X																
<i>Liquid Tight Floor</i>			X																				
<i>Listed</i>			X	X	X																		
<i>Listing Agency</i>			X	X																			
<i>Live/Work Unit</i>			X																				
<i>Lobby</i>			X	X	X																		
<i>Lodging House</i>				X		X																	
<i>Mail Boxes</i>							X																
<i>Major Structural Alterations, Additions or Repairs</i>																X	X	X	X	X	X		
<i>Marked Crossing</i>					X	X	X	X															
<i>May</i>								X															
<i>Medical Pool</i>																				X			
<i>Mezzanine</i>							X																
<i>Minor Structural Alteration, Additions or Repairs</i>																X	X	X	X	X	X		
<i>Monolithic</i>																X	X	X	X	X	X		
<i>Monolithic Ceiling</i>																X	X	X	X	X	X		
<i>Motel</i>				X	X																		
<i>Motion Picture and Television Production Studio Sound Stage, Approved Production Facilities and Production Locations</i>			X																				
<i>Multi-bedroom Housing Unit</i>								X															
<i>Multilevel Assembly Seating</i>					†	†	†																
<i>Multistory Dwelling Unit</i>							X																
<i>Multistory Unit</i>					†	†	†																
<i>Newly Constructed</i>							X																
<i>NFPA</i>								X															
<i>Non-General Acute Care Building (Non-GAC Building)</i>																X							
<i>Nonambulatory Persons</i>			X																				
<i>Noncombustible</i>			X																				
<i>Nonpatient-care Suite</i>			X																				

**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	5	6							
Adopt entire chapter	X																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																							
Should				X	X			X															
Sidewalk				X	X	X	X																
Sign						X	X																
Significant Loss of Function								X	X	X	X	X				X	X						
Single-Accommodation Sanitary Facility							X																
Sink							X	X															
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 Amusement Area		X																					
Special Inspection									X	X	X	X	X			X	X						
Specified Public Transportation								X															
Stage								X															
Stair									X														
Stairs																		X					
Stairway									X														
State-Owned/Leased Building		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					
Temporary Holding Facility			X																				
Tenable Environment			X																				
Terminally Ill			X																				

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

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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							
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																							
<i>Testing Agency</i>				X	X																		
<i>Text Telephone</i>							X	X															
<i>Toddler</i>			X																				
<i>Torque-Controlled Post-Installed Anchor</i>								X	X	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>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>Waterline</i>																				X			
<i>Wet Bar</i>										X													
<i>Wheelchair</i>							X	X															
<i>Wheelchair Space</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.

**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 purposes of the code.

**ICC code development note:** Code change proposals to sections preceded by the designation [A], [BG] or [BS] will be considered by one of the code development committees meeting during the 2025 (Group B) Code Development Cycle.

## 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 space adjacent to or between vehicle 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.

**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 66313)

## DEFINITIONS

**[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.

**ACTIVE EARTHQUAKE FAULT. [DSA-SS, DSA-SS/CC, OSHPD 1, 1R, 2, 4 & 5]** 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 E283 or ASTM E2178.

**[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.

**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 1208.4.

**[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. [DSA-AC]** Off-board charging equipment used to charge an electric vehicle.

**ELECTRIC VEHICLE CHARGING SPACE (EV Space). [DSA-AC]** A space intended for charging electric vehicles.

**ELECTRIC VEHICLE CHARGING STATION (EVCS). [DSA-AC]** 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 charging stations shall be considered equivalent to the number of electric vehicles that can be simultaneously charged.

**ELECTRIC VEHICLE (EV) CONNECTOR. [DSA-AC]** 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.

**[BG] ELECTRIC VEHICLE CHARGING STATION.** One or more vehicle spaces served by an electric vehicle charging system.

**[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 exterior 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.

**[BF] EMITTANCE.** The ratio of radiant heat flux emitted by a specimen to that emitted by a blackbody at the same temperature and under the same conditions.

**[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.** The designated department or agency as specified by statute or regulation.

**[F] ENERGY STORAGE SYSTEM, ELECTROCHEMICAL.** An energy storage system that stores energy and produces electricity using chemical reactions. It includes, among others, battery ESS and capacitor ESS.

**[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.

## DEFINITIONS

**ENTRANCE. [HCD 1, HCD 2, HCD-1/AC and DSA-AC]** 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, 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 [DSA-SS, DSA-SS/CC, OSHPD 1, 2, 4 & 5]** means equipment that typically remains on countertop, work bench, shelf or support other than the floor during its service life.
- (2) **ESSENTIAL EQUIPMENT [OSHPD 1, 2, 4 & 5]** means equipment whose failure 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) **ESSENTIAL EQUIPMENT [DSA-SS, DSA-SS/CC]** means equipment whose failure will significantly impair operations during or after a disaster for emergency preparedness, communications and operations centers, and other facilities required for emergency response of state-owned essential services buildings, as defined in the California Administrative Code (Title 24, Part 1, CCR) Section 4-207, and all structures required for their continuous operation or access/egress.
- (4) **FIXED EQUIPMENT [DSA-SS, DSA-SS/CC, OSHPD 1, 2, 4 & 5]** 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 [OSHPD 1, 2, 4 & 5]** means equipment that will be in use for the duration of the need for the equipment, not to exceed the duration of the construction project that it is related to.
- (5) **MOBILE EQUIPMENT [DSA-SS, DSA-SS/CC, OSHPD 1, 2, 4 & 5]** 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 [DSA-SS, DSA-SS/CC, OSHPD 1, 2, 4 & 5]** means fixed 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 [DSA-SS, DSA-SS/CC, OSHPD 1, 2, 4 & 5]** 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 [OSHPD 1, 2, 4 & 5]** 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, tornadoes, 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.

**[A] 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.

**EXIT, HORIZONTAL.** See “Horizontal exit.”

**[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.

**[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.

**[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.

**[BF] FIRE PROTECTION RATING.** The period of time that an opening protective prevents or retards the passage of excessive flames 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 PROTECTIVE CURTAIN ASSEMBLY.** An assembly consisting of a fabric curtain, a bottom bar, guides, a coil, and an operating and closing system.

**[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.

**[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.

**[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.

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

**[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.

**[BS] FIRE-RETARDANT-TREATED WOOD.** Wood products that, when impregnated with chemicals by a pressure process or other means during manufacture, exhibit reduced surface-burning characteristics and resist propagation of fire.

**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.

**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 US 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)] subdivided as follows:

1. Category 1A. A gas that meets either of the following:
  - 1.1. A gas which is ignitable at 14.7 psia (101 kPa) when in a mixture of 13 percent or less by volume with air.
  - 1.2. A gas with a flammable range at 14.7 psia (101 kPa) with air of at least 12 percent, regardless of the lower limit, unless data shows compliance with Category 1B.
2. Category 1B. A gas which meets the flammability criteria for Category 1A, is not pyrophoric or chemically unstable, and meets one or more of the following:
  - 2.1. A lower flammability limit of more than 6 percent by volume of air.
  - 2.2. A fundamental burning velocity of less than 3.9 inches/second (99 mm/s).

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.

Where not otherwise specified, the term “flammable gas” includes both Category 1A and 1B.

**[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, or liquids that do not have a fire point when tested in accordance with ASTM D92.

**[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 interconnection 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.

**[BF] NAILABLE SUBSTRATE.** A product or material such as framing, sheathing or furring, composed of wood, wood-based materials or other materials providing equivalent fastener withdrawal resistance.

**[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.*

**NFPA. [DSA-AC]** *The National Fire Protection Association.*

**[BS] NOMINAL LOADS.** The magnitudes of the loads specified in Chapter 16 (dead, live, soil, wind, tornado, 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 1 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 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.

**NONPATIENT-CARE SUITE.** *In Group I-2 occupancies, a group of rooms or spaces within a suite for use as administrative, business and professional offices.*

**[BF] NONCOMBUSTIBLE PROTECTION (FOR MASS TIMBER).** Noncombustible material, in accordance with Section 703.6, designed to increase the fire-resistance rating and delay the combustion of mass timber.

**[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)].

## DEFINITIONS

**[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, NPC-4D 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 ROOF.** An exterior space on a roof that is designed for human occupancy, other than maintenance or repair, and is equipped with a means of egress system meeting the requirements of this code.

**[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.

**OFF-SITE CONSTRUCTION. [OSHPD 1, 1R, 2, 4 & 5]** A modular building, modular component or panelized system that is designed and constructed in compliance with Section 1710 or 1710A of this code and is wholly or in substantial part fabricated or assembled in off-site fabrication plants for installation (or assembly and installation) on a separate building site and has been fabricated in such a manner that all parts or processes cannot be inspected at the installation site without disassembly or damage.

**[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 PLAIN CONCRETE STRUCTURAL WALL.** See Section 1905.2.

**[BS] ORDINARY PRECAST STRUCTURAL WALL.** See Section 1905.2.

**[BS] ORDINARY REINFORCED CONCRETE STRUCTURAL WALL.** See Section 1905.2.

**[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.

**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.** This definition applies only to Chapters 16 through 23.

Structures, other than buildings, for which loads are specified in Chapter 16.

**OUTPATIENT CLINIC.** See “Clinic, outpatient.”

**[BF] RESPONSIVE VAPOR RETARDER.** A vapor retarder material complying with a vapor retarder class of Class I or II, but that also has a vapor permeance of 1 perm or greater in accordance with ASTM E96, water method (Procedure B).

**[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, 1R, 2, 4 & 5]** *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.*

**[BS] RISK CATEGORY.** A categorization of buildings and other structures for determination of flood, wind, tornado, snow, ice and earthquake loads based on the risk associated with unacceptable performance.

**[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."

**[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 correcting damage or restoring pre-damage condition.

**[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 amplexus 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 STRUCTURAL 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 that are not designated as part of a primary structural frame or bearing wall.

**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.

## DEFINITIONS

**[BF] SELF-CLOSING.** As applied to a fire door or other opening protective, means equipped with a 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.”

**[BG] SELF-SERVICE STORAGE FACILITY.** Real property 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.

**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.

**[BS] SERVICE LIFE.** The period of time that a structure serves its intended purpose. For temporary structures, this shall be the cumulative time of service for sequential temporary events that may occur in multiple locations. For public-occupancy temporary structures, this is assumed to be a minimum of 10 years.

**[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.** This definition applies only to 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, 1R, 2, 4 & 5]* 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 drainpipe, 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 Chapter 20 of ASCE/SEI-7.

**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.

**[BF] TRIM.** Picture molds, chair rails, baseboards, handrails, door and window frames and similar decorative or protective materials used in fixed applications.

**[F] TROUBLE SIGNAL.** A signal initiated by the fire alarm system or device indicative of a fault in a monitored circuit or component.

**TTY.** An abbreviation for teletypewriter. Machinery that employs interactive text-based communication through the transmission of coded signals across the telephone network. TTYS may include, for example, devices known as TDDs (telecommunication display devices or telecommunication devices for deaf persons) or computers with special modems. TTYS are also called text telephones.

**[BS] TSUNAMI DESIGN GEODATABASE.** The ASCE database (version 2016-1.0) of *Tsunami Design Zone* maps and associated design data for the states of Alaska, California, Hawaii, Oregon and Washington.

**[BS] TSUNAMI DESIGN ZONE.** An area identified on the *Tsunami Design Zone* map between the shoreline and the inundation limit, within which certain structures designated in Chapter 16 are designed for or protected from inundation.

**[BS] TUBULAR DAYLIGHTING DEVICE (TDD).** A non-operable fenestration unit primarily designed to transmit daylight from a roof surface to an interior ceiling via a tubular conduit. The basic unit consists of an exterior glazed weathering surface, a light-transmitting tube with a reflective interior surface, and an interior-sealing device such as a translucent ceiling panel. The unit can be factory assembled, or field-assembled from a manufactured kit.

**TURNOVER TIME.** The period of time, in hours, required to circulate a volume of water equal to the pool capacity.

**[BS] TYPE X.** A type of gypsum panel product with special core additives to increase the fire resistance as specified by the applicable standards listed in Table 2506.2 (see the definition of "Gypsum panel product").

**[F] UMBRELLA STRUCTURE.** A structure, enclosure or shelter with or without sidewalls or drops, constructed of fabric or pliable material supported by a central pole or poles (see "Tent").

**[BS] UNDERLAYMENT.** One or more layers of a material that is applied to a steep-slope roof covering deck under the roof covering and resists liquid water that penetrates the roof covering.

**UNIFORMITY COEFFICIENT.** The ratio of theoretical size of a sieve that will pass 60 percent of the sand to the theoretical size of sieve that will pass 10 percent.

**[BS] UNDERPINNING.** The alteration of an existing foundation to transfer loads to a lower elevation using new piers, piles or other permanent structural support elements installed below the existing foundation.

**UNIT SKYLIGHT.** See "Skylight, unit."

**UNREASONABLE HARDSHIP.** When the enforcing agency finds that compliance with the building standard would make the specific work of the project affected by the building standard infeasible, based on an overall evaluation of the following factors:

1. The cost of providing access.
2. The cost of all construction contemplated.
3. The impact of proposed improvements on financial feasibility of the project.
4. The nature of the accessibility which would be gained or lost.
5. The nature of the use of the facility under construction and its availability to persons with disabilities.

The details of any finding of unreasonable hardship shall be recorded and entered in the files of the enforcing agency.

**[F] UNSTABLE (REACTIVE) MATERIAL.** A material, other than an explosive, which in the pure state or as commercially produced, will vigorously polymerize, decompose, condense or become self-reactive and undergo other violent chemical changes, including explosion, when exposed to heat, friction or shock, or in the absence of an inhibitor, or in the presence of contaminants, or in contact with incompatible materials. Unstable (reactive) materials are subdivided as follows:

**Class 1.** Materials that in themselves are normally stable but which can become unstable at elevated temperatures and pressure.

**Class 2.** Materials that in themselves are normally unstable and readily undergo violent chemical change but do not detonate. This class includes materials that can undergo chemical change with rapid release of energy at normal temperatures and pressures, and that can undergo violent chemical change at elevated temperatures and pressures.

**Class 3.** Materials that in themselves are capable of detonation or of explosive decomposition or explosive reaction but which require a strong initiating source or which must be heated under confinement before initiation. This class includes materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures.

**Class 4.** Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures. This class includes materials that are sensitive to mechanical or localized thermal shock at normal temperatures and pressures.

**[F] USE (MATERIAL).** Placing a material into action, including solids, liquids and gases.

**USE ZONE. [DSA-AC]** The ground level area beneath and immediately adjacent to a play structure or play equipment that is designated by ASTM F1487 for unrestricted circulation around the play equipment and where it is predicted that a user would land when falling from or exiting the play equipment.

**VALUATION THRESHOLD. [DSA-AC]** An annually adjusted, dollar-amount figure used in part to determine the extent of required path of travel upgrades. The baseline valuation threshold of \$50,000 is based on the January 1981, "ENR US20 Cities" Average Construction Cost Index (CCI) of 3372.02 as published in *Engineering News Record*, McGraw Hill Publishing Company. The current valuation threshold is determined by multiplying the baseline valuation threshold by a ratio of the current year's January CCI to the baseline January 1981 CCI.

## DEFINITIONS

**[BG] VAPOR DIFFUSION PORT.** An assembly constructed or installed within a roof assembly at an opening in the roof deck to convey water vapor from an unvented attic to the outside atmosphere.

**[BF] VAPOR PERMEABLE.** The property of having a moisture vapor permeance rating of 5 perms ( $2.9 \times 10^{-10} \text{ kg/Pa} \times \text{s} \times \text{m}^2$ ) or greater, when tested in accordance with Procedure A or Procedure B of ASTM E96. A vapor permeable material permits the passage of moisture vapor.

**[BF] VAPOR RETARDER CLASS.** A measure of a material or assembly's ability to limit the amount of moisture that passes through that material or assembly. Vapor retarder class shall be defined using the desiccant method with Procedure A of ASTM E96 as follows:

**Class I:** 0.1 perm or less.

**Class II:**  $0.1 < \text{perm} \leq 1.0$  perm.

**Class III:**  $1.0 < \text{perm} \leq 10$  perm.

**VARIABLE MESSAGE SIGNS (VMS).** *[DSA-AC]* Electronic signs that have a message with the capacity to change by means of scrolling, streaming or paging across a background.

**VARIABLE MESSAGE SIGN (VMS) CHARACTERS.** *[DSA-AC]* Characters of an electronic sign are composed of pixels in an array. High resolution VMS characters have vertical pixel counts of 16 rows or greater. Low resolution VMS characters have vertical pixel counts of 7 to 15 rows.

**[BS] VEGETATIVE ROOF.** A roof assembly of interacting components designed to waterproof a building's top surface that includes, by design, a vegetative surface.

**[BS] VEHICLE BARRIER.** A component or a system of components, near open sides or walls of garage floors or ramps that act as a restraint for vehicles.

**[BG] VEHICULAR GATE.** A gate that is intended for use at a vehicular entrance or exit to a facility, building or portion thereof, and that is not intended for use by pedestrian traffic.

**VEHICULAR OR PEDESTRIAN ARRIVAL POINTS.** *[HCD 1-AC]* Public or resident parking areas, public transportation stops, passenger loading zones, and public streets or sidewalks.

**VEHICULAR WAY.** *[HCD 1-AC, DSA-AC]* A route provided for vehicular traffic, such as in a street, driveway or parking facility.

**[BF] VENEER.** A facing attached to a wall for the purpose of providing ornamentation, protection or insulation, but not counted as adding strength to the wall.

**[M] VENTILATION.** The natural or mechanical process of supplying conditioned or unconditioned air to, or removing such air from, any space.

**[F] VERTICAL WATER SUPPLY ZONE.** A vertical fire protection zone within the standpipe system or group of floors supplied by a single sprinkler express riser in a high-rise building established by pressure limitations based on the design.

**[BF] VINYL SIDING.** A shaped material, made principally from rigid polyvinyl chloride (PVC), that is used as an exterior wall covering.

**[F] VISIBLE ALARM NOTIFICATION APPLIANCE.** A notification appliance that alerts by the sense of sight.

**WAITING ROOM.** *[SFM]* Waiting room is a room or area normally provided with seating and used for persons waiting.

**WALK.** *[DSA-AC]* An exterior prepared surface for pedestrian use, including pedestrian areas such as plazas and courts. (As differentiated from the definition of "Sidewalk.") *[HCD 1-AC]* A surfaced pedestrian way not located contiguous to a street used by the public. (See also "Sidewalk.")

**[BG] WALKWAY, PEDESTRIAN.** A walkway used exclusively as a pedestrian trafficway.

**[BS] WALL.** This definition applies only to Chapter 21.

A vertical element with a horizontal length-to-thickness ratio greater than three, used to enclose space.

**Cavity wall.** A wall built of masonry units or of concrete, or a combination of these materials, arranged to provide an airspace within the wall, and in which the inner and outer parts of the wall are tied together with metal ties.

**Dry-stacked, surface-bonded wall.** A wall built of concrete masonry units where the units are stacked dry, without 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, 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. [HCD 1-AC, DSA-AC]** 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.

**[BS] WIND DESIGN GEODATABASE.** The ASCE database (version 2022-1.0) of geocoded wind speed design data. The ASCE Wind Design Geodatabase of geocoded wind speed design data is available at <https://asce7hazardtool.online/>.

**[BS] WIND SPEED, BASIC,  $V$ .** See “Basic wind speed.”

**[BS] WIND SPEED,  $V_{asd}$ .** Allowable stress design wind speeds.

**[BS] WINDBORNE DEBRIS REGION.** Areas within hurricane-prone regions located:

1. Within 1 mile (1.61 km) of the mean high-water line where an Exposure D condition exists upwind at the waterline and the basic wind speed,  $V$ , is 130 mph (58 m/s) or greater; or
2. In areas where the basic wind speed,  $V$ , is 140 mph (63 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.(2). For Risk Category III health care facilities and Risk Category IV buildings and structures, the windborne debris region shall be based on Figure 1609.3(3) and Figure 1609.3(4), respectively.

**[BE] WINDER.** A tread with nonparallel edges.

**WINERY CAVES.** See Section 446.

**WINDFORCE-RESISTING SYSTEM, MAIN.** See “Main windforce-resisting system.”

**[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 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.

**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.

**[BS] WOOD/PLASTIC COMPOSITE.** A composite material made primarily from wood or cellulose-based materials and plastic.

**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.

## DEFINITIONS

**[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; life-guard stations; maintenance equipment closets; counter and equipment areas in restaurant kitchens; file rooms; storage areas; etc.*

**[BS] WYTHE.** 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.

## CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE

### CHAPTER 3 – OCCUPANCY CLASSIFICATION 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	5	6							
Adopt entire chapter	X							X	X	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		
Chapter / Section																							
302.1			X	X	X																		
302.1.3																						X	
303.1				X																			
303.2				X																			
303.7				X																			
303.8				X																			
304.1				X																			
305.1				X																			
305.2				X																			
305.2.1				X																			
306.2				X																			
Table 307.1(1)				X																			
Table 307.1(2)				X																			
307.1.1				X																			
307.4				X																			
308.1				X																			
308.3				X	†	†																	
308.4				X																			
308.4.6				X																			
308.4.7				X																			
308.4.8				X																			
308.4.9				X																			
308.5				X																			
308.5.2				X																			
308.5.3				X																			
308.5.4				X																			
310.2				X	X																		
310.3				X	X																		
310.3.1				X																			
310.3.2				X																			
310.4				X	X																		
310.4.1				X																			
310.4.2				X	X	X																	
310.5				X																			
310.6				X																			
313				X																			
314				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.



## 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*. Group R occupancies not constructed in accordance with the *California Residential Code* as permitted by Sections 310.4.1 and 310.4.2 shall comply with Section 420.

**310.2 Residential Group R-1.** Residential Group R-1 occupancies containing sleeping units or more than two dwelling 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
- Large family child care*
- Small family child care*
- Congregate living facilities (nontransient) with more than 16 occupants
- Boarding houses (nontransient)
- Convents
- Dormitories
- Emergency services living quarters
- 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-2.1, R-2.2, R-3.1, R-4 or I, including:

- Buildings that do not contain more than two dwelling units

Care facilities that provide accommodations for five or fewer persons receiving care

Congregate residences (nontransient) with 16 or fewer occupants

Boarding houses (nontransient)

Convents

Dormitories

Emergency services living quarters

Fraternities and sororities

Monasteries

Congregate residences (transient) with 10 or fewer occupants

**[HCD 1] Efficiency dwelling units**

Boarding houses (transient)

*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 with five or fewer guest rooms

**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 shall be constructed in accordance with this code or the California Residential Code, provided that facilities constructed using the California Residential Code are protected by an automatic sprinkler system installed in accordance with Section 903.3.1.3 or Section R309.1.1 of 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. This occupancy classification may*

**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	5	6							
Adopt entire chapter	X							X	X	X	X	X	X	X	X								
Adopt entire chapter as amended (amended sections listed below)			X	X	X									X									
Adopt only those sections that are listed below						X	X																X
Chapter / Section																							
403						X																	
403.1						X																	
403.2						X																	
403.2.1						X																	
403.2.1.1						X																	
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403.3.3						X																	
403.3.5						X																	
403.4.7						X																	
403.4.8.1						X																	
403.5.4						X																	
403.6						X																	
403.7						X																	
404.5						X																	
404.6						X																	
404.12						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																	
406.6.4.1						X																	
406.9						X																	
406.9.1						X																	
406.9.2						X																	
406.9.3						X																	
407.1						X																	
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**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	DP H	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	SS/CC	1	1R	2	3	4	5	6							
Adopt entire chapter	X						X	X		X	X	X		X	X	X							
Adopt entire chapter as amended (amended sections listed below)			X	X	X								X										
Adopt only those sections that are listed below					X	X																	X
Chapter / Section																							
407.2.6					X																		
407.2.7					X																		
407.3					X																		
407.3.1					X																		
407.3.1.1					X																		
407.3.1.2					X																		
407.3.2					X																		
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407.4.4.1					X																		
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407.4.4.3					X																		
407.4.4.3.1					X																		
407.4.4.3.2					X																		
407.4.4.4 Reserved					X																		
407.4.4.6					X																		
407.4.4.6.1					X																		
407.4.5 – 407.4.5.3					X																		
407.5					X																		
407.7 – 407.7.1					X																		
407.9					X																		
407.10					X																		
407.11					X																		
407.12					X																		
407.13 – 407.13.4					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																		
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408.3.6					X																		
408.3.6.1					X																		
408.3.6.2					X																		

**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	5	6							
Adopt entire chapter	X						X	X	X	X	X	X	X	X	X								
Adopt entire chapter as amended (amended sections listed below)			X	X	X								X										
Adopt only those sections that are listed below					X	X																	X
Chapter / Section																							
408.3.6.3				X																			
408.3.6.4				X																			
408.3.8.1				X																			
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																			
408.9.1				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																			
408.16				X																			
410.2.6				X																			
411.1 – 411.2				X																			
412.2.6							X																
414.1.1				X																			
Table 414.2.5.4				X																			
414.5				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																			

**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	5	6							
Adopt entire chapter	X						X	X	X	X	X	X	X	X	X								
Adopt entire chapter as amended (amended sections listed below)			X	X	X								X										
Adopt only those sections that are listed below					X	X																	X
Chapter / Section																							
415.13				X																			
415.13.1				X																			
415.13.2				X																			
415.13.3				X																			
420.1				X	X	X																	
420.4				X																			
420.5				X																			
420.6				X																			
420.6.1				X																			
420.6.2				X																			
420.7 Reserved				X																			
420.8 Reserved				X																			
420.9				X																			
420.10				X																			
420.11.1				X	X	X																	
420.12					X																		
420.13					X		X																
420.14					X																		
420.15				X																			
420.16				X																			
421.4				X																			
422.1																X							
422.2				X																			
422.3.2				X																			
422.3.4				X																			
422.6				X																			
422.7				X																			
435				X																			
436				X																			
439				X																			
440				X																			
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444				X																			
446				X																			
449				X																			
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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.

pipe system demand shall not be required to be included in the secondary on-site water supply calculations. In no case shall the secondary on-site water supply be less than 15,000 gallons.

**[F] 403.3.4 Fire pump room.** Fire pumps shall be located in rooms protected in accordance with Section 913.2.1.

**403.3.5 Fire pumps.** See Section 913.6.

**[F] 403.4 Emergency systems.** The detection, alarm and emergency systems of high-rise buildings shall comply with Sections 403.4.1 through 403.4.8.

**[F] 403.4.1 Smoke detection.** Smoke detection shall be provided in accordance with Section 907.2.13.1.

**[F] 403.4.2 Fire alarm system.** A fire alarm system shall be provided in accordance with Section 907.2.13.

**[F] 403.4.3 Standpipe system.** A high-rise building shall be equipped with a standpipe system as required by Section 905.3.

**[F] 403.4.4 Emergency voice/alarm communication system.** An emergency voice/alarm communication system shall be provided in accordance with Section 907.5.2.2.

**[F] 403.4.5 Emergency communication coverage.** In-building, two-way emergency responder communication coverage shall be provided in accordance with Section 510 of the *California Fire Code*.

**[F] 403.4.6 Fire command.** A fire command center complying with Section 911 shall be provided in a location approved by the fire code official.

**403.4.7 Smoke control system.** All portions of high-rise buildings shall be provided with a smoke control system in accordance with Section 909.

**[F] 403.4.8 Standby and emergency power.** A standby power system complying with Section 2702 and Section 3003 shall be provided for the standby power loads specified in Section 403.4.8.3. An emergency power system complying with Section 2702 shall be provided for the emergency power loads specified in Section 403.4.8.4.

**[F] 403.4.8.1 Equipment room.** If the standby or emergency power system includes a generator set inside a building, the system shall be located in a separate room enclosed with 2-hour fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both. System supervision with manual start and transfer features shall be provided at the fire command center.

**Exception:** In Group I-2, manual start and transfer features for the critical branch of the emergency power are not required to be provided at the fire command center.

**[F] 403.4.8.2 Fuel line piping protection.** Fuel lines supplying a generator set inside a building shall be separated from areas of the building other than the room the generator is located in by one of the following methods:

1. A fire-resistant pipe-protection system that has been tested in accordance with UL 1489. The system shall be installed as tested and in accordance with the manufacturer's installation instructions, and shall have a rating of not less than 2 hours. Where the building is protected throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1, the required rating shall be reduced to 1 hour.
2. An assembly that has a fire-resistance rating of not less than 2 hours. Where the building is protected throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the required fire-resistance rating shall be reduced to 1 hour.
3. Other approved methods.

**[F] 403.4.8.3 Standby power loads.** The following are classified as standby power loads:

1. Ventilation and automatic fire detection equipment for smokeproof enclosures.
2. Elevators.
3. Where elevators are provided in a high-rise building for accessible means of egress, fire service access or occupant self-evacuation, the standby power system shall also comply with Sections 1009.4, 3007 or 3008, as applicable.

**[F] 403.4.8.4 Emergency power loads.** The following are classified as emergency power loads:

1. Exit signs and means of egress illumination required by Chapter 10.
2. Elevator car lighting.
3. Emergency voice/alarm communications systems.
4. Automatic fire detection systems.
5. Fire alarm systems.
6. Electrically powered fire pumps.
7. Power and lighting for the fire command center required by Section 403.4.6.

**[BE] 403.5 Means of egress and evacuation.** The means of egress in high-rise buildings shall comply with Sections 403.5.1 through 403.5.5.

**[BE] 403.5.1 Remoteness of interior exit stairways.** Required interior exit stairways shall be separated by a distance not less than 30 feet (9144 mm) or not less than one-fourth of the length of the maximum overall diagonal dimension of the building or area to be served, whichever is less. The distance shall be measured in a straight line between the nearest points of the enclosure surrounding the interior exit stairways. In buildings with three or more interior exit stairways, not fewer than two of the interior exit stairways shall comply with this section. Interlocking or scissor stairways shall be counted as one interior exit stairway.

**[BE] 403.5.2 Additional interior exit stairway.** For buildings other than Group R-2 and their ancillary spaces that are more than 420 feet (128 m) in building height, one additional interior exit stairway meeting the requirements of Sections 1011 and 1023 shall be provided in addition to the minimum number of exits required by Section 1006.3. The total capacity of any combination of remaining interior exit stairways with one interior exit stairway removed shall be not less than the total capacity required by Section 1005.1. Scissor stairways shall not be considered the additional interior exit stairway required by this section.

**Exceptions:**

1. An additional interior exit stairway shall not be required to be installed in buildings having elevators used for occupant self-evacuation in accordance with Section 3008.
2. An additional interior exit stairway shall not be required for other portions of the building where the highest occupiable floor level in those areas is less than 420 feet (128 m) in building height.

**[BE] 403.5.3 Stairway door operation.** Stairway doors other than the exit discharge doors shall be permitted to be locked from the stairway side. Stairway doors that are locked from the stairway side shall be capable of being unlocked without unlatching where any of the following conditions occur:

1. Individually or simultaneously upon a signal from the fire command center.
2. Simultaneously upon activation of a fire alarm signal in an area served by the stairway.
3. Upon failure of the power supply to the lock or the locking system.

**[BE] 403.5.3.1 Stairway communication system.** A telephone or other two-way communications system connected to an approved constantly attended station shall be provided at not less than every fifth floor in each stairway where the doors to the stairway are locked. Systems shall be listed in accordance with UL 2525 and installed in accordance with NFPA 72.

**[BE] 403.5.4 Smokeproof enclosures.** Every exit enclosure in high-rise buildings shall comply with Sections 909.20 and 1023.12. Every required interior exit stairway in Group I-2 occupancies serving floors more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access shall be a smokeproof enclosure in accordance with Sections 909.20 and 1023.12.

**Exception:** In high-rise buildings, exit enclosures serving three or less adjacent floors where one of the adjacent floors is the level of exit discharge.

**[BE] 403.5.5 Luminous egress path markings.** Luminous egress path markings shall be provided in accordance with Section 1025.

**403.6 Elevators.** Elevator installation and operation in high-rise buildings shall comply with Chapter 30 and Sections 403.6.1 and 403.6.2.

Enclosed elevator lobbies shall be provided in accordance with Section 3006. Exceptions 2, 3, 4 and 5 of 3006.3 shall only be permitted where approved by the Fire Chief in accordance with Section 1.11.2.1.1 or in accordance with Section 1.11.2.1.2 for all state-owned buildings, state-occupied buildings and state institutions throughout the state.

**403.6.1 Fire service access elevator.** In buildings with an occupied floor more than 120 feet (36 576 mm) above the lowest level of fire department vehicle access, not fewer than two fire service access elevators, or all elevators, whichever is less, shall be provided in accordance with Section 3007. Each fire service access elevator shall have a capacity of not less than 3,500 pounds (1588 kg) and shall comply with Section 3002.4.

**403.6.2 Occupant evacuation elevators.** Where installed in accordance with Section 3008, passenger elevators for general public use shall be permitted to be used for occupant self-evacuation.

**403.7 Existing high-rise buildings.** For existing high-rise buildings, see California Fire Code Chapter 11 and California Existing Building Code.

## SECTION 404—ATRIUMS

**404.1 General.** The provisions of Sections 404.1 through 404.12 shall apply to buildings containing atriums. Atriums are not permitted in buildings or structures classified as Group H.

**Exception:** Vertical openings that comply with Sections 712.1.1 through 712.1.3, and Sections 712.1.9 through 712.1.14.

**404.2 Use.** The floor of the atrium shall not be used for other than low fire hazard uses and only approved materials and decorations in accordance with the California Fire Code shall be used in the atrium space.

**Exception:** The atrium floor area is permitted to be used for any approved use where the individual space is provided with an automatic sprinkler system in accordance with Section 903.3.1.1.

**[F] 404.3 Automatic sprinkler protection.** An approved automatic sprinkler system shall be installed throughout the entire building.

**Exceptions:**

1. That area of a building adjacent to or above the atrium need not be sprinklered provided that portion of the building is separated from the atrium portion by not less than 2-hour fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both.
2. Where the ceiling of the atrium is more than 55 feet (16 764 mm) above the floor, sprinkler protection at the ceiling of the atrium is not required.

**[F] 404.4 Fire alarm system.** A fire alarm system shall be provided in accordance with Section 907.2.14.

**404.5 Smoke control.** A smoke control system shall be installed in accordance with Section 909.

**Exceptions:**

1. In other than Group I-2 and R-2.1, smoke control is not required for atriums that connect only two stories.
2. A smoke control system is not required for atriums connecting more than two stories when all of the following are met:
  - 2.1. Only the two lowest stories shall be permitted to be open to the atrium.
  - 2.2. All stories above the lowest two stories shall be separated from the atrium in accordance with the provisions for a shaft in Section 713.4.

**404.6 Enclosure of atriums.** Atrium spaces shall be separated from adjacent spaces by a 1-hour fire barrier constructed in accordance with Section 707 or a horizontal assembly constructed in accordance with Section 711, or both.

**Exceptions:**

1. A fire barrier is not required where a glass wall forming a smoke partition is provided. The glass wall shall comply with all of the following:
  - 1.1. Automatic sprinklers are provided along both sides of the separation wall and doors, or on the room side only if there is not a walkway on the atrium side. The sprinklers shall be located between 4 inches and 12 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.
  - 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  $\frac{3}{4}$ -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.
5. In Group I-2 and R-2.1 occupancies, a fire barrier is not required between the atrium and the adjoining spaces, other than care recipient sleeping or treatment rooms, for up to three stories of the atrium provided that such spaces are accounted for in the design of the smoke control system and do not provide access to care recipient sleeping or treatment rooms.
6. A horizontal assembly is not required between the atrium and openings for escalators complying with Section 712.1.3.
7. A horizontal assembly is not required between the atrium and openings for exit access stairways and ramps complying with Item 4 of Section 1019.3.

**[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.

**[BE] 404.9 Exit access travel distance.** Exit access travel distance for areas open to an atrium shall comply with the requirements of Section 1017.

**[BE] 404.10 Exit stairways in an atrium.** Where an atrium contains an interior exit stairway all the following shall be met:

1. The entry to the exit stairway is the edge of the closest riser of the exit stairway.
2. The entry of the exit stairway shall have access from a minimum of two directions.
3. The distance between the entry to an exit stairway in an atrium and the entrance to a minimum of one exit stairway enclosed in accordance with Section 1023.2 shall comply with the separation required by Section 1007.1.1.
4. Exit access travel distance shall be measured to the closest riser of the exit stairway.
5. Not more than 50 percent of the exit stairways shall be located in the same atrium.
6. The discharge from the exit stairway at the level of exit discharge shall comply with Section 1028.1.

**[BE] 404.11 Interior exit stairway discharge.** Discharge of interior exit stairways through an atrium shall be in accordance with Section 1028.

**404.12 Group I and R-2.1 occupancy means of egress.** Required means of egress from sleeping and treatment 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 907.2.18 and 907.2.19.

**[F] 405.6 Fire alarm systems.** A fire alarm system shall be provided where required by Sections 907.2.18 and 907.2.19.

**[BE] 405.7 Means of egress.** Means of egress shall be in accordance with Sections 405.7.1 and 405.7.2.

**[BE] 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.

**[BE] 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 1023.12.

**[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.

**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.

**[F] 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.

**[F] 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 1202 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 vehicle 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

**407.1 General.** Occupancies in Group I-2 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 ( $483\text{ m}^2$ ) between fire walls of two-hour fire-resistive construction with openings protected by fire assemblies having a  $1\frac{1}{2}$ -hour fire protection rating.

**407.2 Corridors continuity and separation.** Corridors in occupancies in Group I-2 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 public-use areas or group meeting 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 fire 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 Nurse stations.** Spaces for care providers', supervisory staff, doctors' and nurses' charting, 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 nurse stations or portions of nurse stations, within the envelope of the corridor is not required to be fire-resistive rated. Nurse 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 nurse stations within the corridor.*

**407.2.3 Psychiatric treatment areas.** Areas wherein psychiatric care recipients who are incapable 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 fire 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 space containing the domestic cooking facility shall be arranged so as not to obstruct access to the required exit.
5. The cooking appliance shall comply with Section 407.2.7.

→ **407.2.7 Domestic cooking appliances.** In Group I-2 occupancies, installation of cooking appliances used in domestic cooking facilities shall comply with all of the following:

1. The types of cooking appliances permitted shall be limited to ovens, cooktops, ranges, warmers and microwaves.
2. Domestic cooking hoods installed and constructed in accordance with Section 505 of the *California Mechanical Code* shall be provided over cooktops and ranges.
3. Cooktops and ranges shall be protected in accordance with Section 904.15.
4. A shut-off for the fuel and electrical power supply to the cooking equipment shall be provided in a location to which only staff has access.
5. A timer shall be provided that automatically deactivates the cooking appliances within a period of not more than 120 minutes.

6. A portable fire extinguisher shall be provided. Installation shall be in accordance with Section 906, and the extinguisher shall be located a distance of travel of 30 feet (9144 mm) or less from each domestic cooking appliance.

**Exceptions:**

1. Cooktops and ranges located within smoke compartments with no patient sleeping or patient care areas are not required to comply with *Items 3, 4 and 5 of this section*.
2. Cooktops and ranges used for care recipient training or nutritional counseling are not required to comply with Item 3 of this section.

**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 1225.4.3.* Roller latches are not permitted. Other doors shall conform to Section 716.

**407.3.1.1 Door construction.** Corridor doors not required to have a fire protection rating shall comply with the following:

1. Solid doors shall have close-fitting operational tolerances, head and jamb stops.
2. Dutch-style doors shall have an astragal, rabbet or bevel at the meeting edges of the upper and lower door sections. Both the upper and lower door sections shall have latching hardware. Dutch-style doors shall have hardware that connects the upper and lower sections to function as a single leaf.

**407.3.1.2 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 inches 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  $\frac{1}{3}$ -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>).*

**[BE] 407.4 Means of egress.** Group I-2 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*.

**[BE] 407.4.1 Direct access to a corridor.** Habitable rooms in Group I-2 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.

**[BE] 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 1010.2.13.

**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.*

**[BE] 407.4.2 Distance of travel.** The distance of travel between any point in a Group I-2 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.*

**[BE] 407.4.3 Reserved.**

**[BE] 407.4.4 Group I-2 care suites.** Care suites in Group I-2 shall comply with Sections 407.4.4.1 through 407.4.4.5 and either Section 407.4.4.6 or 407.4.4.7.

**[BE] 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.

**[BE] 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*.

**[BE] 407.4.4.3 Access to corridor.** Every care suite shall have a door leading directly to an exit access corridor or horizontal exit. Movement from habitable rooms within a care suite shall not require more than 100 feet (30 480 mm) of travel within the care suite to a door leading to the exit access corridor or horizontal exit. Where a care suite is required to have more than one exit access door by Section 407.4.4.6.2 or 407.4.4.7.2, the additional door shall lead directly to an exit access corridor, exit or an adjacent suite.

**407.4.4.3.1 Sleeping room.** *Sleeping rooms shall be limited to one intervening room.*

**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.*

**[BE] 407.4.4.4 Reserved.**

**[BE] 407.4.4.5 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 Section 1010.1.2, Exception 7.
3. Means of egress doors complying with Section 1010.

**[BE] 407.4.4.6 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 care suite is not used as an exit access for more than eight care recipient beds.
2. The arrangement of the care suite allows for direct and constant visual supervision into the sleeping rooms by care providers.
3. *In fully sprinklered buildings, an automatic smoke detection system is provided in the sleeping rooms and installed in accordance with Section 907.2.6.2.2, Item 1 and NFPA 72.*

**[BE] 407.4.4.6.1 Area.** Care suites containing sleeping rooms shall be not greater than 5,000 square feet ( $465 \text{ m}^2$ ) in area.

**Exceptions:**

1. *Care suites containing sleeping rooms shall be permitted to be not greater than 7,500 square feet ( $696 \text{ m}^2$ ) 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 ( $929 \text{ m}^2$ ) 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.*

**[BE] 407.4.4.6.2 Exit access.** Any sleeping room, or any care suite that contains sleeping rooms, of more than 1,000 square feet ( $93 \text{ m}^2$ ) shall have not fewer than two exit access doors from the care suite located in accordance with Section 1007.

**[BE] 407.4.4.7 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 407.4.4.7.1 and 407.4.4.7.2.

**[BE] 407.4.4.7.1 Area.** Care suites of rooms, other than sleeping rooms, shall have an area not greater than 10,000 square feet ( $929 \text{ m}^2$ ).

**[BE] 407.4.4.7.2 Exit access.** Any room or care suites, other than sleeping rooms, with an area of more than 2,500 square feet ( $232 \text{ m}^2$ ) 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 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 ( $929 \text{ m}^2$ ).

**407.4.5.3 Automatic sprinkler system protection.** Nonpatient-care suites shall be located in fully sprinklered buildings.

**[BE] 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 the following:*
  - 1.1. *Any story, not containing a Group I-2 occupancy, that is located above a story containing a Group I-2 occupancy.*

- 1.2. *Areas that do not contain a Group I-2 occupancy, where such areas are separated from the Group I-2 occupancy by a horizontal exit in accordance with Section 1026.2.*
- 1.3. *Any story, not containing a Group I-2 occupancy, that is located more than one story below a story containing a Group I-2 occupancy.*
- 1.4. *Any story housing only mechanical equipment where such story is located below a story containing a Group I-2 occupancy and is separated from the story above by a horizontal assembly having not less than a 2 hour fire resistance-rating.*

**[BE] 407.5.1 Smoke compartment size.** Stories shall be divided into smoke compartments with an area of not more than 22,500 square feet ( $2092 \text{ m}^2$ ) in Group I-2 occupancies.

**[BE] 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).

**[BE] 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 ( $2.8 \text{ m}^2$ ) for each care recipient confined to bed or stretcher.
2. Not less than 6 square feet ( $0.56 \text{ m}^2$ ) 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.

**[BE] 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.

**[BE] 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.

**407.6.1 Activation of automatic-closing doors.** Automatic-closing doors on hold-open devices in accordance with Section 716.2.6.6 shall also close upon activation of a fire alarm system, an automatic sprinkler system, or both. The automatic release of the hold-open device on one door shall release all such doors within the same smoke compartment.

**[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 frames protected in accordance with the provisions of Column Type IA 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.

**[BE] 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 occupancies, electrical construction and installation shall be in accordance with the provisions of Chapter 27, Article 517 of the California Electrical Code and NFPA 99.

**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 noncombustible 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<sup>1</sup>/<sub>2</sub>-hour fire-protection rating.

**[F] 415.11.1.8 Electrical.** Electrical equipment and devices within the fabrication area shall comply with the *California Electrical Code*. The requirements for hazardous locations need not be applied where the average air change is not less than four times that set forth in Section 415.11.1.6 and where the number of air changes at any location is not less than three times that required by Section 415.11.1.6. The use of recirculated air shall be permitted.

**[F] 415.11.1.8.1 Workstations.** Workstations shall not be energized without adequate exhaust ventilation. See Section 415.11.1.6 for workstation exhaust ventilation requirements.

**[F] 415.11.2 Corridors.** Corridors shall comply with Chapter 10 and shall be separated from fabrication areas as specified in Section 415.11.1.2. Corridors shall not contain HPM and shall not be used for transporting such materials except through closed piping systems as provided in Section 415.11.7.4.

**Exception:** Where existing fabrication areas are altered or modified, HPM is allowed to be transported in existing corridors, subject to the following conditions:

1. Nonproduction HPM is allowed to be transported in corridors if utilized for maintenance, lab work and testing.
2. Where existing fabrication areas are altered or modified, HPM is allowed to be transported in existing corridors, subject to the following conditions:
  - 2.1. Corridors. Corridors adjacent to the fabrication area where the alteration work is to be done shall comply with Section 1020 for a length determined as follows:
    - 2.1.1. The length of the common wall of the corridor and the fabrication area; and
    - 2.1.2. For the distance along the corridor to the point of entry of HPM into the corridor serving that fabrication area.
  - 2.2. Emergency alarm system. There shall be an emergency telephone system, a local manual alarm station or other approved alarm-initiating device within corridors at not more than 150-foot (45 720 mm) intervals and at each exit and doorway. The signal shall be relayed to an approved central, proprietary or remote station service or the emergency control station and shall initiate a local audible alarm.
  - 2.3. Pass-throughs. Self-closing doors having a fire protection rating of not less than 1 hour shall separate pass-throughs from existing corridors. Pass-throughs shall be constructed as required for the corridors and protected by an approved automatic sprinkler system.

**[F] 415.11.3 Service corridors.** Service corridors within a Group H-5 occupancy shall comply with Sections 415.11.3.1 through 415.11.3.4.

**[F] 415.11.3.1 Use conditions.** Service corridors shall be separated from corridors as required by Section 415.11.1.2. Service corridors shall not be used as a required corridor.

**[F] 415.11.3.2 Mechanical ventilation.** Service corridors shall be mechanically ventilated as required by Section 415.11.1.6 or at not less than six air changes per hour.

**[F] 415.11.3.3 Means of egress.** The distance of travel from any point in a service corridor to an exit, exit access corridor or door into a fabrication area shall be not greater than 75 feet (22 860 mm). Dead ends shall be not greater than 4 feet (1219 mm) in length. There shall be not less than two exits, and not more than one-half of the required means of egress shall require travel into a fabrication area. Doors from service corridors shall swing in the direction of egress travel and shall be self-closing.

**[F] 415.11.3.4 Minimum width.** The clear width of a service corridor shall be not less than 5 feet (1524 mm), or 33 inches (838 mm) wider than the widest cart or truck used in the service corridor, whichever is greater.

**[F] 415.11.4 Emergency alarm system.** Emergency alarm systems shall be provided in accordance with this section and Sections 415.5.1 and 415.5.2. The maximum allowable quantity per control area provisions shall not apply to emergency alarm systems required for HPM.

**[F] 415.11.4.1 Service corridors.** An emergency alarm system shall be provided in service corridors, with not fewer than one alarm device in each service corridor.

**[F] 415.11.4.2 Corridors and interior exit stairways and ramps.** Emergency alarms for corridors, interior exit stairways and ramps and exit passageways shall comply with Section 415.5.2.

**[F] 415.11.4.3 Liquid storage rooms, HPM rooms and gas rooms.** Emergency alarms for liquid storage rooms, HPM rooms and gas rooms shall comply with Section 415.5.1.

**[F] 415.11.4.4 Alarm-initiating devices.** An approved emergency telephone system, local alarm manual pull stations, or other approved alarm-initiating devices are allowed to be used as emergency alarm-initiating devices.

**[F] 415.11.4.5 Alarm signals.** Activation of the emergency alarm system shall sound a local alarm and transmit a signal to the emergency control station.

**[F] 415.11.5 Storage of hazardous production materials.** Storage of hazardous production materials (HPM) in fabrication areas shall be within approved or listed storage cabinets or gas cabinets or within a workstation. The storage of HPM in quantities greater than those specified in Section 5004.2 of the *California Fire Code* shall be in liquid storage rooms, HPM rooms or gas rooms as appropriate for the materials stored. The storage of other hazardous materials shall be in accordance with other applicable provisions of this code and the *California Fire Code*.

**[F] 415.11.6 HPM rooms, gas rooms, liquid storage room construction.** HPM rooms, gas rooms and liquid storage rooms shall be constructed in accordance with Sections 415.11.6.1 through 415.11.6.9.

**[F] 415.11.6.1 HPM rooms and gas rooms.** HPM rooms and gas rooms shall be separated from other areas 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 where the area is 300 square feet ( $27.9 \text{ m}^2$ ) or more and not less than 1 hour where the area is less than 300 square feet ( $27.9 \text{ m}^2$ ).

**[F] 415.11.6.2 Liquid storage rooms.** Liquid storage rooms shall be constructed in accordance with the following requirements:

1. Rooms greater than 500 square feet ( $46.5 \text{ m}^2$ ) in area, shall have not fewer than one exterior door approved for fire department access.
2. Rooms shall be separated from other areas 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 1 hour for rooms up to 150 square feet ( $13.9 \text{ m}^2$ ) in area and not less than 2 hours where the room is more than 150 square feet ( $13.9 \text{ m}^2$ ) in area.
3. Shelving, racks and wainscotting in such areas shall be of noncombustible construction or wood of not less than 1-inch (25 mm) nominal thickness or fire-retardant-treated wood complying with Section 2303.2.
4. Rooms used for the storage of Class I flammable liquids shall not be located in a basement.

**[F] 415.11.6.3 Floors.** Except for surfacing, floors of HPM rooms and liquid storage rooms shall be of noncombustible liquid-tight construction. Raised grating over floors shall be of noncombustible materials.

**[F] 415.11.6.4 Location.** Where HPM rooms, liquid storage rooms and gas rooms are provided, they shall have not fewer than one exterior wall and such wall shall be not less than 30 feet (9144 mm) from lot lines, including lot lines adjacent to public ways.

**[F] 415.11.6.5 Explosion control.** Explosion control shall be provided where required by Section 414.5.1.

**[F] 415.11.6.6 Exits.** Where two exits are required from HPM rooms, liquid storage rooms and gas rooms, one shall be directly to the outside of the building.

**[F] 415.11.6.7 Doors.** Doors in a fire barrier wall, including doors to corridors, shall be self-closing fire door assemblies having a fire protection rating of not less than  $\frac{3}{4}$  hour.

**[F] 415.11.6.8 Ventilation.** Mechanical exhaust ventilation shall be provided in liquid storage rooms, HPM rooms and gas rooms at the rate of not less than 1 cubic foot per minute per square foot ( $0.044 \text{ L/s/m}^2$ ) of floor area or six air changes per hour.

Exhaust ventilation for gas rooms shall be designed to operate at a negative pressure in relation to the surrounding areas and direct the exhaust ventilation to an exhaust system.

**[F] 415.11.6.9 Emergency alarm system.** An approved emergency alarm system shall be provided for HPM rooms, liquid storage rooms and gas rooms.

Emergency alarm-initiating devices shall be installed outside of each interior exit door of such rooms.

Activation of an emergency alarm-initiating device shall sound a local alarm and transmit a signal to the emergency control station.

An approved emergency telephone system, local alarm manual pull stations or other approved alarm-initiating devices are allowed to be used as emergency alarm-initiating devices.

**[F] 415.11.7 Piping and tubing.** Hazardous production materials piping and tubing shall comply with this section and ASME B31.3.

**[F] 415.11.7.1 HPM having a health-hazard ranking of 3 or 4.** Systems supplying HPM liquids or gases having a health-hazard ranking of 3 or 4 shall be welded throughout, except for connections, to the systems that are within a ventilated enclosure if the material is a gas, or an approved method of drainage or containment is provided for the connections if the material is a liquid.

**[F] 415.11.7.2 Location in service corridors.** Hazardous production materials supply piping or tubing in service corridors shall be exposed to view.

**[F] 415.11.7.3 Excess flow control.** Where HPM gases or liquids are carried in pressurized piping above 15 pounds per square inch gauge (psig) (103.4 kPa), excess flow control shall be provided. Where the piping originates from within a liquid storage room, HPM room or gas room, the excess flow control shall be located within the liquid storage room, HPM room or gas room. Where the piping originates from a bulk source, the excess flow control shall be located as close to the bulk source as practical.

**[F] 415.11.7.4 Installations in corridors and above other occupancies.** The installation of HPM piping and tubing within the space defined by the walls of corridors and the floor or roof above, or in concealed spaces above other occupancies, shall be in accordance with Sections 415.11.7.1 through 415.11.7.3 and the following conditions:

1. Automatic sprinklers shall be installed within the space unless the space is less than 6 inches (152 mm) in the least dimension.
2. Ventilation not less than six air changes per hour shall be provided. The space shall not be used to convey air from any other area.

## SECTION [F] 426—COMBUSTIBLE DUSTS, GRAIN PROCESSING AND STORAGE

**[F] 426.1 General.** The provisions of Sections 426.1.1 through 426.1.7 shall apply to buildings in which materials that produce combustible dusts are stored or handled. Buildings that store or handle combustible dusts shall comply with the applicable provisions of the *California Fire Code*. Where required by the fire code official, NFPA 652 and the applicable provisions of NFPA 61, NFPA 85, NFPA 120, NFPA 484, NFPA 654, NFPA 655 and NFPA 664 shall apply.

**[F] 426.1.1 Type of construction and height exceptions.** Buildings shall be constructed in compliance with the height, number of stories and area limitations specified in Sections 504 and 506; except that where erected of Type I or II construction, the heights and areas of grain elevators and similar structures shall be unlimited, and where of Type IV construction, the maximum building height shall be 65 feet (19 812 mm) and except further that, in isolated areas, the maximum building height of Type IV structures shall be increased to 85 feet (25 908 mm).

**[F] 426.1.2 Grinding rooms.** Every room or space occupied for grinding or other operations that produce combustible dusts in such a manner that the room or space is classified as a Group H-2 occupancy shall be enclosed with fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both. The fire-resistance rating of the enclosure shall be not less than 2 hours where the area is not more than 3,000 square feet (279 m<sup>2</sup>), and not less than 4 hours where the area is greater than 3,000 square feet (279 m<sup>2</sup>).

**[F] 426.1.3 Conveyors.** Conveyors, chutes, piping and similar equipment passing through the enclosures of rooms or spaces shall be constructed dirt tight and vapor tight, and be of approved noncombustible materials complying with Chapter 30.

**[F] 426.1.4 Explosion control.** Explosion control shall be provided as specified in the *California Fire Code*, or spaces shall be equipped with the equivalent mechanical ventilation complying with the *California Mechanical Code*.

**[F] 426.1.5 Grain elevators.** Grain elevators, malt houses and buildings for similar occupancies shall not be located 30 feet (9144 mm) or less from interior lot lines or structures on the same lot, except where erected along a railroad right-of-way.

**[F] 426.1.6 Coal pockets.** Coal pockets located less than 30 feet (9144 mm) from interior lot lines or from structures on the same lot shall be constructed of not less than Type IB construction. Where more than 30 feet (9144 mm) from interior lot lines, or where erected along a railroad right-of-way, the minimum type of construction of such structures not more than 65 feet (19 812 mm) in building height shall be Type IV.

**[F] 426.1.7 Tire rebuilding.** Buffing operations shall be located in a room separated from the remainder of the building housing the tire rebuilding or tire recapping operation by a 1-hour fire barrier.

**Exception:** Buffing operations are not required to be separated where all of the following conditions are met:

1. Buffing operations are equipped with an approved continuous automatic water-spray system directed at the point of cutting action.
2. Buffing machines are connected to particle-collecting systems providing a minimum air movement of 1,500 cubic feet per minute (cfm) (0.71 m<sup>3</sup>/s) in volume and 4,500 feet per minute (fpm) (23 m/s) in-line velocity.
3. The collecting system shall discharge the rubber particles to an approved outdoor noncombustible or fire-resistant container, which is emptied at frequent intervals to prevent overflow.

## SECTION 427—MEDICAL GAS SYSTEMS

**[F] 427.1 General.** Medical gases at health care-related facilities intended for patient or veterinary care shall comply with Sections 427.2 through 427.2.3 in addition to the requirements of Chapter 53 of the *California Fire Code*.

**[F] 427.2 Interior supply location.** Medical gases shall be located in areas dedicated to the storage of such gases without other storage or uses. Rooms containing medical gases shall be labeled in accordance with NFPA 99. Where containers of medical gases in quantities greater than the permitted amount are located inside the buildings, they shall be located in a 1-hour exterior room, 1-hour interior room or a gas cabinet in accordance with Section 427.2.1, 427.2.2 or 427.2.3, respectively. Rooms or areas where medical gases are stored or used in quantities exceeding the maximum allowable quantity per control area as set forth in Tables 307.1(1) and 307.1(2) shall be in accordance with Group H occupancies.

**[F] 427.2.1 One-hour exterior room.** A 1-hour exterior room shall be a room or enclosure separated from the remainder of the building by fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both, with a fire-resistance rating of not less than 1 hour. Openings between the room or enclosure and interior spaces shall be provided with self-closing smoke- and draft-control assemblies having a fire protection rating of not less than 1 hour. Rooms shall have not less than one exterior wall that is provided with not less than two vents. Each vent shall have a minimum free air opening of not less than 36 square inches (232 cm<sup>2</sup>) for each 1,000 cubic feet (28 m<sup>3</sup>) at normal temperature and pressure (NTP) of gas stored in the room and shall be not less than 72 square inches (465 cm<sup>2</sup>) in aggregate free opening area. One vent shall be within 6 inches (152 mm) of the floor and one shall be within 6 inches (152 mm) of the ceiling. Rooms shall be provided with not fewer than one automatic fire sprinkler to provide container cooling in case of fire.

**[F] 427.2.2 One-hour interior room.** Where an exterior wall cannot be provided for the room, a 1-hour interior room shall be provided and shall be a room or enclosure separated from the remainder of the building by fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both, with a fire-resistance rating of not less than 1 hour. Openings between the room or enclosure and interior spaces shall be provided with self-closing smoke- and draft-control assemblies having a fire protection rating of not less than 1 hour. An automatic sprinkler system shall be installed

within the room. The room shall be exhausted through a duct to the exterior. Supply and exhaust ducts shall be enclosed in a 1-hour rated shaft enclosure from the room to the exterior. Approved mechanical ventilation shall comply with the *California Mechanical Code* and be provided with a minimum rate of 1 cubic foot per minute per square foot ( $0.00508 \text{ m}^3/\text{s/m}^2$ ) of the area of the room.

**[F] 427.2.3 Gas cabinets.** Gas cabinets shall be constructed in accordance with Section 5003.8.6 of the *California Fire Code* and shall comply with the following:

1. Cabinets shall be exhausted to the exterior through a dedicated exhaust duct system installed in accordance with Chapter 5 of the *California Mechanical Code*.
2. Supply and exhaust ducts shall be enclosed in a 1-hour rated shaft enclosure from the cabinet to the exterior. The average velocity of ventilation at the face of access ports or windows shall be not less than 200 feet per minute ( $1.02 \text{ m/s}$ ) with a minimum of 150 feet per minute ( $0.76 \text{ m/s}$ ) at any point of the access port or window.
3. Cabinets shall be provided with an automatic sprinkler system internal to the cabinet.

#### **SECTION 435—SPECIAL PROVISIONS FOR LICENSED 24-HOUR CARE FACILITIES IN A GROUP R-2.1, R-3.1, R-4 [SFM]**

**435.1 Scope.** The provisions of this section shall apply to 24-hour care facilities in a Group R-2.1, R-3.1 or R-4 occupancy licensed by a governmental agency.

**435.2 General.** The provisions in this section shall apply in addition to general requirements in this code.

**435.2.1** Restraint shall not be practiced in a Group R-2.1, R-3.1 or R-4 Occupancies.

**Exception:** Occupancies which meet all the requirements for a Group I-3 Occupancy.

**435.2.2** Pursuant to Health and Safety Code Section 13133, regulations of the state fire marshal pertaining to 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 inconsistent 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.

**Exception:** Local regulations relating to roof coverings in facilities licensed as a residential care facility for the elderly (RCFE) per Health and Safety Code Section 13133.

#### **435.3 Building height and area provisions.**

**435.3.1** Group R-2.1, R-3.1 and R-4 shall be constructed in accordance with Table 504.3.

**435.3.2 Limitations six or less clients.** Group R-3.1 occupancies where nonambulatory clients are housed above the first story, having more than two stories in height or having more than 3,000 square feet ( $279 \text{ m}^2$ ) of floor area above the first story shall not be of less than one-hour fire-resistance-rated construction throughout.

In Group R3.1 occupancies housing a bedridden client, the client sleeping room shall not be located above or below the first story.

**Exception:** Clients who become bedridden as a result of a temporary illness as defined in Health and Safety Code Sections 1566.45, 1568.0832 and 1569.72. A temporary illness is an illness, which persists for 14 days or less. A bedridden client may be retained in excess of the 14 days upon approval by the Department of Social Services and may continue to be housed on any story in a Group R-3.1 occupancy classified as a licensed residential facility.

Every licensee 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.

**435.3.3 Limitations seven or more clients.** Group R-4 occupancies where nonambulatory clients are housed above the first story and there is more than 3,000 square feet ( $279 \text{ m}^2$ ) of floor area above the first story or housing not more than 16 clients above the first story shall be constructed of not less than one-hour fire-resistance-rated construction throughout.

**435.3.4 Nonambulatory elderly clients.** Group R-4 occupancies housing nonambulatory elderly clients shall be of not less than one-hour fire-resistance-rated construction throughout.

#### **435.4 Type of construction provisions.**

**435.4.1** Group R-2.1, occupancies are not permitted in nonfire-resistance-rated construction, see Health and Safety Code Section 13131.5.

#### **435.5 Fire-resistance-rated construction provisions.**

**435.5.1 Smoke barriers required.** Group R-2.1 and R-4 occupancies licensed as a Residential Care Facility (RCF) with individual floor areas over 6,000 square feet ( $557 \text{ m}^2$ ) per floor, shall be provided with smoke barriers, constructed in accordance with Section 709.

Group R-2.1 occupancies housing bedridden clients shall be provided with smoke barriers constructed in accordance with Section 709 regardless of the number of clients.

When smoke barriers are required, the area within a smoke compartment shall not exceed 22,500 square feet ( $2090 \text{ m}^2$ ) nor shall its travel distance exceed 200 feet (60 960 mm). Such smoke barriers shall divide the floor as equally as possible.

## 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	5	6							
Adopt entire chapter	X							X	X	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																
Chapter / Section																							
503.1				X	X																		
<i>Figure 5-1</i>				X																			
Table 504.3				X																			
Table 504.4				X																			
Table 506.2				X																			
506.2.1				X																			
506.2.2				X																			
508.2.4				X																			
508.3.3				X																			
Table 508.4				X																			
508.5					X	X																	
508.5, Item 2					†	†																	
508.5.3, <i>Exception</i>					X	X																	
508.5.7				X																			
508.5.8, <i>Exception</i>					X	X																	
508.5.9							X	X															
508.5.11								X															
Table 509.1					X																		
509.3					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.

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**About this chapter:** Chapter 5 establishes the limits to which a building can be built. Building height, number of stories and building area are specified in this chapter. Chapter 5 must be used in conjunction with the occupancies established in Chapter 3 and the types of construction established in Chapter 6. This chapter also specifies the impact that mezzanines, accessory occupancies and mixed occupancies have on the overall size of a building.

**ICC code development note:** Code change proposals to sections preceded by the designation [F] or [BE] will be considered by a code development committee meeting during the 2024 (Group A) Code Development Cycle. All other code change proposals will be considered by a code development committee meeting during the 2025 (Group B) Code Development Cycle.

## SECTION 501—GENERAL

**501.1 Scope.** The provisions of this chapter control the height and area of structures hereafter erected and additions to existing structures.

## SECTION 502—BUILDING ADDRESS

**[F] 502.1 Address identification.** New and existing buildings shall be provided with approved address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each character shall be a minimum of 4 inches (102 mm) high with a minimum stroke width of  $\frac{1}{2}$  inch (12.7 mm). Where required by the fire code official, address identification shall be provided in additional approved locations to facilitate emergency response. Where access is by means of a private road and the building address cannot be viewed from the public way, a monument, pole or other approved sign or means shall be used to identify the structure. Address identification shall be maintained.

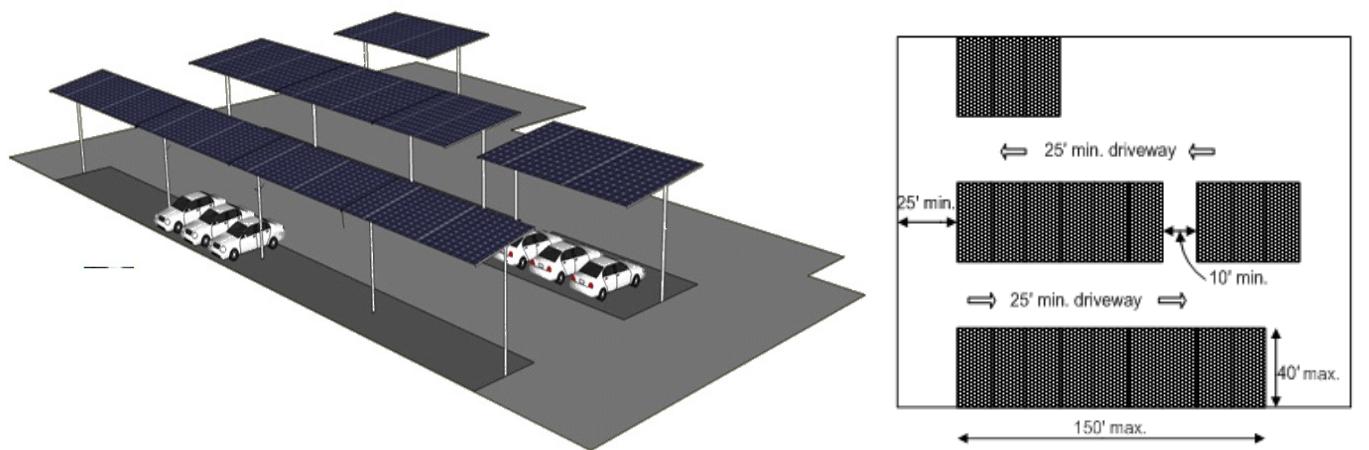
## SECTION 503—GENERAL BUILDING HEIGHT AND AREA LIMITATIONS

**503.1 General.** Unless otherwise specifically modified in Chapter 4 and this chapter, building height, number of stories and building area shall not exceed the limits specified in Sections 504 and 506 based on the type of construction as determined by Section 602 and the occupancies as determined by Section 302 except as modified hereafter. Building height, number of stories and building area provisions shall be applied independently. For the purposes of determining area limitations, height limitations and type of construction, each portion of a building separated by one or more fire walls complying with Section 706 shall be considered to be a separate building.

**Exceptions:**

1. *[HCD 1] Limited-density owner-built rural dwellings may be of any type of construction which will provide for a sound structural condition. Structural hazards which result in an unsound condition and which may constitute a substandard building are delineated by Section 17920.3 of the Health and Safety Code.*
2. *[SFM] Other than structural requirements, solar photovoltaic panels supported by a structure with no use underneath shall not constitute additional story or additional floor area and may exceed the height limit when constructed on a roof top of a building provided the following conditions are met:
 
  1. For all occupancies, the highest point of the structure/panel shall meet the lower of the two values below:
    1. 3 feet above the allowable building height per this code.
    2. 3 feet above the roof of the building immediately below.
  2. For installations on flat roofs in other than Group R-3 and R-4 occupancies, the highest point of the structure/panel shall meet the lower of the two values below:
    1. 10 feet above the allowable building height per this code.
    2. 10 feet above the roof of the building immediately below.*
3. *[SFM] Other than structural requirements, solar photovoltaic panels supported by a structure over parking stalls shall not constitute additional story or additional floor area and may exceed the height limit as specified in exception 2 (above) when the following conditions are met (see Figure 5-1):
 
  1. The area within the perimeter of the photovoltaic array has maximum rectangular dimension of 40 feet by 150 feet.
  2. The distance between solar photovoltaic array structures is a minimum of 10 feet clear.
  3. The driveway aisle separating solar photovoltaic array structures has a minimum width of 25 feet clear.
  4. Solar photovoltaic array structure is used only for parking purposes with no storage.
  5. Completely open on all sides (other than necessary structural supports) with no interior partitions.*

FIGURE 5-1



**503.1.1 Special industrial occupancies.** Buildings and structures designed to house special industrial processes that require large areas and unusual building heights to accommodate craneways or special machinery and equipment, including, among others, rolling mills; structural metal fabrication shops and foundries; or the production and distribution of electric, gas or steam power, shall be exempt from the building height, number of stories and building area limitations specified in Sections 504 and 506.

**503.1.2 Buildings on same lot.** Two or more buildings on the same lot shall be regulated as separate buildings or shall be considered as portions of one building where the building height, number of stories of each building and the aggregate building area of the buildings are within the limitations specified in Sections 504 and 506. The provisions of this code applicable to the aggregate building shall be applicable to each building.

**503.1.3 Type I construction.** Buildings of Type I construction permitted to be of unlimited tabular building heights and areas are not subject to the special requirements that allow unlimited area buildings in Section 507 or unlimited building height in Sections 503.1.1 and 504.3 or increased building heights and areas for other types of construction.

**503.1.4 Occupiable roofs.** A roof level or portion thereof shall not be used as an occupiable roof unless the occupancy of the roof is an occupancy that is permitted by Table 504.4 for the story immediately below the roof. The area of the occupiable roofs shall not be included in the building area as regulated by Section 506. An occupiable roof shall not be included in the building height or number of stories as regulated by Section 504, provided that the penthouses and other enclosed rooftop structures comply with Section 1511.

**Exceptions:**

1. The occupancy located on an occupiable roof shall not be limited to the occupancies allowed on the story immediately below the roof where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and occupant notification in accordance with Sections 907.5.2.1 and 907.5.2.3 is provided in the area of the occupiable roof. Emergency voice/alarm communication system notification per Section 907.5.2.2 shall also be provided in the area of the occupiable roof where such system is required elsewhere in the building.
2. Assembly occupancies shall be permitted on roofs of open parking spaces of Type I or Type II construction, in accordance with the exception to Section 903.2.1.6.

**503.1.4.1 Enclosures over occupiable roof areas.** Elements or structures enclosing the occupiable roof areas shall not extend more than 48 inches (1220 mm) above the surface of the occupiable roof.

**Exceptions:**

1. Penthouses constructed in accordance with Section 1511.2 and towers, domes, spires and cupolas constructed in accordance with Section 1511.5.
2. Elements or structures enclosing the occupiable roof areas where the roof deck is located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.

## SECTION 504—BUILDING HEIGHT AND NUMBER OF STORIES

**504.1 General.** The height, in feet, and the number of stories of a building shall be determined based on the type of construction, occupancy classification and whether there is an automatic sprinkler system installed throughout the building.

**Exception:** The building height of one-story aircraft hangars, aircraft paint hangars and buildings used for the manufacturing of aircraft shall not be limited where the building is provided with an automatic sprinkler system or automatic fire-extinguishing system in accordance with Chapter 9 and is entirely surrounded by public ways or yards not less in width than one and one-half times the building height.

**504.1.1 Unlimited area buildings.** The height of unlimited area buildings shall be designed in accordance with Section 507.

**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.

TABLE 506.2—ALLOWABLE AREA FACTOR ( $A_t$  = NS, S1, S13R, S13D or SM, as applicable) IN SQUARE FEET<sup>a, b, i</sup>—continued

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>i</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												
	SM (without height increase)												
	SM (with height increase)												
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 area 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. 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 with 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.

**506.2.1 Single-occupancy buildings.** The allowable area of each story of a single-occupancy building shall be determined in accordance with Equation 5-1:

$$\text{Equation 5-1} \quad A_a = A_t + (NS \times I_f)$$

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.

The allowable area per story of a single-occupancy building with a maximum of *two* stories above grade plane shall be determined by Equation 5-1. The total allowable area of a single-occupancy building more than *two* stories above grade plane shall be determined in accordance with Equation 5-2:

$$\text{Equation 5-2} \quad A_a = [A_t + (NS \times I_f)] \times S_a$$

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.

$S_a = 3$  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, where the actual number of stories above grade plane exceeds three.

$S_a = 2$  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.

The actual area of any individual floor shall not exceed the allowable area per Equation 5-1.

**506.2.2 Mixed-occupancy buildings.** The allowable area of each story of a mixed-occupancy building shall be determined in accordance with the applicable provisions of Section 508.3.2 for nonseparated occupancies and Section 508.4.2 for separated occupancies.

For buildings with more than *two* stories above grade plane, the total building area shall be such that the aggregate sum of the ratios of the actual area of each story divided by the allowable area of such stories, determined in accordance with Equation 5-3 based on the applicable provisions of Section 508.1, shall not exceed three, *provided the aggregate sum of the ratios for portions of mixed-occupancy, multistory buildings containing 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, including any other associated non-separated occupancies, shall not exceed two*.

$$\text{Equation 5-3} \quad A_a = [A_t + (NS \times I_f)]$$

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.

**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 automatic sprinkler system increase applicable only to the portions of the building not classified as Group H-2 or H-3.

**506.3 Frontage increase.** Every building shall adjoin or have access to a public way to receive an area factor increase based on frontage. Area factor increase shall be determined in accordance with Sections 506.3.1 through 506.3.3.

**506.3.1 Minimum percentage of perimeter.** To qualify for an area factor increase based on frontage, a building shall have not less than 25 percent of its perimeter on a public way or open space. Such open space shall be either on the same lot or dedicated for public use and shall be accessed from a street or approved fire lane.

**506.3.2 Minimum frontage distance.** To qualify for an area factor increase based on frontage, the public way or open space adjacent to the building perimeter shall have a minimum distance of 20 feet (6096 mm) measured at right angles from the building face to any of the following:

1. The closest interior lot line.
2. The entire width of a street, alley or public way.
3. The exterior face of an adjacent building on the same property.

The frontage increase shall be based on the smallest public way or open space that is 20 feet (6096 mm) or greater, and the percentage of building perimeter having a minimum 20 feet (6096 mm) public way or open space.

**506.3.3 Amount of increase.** The area factor increase based on frontage shall be determined in accordance with Table 506.3.3.

**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 that the following criteria are met:

- Buildings containing Group H-5 occupancy shall be of Type I or II construction.
- Each area used for Group H-5 occupancy shall be separated from other occupancies as required in Sections 415.11 and 508.4.
- 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 that the following criteria are met:

- 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.
- The building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
- 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, 508.4 or 508.5, or a combination of these sections.

**Exceptions:**

- Occupancies separated in accordance with Section 510.
- Where required by Table 415.6.5, areas of Group H-1, H-2 and H-3 occupancies shall be located in a detached building or structure.

**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 nonsprinklered 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:**

- 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.
- 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.
- Group I-2 shall be separated from all other occupancies in accordance with Section 508.4.*

**Exception:** No separation is required between Group B, E and R-1 sleeping units accessory to Group I-2 and covered exterior entrances required by Section 11B-206.4.10 or Section 1224.33.2.1 accessory to Group I-2.

- Group I-3 shall be separated from all other occupancies in accordance with Section 508.4.*

**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 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. *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.

TABLE 508.4—REQUIRED SEPARATION OF OCCUPANCIES (HOURS)<sup>f</sup>

OCCUPANCY	A, E		I-4 <sup>i</sup> , R-2.1		I-2 <sup>j</sup>		I-3		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>		F-2, S-2 <sup>b</sup> , U		B <sup>e</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	S
A, E	N	N	1	2	2	NP	2	NP	1	2	N	1	1	2	2	NP	NP	NP	3	4	2	3	2	NP	
I-4 <sup>i</sup> , R-2.1	1	2	N	N	2	NP	2	NP	1	NP	1	2	1	2	2	NP	NP	NP	4	NP	2	NP	4	NP	
I-2 <sup>j</sup>	2	NP	2	NP	N	N	2	NP	2	NP	2	NP	2	NP	2	NP	NP	NP	4	NP	2	NP	4	NP	
I-3	2	NP	2	NP	2	NP	N	NP	2	NP	2	2	2	2	NP	NP	NP	NP	4	NP	4	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>	1	2	1	NP	2	NP	2	NP	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	1	1	2	2	NP	2	2	1 <sup>c</sup>	2 <sup>c</sup>	N	N	1	2	1	NP	NP	NP	3	4	2	3	2	NP	
B <sup>e</sup> , F-1 <sup>g,h</sup> , M, S-1	1	2	1	2	2	NP	2	2	1	2	1	2	N	N	1	NP	NP	NP	2	3	1	2	1	NP	
L	2	NP	2	NP	2	NP	2	NP	4	NP	1	NP	1	NP	1	NP	NP	NP	2	NP	1	NP	1	NP	
H-1	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	N	NP	NP	NP	NP	NP	NP	NP	
H-2	3	4	4	NP	4	NP	4	NP	3	4	3	4	2	3	2	NP	NP	NP	N	NP	1	NP	1	NP	
H-3, H-4	2	3	4	NP	4	NP	4	NP	2	3	2	3	1	2	1	NP	NP	NP	1	NP	1 <sup>d</sup>	NP	1	NP	
H-5	2	NP	4	NP	4	NP	4	NP	2	NP	2	NP	1	NP	1	NP	NP	NP	1	NP	1	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 Sections 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.*

i. *[SFM] Group E child-care separation with I-4 child care can be reduced to 1 hour with the installation of automatic fire sprinklers in accordance with Section 903.3.1.*

j. *When not considered an accessory use in accordance with Section 508.2.4, the required separation between Group I-2 and required covers for accessible entrances and emergency vehicle entrances, when in accordance with Section 406.5.2 and protected by an automatic sprinkler system, shall be reduced by 1 hour but not to less than 1 hour. See Section 903.2.21.*

**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.

**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, so as 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 gypsum board that is not less than  $\frac{1}{2}$  inch (12.7 mm) in thickness 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.

**Exception:** A thermal barrier shall not be required on the top of horizontal assemblies serving as occupancy separations.

**508.5 Live/work units.** Live/work units shall comply with one of the following:

1. For a live/work unit located in a building constructed in accordance with this code, both the residential and nonresidential portions of the live/work unit shall comply with Sections 508.5 through 508.5.11.
2. For a live/work unit located in a building constructed in accordance with the *California Residential Code*, the nonresidential portion of the live/work unit shall comply with Sections 508.5.1 through 508.5.11, and the residential portion of the live/work unit shall be constructed in accordance with the *California Residential Code* and Section 508.5.7.

**Exceptions:**

1. Dwelling or sleeping units that include an office that is less than 10 percent of the area of the dwelling unit are permitted to be classified as dwelling units with accessory occupancies in accordance with Section 508.2.
2. *Live/work units complying with the requirements of Section 508.5 shall be permitted to be constructed as one- and two-family dwellings or townhouses in accordance with the California Residential Code, as applicable.*

**508.5.1 Limitations.** The following shall apply to live/work areas:

1. The live/work unit is permitted to be not greater than 3,000 square feet ( $279 \text{ m}^2$ ) in area.
2. The nonresidential area is permitted to be not more than 50 percent of the area of each live/work unit.
3. The nonresidential area function shall be limited to the first or main floor only of the live/work unit.

**508.5.2 Occupancies.** Live/work units shall be classified as a Group R-2 occupancy. Separation requirements found in Sections 420 and 508 shall not apply within the live/work unit where the live/work unit is in compliance with Section 508.5. Nonresidential uses that would otherwise be classified as either a Group H or S occupancy shall not be permitted in a live/work unit.

**Exception:** Storage shall be permitted in the live/work unit provided that the aggregate area of storage in the nonresidential portion of the live/work unit shall be limited to 10 percent of the space dedicated to nonresidential activities.

**[BE] 508.5.3 Means of egress.** Except as modified by this section, the means of egress components for a live/work unit shall be designed in accordance with Chapter 10 for the function served.

**Exception:** Residential areas of live/work units constructed in accordance with the *California Residential Code* shall not be required to comply with Chapter 10.

**[BE] 508.5.4 Egress capacity.** The egress capacity for each element of the live/work unit shall be based on the occupant load for the function served in accordance with Table 1004.5.

**[BE] 508.5.5 Spiral stairways.** Spiral stairways that conform to the requirements of Section 1011.10 shall be permitted.

**[BE] 508.5.6 Vertical openings.** Floor openings between floor levels of a live/work unit are permitted without enclosure.

**[F] 508.5.7 Fire protection.** Live/work units in buildings constructed in accordance with this code shall be provided with all of the following:

1. An automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.
2. Smoke alarms in accordance with Section 907.2.11.
3. Where required by Section 907.2.9.1, a manual fire alarm system.

Live/work units in buildings constructed in accordance with the *California Residential Code* shall be provided with an automatic sprinkler system and smoke alarms. The automatic sprinkler system shall comply with *California Residential Code* Section R309, and smoke alarms shall comply with *California Residential Code* Section 310.

**508.5.8 Structural.** Floors within a live/work unit shall be designed for the live loads in Table 1607.1, based on the function within the space.

**Exception:** Residential areas of live/work units constructed in accordance with the California Residential Code shall not be required to comply with Table 1607.1.

**[BE] 508.5.9 Accessibility.** Accessibility shall be designed in accordance with Chapter 11A and/or 11B, when applicable, for the function served.

**508.5.10 Ventilation.** The applicable ventilation requirements of the California Mechanical Code shall apply to each area within the live/work unit for the function within that space.

**508.5.11 Plumbing facilities.** The nonresidential area of the live/work unit shall be provided with minimum plumbing facilities as specified by the California Plumbing Code, based on the function of the nonresidential area. Where the nonresidential area of the live/work unit is required to be accessible, the plumbing fixtures specified by the California Plumbing Code shall be accessible.

### 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 specified in Table 509.1.

**Exception:** Incidental uses within and serving a dwelling unit are not required to comply with this section.

[F] TABLE 509.1—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
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower	1 hour or provide automatic sprinkler system
Refrigerant machinery room	1 hour or provide automatic sprinkler system
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
<b>[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.</b>	1 hour
In Group I-2 occupancies, laboratories not classified as Group H	1 hour <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
In Group I-2, laundry rooms over 100 square feet	1 hour and provide automatic sprinkler system <sup>a</sup>
Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces	1 hour and provide automatic sprinkler system <sup>a</sup>
In Group I-2, physical plant maintenance shops	1 hour and provide automatic sprinkler system <sup>a</sup>
In ambulatory care facilities or Group I-2 occupancies, waste and linen collection rooms with containers that have an aggregate volume of 8.67 cubic feet or greater	1 hour and provide automatic sprinkler system <sup>a</sup>
In other than ambulatory care facilities and Group I-2 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 occupancies, storage rooms greater than 50 square feet	1 hour and provide automatic sprinkler system <sup>a</sup>
Electrical installations and transformers	See Sections 110.26 through 110.34 and Sections 450.8 through 450.48 of the California Electrical Code 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 occupancies as indicated.

**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	5	6							
Adopt entire chapter	X							X	X	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																							
Chapter / Section																							
Table 601			X																				
602.1			X																				
602.4.1.5				X	X																		
602.4.2.5				X	X																		
602.4.3.5				X	X																		
602.4.4.3				X	X																		
603.1				X	X																		
603.1.3				X	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.



## **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			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	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																							
Chapter / Section																							
705.2.3.2				X																			
705.5					X																		
Table 705.5						X																	
705.13							X																
Table 706.4								X															
Table 707.3.10									X														
707.5										X													
708.1										X													
708.3										X													
709.3										X													
709.5										X													
709.5.1										X													
710.2										X													
710.4										X													
710.8										X													
716.2.2.1										X													
716.2.6.6										X													
716.2.9.4										X													
717.5.2										X													
717.5.4										X													
717.5.4.1										X													
717.5.5										X													
721.2										X	X												
721.2.1										X	X												
722.7										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.



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 Fire partition walls enclosing elevator lobbies.** Fire partition walls used to enclose elevator lobbies in accordance with Section 3006.3 shall form an enclosure that terminates at a fire barrier or fire partition having a fire-resistance rating of not less than 1 hour, or an outside wall.

**708.4.2 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, fire partitions serving as corridor walls, fire partitions separating ambulatory care facilities from adjacent spaces or corridors, fire partitions separating dwelling and sleeping units from Group R-1 and R-2 occupancies and fire partitions separating vestibules from the level of exit discharge.

**708.4.3 Fireblocks and draftstops in combustible construction.** In combustible 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. Draftstops 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, draftstops shall only be required above one of the corridor walls.
3. In Group R-2 occupancies with fewer than four dwelling units, fireblocking and draftstops 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, fireblocking and draftstops 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 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.

→ **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 assemblies separating smoke compartments.** Smoke-barrier assemblies used to separate smoke compartments shall form an effective membrane enclosure that is continuous from an outside wall or smoke barrier wall to an outside wall or another smoke barrier wall and to the horizontal assemblies.

**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 fire resistance 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 where protected by an elevator lobby, at each exit door opening into a protected lobby 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, 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 not be required to be protected in accordance with Section 716. The doors shall be close fitting within operational tolerances, and shall not have a center mullion or undercuts in excess of  $\frac{3}{4}$  inch (19.1 mm), louvers or grilles. The doors shall have head and jamb stops, and astragals or rabbets at meeting edges. Positive latching devices are not required. 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 1010.3.3 and protected in accordance with Section 716. *Doors installed across corridors shall comply with Section 1010.1.1.*

**709.5.1 Group I-2, R-2.1 and ambulatory care facilities.** In Group I-2, 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, 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.

**710.4 Continuity.** Smoke partitions shall extend 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.

**Exception:** In Group I-2, a lay-in ceiling system shall be considered capable of limiting the transfer of smoke where the ceiling tiles weigh not less than 1 pound per square foot (4.882 kg/m<sup>2</sup>) and where the HVAC system is fully ducted in accordance with the *California Mechanical Code*.

**710.4.1 Smoke partition walls enclosing elevator lobbies.** Smoke partition walls used to enclose elevator lobbies in accordance with Section 3006.3 shall form an enclosure that terminates at a fire barrier having a fire-resistance rating of not less than 1 hour, another smoke partition or an outside wall.

**710.5 Openings.** Openings in smoke partitions shall comply with Sections 710.5.1 through 710.5.3.

**710.5.1 Windows.** Windows in smoke partitions shall be sealed to resist the free passage of smoke or be automatic-closing upon detection of smoke.

**710.5.2 Doors.** Doors in smoke partitions shall comply with Sections 710.5.2.1 through 710.5.2.3.

**710.5.2.1 Louvers.** Doors in smoke partitions shall not include louvers.

**Exception:** Where permitted in accordance with Section 407.3.1.1.

**710.5.2.2 Smoke and draft control doors.** Where required elsewhere in the code, doors in smoke partitions shall meet the requirements for a smoke and draft control door assembly tested in accordance with UL 1784. The air leakage rate of the door assembly shall not exceed 3.0 cubic feet per minute per square foot [ $0.015424 \text{ m}^3/(\text{s} \times \text{m}^2)$ ] of door opening at 0.10 inch of water (25 Pa) for both the ambient temperature test and the elevated temperature exposure test. Installation of smoke doors shall be in accordance with NFPA 105.

**710.5.2.2.1 Smoke and draft control door labeling.** Smoke and draft control doors complying only with UL 1784 shall be permitted to show the letter "S" on the manufacturer's labeling.

**710.5.2.3 Self- or automatic-closing doors.** Where required elsewhere in the code, doors in smoke partitions shall be self- or automatic-closing by smoke detection in accordance with Section 716.2.6.6.

**710.5.3 Pass-through openings in Group I-2.** Where pass-through openings are provided in smoke partitions in Group I-2 occupancies, such openings shall comply with the following:

1. The smoke compartment in which the pass-through openings occur does not contain a patient care suite or sleeping room.
2. Pass-through openings are installed in a wall, door or vision panel that is not required to have a fire-resistance rating.
3. The top of the pass-through opening is located a maximum of 48 inches (1219 mm) above the floor.
4. The aggregate area of all such pass-through openings within a single room shall not exceed 80 square inches (0.05 m<sup>2</sup>).

**710.6 Penetrations.** The space around penetrating items shall be filled with an approved material to limit the free passage of smoke.

**710.7 Joints.** Joints shall be filled with an approved material to limit the free passage of smoke.

**710.8 Ducts and air transfer openings.** The space around a duct penetrating a smoke partition shall be filled with an approved material to limit the free passage of smoke. Air transfer openings in smoke partitions shall be provided with a smoke damper complying with Section 717.3.2.2. *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, duct openings in smoke partitions shall also be provided with a smoke damper complying with Section 717.3.2.2.*

**Exceptions:**

1. Where the installation of a smoke damper will interfere with the operation of a required smoke control system in accordance with Section 909, approved alternative protection shall be utilized.
2. *[SFM] Smoke dampers are not required in corridor penetrations where the duct is constructed of steel not less than 0.019-inch (0.40 mm) in thickness and there are no openings serving the corridor.*

## SECTION 711—FLOOR AND ROOF ASSEMBLIES

**711.1 General.** Horizontal assemblies shall comply with Section 711.2. Nonfire-resistance-rated floor and roof assemblies shall comply with Section 711.3.

**711.2 Horizontal assemblies.** Horizontal assemblies shall comply with Sections 711.2.1 through 711.2.6.

**711.2.1 Materials.** Assemblies shall be of materials permitted by the building type of construction.

**711.2.2 Continuity.** Assemblies shall be continuous without vertical openings, except as permitted by this section and Section 712.

**711.2.3 Supporting construction.** The supporting construction shall be protected to afford the required fire-resistance rating of the horizontal assembly supported.

**Exception:** In buildings of Type IIB, IIIB or VB construction, the construction supporting the horizontal assembly is not required to be fire-resistance rated at the following:

1. Horizontal assemblies at the separations of incidental uses as specified by Table 509.1 provided that the required fire-resistance rating does not exceed 1 hour.
2. Horizontal assemblies at the separations of dwelling units and sleeping units as required by Section 420.3.
3. Horizontal assemblies at smoke barriers constructed in accordance with Section 709.

**711.2.4 Fire-resistance rating.** The fire-resistance rating of horizontal assemblies shall comply with Sections 711.2.4.1 through 711.2.4.6 but shall be not less than that required by the building type of construction.

**711.2.4.1 Separating mixed occupancies.** Where the horizontal assembly separates mixed occupancies, the assembly shall have a fire-resistance rating of not less than that required by Section 508.4 based on the occupancies being separated.

**711.2.4.2 Separating fire areas.** Where the horizontal assembly separates a single occupancy into different fire areas, the assembly shall have a fire-resistance rating of not less than that required by Section 707.3.10.

**711.2.4.3 Dwelling units and sleeping units.** Horizontal assemblies serving as dwelling or sleeping unit separations in accordance with Section 420.3 shall be not less than 1-hour fire-resistance-rated construction.

**Exception:** Horizontal assemblies separating dwelling units and sleeping units shall be not less than  $\frac{1}{2}$ -hour fire-resistance-rated construction in a building of Types IIB, IIIB and VB construction, where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

**711.2.4.4 Separating smoke compartments.** Where the horizontal assembly is required to be a smoke barrier, the assembly shall comply with Section 709.

**711.2.4.5 Separating incidental uses.** Where the horizontal assembly separates incidental uses from the remainder of the building, the assembly shall have a fire-resistance rating of not less than that required by Section 509.

**711.2.4.6 Other separations.** Where a horizontal assembly is required by other sections of this code, the assembly shall have a fire-resistance rating of not less than that required by that section.

**711.2.5 Ceiling panels.** Where the weight of lay-in ceiling panels, used as part of fire-resistance-rated floor/ceiling or roof/ceiling assemblies, is not adequate to resist an upward force of 1 pound per square foot (48 Pa), wire or other approved devices shall be installed above the panels to prevent vertical displacement under such upward force.

**711.2.6 Unusable space.** In 1-hour fire-resistance-rated floor/ceiling assemblies, the ceiling membrane is not required to be installed over unusable crawl spaces. In 1-hour fire-resistance-rated roof assemblies, the floor membrane is not required to be installed where unusable attic space occurs above.

**711.3 Nonfire-resistance-rated floor and roof assemblies.** Nonfire-resistance-rated floor, floor/ceiling, roof and roof/ceiling assemblies shall comply with Sections 711.3.1 and 711.3.2.

**711.3.1 Materials.** Assemblies shall be of materials permitted by the building type of construction.

**711.3.2 Continuity.** Assemblies shall be continuous without vertical openings, except as permitted by Section 712.

## SECTION 712—VERTICAL OPENINGS

**712.1 General.** Each vertical opening shall comply in accordance with one of the protection methods in Sections 712.1.1 through 712.1.16.

**712.1.1 Shaft enclosures.** Vertical openings contained entirely within a shaft enclosure complying with Section 713 shall be permitted.

**712.1.2 Individual dwelling unit.** Unconcealed vertical openings totally within an individual residential dwelling unit and connecting four stories or less shall be permitted.

**712.1.3 Escalator openings.** Where a building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, vertical openings for escalators shall be permitted where protected in accordance with Section 712.1.3.1 or 712.1.3.2.

**712.1.3.1 Opening size.** Protection by a draft curtain and closely spaced sprinklers in accordance with NFPA 13 shall be permitted where the area of the vertical opening between stories does not exceed twice the horizontal projected area of the escalator. In other than Groups B and M, this application is limited to openings that do not connect more than four stories.

**712.1.3.2 Automatic shutters.** Protection of the vertical opening by listed or approved shutters at every penetrated floor shall be permitted in accordance with all of the following:

1. The shutter shall be installed in accordance with the manufacturer's instructions.
2. The shutter shall be of noncombustible construction and have a fire-resistance rating of not less than 1.5 hours.
3. The shutter shall close immediately upon the actuation of a smoke detector installed in accordance with Section 907.3.
4. The shutter shall completely close off the vertical opening.
5. Escalators shall cease operation when the shutter begins to close.
6. The shutter shall operate at a speed of not more than 30 feet per minute (152.4 mm/s).
7. The shutter shall be equipped with a sensing leading edge to stop closure where in contact with any obstacle, and continue to close when the obstacle is cleared.

**712.1.4 Penetrations.** Penetrations, concealed and unconcealed, shall be permitted where protected in accordance with Section 714.

**712.1.5 Joints.** Joints shall be permitted where complying with Section 712.1.5.1 or 712.1.5.2, as applicable.

**712.1.5.1 Joints in or between horizontal assemblies.** Joints made in or between horizontal assemblies shall comply with Section 715. The void created at the intersection of a floor/ceiling assembly and an exterior curtain wall assembly shall be permitted where protected in accordance with Section 715.4.

**712.1.5.2 Joints in or between nonfire-resistance-rated floor assemblies.** Joints in or between floor assemblies without a required fire-resistance rating shall be permitted where they comply with one of the following:

1. The joint shall be concealed within the cavity of a wall.
2. The joint shall be located above a ceiling.

**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE**  
**CHAPTER 9 – FIRE PROTECTION AND LIFE SAFETY SYSTEMS**

(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	6							
Adopt entire chapter	X							X	X	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
Chapter / Section																							
901.5			X																				
903.2			X																				
903.2.1.2			X																				
903.2.1.3			X																				
903.2.3			X																				
903.2.4.1			X																				
903.2.5.4			X																				
903.2.6			X																				
903.2.6.1			X																				
903.2.6.2			X																				
903.2.7			X																				
903.2.8			X																				
903.2.8.2			X																				
Table 903.2.11.6			X																				
903.2.14			X																				
903.2.14.1			X																				
903.2.14.2			X																				
903.2.15			X																				
903.2.15.1			X																				
903.2.16			X																				
903.2.16.1			X																				
903.2.17			X																				
903.2.17.1			X																				
903.2.17.2			X																				
903.2.17.2.1			X																				
903.2.17.2.2			X																				
903.2.17.2.3			X																				
903.2.17.2.4			X																				
903.2.17.2.5			X																				
903.2.17.2.6			X																				
903.2.18			X																				
903.2.19			X																				
903.2.19.1			X																				
903.2.19.1.1			X																				
903.2.19.1.2			X																				
903.2.20			X																				
903.2.21			X																				
903.3			X																				
903.3.1.1			X																				
903.3.1.1.1			X																				
903.3.1.1.4			X																				
903.3.1.2			X																				
903.3.1.3			X																				
903.3.2			X																				

**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	5	6							
Adopt entire chapter	X						X	X	X	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
Chapter / Section																							
903.3.5						X																	
903.3.10						X																	
904.3.1						X		X															
904.5						X																	
904.6						X																	
904.7						X																	
904.8						X																	
904.9						X																	
904.10						X																	
904.11.3						X																	
904.14						X																	
904.15						X																	
905.1						X																	
905.2						X																	
905.3						X																	
905.3.1						X																	
905.3.8						X																	
905.3.8.1						X																	
905.3.8.2						X																	
905.3.9						X																	
905.3.10						X																	
905.4						X																	
905.5						X																	
905.7.2						X																	
906.1						X																	
906.2						X																	
Table 906.3(1)						X																	
Table 906.3(2)						X																	
906.3.2						X																	
906.3.4						X																	
907.1.3						X																	
907.1.4						X																	
907.1.5						X																	
907.2						X																	
907.2.1						X																	
907.2.1.1						X																	
907.2.1.3						X																	
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907.2.2.3						X																	
907.2.3						X																	
907.2.3.1						X																	
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907.2.3.3						X																	

**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	5	6								
Adopt entire chapter	X							X	X	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
Chapter / Section																								
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																		
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907.2.6.3.3						X																		
907.2.6.3.4						X																		
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907.2.6.5						X																		
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907.2.9.1						X																		
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907.2.9.4						X																		
907.2.9.4.1						X																		
907.2.11						X																		
907.2.11.1						X																		
907.2.11.2						X																		
907.2.11.2.1 – 907.2.11.2.6						X																		
907.2.11.3						X																		
907.2.11.4						X																		
907.2.11.6						X																		
907.2.11.8						X																		
907.2.11.9						X																		
907.2.12						X																		
907.2.13						X																		
907.2.13.1						X																		
907.2.13.1.2						X																		
907.2.24 with subsections						X																		
907.2.25 with subsections						X																		
907.2.26 with subsections						X																		
907.2.27						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	5	6							
Adopt entire chapter	X							X	X	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
Chapter / Section																							
907.2.28 with subsection					X																		
907.2.29 with subsection					X																		
907.3					X																		
907.3.2					X																		
907.3.2.1 through 907.3.2.5					X																		
907.3.3					X																		
907.3.3.1					X																		
907.4.2.1					X																		
907.4.2.2					X			X															
907.4.2.7					X																		
907.5					X																		
907.5.1.1					X																		
907.5.2.1					X																		
907.5.2.1.4					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														
907.5.2.3.4					X				X														
907.5.2.4					X																		
907.5.2.5					X																		
907.6					X																		
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907.6.1.1						X																	
907.6.4						X																	
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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																	
907.6.6.4						X																	
909.5.3						X																	
909.5.3.1						X																	
909.12.1						X																	
909.13.1						X																	
909.16						X																	
909.16.1						X																	
909.18.9						X																	
909.20						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	5	6							
Adopt entire chapter	X							X	X	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
Chapter / Section																							
909.20.1						X																	
909.20.2.2						X																	
909.20.2.3						X																	
909.20.2.4						X																	
909.20.2.5						X																	
909.20.3.2						X																	
909.20.4.1						X																	
909.20.4.2						X																	
909.20.6						X																	
909.20.6.1						X																	
909.20.6.2						X																	
910.2.1						X																	
910.3.1						X																	
911.1						X																	
911.1.6						X																	
911.1.8						X																	
912.4						X																	
912.6						X																	
913.1						X																	
913.6						X																	
915.1						X	X	X															
915.2						X	X	X															
915.2.1						X	X	X															
915.2.3						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															
915.5.2						X	X	X															
915.5.3						X	X	X															
915.6						X	X	X															
915.6.1						X																	
915.7						X		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.



**[F] 903.2.1.5 Group A-5.** An automatic sprinkler system shall be provided for all enclosed Group A-5 accessory use areas in excess of 1,000 square feet (93 m<sup>2</sup>).

**[F] 903.2.1.5.1 Spaces under grandstands or bleachers.** Enclosed spaces under grandstands or bleachers shall be equipped with an automatic sprinkler system in accordance with Section 903.3.1.1 where either of the following exist:

1. The enclosed area is 1,000 square feet (93 m<sup>2</sup>) or less and is not constructed in accordance with Section 1030.1.1.1.
2. The enclosed area exceeds 1,000 square feet (93 m<sup>2</sup>).

**[F] 903.2.1.6 Assembly occupancies on roofs.** Where an occupiable roof has an assembly occupancy with an occupant load exceeding 100 for Group A-2 and 300 for other Group A occupancies, all floors between the occupiable roof and the level of exit discharge shall be equipped with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

**Exception:** Open parking garages of Type I or Type II construction.

**[F] 903.2.1.7 Multiple fire areas.** An automatic sprinkler system shall be provided where multiple fire areas of Group A-1, A-2, A-3 or A-4 occupancies share exit or exit access components and the combined occupant load of these fire areas is 300 or more.

**[F] 903.2.2 Group B.** An automatic sprinkler system shall be provided for Group B occupancies as required in Sections 903.2.2.1 and 903.2.2.2.

**[F] 903.2.2.1 Ambulatory care facilities.** An automatic sprinkler system shall be installed throughout the entire floor containing an ambulatory care facility where either of the following conditions exist at any time:

1. Four or more care recipients are incapable of self-preservation.
2. One or more care recipients that are incapable of self-preservation are located at other than the level of exit discharge serving such a facility.

In buildings where ambulatory care is provided on levels other than the level of exit discharge, an automatic sprinkler system shall be installed throughout the entire floor as well as all floors below where such care is provided, and all floors between the level of ambulatory care and the nearest level of exit discharge, the level of exit discharge, and all floors below the level of exit discharge.

**Exception:** Floors classified as an open parking garage are not required to be sprinklered.

**[F] 903.2.2.2 Laboratories involving testing, research and development.** An automatic sprinkler system shall be installed throughout the fire areas utilized for the research and development or testing of lithium-ion or lithium metal batteries.

**[F] 903.2.3 Group E.** An automatic sprinkler system shall be provided for Group E occupancies as follows:

1. Throughout all Group E fire areas greater than 12,000 square feet (1115 m<sup>2</sup>) in area.
2. The Group E fire area is located on a floor other than a level of exit discharge serving such occupancies.

**Exception:** In buildings where every classroom has not fewer than one exterior exit door at ground level, an automatic sprinkler system is not required in any area below the lowest level of exit discharge serving that area.

3. The Group E fire area has an occupant load of 300 or more.
4. *In rooms or areas with special hazards such as laboratories, vocational shops and other such areas where hazardous materials in quantities not exceeding the maximum allowable quantity are used or stored.*
5. *Throughout any Group E structure greater than 12,000 square feet (1115 m<sup>2</sup>) in area, which contains more than one fire area, and which is separated into two or more buildings by fire walls of not less than 4-hour fire resistance rating without openings.*
6. *For public school state funded construction projects see Section 903.2.19.*
7. *For public school campuses: Kindergarten through 12th grade, see Section 903.2.20.*

**[F] 903.2.4 Group F-1.** An automatic sprinkler system shall be provided throughout all buildings containing a Group F-1 occupancy where one of the following conditions exists:

1. A Group F-1 fire area exceeds 12,000 square feet (1115 m<sup>2</sup>).
2. A Group F-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group F-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m<sup>2</sup>).
4. A Group F-1 occupancy is used to manufacture lithium-ion or lithium metal batteries.
5. A Group F-1 occupancy is used to manufacture vehicles, energy storage systems or equipment containing lithium-ion or lithium metal batteries where the batteries are installed as part of the manufacturing process.

**[F] 903.2.4.1 Woodworking operations.** An automatic sprinkler system shall be provided throughout all Group F-1 occupancy fire areas that contain woodworking operations in excess of 2,500 square feet (232 m<sup>2</sup>) in area that generate finely divided combustible waste or use finely divided combustible materials.

**[SFM]** *A fire wall of less than four-hour fire-resistance rating without openings, or any fire wall with openings, shall not be used to establish separate fire areas.*

**[F] 903.2.4.2 Group F-1 distilled spirits.** An automatic sprinkler system shall be provided throughout a Group F-1 fire area used for the manufacture of distilled spirits.

**[F] 903.2.4.3 Group F-1 upholstered furniture or mattresses.** An automatic sprinkler system shall be provided throughout a Group F-1 fire area that exceeds 2,500 square feet (232 m<sup>2</sup>) used for the manufacture of upholstered furniture or mattresses.

**[F] 903.2.5 Group H.** Automatic sprinkler systems shall be provided in high-hazard occupancies as required in Sections 903.2.5.1 through 903.2.5.3.

**[F] 903.2.5.1 General.** An automatic sprinkler system shall be installed in Group H occupancies.

**[F] 903.2.5.2 Group H-5 occupancies.** An automatic sprinkler system shall be installed throughout buildings containing Group H-5 occupancies. The design of the automatic sprinkler system shall be not less than that required by this code for the occupancy hazard classifications in accordance with Table 903.2.5.2.

Where the design area of the automatic sprinkler system consists of a corridor protected by one row of sprinklers, the maximum number of sprinklers required to be calculated is 13.

<b>[F] TABLE 903.2.5.2—GROUP H-5 AUTOMATIC SPRINKLER SYSTEM DESIGN CRITERIA</b>	
<b>LOCATION</b>	<b>OCCUPANCY HAZARD CLASSIFICATION</b>
Fabrication areas	Ordinary Hazard Group 2
Service corridors	Ordinary Hazard Group 2
Storage rooms without dispensing	Ordinary Hazard Group 2
Storage rooms with dispensing	Extra Hazard Group 2
Corridors	Ordinary Hazard Group 2

**[F] 903.2.5.3 Pyroxylin plastics.** An automatic sprinkler system shall be provided in buildings, or portions thereof, where cellulose nitrate film or pyroxylin plastics are manufactured, stored or handled in quantities exceeding 100 pounds (45 kg).

**903.2.5.4 Group H occupancies located on the 11th story and above.** The fire 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 11th story and above.

**[F] 903.2.6 Group I.** An automatic sprinkler system shall be provided throughout buildings with a Group I fire area.

**Exceptions:**

1. Those areas exempted by Section 407.6 of the California Building Code.
2. Pursuant to Health and Safety Code Section 13113(d), Group I-2 occupancies, or any alterations thereto, located in Type IA construction in existence on March 4, 1972.

**903.2.6.1 Group I-2.** In an existing, unsprinklered Group I-2, nurse station open to fire-resistive exit access corridors shall be protected by an automatic sprinkler system located directly above the nurse station. It shall be permitted to connect the automatic sprinkler system to the domestic water service.

**903.2.6.2 Group I-3.** Every building, or portion thereof, where inmates or persons are in custody or restrained shall be protected by an automatic sprinkler system conforming to NFPA 13. The main sprinkler control valve or valves and all other control valves in the system shall be locked in the open position and electrically supervised so that at least an audible and visual alarm will sound at a constantly attended location when valves are closed. The sprinkler branch piping serving cells may be embedded in the concrete construction.

**[F] 903.2.7 Group M.** An automatic sprinkler system shall be provided throughout buildings containing a Group M occupancy where one of the following conditions exists:

1. A Group M fire area exceeds 12,000 square feet ( $1115\text{ m}^2$ ).
2. A Group M fire area is located more than three stories above grade plane.
3. The combined area of all Group M fire areas on all floors, including any mezzanines, exceeds 24,000 square feet ( $2230\text{ m}^2$ ).
4. The structure exceeds 24,000 square feet ( $465\text{ m}^2$ ), contains more than one fire area containing a Group M occupancy, and is separated into two or more buildings by fire walls of not less than 4-hour fire resistance rating without openings.

**[F] 903.2.7.1 High-piled storage.** An automatic sprinkler system shall be provided in accordance with the California Fire Code in all buildings of Group M where storage of merchandise is in high-piled or rack storage arrays.

**[F] 903.2.7.2 Group M upholstered furniture or mattresses.** An automatic sprinkler system shall be provided throughout a Group M fire area where the area used for the display and sale of upholstered furniture or mattresses exceeds 5,000 square feet ( $464\text{ m}^2$ ).

**[F] 903.2.7.3 Lithium-ion or lithium metal battery storage.** An automatic sprinkler system shall be provided in a room or space within a Group M occupancy where required for the storage of lithium-ion or lithium metal batteries by Section 320 of the California Fire Code or Chapter 32 of the California Fire Code.

**[F] 903.2.8 Group R.** An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R fire area.

**Exceptions:**

1. Existing Group R-3 occupancies converted to Group R-3.1 occupancies not housing bedridden clients, not housing nonambulatory clients above the first floor and not housing clients above the second floor.
2. Existing Group R-3 occupancies converted to Group R-3.1 occupancies housing only one bedridden client and complying with Section 435.8.3.3.

3. Machine rooms, machinery spaces, control rooms and control spaces and *hoistways* associated with occupant evacuation elevators designed in accordance with Section 3008.
4. *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.*

**[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 ( $5\text{ m}^2$ ) 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] 903.3.1.1.3 Lithium-ion or lithium metal batteries.** Where automatic sprinkler systems are required by this code for areas containing lithium-ion or lithium metal batteries, the design of the system shall be based on a series of fire tests. Such tests shall be conducted or witnessed and reported by an approved testing laboratory involving test scenarios that address the range of variables associated with the intended arrangement of the hazards to be protected.

**903.3.1.1.4 Solar photovoltaic power systems.** Automatic sprinklers shall not be required in the following areas:

1. *Solar photovoltaic panel structures with 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 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] 903.3.1.2 NFPA 13R sprinkler systems.** Automatic sprinkler systems in Group R occupancies shall be permitted to be installed throughout in accordance with NFPA 13R as amended in Chapter 35 where the Group R occupancy meets all of the following conditions:

1. Four stories or fewer above grade plane.
2. For other than Group R-2 occupancies, the floor level of the highest story is 30 feet (9144 mm) or less above the lowest level of fire department vehicle access.

For Group R-2 occupancies, the roof assembly is less than 45 feet (13 716 mm) above the lowest level of fire department vehicle access. 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.

3. The floor level of the lowest story is 30 feet (9144 mm) or less below the lowest level of fire department vehicle access.

The number of stories of Group R occupancies constructed in accordance with Sections 510.2 and 510.4 shall be measured from grade plane.

**[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 Corridors and balconies in the means of egress.** Sprinkler protection shall be provided in corridors and for balconies in the means of egress where any of the following conditions apply:

1. Corridors with combustible floor or walls.
2. Corridors with an interior change of direction exceeding 45 degrees (0.79 rad).
3. Corridors that are less than 50 percent open to the outside atmosphere at the ends.
4. Open-ended corridors and associated exterior stairways and ramps as specified in Section 1027.6, Exception 3.
5. Egress balconies not complying with Sections 1021.2 and 1021.3.

**[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 unsprinklered 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 fire department vehicle access needed to meet the provisions in Section 503.

- 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. Reserved.
3. Throughout all spaces within a smoke compartment containing treatment rooms in ambulatory care facilities.
4. Dwelling units and sleeping units in Group R occupancies.
5. 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.

**[F] 903.3.8.1 Number of sprinklers.** Limited area sprinkler systems shall not exceed six sprinklers in any single fire area.

**[F] 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.

**[F] 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.

**[F] 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.

**[F] 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 High-rise building 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.

**903.3.10 Floor control valves.** Floor control valves and waterflow detection assemblies shall be installed at each floor where any of the following occur:

- Buildings where the floor level of the highest story is located more than 30 feet above the lowest level of fire department vehicle access.
- Buildings that are four or more stories in height.
- 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.

**[A] 903.4 Sprinkler system supervision and alarms.** Automatic sprinkler system supervision and alarms shall comply with Sections 903.4.1 through 903.4.3.

**[F] 903.4.1 Electronic supervision.** Valves controlling the water supply for automatic sprinkler systems, pumps, tanks, water levels and temperatures, critical air pressures and waterflow switches on all automatic sprinkler systems shall be electrically supervised by a listed fire alarm control unit.

**Exceptions:**

- Automatic sprinkler systems protecting one- and two-family dwellings.
- Limited area sprinkler systems in accordance with Section 903.3.8, provided that backflow prevention device test valves located in limited area sprinkler system supply piping shall be locked in the open position unless supplying an occupancy required to be equipped with a fire alarm system, in which case the backflow preventer valves shall be electrically supervised by a tamper switch installed in accordance with NFPA 72 and separately annunciated.
- 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.
- Jockey pump control valves that are sealed or locked in the open position.
- Control valves to commercial kitchen hoods, paint spray booths or dip tanks that are sealed or locked in the open position.
- Valves controlling the fuel supply to fire pump engines that are sealed or locked in the open position.
- Trim valves to pressure switches in dry, preaction and deluge sprinkler systems that are sealed or locked in the open position.
- Underground key or hub gate valves in roadway boxes.

**[F] 903.4.2 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.

**[F] 903.4.3 Alarms.** An approved audible and visual sprinkler waterflow alarm 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 waterflow switch is required by Section 903.4.1 to be electrically supervised, such sprinkler waterflow alarm devices shall be powered by a fire alarm control unit or, where provided, a fire alarm system. Where a fire alarm system is provided, actuation of the automatic sprinkler system shall actuate the building fire alarm system.

**Exception:** Automatic sprinkler systems protecting one- and two-family dwellings.

**[F] 903.5 Inspection, testing and maintenance.** Automatic sprinkler systems shall be inspected, tested and maintained in accordance with the *California Fire Code*.

## SECTION 904—ALTERNATIVE AUTOMATIC FIRE-EXTINGUISHING SYSTEMS

**[F] 904.1 General.** Automatic fire-extinguishing systems, other than automatic sprinkler systems, shall be designed, installed, inspected, tested and maintained in accordance with the provisions of this section and the applicable referenced standards.

**[F] 904.2 Where permitted.** Automatic fire-extinguishing systems installed as an alternative to the required automatic sprinkler systems of Section 903 shall be approved by the fire code official.

**[F] 904.2.1 Restriction on using automatic sprinkler system exceptions or reductions.** Automatic fire-extinguishing systems shall not be considered alternatives for the purposes of exceptions or reductions allowed for automatic sprinkler systems or by other requirements of this code.

**[F] 904.2.2 Commercial hood and duct systems.** Each required commercial kitchen exhaust hood and duct system required by Section 606 of the *California Fire Code* or Chapter 5 of the *California Mechanical Code* to have a Type I hood shall be protected with an approved automatic fire-extinguishing system installed in accordance with this code.

**[F] 904.3 Installation.** Automatic fire-extinguishing systems shall be installed in accordance with this section.

**[F] 904.3.1 Electrical wiring.** Electrical wiring shall be in accordance with the *California Electrical Code*.

**[F] 904.3.2 Actuation.** Automatic fire-extinguishing systems shall be automatically actuated and provided with a manual means of actuation in accordance with Section 904.13.1. Where more than one hazard could be simultaneously involved in fire due to their proximity, all hazards shall be protected by a single system designed to protect all hazards that could become involved.

**Exception:** Multiple systems shall be permitted to be installed if they are designed to operate simultaneously.

**[F] 904.3.3 System interlocking.** Automatic equipment interlocks with fuel shutoffs, ventilation controls, door closers, window shutters, conveyor openings, smoke and heat vents and other features necessary for proper operation of the fire-extinguishing system shall be provided as required by the design and installation standard utilized for the hazard.

**[F] 904.3.4 Alarms and warning signs.** Where alarms are required to indicate the operation of automatic fire-extinguishing systems, distinctive audible and visible alarms and warning signs shall be provided to warn of pending agent discharge. Where exposure to automatic-extinguishing agents poses a hazard to persons and a delay is required to ensure the evacuation of occupants before agent discharge, a separate warning signal shall be provided to alert occupants once agent discharge has begun. Audible signals shall be in accordance with Section 907.5.2.

**[F] 904.3.5 Monitoring.** Where a building fire alarm system is installed, automatic fire-extinguishing systems shall be monitored by the building fire alarm system in accordance with NFPA 72.

**[F] 904.4 Inspection and testing.** Automatic fire-extinguishing systems shall be inspected and tested in accordance with the provisions of this section prior to acceptance.

**[F] 904.4.1 Inspection.** Prior to conducting final acceptance tests, all of the following items shall be inspected:

1. Hazard specification for consistency with design hazard.
2. Type, location and spacing of automatic- and manual-initiating devices.
3. Size, placement and position of nozzles or discharge orifices.
4. Location and identification of audible and visible alarm devices.
5. Identification of devices with proper designations.
6. Operating instructions.

**[F] 904.4.2 Alarm testing.** Notification appliances, connections to fire alarm systems and connections to approved supervising stations shall be tested in accordance with this section and Section 907 to verify proper operation.

**[F] 904.4.2.1 Audible and visible signals.** The audibility and visibility of notification appliances signaling agent discharge or system operation, where required, shall be verified.

**[F] 904.4.3 Monitor testing.** Connections to protected premises and supervising station fire alarm systems shall be tested to verify proper identification and retransmission of alarms from automatic fire-extinguishing systems.

**[F] 904.5 Wet-chemical systems.** Wet-chemical extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with *California Code of Regulations, Title 19, Division 1, Chapter 5* and NFPA 17A and their listing. Records of inspections and testing shall be maintained.

**[F] 904.6 Dry-chemical systems.** Dry-chemical extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with *California Code of Regulations, Title 19, Division 1, Chapter 5* and NFPA 17 and their listing. Records of inspections and testing shall be maintained.

**[F] 904.7 Foam systems.** Foam-extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with *California Code of Regulations, Title 19, Division 1, Chapter 5* and NFPA 11 and their listing. Records of inspections and testing shall be maintained.

**[F] 904.8 Carbon dioxide systems.** Carbon dioxide extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with *California Code of Regulations, Title 19, Division 1, Chapter 5*, NFPA 12 and their listing. Records of inspections and testing shall be maintained.

**[F] 904.9 Halon systems.** Halogenated extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with *California Code of Regulations, Title 19, Division 1, Chapter 5*, NFPA 12A and their listing. Records of inspections and testing shall be maintained.

**[F] 904.10 Clean-agent systems.** Clean-agent fire-extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with *California Code of Regulations, Title 19, Division 1, Chapter 5* and NFPA 2001 and their listing. Records of inspections and testing shall be maintained.

**[F] 904.11 Automatic water mist systems.** Automatic water mist systems shall be permitted in applications that are consistent with the applicable listing or approvals and shall comply with Sections 904.11.1 through 904.11.3.

**[F] 904.11.1 Design and installation requirements.** Automatic water mist systems shall be designed and installed in accordance with Sections 904.11.1.1 through 904.11.1.4.

**[F] 904.11.1.1 General.** Automatic water mist systems shall be designed and installed in accordance with NFPA 750 and the manufacturer's instructions.

**[F] 904.11.1.2 Actuation.** Automatic water mist systems shall be automatically actuated.

**[F] 904.11.1.3 Water supply protection.** Connections to a potable water supply shall be protected against backflow in accordance with the *California Plumbing Code*.

**[F] 907.2.6.3.1 System initiation.** Actuation of an automatic fire-extinguishing system, automatic sprinkler system, a manual fire alarm box or a fire detector shall initiate an approved fire alarm signal that automatically notifies staff.

**[F] 907.2.6.3.2 Manual fire alarm boxes.** Manual fire alarm boxes are not required to be located in accordance with Section 907.4.2 where the fire alarm boxes are provided at staff-attended locations having direct supervision over areas where manual fire alarm boxes have been omitted.

**[F] 907.2.6.3.2.1 Manual fire alarm boxes in detainee areas.** Manual fire alarm boxes are allowed to be locked in areas occupied by detainees, provided that staff members are present within the subject area and have keys readily available to operate the manual fire alarm boxes.

**[F] 907.2.6.3.3 Automatic smoke detection system.** An automatic smoke detection system shall be installed throughout resident housing areas, including sleeping units and contiguous day rooms, group activity spaces and other common spaces normally open to residents.

**Exceptions:**

1. Other approved smoke detection arrangements *may be used to prevent damage or tampering or for other purposes provided the function of detecting any fire is fulfilled and the location of the detectors is such that the speed of detection will be equivalent to that provided by the spacing and location required in accordance with NFPA 72 as referenced in Chapter 35. This may include the location of detectors in return air ducts from cells, behind grilles or in other locations. Spot type, combination duct and open area smoke detectors may be used when located not more than 14 inches (356 mm) from the return air grill. For initiation and annunciation purposes, these detectors may be combined in groups of four. The fire code official having jurisdiction, however, must approve the proposed equivalent performance of the design.*
2. *For detention housing and/or mental health housing area(s), including correctional medical and mental health uses, automatic smoke detection system in sleeping units shall not be required when all of the following conditions are met:*
  - 2.1. *All rooms, including the inmate cells are provided with an automatic sprinkler system in accordance with Section 903.3.1.1.*
  - 2.2. *Building is continuously staffed by a correctional officer at all times.*
3. *Smoke detectors are not required to be installed in inmate cells with two or fewer occupants in detention facilities which do not have a correctional medical and mental health use.*
4. *Smoke detectors are not required to be installed in inmate day rooms of detention facilities where 24-hour direct visual supervision is provided by a correctional officer(s) and a manual fire alarm box is located in the control room.*

**907.2.6.3.4 System annunciation.** A staff alerting fire alarm shall sound at all staff control stations on the floor of activation and an audible and visual signal shall be indicated on an annunciator at the facility control center upon activation of any automatic extinguishing system, automatic detection system, or any smoke detector or manual actuating or initiating device. In addition, where there are staff-control stations on the floor, an audible, visual and manual alarm shall be located in each staff control station.

*Fire and trouble signals of fire alarm systems and sprinkler water-flow and supervisory signals of extinguishing systems shall be annunciated in an area designated as the facility control center which shall be constantly attended by staff personnel. All such signals shall produce both an audible signal and visual display at the facility control center indicating the building, floor zone or other designated area from which the signal originated in accordance with Section 907.6.4.*

*All local detention facilities within the scope of Section 6031.4 of the Penal Code shall have an automatic smoke detection system. A manual fire alarm-initiating device shall be installed in all guard control stations and shall be capable of alerting personnel in a central control point to the presence of fire or smoke within the facility.*

**907.2.6.4 Group I-4.** An automatic smoke detection system shall be installed throughout the Group I-4, including contiguous day rooms, group activity spaces and other common spaces normally occupied by the clients. Group I-4 facilities located above the first story shall comply with the provisions of Section 436.1.

**907.2.6.5 Large family day-care.** Every large family day-care home shall be provided with at least one manual fire alarm box at a location approved by the authority having jurisdiction. Such device shall actuate a fire alarm signal, which shall be audible throughout the facility at a minimum 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. Such device or devices shall be attached to the structure and must be a device that is listed and approved by the Office of the State Fire Marshal.

**[F] 907.2.7 Group M.** Fire alarm systems shall be required in Group M occupancies in accordance with Sections 907.2.7.1 and 907.2.7.2.

**[F] 907.2.7.1 Occupant load.** A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group M occupancies where one of the following conditions exists:

1. The combined Group M occupant load of all floors is 500 or more persons.
2. The Group M occupant load is more than 100 persons above or below the lowest level of exit discharge.

**Exceptions:**

1. A manual fire alarm system is not required in covered or open mall buildings complying with Section 402.

- 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 and the occupant notification appliances will automatically activate throughout the notification zones upon sprinkler water flow.

**[F] 907.2.7.1.1 Occupant notification.** During times that the building is occupied, the initiation of a signal from a manual fire alarm box or from a waterflow switch shall not be required to activate the alarm notification appliances when an alarm signal is activated at a constantly attended location from which evacuation instructions shall be initiated over an emergency voice/alarm communication system installed in accordance with Section 907.5.2.2.

**[F] 907.2.7.2 Storage of lithium-ion or lithium metal batteries.** A fire alarm system activated by an air-sampling-type smoke detection system or a radiant-energy-sensing detection system shall be installed in a room or space within a Group M occupancy where required for the storage of lithium-ion or lithium metal batteries in accordance with Section 320 of the *California Fire Code*.

**[F] 907.2.8 Group R-1.** Fire alarm systems and smoke alarms shall be installed in Group R-1 occupancies as required in Sections 907.2.8.1 through 907.2.8.3.

**[F] 907.2.8.1 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-1 occupancies.

**Exceptions:**

- A manual fire alarm system is not required in buildings not more than two stories in height where all individual dwelling units, sleeping units and contiguous attic and crawl spaces to those units are separated from each other and public or common areas by not less than 1-hour fire partitions and each individual dwelling unit and sleeping unit has an exit directly to a public way, egress court or yard.
- Manual fire alarm boxes are not required throughout the building where all of the following conditions are met:
  - The building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
  - The notification appliances will activate upon sprinkler water flow.
  - 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 dwelling units or sleeping units.

**Exception:** An automatic smoke detection system is not required in buildings that do not have interior corridors serving dwelling units or sleeping units and where each dwelling unit or 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 907.2.11.

**[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 through 907.2.9.3 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:

- Any dwelling unit or sleeping unit is located three or more stories above the lowest level of exit discharge.
- 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.
- The building contains more than 16 dwelling units or sleeping units.
- Congregate residences with more than 16 occupants.*

**Exceptions:**

- 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.
- 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 automatically activate throughout the notification zones upon a sprinkler water flow.
- 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 907.2.11.

**[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.

Required smoke detectors listed in accordance with UL 268, 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 to activate the occupant notification in accordance with NFPA 72 and shall comply with Section 907.2.11.7.

**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.

**[A] 907.2.10 Group S.** A fire alarm system shall be installed in a Group S occupancy as required by Sections 907.2.10.1 and 907.2.10.2.

**[F] 907.2.10.1 Public- and self-storage occupancies.** A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group S public-and self-storage occupancies three stories or greater in height for interior corridors and interior common areas. Visible notification appliances are not required within storage units.

**Exception:** 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, and the occupant notification appliances will activate throughout the notification zones upon sprinkler water flow.

**[F] 907.2.10.2 Storage of lithium-ion or lithium metal batteries.** A fire alarm system activated by an air-sampling-type smoke detection system or a radiant-energy-sensing detection system shall be installed throughout the entire fire area where required for the storage of lithium-ion batteries or lithium metal batteries in accordance with Section 320 of the *California Fire Code*.

**[F] 907.2.11 Single- and multiple-station smoke alarms.** Listed single- and multiple-station smoke alarms complying with UL 217 shall be installed in accordance with Sections 907.2.11.1 through 907.2.11.7, NFPA 72 and the manufacturer's instructions.

**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] 907.2.11.1 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 dwelling unit or sleeping unit.
3. In each story within the dwelling unit or sleeping unit, including basements. For dwelling units or 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] 907.2.11.2 Groups R-2, R-2.1, R-2.2, R-3, R-3.1 and R-4.** 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.

**907.2.11.2.1 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.

**907.2.11.2.1.1 Smoke alarms.** Single- and multiple-station smoke alarms shall be installed in accordance with California Fire Code Section 907.2.11.

**907.2.11.2.2 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.

**907.2.11.2.3 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.

**907.2.11.2.4 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.

**907.2.11.2.5 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.

**907.2.11.2.6 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] 907.2.11.3 Installation near cooking appliances.** See Section 907.2.11.8.

**[F] 907.2.11.4 Installation near bathrooms.** See Section 907.2.11.8.

**[F] 907.2.11.5 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] 907.2.11.6 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] 907.2.11.7 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.

#### **907.2.11.8 Specific location requirements.**

Extract from NFPA 72 Section 29.11.3.4 Specific Location Requirements\*.

This extract has been provided by NFPA for the Office of the State Fire Marshal adoption by reference as follows:

**29.11.3.4 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 and smoke detectors shall not be installed within an area of exclusion determined by a 10-foot (3.0 m) radial distance along a horizontal flow path from a stationary or fixed cooking appliance, unless listed for installation in close proximity to cooking appliances. Smoke alarms and smoke detectors installed between 10 feet (3.0 m) and 20 feet (6.1 m) along a horizontal flow path from a stationary or fixed appliance shall be equipped with an alarm-silencing means or use photoelectric detection.

- (5) *Smoke alarms or smoke detectors that use photoelectric detection shall be permitted for installation at a radial distance greater than 6 feet (1.8 m) from any stationary or fixed cooking appliance when both of the following conditions are met:*
  - (a) *The kitchen or cooking area and adjacent spaces have no clear partitions or headers.*
  - (b) *The 10-foot (3.0 m) area of exclusion would prohibit the placement of a smoke alarm or smoke detector required by other sections of this code.*
- (6) *Effective January 1, 2022, smoke alarms and smoke detectors installed between 6 feet (1.8 m) and 20 feet (6.1 m) along a horizontal flow path from a stationary or fixed cooking appliance shall be listed for resistance to common nuisance sources from cooking.*
- (7) *Smoke alarms and smoke detectors shall not be installed within a 36-inch (910 mm) horizontal path from a door to a bathroom containing a shower or tub unless listed for installation in close proximity to such locations.*
- (8) *Smoke alarms and smoke detectors shall not be installed within a 36-inch (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.*
- (9) *Smoke alarms and smoke detectors shall not be installed within a 36-inch (910 mm) horizontal path from the tip of the blade of a ceiling-suspended (paddle) fan unless the room configuration restricts meeting this requirement.*
- (10) *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.*
- (11) *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.*
- (12) *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 inches (300 mm) vertically down from the highest point.*
- (13) *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.*
- (14) *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.

**907.2.11.9 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] 907.2.12 Special amusement areas.** Fire detection and alarm systems shall be provided in special amusement areas and throughout the exit access to the point of exit discharge in accordance with Section 411.3.

**[F] 907.2.13 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 907.2.13.1, a fire department communication system in accordance with Section 907.2.13.2 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 907.2.22.
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. Buildings with an occupancy in Group H-1, H-2 or H-3 in accordance with Section 415.
6. In Group I-2 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] 907.2.13.1 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 907.2.13.1.1 and 907.2.13.1.2.

**[F] 907.2.13.1.1 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] 907.2.13.1.2 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] 907.2.13.2 Fire department communication system.** Where a wired communication system is approved in lieu of an in-building two-way emergency responder communication 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] 907.2.13.3 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] 907.2.14 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] 907.2.15 High-piled combustible storage areas.** An automatic smoke detection system shall be installed throughout high-piled combustible storage areas where required by Section 3206.5 of the *California Fire Code*.

**[F] 907.2.16 Aerosol storage uses.** Aerosol product rooms and general-purpose warehouses containing aerosol products, aerosol cooking spray products or plastic aerosol 3 products shall be provided with an approved manual fire alarm system where required by the *California Fire Code*.

**[F] 907.2.17 Lumber, wood structural panel and veneer mills.** Lumber, wood structural panel and veneer mills shall be provided with a manual fire alarm system.

**[F] 907.2.18 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 907.2.18.1.

**[F] 907.2.18.1 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 cubic feet per minute (2.4 m<sup>3</sup>/s) and serving not more than 10 air-inlet openings.

**[F] 907.2.18.2 Alarm required.** Activation of the smoke control system shall activate an audible alarm at a constantly attended location.

**[F] 907.2.19 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] 907.2.20 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] 907.2.21 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] 907.2.22 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 907.2.22.1 and 907.2.22.2.

**Exception:** Audible appliances shall not be installed within the control tower cab.

*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 1010.2.12 or 1010.2.13, 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-compartment 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-compartment 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.

**907.3.3.1 Hoist way fire detection.** *Smoke detectors or other automatic fire detection shall be provided in hoist ways in accordance with NFPA 72 for the following:*

1. *Where required by California Code of Regulations, Title 8, Division 1, Chapter 4, Subchapter 6, Elevator Safety Orders, to initiate elevator phase I emergency recall.*
2. *Where required by Section 3003.4.3 to activate a hoist way ventilation system.*

**[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 a fire alarm system is required by another section of this code, occupant notification in accordance with Section 907.5 shall be initiated by one or more of the following. Initiating devices shall be installed in accordance with Sections 907.4.1 through 907.4.3.1.

1. Manual fire alarm boxes.
2. Automatic fire detectors.
3. Automatic sprinkler system waterflow devices.
4. Automatic fire-extinguishing systems.

**[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 an approved supervising station in accordance with Section 907.6.6, 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.

**907.4.2.7 Operation.** Manual fire alarm boxes shall be operable with one hand including boxes with protective covers.

**[F] 907.4.3 Automatic smoke detection.** Where an automatic smoke detection system is required, it shall utilize smoke detectors unless ambient conditions prohibit such an installation. In spaces where smoke detectors cannot be utilized due to ambient conditions, approved automatic heat detectors shall be permitted.

**[F] 907.4.3.1 Automatic sprinkler system.** For conditions other than specific fire safety functions noted in Section 907.3, in areas where ambient conditions prohibit the installation of smoke detectors, an automatic sprinkler system installed in such areas in accordance with Section 903.3.1.1 or 903.3.1.2 and that is connected to the fire alarm system shall be approved as automatic heat detection.

**[F] 907.5 Occupant notification.** Occupant notification by fire alarms shall be in accordance with Sections 907.5.1 through 907.5.2.5. Occupant notification by smoke alarms in Group R-1 and R-2 occupancies shall comply with Section 907.5.2.1.3.2.

**[F] 907.5.1 Alarm activation and annunciation.** Upon activation, fire alarm systems shall initiate occupant notification and shall annunciate at the fire alarm control unit, or where allowed elsewhere by Section 907, at a constantly attended location.

**[F] 907.5.1.1 Presignal feature.** A presignal feature shall be provided only where approved. The presignal shall be announced at an approved, constantly attended location, having the capability to activate the occupant notification system in the event of fire or other emergency.

**Exception:** A presignal feature shall not be permitted to be installed in a Group I-2 or R-2.1 occupancy.

**[F] 907.5.2 Alarm notification appliances.** Alarm notification appliances shall be provided and shall be listed for their purpose.

**[F] 907.5.2.1 Audible alarms.** Audible alarm notification appliances shall be provided and emit a distinctive sound that is not to be used for any purpose other than that of a fire alarm. *In Group I-2 occupancies, audible appliances located in patient areas shall be only chimes or similar sounding appliances for alerting staff. See Section 907.5.2.5.*

**Exceptions:**

1. Audible alarm notification appliances are not required in *patient areas* of Group I-2 occupancies that are in compliance with Section 907.5.2.5.
2. A visible alarm notification appliance installed in a nurses' control station or other continuously attended staff location in a Group I-2 care suite shall be an acceptable alternative to the installation of audible alarm notification appliances throughout a care suite in Group I-2 occupancies that are in compliance with Section 907.5.2.5.
3. Where provided, audible notification appliances located in each enclosed occupant evacuation elevator lobby in accordance with Section 3008.9.1 shall be connected to a separate notification zone for manual paging only.

**[F] 907.5.2.1.1 Average sound pressure.** The audible alarm notification appliances shall provide a sound pressure level of 15 decibels (dBA) above the average ambient sound level or 5 dBA above the maximum sound level having a duration of not less than 60 seconds, whichever is greater, in every occupiable space within the building.

**[F] 907.5.2.1.2 Maximum sound pressure.** The total sound pressure level produced by combining the ambient sound pressure level with all audible notification appliances operating shall not exceed 110 dBA at the minimum hearing distance from the audible appliance. Where the average ambient noise is greater than 105 dBA, visible alarm notification appliances shall be provided in accordance with NFPA 72 and audible alarm notification appliances shall not be required.

**[F] 907.5.2.1.3 Audible alarm signal frequency in Group R-1, R-2 and I-1 sleeping rooms.** Audible alarm signal frequency in Group R-1, R-2 and I-1 occupancies shall be in accordance with Sections 907.5.2.1.3.1 and 907.5.2.1.3.2.

**[F] 907.5.2.1.3.1 Fire alarm system audible signal.** In sleeping rooms of Group R-1, R-2 and I-1 occupancies, the audible alarm signal activated by a fire alarm system shall be a 520-Hz low-frequency signal complying with NFPA 72.

**[F] 907.5.2.1.3.2 Smoke alarm signal in sleeping rooms.** In sleeping rooms of Group R-1, R-2 and I-1 occupancies that are required by Section 907.2.8 or 907.2.9 to have a fire alarm system, the audible alarm signal activated by single- or multiple-station smoke alarms in the dwelling unit or sleeping unit shall be a 520-Hz signal complying with NFPA 72. Where a sleeping room smoke alarm is unable to produce a 520-Hz signal, the 520-Hz alarm signal shall be provided by a listed notification appliance or a smoke detector with an integral 520-Hz sounder.

**907.5.2.1.4 Audible alarm signal.** The audible signal shall be the standard fire alarm evacuation signal, ANSI S3.41 Audible Emergency Evacuation Signal, "three pulse temporal pattern," as described in NFPA 72.

**Exception:** The use of the existing evacuation signaling scheme shall be permitted where approved by the enforcing agency.

**[F] 907.5.2.2 Emergency voice/alarm communication systems.** Emergency voice/alarm communication systems required by this code shall be designed and installed in accordance with NFPA 72. The operation of any automatic fire detector, sprinkler waterflow device or manual fire alarm box shall automatically sound an alert tone followed by voice instructions giving approved information and directions for a general or staged evacuation in accordance with the building's fire safety and evacuation plans required by Section 404 of the *California Fire Code*. 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*, the system shall operate on at least the alarming floor, the floor above and the floor below. Speakers shall be provided throughout the building by paging zones. At a minimum, paging zones shall be provided as follows:

1. Elevator groups.
2. Interior exit stairways.
3. Each floor.
4. Areas of refuge as defined in Chapter 2.

**Exception:** In Group I-2 occupancies, where in accordance with Section 907.5.2.5, audible fire alarm notification devices are not provided, upon receipt of an alarm at a constantly attended location, a general occupant notification shall be broadcast over the public-address system.

**[F] 907.5.2.2.1 Manual override.** A manual override for emergency voice communication shall be provided on a selective and all-call basis for all paging zones.

**[F] 907.5.2.2.2 Live voice messages.** The emergency voice/alarm communication system shall have the capability to broadcast live voice messages by paging zones on a selective and all-call basis.

**[F] 907.5.2.2.3 Alternative uses.** The emergency voice/alarm communication system shall be allowed to be used for other announcements, provided that the manual fire alarm use takes precedence over any other use.

**[F] 907.5.2.2.4 Emergency voice/alarm communication captions.** Where stadiums, arenas and grandstands have 15,000 fixed seats or more and provide audible public announcements, the emergency/voice alarm communication system shall provide prerecorded or real-time captions. Prerecorded or live emergency captions shall be from an approved location constantly attended by personnel trained to respond to an emergency.

**[F] 907.5.2.2.5 Standby power.** Emergency voice/alarm communications systems shall be provided with standby power in accordance with Section 2702.

**[F] 907.5.2.3 Visible alarms.** Visible alarm notification appliances shall be provided in accordance with Sections 907.5.2.3.1 through 907.5.2.3.4.

**Exceptions:**

1. In other than Group I-2, visible alarm notification appliances are not required in alterations, except where an existing fire alarm system is upgraded or replaced, or a new fire alarm system is installed.
2. Visible alarm notification appliances shall not be required in enclosed exit stairways, enclosed exit ramps, exterior exit stairs and exterior exit ramps.
3. Visible alarm notification appliances shall not be required in elevator cars.
4. Visual alarm notification appliances are not required in critical care areas of Group I-2 occupancies that are in compliance with Section 907.5.2.5.
5. A visible alarm notification appliance installed in a nurses' control station or other continuously attended staff location in a Group I-2 care suite shall be an acceptable alternative to the installation of visible alarm notification appliances throughout the care suite in Group I-2 occupancies that are in compliance with Section 907.5.2.5.

**[F] 907.5.2.3.1 Public use areas and common use areas.** Visible alarm notification appliances shall be provided in public use areas and common use areas, *including but not limited to*:

1. *Band rooms*
2. *Classrooms*
3. *Corridors*
4. *Gymnasiums*
5. *Lobbies*
6. *Meeting and conference rooms*
7. *Multipurpose rooms*
8. *Music practice rooms*
9. *Occupational shops*
10. *Occupied rooms where ambient noise impairs hearing of the fire alarm*
11. *Sanitary facilities including restrooms, bathrooms and shower rooms.*
12. *Shared office rooms used by two or more persons.*
13. *Normally occupied room(s) used by two or more persons such as mother's room, phone room, quiet room, wellness room, etc.*
14. *Normally occupied storage room/area.*
15. *Exam rooms in medical office buildings.*

**Exception:** Where employee work areas have audible alarm coverage, the notification appliance circuits serving the employee work areas shall be initially designed with not less than 20-percent spare capacity to account for the potential of adding visible notification appliances in the future to accommodate hearing-impaired employee(s).

**[F] 907.5.2.3.2 Groups R-1 and R-2.1.** Habitable spaces in dwelling units and sleeping units in Group R-1 and R-2.1 occupancies in accordance with Table 907.5.2.3.2 shall be provided with visible alarm notification. Visible alarms shall be activated by the in-room smoke alarm and the building fire alarm system.

**[F] TABLE 907.5.2.3.2—VISIBLE ALARMS**

AGGREGATE NUMBER OF DWELLING UNITS AND SLEEPING UNITS	SLEEPING ACCOMMODATIONS WITH VISIBLE ALARMS
6 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 1,000	5% of total
1,001 and over	50 plus 3 for each 100 over 1,000

**[ISFM]** Also see Chapter 11B, Section 11B-224.4 and Table 11B-224.4.

**[F] 907.5.2.3.3 Group R-2.** In Group R-2 occupancies required by Section 907 to have a fire alarm system, each story that contains dwelling units and sleeping units shall be provided with the capability to support future visible alarm notification appliances in accordance with NFPA 72. Such capability shall accommodate wired or wireless equipment.

**[F] 907.5.2.3.3.1 Wired equipment.** Where wired equipment is used to comply with the future capability required by Section 907.5.2.3.3, the system shall include one of the following capabilities:

1. The replacement of audible appliances with combination audible/visible appliances or additional visible notification appliances.
2. The future extension of the existing wiring from the unit smoke alarm locations to required locations for visible appliances.
3. For wired equipment, the fire alarm power supply and circuits shall have not less than 5-percent excess capacity to accommodate the future addition of visible alarm notification appliances, and a single access point to such circuits shall be available on every story. Such circuits shall not be required to be extended beyond a single

**[F] 907.7 Acceptance tests and completion.** Upon completion of the installation, the fire alarm system and all fire alarm components shall be tested in accordance with NFPA 72.

**[F] 907.7.1 Single- and multiple-station alarm devices.** When the installation of the alarm devices is complete, each device and interconnecting wiring for multiple-station alarm devices shall be tested in accordance with the smoke alarm provisions of NFPA 72.

**[F] 907.7.2 Record of completion.** A record of completion in accordance with NFPA 72 verifying that the system 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 415.11.4.

**[F] 908.3 Fire alarm system interface.** Where an emergency alarm system is interfaced with a building's fire alarm system, the signal produced at the fire alarm control unit shall be a supervisory signal.

## 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.

**[F] 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 ( $m^2$ ).

$A_F$  = Unit floor or roof area of barrier, square feet ( $m^2$ ).

$A_w$  = Unit wall area of barrier, square feet ( $m^2$ ).

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, 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*.
3. In Group I-2, 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, 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 1010.3.3 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, 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.*

**[F] 909.5.3.1 Group I-2, R-2.1 and ambulatory care facilities.** In Group I-2, 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 716.2.6.6 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 buildings equipped throughout with automatic sprinkler systems.

**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE**  
**CHAPTER 10 – MEANS OF EGRESS**

(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	6							
Adopt entire chapter	X							X	X				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																
Chapter / Section																							
1003.1			X			X	X																
1003.1.1										X													
1003.1.2											X	X			X								
1003.2			X																				
1003.3, <i>Exception</i>			X																				
1003.3.1			X																				
1003.3.3.1			X																				
1003.3.4				X	X	X																	
1003.5				X	X	X																	
Table 1004.5			X																				
1004.9			X																				
1005.3.1			X																				
1005.3.2			X																				
1005.7.1			X																				
1005.7.2			X																				
1006.2.1			X																				
Table 1006.2.1			X																				
1006.2.2			X																				
1006.2.2.3			X																				
1006.2.2.4			X																				
1006.2.2.7			X																				
1006.2.2.8			X																				
Table 1006.3.4(1)			X																				
Table 1006.3.4(2)			X																				
1008.2			X																				
1008.3			X																				
1009.1			X	X	X	X	X	X															
1009.2									X	X													
1009.3									X	X													
1009.4.1			X																				
1009.4.2										X													
1009.5			X	X	X	X	X	X	X														
1009.6										X													
1009.6.3			X	X	X	X	X	X	X														
1009.8.1.1									X	X													
1009.8.2			X						X	X													
1009.9									X	X													
1009.10										X													
1009.11									X	X													
1009.12			X					X	X														

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**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	6							
Adopt entire chapter	X						X	X				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																
Chapter / Section																							
1010 (1st paragraph below title only)								X															
1010.1.1							X																
1010.1.1.1							X																
1010.1.2							X																
1010.1.2.1							X																
1010.1.4								X	X														
1010.1.6								X	X														
1010.1.7								X	X														
1010.2.2							X		X	X													
1010.2.3							X																
1010.2.4							X																
1010.2.7.1							X																
1010.2.7.2							X																
1010.2.8							X																
1010.2.11.1							X																
1010.2.12							X																
1010.2.12.1							X																
1010.2.12.1 (Item 4, 6.3 & 6.4 only)									X														
1010.2.13							X																
1010.2.15 Reserved							X																
1010.3.1								X															
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																

**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	6							
Adopt entire chapter	X							X	X				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																
Chapter / Section																							
1013.8				X																			
1014 (1st paragraph below title only)								X															
1014.9				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 (1st paragraph below title only)								X															
1018.3 Exception only									X														
1018.5 Exception only									X														
1019.3				X																			
1019.4				X																			
1020.2				X																			
Table 1020.2				X																			
Table 1020.3				X																			
1020.5				X						X		X		X									
1020.6				X																			
1020.7				X																			
1022.3				X																			
1023.2				X																			
1023.9				X			X																
1023.9 (2nd paragraph only)								X															
1023.9.1				X																			
1023.11						X																	
1024.2				X																			
1025.1				X																			
1026.4.1				X																			
1026.4.2				X																			
1026.6				X																			
1028.5				X																			
1030.1				X																			
1030.2				X																			
1030.3				X																			
1030.3.1				X																			
1030.6.3.2				X																			
1030.9.1				X																			
1031.2				X																			
1031.2.1				X																			
1031.2.2				X																			
1031.2.3				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.



dance with Section 1006.3.4. The required number of exits, or exit access stairways or ramps providing access to exits, from any story or occupiable roof shall be maintained until arrival at the exit discharge or a public way.

TABLE 1006.3.3—MINIMUM NUMBER OF EXITS OR ACCESS TO EXITS PER STORY OR OCCUPIABLE ROOFS	
OCCUPANT LOAD PER STORY OR OCCUPIABLE ROOF	MINIMUM NUMBER OF EXITS OR ACCESS TO EXITS PER STORY OR OCCUPIABLE ROOF
1-500	2
501-1,000	3
More than 1,000	4

**1006.3.4 Single exits.** A single exit or access to a single exit shall be permitted from any story or occupiable roof where one of the following conditions exists:

1. The occupant load, number of dwelling units and exit access travel distance do not exceed the values in Table 1006.3.4(1) or 1006.3.4(2).
2. Rooms, areas and spaces complying with Section 1006.2.1 with exits that discharge directly to the exterior at the level of exit discharge, are permitted to have one exit or access to a single exit.
3. Parking garages where vehicles are mechanically parked shall be permitted to have one exit or access to a single exit.
4. Group R-3 and R-4 occupancies shall be permitted to have one exit or access to a single exit.
5. Individual single-story or multistory dwelling units shall be permitted to have a single exit or access to a single exit from the dwelling unit provided that both of the following criteria are met:
  - 5.1. The dwelling unit complies with Section 1006.2.1 as a space with one means of egress.
  - 5.2. Either the exit from the dwelling unit discharges directly to the exterior at the level of exit discharge, or the exit access outside the dwelling unit's entrance door provides access to not less than two approved independent exits.

TABLE 1006.3.4(1)—STORIES AND OCCUPIABLE ROOFS WITH ONE EXIT OR ACCESS TO ONE EXIT FOR R-2 AND R-3 OCCUPANCIES			
STORY OR OCCUPIABLE ROOF	OCCUPANCY	MAXIMUM NUMBER OF DWELLING UNITS	MAXIMUM EXIT ACCESS TRAVEL DISTANCE
Basement, first, second or third story above grade plane and occupiable roofs over the first or second story above grade plane	R-2 <sup>a, b, c</sup> R-3 <sup>d</sup>	4 dwelling units NA	125 feet NA
Fourth story above grade plane and higher	R-3 <sup>d</sup>	NA	125 feet

For SI: 1 foot = 304.8 mm.  
NP = Not Permitted.  
NA = Not Applicable.

a. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1031.

b. This table is used for Group R-2 occupancies consisting of dwelling units. For Group R-2 occupancies consisting of sleeping units, use Table 1006.3.4(2).

c. This table is for occupiable roofs accessed through and serving individual dwelling units in Group R-2 occupancies. For Group R-2 occupancies with occupiable roofs that are not accessed through and serving individual units, use Table 1006.3.4(2).

TABLE 1006.3.4(2)—STORIES AND OCCUPIABLE ROOFS WITH ONE EXIT OR ACCESS TO ONE EXIT FOR OTHER OCCUPANCIES			
STORY AND OCCUPIABLE ROOF	OCCUPANCY <sup>e</sup>	MAXIMUM OCCUPANT LOAD PER STORY AND OCCUPIABLE ROOF	MAXIMUM EXIT ACCESS TRAVEL DISTANCE (feet)
First story above or below grade plane and occupiable roofs over the first story above grade plane	A, B <sup>b</sup> , E, F <sup>b</sup> , M, U	49	75
	H-2, H-3	3	25
	H-4, H-5, I, R-1, R-2 <sup>a, c</sup> , R-2.2	10	75
	I-2	7	50
	S <sup>b, d</sup>	29	75
Second story above grade plane	B, F, M, S <sup>d</sup>	29	75
Third story above grade plane and higher	NP	NA	NA

For SI: 1 foot = 304.8 mm.  
NP = Not Permitted.  
NA = Not Applicable.

a. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1031.

b. Group B, F and S occupancies in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or an occupiable roof of such buildings shall have a maximum exit access travel distance of 100 feet.

c. This table is used for Group R-2 occupancies consisting of sleeping units. For Group R-2 occupancies consisting of dwelling units, use Table 1006.3.4(1).

d. The length of exit access travel distance in a Group S-2 open parking garage shall be not more than 100 feet.

e. For Group L Occupancies see Section 453.6.1.

**1006.3.4.1 Mixed occupancies.** Where one exit, or exit access stairway or ramp providing access to exits at other stories, is permitted to serve individual stories, mixed occupancies shall be permitted to be served by single exits provided that each individual occupancy complies with the applicable requirements of Table 1006.3.4(1) or 1006.3.4(2) for that occupancy. Where applicable, cumulative occupant loads from adjacent occupancies shall be considered to be in accordance with the provisions of Section 1004.1. In each story of a mixed occupancy building, the maximum number of occupants served by a single exit shall be such that the sum of the ratios of the calculated number of occupants of the space divided by the allowable number of occupants indicated in Table 1006.3.4(2) for each occupancy does not exceed one. Where dwelling units are located on a story with other occupancies, the actual number of dwelling units divided by four plus the ratio from the other occupancy does not exceed one.

## SECTION 1007—EXIT AND EXIT ACCESS DOORWAY CONFIGURATION

**1007.1 General.** Exits, exit access doorways, and exit access stairways and ramps serving spaces, including individual building stories, shall be separated in accordance with the provisions of this section.

**1007.1.1 Two exits or exit access doorways.** Where two exits, exit access doorways, exit access stairways or ramps, or any combination thereof, are required from any portion of the exit access, they shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between them. Interlocking or scissor stairways shall be counted as one exit stairway.

**Exceptions:**

1. Where interior exit stairways or ramps are interconnected by a 1-hour fire-resistance-rated corridor conforming to the requirements of Section 1020, the required exit separation shall be measured along the shortest direct line of travel within the corridor.
2. Where a building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2, the separation distance shall be not less than one-third of the length of the maximum overall diagonal dimension of the area served.

**1007.1.1.1 Measurement point.** The separation distance required in Section 1007.1.1 shall be measured in accordance with the following:

1. The separation distance to exit or exit access doorways shall be measured to any point along the width of the doorway.
2. The separation distance to exit access stairways shall be measured to the closest riser.
3. The separation distance to exit access ramps shall be measured to the start of the ramp run.

**1007.1.2 Three or more exits or exit access doorways.** Where access to three or more exits is required, not less than two exit or exit access doorways shall be arranged in accordance with the provisions of Section 1007.1.1. Additional required exit or exit access doorways shall be arranged a reasonable distance apart so that if one becomes blocked, the others will be available.

**1007.1.3 Remoteness of exit access stairways or ramps.** Where two exit access stairways or ramps provide the required means of egress to exits at another story, the required separation distance shall be maintained for all portions of such exit access stairways or ramps.

**1007.1.3.1 Three or more exit access stairways or ramps.** Where more than two exit access stairways or ramps provide the required means of egress, not less than two shall be arranged in accordance with Section 1007.1.3.

## SECTION 1008—MEANS OF EGRESS ILLUMINATION

**1008.1 Means of egress illumination.** Illumination shall be provided in the means of egress in accordance with Section 1008.2. In the event of power supply failure, means of egress illumination shall comply with Section 1008.3.

**1008.2 Illumination required.** The means of egress serving a room or space shall be illuminated at all times that the room or space is occupied.

**Exceptions:**

1. Occupancies in Group U.
2. Self-service storage units 400 square feet ( $37.2\text{ m}^2$ ) or less in area and accessed directly from the exterior of the building.
3. Aisle accessways in Group A.
4. Dwelling units and sleeping units in Groups R-1, R-2 and R-3.
5. Sleeping units of Group I, R-2.1 and R-4 occupancies.

**1008.2.1 Illumination level under normal power.** The means of egress illumination level shall be not less than 1 footcandle (11 lux) at the walking surface. Along exit access stairways, exit stairways and at their required landings, the illumination level shall not be less than 10 footcandles (108 lux) at the walking surface when the stairway is in use.

**Exception:** For auditoriums, theaters, concert or opera halls and similar assembly occupancies, the illumination at the walking surface is permitted to be reduced during performances by one of the following methods provided that the required illumination is automatically restored upon activation of a premises' fire alarm system:

1. Externally illuminated walking surfaces shall be permitted to be illuminated to not less than 0.2 footcandle (2.15 lux).

occupant load of 50 or more, doors in any position shall not reduce the landing to less than one-half its required width. Landings shall have a length measured in the direction of travel of not less than 44 inches (1118 mm).

**Exception:** Landing length in the direction of travel in Groups R-3 and U and within individual units of Group R-2 need not exceed 36 inches (914 mm).

**1010.1.6 Thresholds.** Thresholds at doorways shall not exceed  $\frac{3}{4}$  inch (19.1 mm) in height above the finished floor or landing for sliding doors serving dwelling units or  $\frac{1}{2}$  inch (12.7 mm) above the finished floor or landing for other doors. Raised thresholds and floor level changes greater than  $\frac{1}{4}$  inch (6.4 mm) at doorways shall be beveled with a slope not greater than one unit vertical in two units horizontal (50-percent slope).

**Exceptions:**

1. In occupancy Group R-2 or R-3, threshold heights for sliding and side-hinged exterior doors shall be permitted to be up to  $\frac{7}{4}$  inches (197 mm) in height if all of the following apply:
  - 1.1. The door is not part of the required means of egress.
  - 1.2. The door is not part of an accessible route as required by Chapter 11A or 11B.
  - 1.3. The door is not part of an *adaptable or accessible dwelling unit*.
2. In *adaptable or accessible dwelling units*, where Exception 5 to Section 1010.1.4 permits a 4-inch (102 mm) elevation change at the door, the threshold height on the exterior side of the door shall not exceed  $4\frac{3}{4}$  inches (120 mm) in height above the exterior deck, patio or balcony for sliding doors or  $4\frac{1}{2}$  inches (114 mm) above the exterior deck, patio or balcony for other doors.

**1010.1.7 Door arrangement.** Space between two doors in a series shall be 48 inches (1219 mm) minimum plus the width of a door swinging into the space. Doors in a series shall swing either in the same direction or away from the space between the doors.

**Exceptions:**

1. The minimum distance between horizontal sliding power-operated doors in a series shall be 48 inches (1219 mm).
2. Storm and screen doors serving individual dwelling units in Groups R-2 and R-3 need not be spaced 48 inches (1219 mm) from the other door.
3. Doors within individual dwelling units in Groups R-2 and R-3 other than *adaptable or accessible dwelling units*.

**1010.2 Door operations.** Except as specifically permitted by this section, egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort.

**1010.2.1 Unlatching.** The unlatching of any door or leaf for egress shall require not more than one motion in a single linear or rotational direction to release all latching and all locking devices. Manual bolts are not permitted.

**Exceptions:**

1. Places of detention or restraint.
2. Doors with manual bolts, automatic flush bolts and constant latching bolts as permitted by Section 1010.2.4, Item 4.
3. Doors from individual dwelling units and sleeping units of Group R occupancies as permitted by Section 1010.2.4, Item 5.

**1010.2.2 Hardware.** Door handles, pulls, latches, locks and other operating devices on doors required to be accessible by Chapter 11A or 11B shall not require tight grasping, tight pinching or twisting of the wrist to operate.

*These design requirements for door handles, pulls, latches, locks and other operating devices, intended for use on required means of egress doors in other than Group R and M occupancies with an occupant load of 10 or less, shall comply with SFM Standard 12-10-2, Section 12-10-202 contained in the CCR, Title 24, Part 12, California Referenced Standards Code.*

**1010.2.3 Hardware height.** Door handles, pulls, latches, locks and other operating devices shall be installed 34 inches (864 mm) minimum and 48 inches (1219 mm) maximum above the finished floor.

**Exceptions:**

1. Locks used only for security purposes and not used for normal operation are permitted at any height.
2. Where the *California Building Code* requires restricting access to a pool, spa or hot tub, and where door and gate latch release mechanisms are accessed from the outside of the barrier and are not of the self-locking type, such a mechanism shall be located above the finished floor or ground surface not less than 52 inches (1219 mm) and not greater than 54 inches (1370 mm), provided that the latch release mechanism is not a self-locking type such as where the lock is operated by means of a key, electronic opener or the entry of a combination into an integral combination lock.

**1010.2.4 Locks and latches.** Locks and latches shall be permitted to prevent operation of doors where any of the following exist:

1. Places of detention or restraint.
2. In Group I-2 and R-2.1 occupancies where the clinical needs of persons receiving care require containment or where persons receiving care pose a security threat, provided that all clinical staff can readily unlock doors at all times, and all such locks are keyed to keys carried by all clinical staff at all times or all clinical staff have the codes or other means necessary to operate the locks at all times.

3. In buildings in occupancy Group A having an occupant load of 300 or less, Groups B, F, M and S, and in places of religious worship, the main door or doors are permitted to be equipped with key-operated locking devices from the egress side provided that:
  - 3.1. The doors are the main exterior doors to the building, or the doors are the main doors to the tenant space.
  - 3.2. The locking device is readily distinguishable as locked.
  - 3.3. A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED. The sign shall be in letters 1 inch (25 mm) high on a contrasting background.
  - 3.4. The use of the key-operated locking device is revocable by the building official for due cause.
4. Manual bolts, automatic flush bolts and constant latching bolts on the inactive leaf of a pair of doors in accordance with Table 1010.2.4, provided that the inactive leaf does not have a doorknob, panic hardware, or similar operating hardware.
5. Single exit doors complying with Section 1006.2.1 or 1006.3.4 from individual dwelling or sleeping units of Group R occupancies and equipped with a night latch, dead bolt, manual bolt, or security chain that requires a second releasing motion, provided that such devices are openable from the inside without the use of a key or tool.
6. Fire doors after the minimum elevated temperature has disabled the unlatching mechanism in accordance with listed fire door test procedures.
7. Doors serving roofs not intended to be occupied shall be permitted to be locked preventing entry to the building from the roof.
8. Other than egress courts, where occupants must egress from an exterior space through the building for means of egress, exit access doors shall be permitted to be equipped with an approved locking device where installed and operated in accordance with all of the following:
  - 8.1. The maximum occupant load shall be posted where required by Section 1004.9. Such signage shall be permanently affixed inside the building and shall be posted in a conspicuous space near all the exit access doorways.
  - 8.2. A weatherproof telephone or two-way communication system installed in accordance with Sections 1009.8.1 and 1009.8.2 shall be located adjacent to not less than one required exit access door on the exterior side.
  - 8.3. The egress door locking device is readily distinguishable as locked and shall be a key-operated locking device.
  - 8.4. A clear window or glazed door opening, not less than 5 square feet ( $0.46\text{ m}^2$ ) in area, shall be provided at each exit access door to determine if there are occupants using the outdoor area.
  - 8.5. A readily visible, durable sign shall be posted on the interior side on or adjacent to each locked required exit access door serving the exterior area stating, "THIS DOOR TO REMAIN UNLOCKED WHEN THE OUTDOOR AREA IS OCCUPIED." The letters on the sign shall be not less than 1 inch (25.4 mm) high on a contrasting background.
  - 8.6. The occupant load of the occupied exterior area shall not exceed 300 occupants in accordance with Section 1004.
9. Locking devices are permitted on doors to balconies, decks or other exterior spaces serving individual dwelling or sleeping units.
10. Locking devices are permitted on doors to balconies, decks or other exterior spaces of 250 square feet ( $23.23\text{ m}^2$ ) or less serving a private office space.

**TABLE 1010.2.4—MANUAL BOLTS, AUTOMATIC FLUSH BOLTS AND CONSTANT LATCHING BOLTS ON THE INACTIVE LEAF OF A PAIR OF DOORS**

APPLICATION WITH A PAIR OF DOORS WITH AN ACTIVE LEAF AND AN INACTIVE LEAF	THE PAIR OF DOORS IS REQUIRED TO COMPLY WITH SECTION 716	PERMITTED USES OF MANUAL BOLTS, AUTOMATIC FLUSH BOLTS AND CONSTANT LATCHING BOLTS ON THE INACTIVE LEAF OF A PAIR OF DOORS		
		Surface- or flush-mounted manual bolts	Automatic flush bolts	Constant latching bolts
Group B, F or S occupancies with occupant load less than 50.	No	P	P	P
	Yes	NP	NP <sup>b</sup>	P
Group B, F or S occupancies where the building is equipped with an automatic sprinkler system in accordance with Section 903.3.1.1 and the inactive leaf is not needed to meet egress capacity requirements.	No	P	P	P
	Yes	NP	NP <sup>b</sup>	P
Group I-2 patient care and sleeping rooms where inactive leaf is not needed to meet egress capacity requirements.	No	NP	NP <sup>b</sup>	P
	Yes	NP	NP <sup>b</sup>	P
Any occupancy where panic hardware is not required, egress doors are used in pairs, and where both leaves are required to meet egress capacity requirements.	No	NP	P	NP
	Yes	NP	NP <sup>b</sup>	NP
Storage or equipment rooms where the inactive leaf is not needed to meet egress capacity requirements.	No	P <sup>a</sup>	P	P
	Yes	P <sup>a</sup>	P	P

P = Permitted. NP = Not permitted.

a. Not permitted on corridor doors in Group I-2 occupancies where corridor doors are required to be positive latching.

b. Permitted where both doors are self closing or automatic closing, and are provided with a coordinator that causes the inactive leaf to be closed prior to the active leaf.

**1013.4 Raised character and braille exit signs. [HCD 1-AC]** Tactile exit signs shall be required at the following locations:

1. Each grade-level exterior exit door that is required to comply with Section 1013.1, shall be identified by a tactile exit sign with the word, "EXIT".
2. Each exit door that is required to comply with Section 1013.1, and that leads directly to a grade-level exterior exit by means of a stairway or ramp shall be identified by a tactile exit sign with the following words as appropriate:
  - 2.1. "EXIT STAIR DOWN"
  - 2.2. "EXIT RAMP DOWN"
  - 2.3. "EXIT STAIR UP"
  - 2.4. "EXIT RAMP UP"
3. Each exit door that is required to comply with Section 1013.1, and that leads directly to a grade-level exterior exit by means of an exit enclosure or an exit passageway shall be identified by a tactile exit sign with the words, "EXIT ROUTE."
4. Each exit access door from an interior room or area to a corridor or hallway that is required to comply with Section 1013.1, shall be identified by a tactile exit sign with the words "EXIT ROUTE."
5. Each exit door through a horizontal exit that is required to comply with Section 1013.1, shall be identified by a sign with the words, "TO EXIT."

Raised character and Braille exit signs shall comply with Chapter 11A, Section 1143A or Chapter 11B, Sections 11B-703.1, 11B-703.2, 11B-703.3 and 11B-703.5.

**1013.5 Internally illuminated exit signs.** Electrically powered, self-luminous and photoluminescent exit signs shall be listed and labeled in accordance with UL 924 and shall be installed in accordance with the manufacturer's instructions and Chapter 27. Exit signs shall be illuminated at all times.

**1013.5.1 Photoluminescent exit signs.** Photoluminescent exit signs shall be provided with an illumination source to charge the exit sign in accordance with the manufacturer's instructions.

**1013.6 Externally illuminated exit signs.** Externally illuminated exit signs shall comply with Sections 1013.6.1 through 1013.6.3.

**1013.6.1 Graphics.** Every exit sign and directional exit sign shall have plainly legible letters not less than 6 inches (152 mm) high with the principal strokes of the letters not less than  $\frac{3}{4}$  inch (19.1 mm) wide. The word "EXIT" shall have letters having a width not less than 2 inches (51 mm) wide, except the letter "I," and the minimum spacing between letters shall be not less than  $\frac{3}{8}$  inch (9.5 mm). Signs larger than the minimum established in this section shall have letter widths, strokes and spacing in proportion to their height.

The word "EXIT" shall be in high contrast with the background and shall be clearly discernible when the means of exit sign illumination is or is not energized. If a chevron directional indicator is provided as part of the exit sign, the construction shall be such that the direction of the chevron directional indicator cannot be readily changed.

**1013.6.2 Exit sign illumination.** The face of an exit sign illuminated from an external source shall have an intensity of not less than 5 footcandles (54 lux).

**1013.6.3 Power source.** Exit signs shall be illuminated at all times. To ensure continued illumination for a duration of not less than 90 minutes in case of primary power loss, the sign illumination means shall be connected to an emergency power system provided from storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with Chapter 27. Group I-2 exit sign illumination shall not be provided by unit equipment batteries only.

**Exception:** Approved exit sign illumination types that provide continuous illumination independent of external power sources for a duration of not less than 90 minutes, in case of primary power loss, are not required to be connected to an emergency electrical system.

**1013.7 Floor-level exit signs.** Where exit signs are required by Chapter 10, additional approved low-level exit signs which are internally or externally illuminated photoluminescent or self-luminous, shall be provided in all interior corridors of Group A, E, I and R-2.1 occupancies and in all areas serving guest rooms of hotels in Group R, Division 1 occupancies.**Exceptions:**

1. Group A occupancies that are protected throughout by an approved supervised fire sprinkler system.
2. Group E Occupancies where direct exits have been provided from each classroom.
3. Group I and R-2.1 occupancies which are provided with smoke barriers constructed in accordance with Section 407.5.
4. Group I-3 occupancies.

The bottom of the sign shall not be less than 6 inches (152 mm) or more than 8 inches (203 mm) above the floor level and shall indicate the path of exit travel. For exit and exit-access doors, the sign shall be on the door or adjacent to the door with the closest edge of the sign or marker within 4 inches (102 mm) of the door frame.

**Note:** Pursuant to Health and Safety Code Section 13143, this California amendment applies to all newly constructed buildings or structures subject to this section for which a building permit is issued (or construction commenced, where no building permit is issued) on or after January 1, 1989.

**1013.8 Path marking.** When exit signs are required by Chapter 10, in addition to approved floor-level exit signs, approved path marking shall be installed at floor level or no higher than 8 inches (203 mm) above the floor level in all interior rated exit corridors of unsprinklered Group A, R-1 and R-2 occupancies.

Such marking shall be continuous except as interrupted by door-ways, corridors or other such architectural features in order to provide a visible delineation along the path of travel.

**Note:** Pursuant to Health and Safety Code Section 13143, the California amendments of this section shall apply to all newly constructed buildings or structures subject to this section for which a building permit is issued (or construction commenced, where no building permit is issued) on or after January 1, 1989.

## SECTION 1014—HANDRAILS

**[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-505, as applicable.

**1014.1 Where required.** Handrails serving flights of stairways, ramps, stepped aisles and ramped aisles shall be adequate in strength and attachment in accordance with Section 1607.9. Handrails required for flights of stairways by Section 1011.11 shall comply with Sections 1014.2 through 1014.10. Handrails required for ramps by Section 1012.8 shall comply with Sections 1014.2 through 1014.9. Handrails for stepped aisles and ramped aisles required by Section 1030.16 shall comply with Sections 1014.2 through 1014.9.

**1014.2 Height.** Handrail height, measured from a line connecting the nosings of flights of stairs or finish surface of ramp slope, shall be uniform, not less than 34 inches (864 mm) and not more than 38 inches (965 mm). Handrail height of alternating tread devices and ship's ladders, measured from a line connecting the nosings, shall be uniform, not less than 30 inches (762 mm) and not more than 34 inches (864 mm).

**Exceptions:**

1. Where handrail fittings or bendings are used to provide continuous transition between flights, the fittings or bendings shall be permitted to exceed the maximum height.
2. In Group R-3 occupancies; within dwelling units in Group R-2 occupancies; and in Group U occupancies that are associated with a Group R-3 occupancy or associated with individual dwelling units in Group R-2 occupancies; where handrail fittings or bendings are used to provide continuous transition between flights, transition at winder treads, transition from handrail to guard, or where used at the start of a flight, the handrail height at the fittings or bendings shall be permitted to exceed the maximum height.
3. Handrails on top of a guard where permitted along stepped aisles and ramped aisles in accordance with Section 1030.16.

**1014.3 Lateral location.** Handrails located outward from the edge of the walking surface of flights of stairways, ramps, stepped aisles and ramped aisles shall be located 6 inches (152.4 mm) or less measured horizontally from the edge of the walking surface. Handrails projecting into the width of the walking surface shall comply with Section 1014.9.

**1014.4 Handrail graspability.** Required handrails shall comply with Section 1014.4.1 or shall provide equivalent graspability.

**Exception:** In Group R-3 occupancies; within dwelling units in Group R-2 occupancies; and in Group U occupancies that are accessory to a Group R-3 occupancy or accessory to individual dwelling units in Group R-2 occupancies; handrails shall be Type I in accordance with Section 1014.4.1, Type II in accordance with Section 1014.4.2 or shall provide equivalent graspability.

**1014.4.1 Type I.** Handrails with a circular cross section shall have an outside diameter of not less than  $1\frac{1}{4}$  inches (32 mm) and not greater than 2 inches (51 mm). Where the handrail is not circular, it shall have a perimeter dimension of not less than 4 inches (102 mm) and not greater than  $6\frac{1}{4}$  inches (160 mm) with a maximum cross-sectional dimension of  $2\frac{1}{4}$  inches (57 mm) and minimum cross-sectional dimension of 1 inch (25 mm). Edges shall have a minimum radius of 0.01 inch (0.25 mm).

**1014.4.2 Type II.** Handrails with a perimeter greater than  $6\frac{1}{4}$  inches (160 mm) shall provide a graspable finger recess area on both sides of the profile. The finger recess shall begin within a distance of  $\frac{3}{4}$  inch (19 mm) measured vertically from the tallest portion of the profile and achieve a depth of not less than  $\frac{5}{16}$  inch (8 mm) within  $\frac{7}{8}$  inch (22 mm) below the widest portion of the profile. This required depth shall continue for not less than  $\frac{3}{8}$  inch (10 mm) to a level that is not less than  $1\frac{3}{4}$  inches (45 mm) below the tallest portion of the profile. The width of the handrail above the recess shall be not less than  $1\frac{1}{4}$  inches (32 mm) to not greater than  $2\frac{3}{4}$  inches (70 mm). Edges shall have a minimum radius of 0.01 inch (0.25 mm).

**1014.5 Continuity.** Handrail gripping surfaces shall be continuous, without interruption by newel posts or other obstructions.

**Exceptions:**

1. Within a dwelling unit that is not an Accessible unit, the continuity of handrail gripping surfaces is allowed to be interrupted by a newel post at a turn or landing.
2. Within a dwelling unit, the use of a volute, turnout, starting easing or starting newel is allowed over the lowest tread.
3. Handrail brackets or balusters attached to the bottom surface of the handrail that do not project horizontally beyond the sides of the handrail within  $1\frac{1}{2}$  inches (38 mm) of the bottom of the handrail shall not be considered obstructions. For each  $\frac{1}{2}$  inch (12.7 mm) of additional handrail perimeter dimension above 4 inches (102 mm), the vertical clearance dimension of  $1\frac{1}{2}$  inches (38 mm) shall be permitted to be reduced by  $\frac{1}{8}$  inch (3.2 mm).
4. Where handrails are provided along walking surfaces with slopes not steeper than 1:20, the bottoms of the handrail gripping surfaces shall be permitted to be obstructed along their entire length where they are integral to crash rails or bumper guards.

required. Where two handrails are required, one of the handrails shall be within 30 inches (762 mm) horizontally of the side of the tiered floor adjacent to the stepped aisle.

**Exceptions:**

1. Handrails are not required for ramped aisles with seating on both sides.
2. Handrails are not required where, at the side of the aisle, there is a guard with a top surface that complies with the graspability requirements of handrails in accordance with Section 1014.4.
3. Handrail extensions are not required at the top and bottom of stepped aisles and ramped aisles to permit crossovers within the aisles.

**1030.16.1 Discontinuous mid-aisle handrails.** Where there is seating on both sides of the aisle, the mid-aisle handrails shall be discontinuous. Where a stepped aisle is required to have two handrails, the mid-aisle handrails shall be discontinuous. Gaps or breaks shall be provided at intervals not exceeding five rows to facilitate access to seating and to permit crossing from one side of the aisle to the other. These gaps or breaks shall have a clear width of not less than 22 inches (559 mm) and not greater than 36 inches (914 mm), measured horizontally, and the mid-aisle handrail shall have rounded terminations or bends.

**1030.16.2 Handrail termination.** Handrails located on the side of stepped aisles shall return to a wall, guard or the walking surface or shall be continuous to the handrail of an adjacent stepped aisle flight.

**1030.16.3 Mid-aisle termination.** Mid-aisle handrails shall not extend beyond the lowest riser and shall terminate within 18 inches (381 mm), measured horizontally, from the lowest riser. Handrail extensions are not required.

**Exception:** Mid-aisle handrails shall be permitted to extend beyond the lowest riser where the handrail extensions do not obstruct the width of the cross aisle.

**1030.16.4 Rails.** Where mid-aisle handrails are provided in stepped aisles, there shall be an additional rail located approximately 12 inches (305 mm) below the handrail. The rail shall be adequate in strength and attachment in accordance with Section 1607.9.1.2.

**1030.17 Assembly guards.** Guards adjacent to seating in a building, room or space used for assembly purposes shall be provided where required by Section 1015 and shall be constructed in accordance with Section 1015 except where provided in accordance with Sections 1030.17.1 through 1030.17.4. At bleachers, grandstands and folding and telescopic seating, guards must be provided where required by ICC 300 and Section 1030.17.1.

**1030.17.1 Perimeter guards.** Perimeter guards shall be provided where the footboards or walking surface of seating facilities are more than 30 inches (762 mm) above the floor or grade below. Where the seatboards are adjacent to the perimeter, guard height shall be 42 inches (1067 mm) high minimum, measured from the seatboard. Where the seats are self-rising, guard height shall be 42 inches (1067 mm) high minimum, measured from the floor surface. Where there is an aisle between the seating and the perimeter, the guard height shall be measured in accordance with Section 1015.3.

**Exceptions:**

1. Guards that impact sightlines shall be permitted to comply with Section 1030.17.3.
2. Bleachers, grandstands and folding and telescopic seating shall not be required to have perimeter guards where the seating is located adjacent to a wall and the space between the wall and the seating is less than 4 inches (102 mm).

**1030.17.2 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.

**1030.17.3 Sightline-constrained guard heights.** Unless subject to the requirements of Section 1030.17.4, 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 footboard 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.

**1030.17.4 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 1031—EMERGENCY ESCAPE AND RESCUE

**1031.1 General.** Emergency escape and rescue openings shall comply with the requirements of this section.

**1031.2 Where required.** 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 emergency escape and rescue opening in accordance with this section. Where basements contain one or more sleeping rooms, an emergency escape and rescue opening shall be required in each sleeping room, but shall not be required in adjoining areas of the basement. Such open-

ings shall open directly into a public way or to a yard or court that opens to a public way, or to an egress balcony that leads 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 1010.2.13 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 egress balcony that leads 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. Storm shelters are not required to comply with this section where the shelter is constructed in accordance with ICC 500.
7. 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:
  - 7.1. One means of egress and one emergency escape and rescue opening.
  - 7.2. Two means of egress.
8. *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.*

**1031.2.1 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 openable windows permanently restricted to a maximum 4-inch (102 mm) open position.

**1031.2.2 Maintenance.** Fire escape stairways and balconies shall be kept clear and unobstructed at all times and shall be maintained in good working order.

**1031.2.3 Examination.** Fire escape stairways and balconies shall be examined for structural adequacy and safety by a registered design professional or other person acceptable to the fire code official every 5 years. The examination shall determine whether the fire escape stairways and balconies can support the dead load plus a live load of not less than 100 pounds per square foot (4.78 kN/m). An inspection report shall be submitted to the fire code official after such examination.

**1031.3 Emergency escape and rescue openings.** Emergency escape and rescue openings shall comply with Sections 1031.3.1 through 1031.3.3.

**1031.3.1 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>).

**1031.3.2 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.

**1031.3.3 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.

**1031.4 Emergency escape and rescue doors.** Where a door is provided as the required emergency escape and rescue opening, it shall be a swinging door or a sliding door.

**1031.5 Area wells.** An emergency escape and rescue opening with the bottom of the clear opening below the adjacent grade shall be provided with an area well in accordance with Sections 1031.5.1 through 1031.5.3.

**SECTION 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.**SECTION 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.**SECTION 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.

**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-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.

#### **SECTION 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.

#### **SECTION 11B-242—SWIMMING POOLS, WADING POOLS AND SPAS**

**11B-242.1 General.** Swimming pools, wading pools and spas shall comply with Section 11B-242.

**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.

#### **SECTION 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-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.

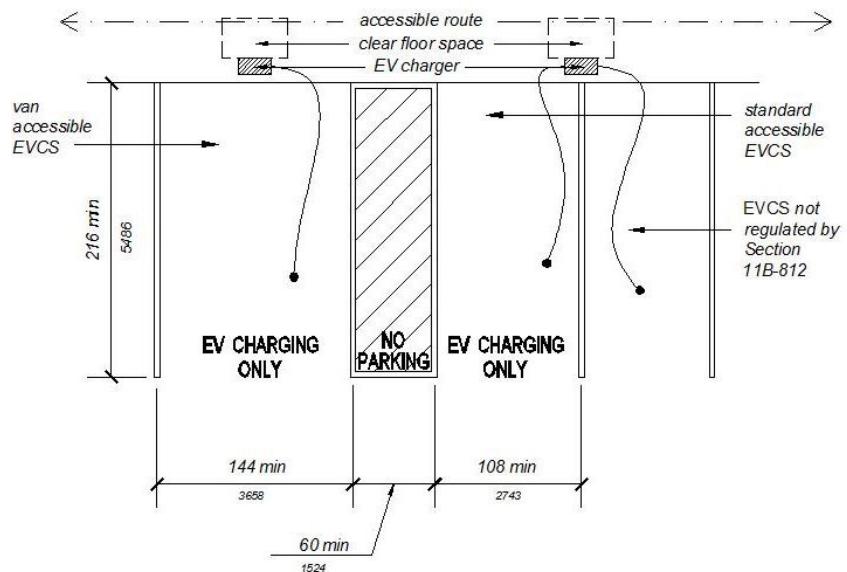
**11B-812.8.6 Finish and size.** Identification signs shall be reflectorized with a minimum area of 70 square inches (45 161 mm<sup>2</sup>).

**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.

**FIGURE 11B-812.9—SURFACE MARKING**



**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.

**11B-812.10.4 Location.** EV chargers shall be adjacent to, and within the projected width of, the vehicle space being served.

**Exceptions:**

- EV chargers serving more than one EVCS shall be adjacent to, and within the combined projected width of, the vehicle spaces being served.
- 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.
- 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.

**SECTION 11B-813—ADULT CHANGING FACILITIES**

**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.

**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	5	6									
Adopt entire chapter								X	X																
Adopt entire chapter as amended (amended sections listed below)	X			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																			
1202.3.1																								X	
1202.4.1.3																									X
1202.5						X																			
1202.5.2.1						X																			
1202.6				X																					
1203.1					X	X					X	X	X	X	X	X									
Table 1202.3.1																								X	
1204.1						X																			
1204.4.1						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																							
1208.1				X																					
1208.2											X	X	X	X	X	X									
1208.2, Exception 5											X	X	X	X	X										
1208.2, Exception 6																	X								
1208.5			X																						
1209			X																						
1209.1.1																								X	
1210.2											X		X	X	X	X									
1212 – 1212.6				X	X																				
1213 – 1213.1				X																					
Table 1224.4.6.5											X	X	X	X	X	X									
1224							X																		
1225											X														
1226												X													
1227												X													
1228													X												
1229													X												
1230														X											
1231														X											
1235															X										
1236															X										

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**CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE**  
**CHAPTER 12 – INTERIOR ENVIRONMENT—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															
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																							
1237																	X						
1240																		X					
1241																		X					
1242																		X					
1243																		X					
1250																			X				
1251																			X				
1252																			X				
1253																			X				
1254																			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.

**About this chapter:**

Chapter 12 provides minimum provisions for the interior of buildings—the occupied environment. Ventilation, lighting, and space heating are directly regulated in this chapter and in conjunction with the *California Mechanical Code* and the *California Energy Code*. Minimum room size, maximum room-to-room sound transmission and classroom acoustics are set for educational occupancies.

**ICC code development note:** Code change proposals to sections preceded by the designation [P] will be considered by a code development committee meeting during the 2024 (Group A) Code Development Cycle. All other code change proposals will be considered by a code development committee meeting during the 2025 (Group B) Code Development Cycle.

## SECTION 1201—GENERAL

**1201.1 Scope.** The provisions of this chapter shall govern ventilation, temperature control, lighting, yards and courts, sound transmission, enhanced classroom acoustics, interior space dimensions, access to unoccupied spaces, toilet and bathroom requirements and ultraviolet (UV) germicidal irradiation systems associated with the interior spaces of buildings.

## SECTION 1202—VENTILATION

**1202.1 General.** Buildings shall be provided with natural ventilation in accordance with Section 1202.5, or mechanical ventilation in accordance with the *California Mechanical Code*.

Dwelling units complying with the air leakage requirements of the *California Energy Code* or ASHRAE 90.1 shall be ventilated by mechanical means in accordance with Section 403 of the *California Mechanical Code*. Ambulatory care facilities and Group I-2 occupancies shall be ventilated by mechanical means in accordance with Section 407 of the *California Mechanical Code*.

**1202.2 Roof ventilation.** Roof assemblies shall be ventilated in accordance with this section or shall comply with Section 1202.3.

**1202.2.1 Ventilated attics and rafter spaces.** Enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof framing members shall have cross ventilation for each separate space by ventilation openings protected against the entrance of rain and snow. Blocking and bridging shall be arranged so as not to interfere with the movement of air. An airspace of not less than 1 inch (25 mm) shall be provided between the insulation and the roof sheathing. The net free ventilating area shall be not less than  $\frac{1}{150}$  of the area of the space ventilated. Ventilators shall be installed in accordance with manufacturer's installation instructions.

**Exception:** The net free cross-ventilation area shall be permitted to be reduced to  $\frac{1}{300}$  provided both of the following conditions are met:

1. In Climate Zones 6, 7 and 8, a Class I or II vapor retarder is installed on the warm-in-winter side of the ceiling.
2. At least 40 percent and not more than 50 percent of the required venting area is provided by ventilators located in the upper portion of the attic or rafter space. Upper ventilators shall be located not more than 3 feet (914 mm) below the ridge or highest point of the space, measured vertically, with the balance of the ventilation provided by eave or cornice vents. Where the location of wall or roof framing members conflicts with the installation of upper ventilators, installation more than 3 feet (914 mm) below the ridge or highest point of the space shall be permitted.

**1202.2.2 Openings into attic.** Exterior openings into the attic space of any building intended for human occupancy shall be protected to prevent the entry of birds, squirrels, rodents, snakes and other similar creatures. Openings for ventilation having a least dimension of not less than  $\frac{1}{16}$  inch (1.6 mm) and not more than  $\frac{1}{4}$  inch (6.4 mm) shall be permitted. Openings for ventilation having a least dimension larger than  $\frac{1}{4}$  inch (6.4 mm) shall be provided with corrosion-resistant wire cloth screening, hardware cloth, perforated vinyl or similar material with openings having a least dimension of not less than  $\frac{1}{16}$  inch (1.6 mm) and not more than  $\frac{1}{4}$  inch (6.4 mm). Where combustion air is obtained from an attic area, it shall be in accordance with Chapter 7 of the *California Mechanical Code*.

**1202.3 Unvented attic and unvented enclosed rafter assemblies.** Unvented attics and unvented enclosed roof framing assemblies created by ceilings applied directly to the underside of the roof framing members/rafters and the structural roof sheathing at the top of the roof framing members shall be permitted where all of the following conditions are met:

1. The unvented attic space is completely within the building thermal envelope.
2. No interior Class I vapor retarders are installed on the ceiling side (attic floor) of the unvented attic assembly or on the ceiling side of the unvented enclosed roof framing assembly.
3. Where wood shingles or shakes are used, not less than a  $\frac{1}{4}$ -inch (6.4 mm) vented airspace separates the shingles or shakes and the roofing underlayment above the structural sheathing.
4. In Climate Zones 5, 6, 7 and 8, any air-impermeable insulation shall be a Class II vapor retarder or shall have a Class II vapor retarder coating or covering in direct contact with the underside of the insulation.
5. Insulation shall comply with either Item 5.1 or 5.2, and additionally Item 5.3.

5.1. Item 5.1.1, 5.1.2, 5.1.3 or 5.1.4 shall be met, depending on the air permeability of the insulation directly under the structural roof sheathing.

- 5.1.1. Where only air-impermeable insulation is provided, it shall be applied in direct contact with the underside of the structural roof sheathing.
- 5.1.2. Where air-permeable insulation is provided inside the building thermal envelope, it shall be installed in accordance with Item 5.1.1. In addition to the air-permeable insulation installed directly below the structural sheathing, rigid board or sheet insulation shall be installed directly above the structural roof sheathing in accordance with the *R*-value percentages in Table 1202.3 for condensation control.
- 5.1.3. Where both air-impermeable and air-permeable insulation are provided, the air-impermeable insulation shall be applied in direct contact with the underside of the structural roof sheathing in accordance with Item 5.1.1 and shall be in accordance with the *R*-value percentages in Table 1202.3 for condensation control. The air-permeable insulation shall be installed directly under the air-impermeable insulation.
- 5.1.4. Alternatively, sufficient rigid board or sheet insulation shall be installed directly above the structural roof sheathing to maintain the monthly average temperature of the underside of the structural roof sheathing above 45°F (7°C). For calculation purposes, an interior air temperature of 68°F (20°C) is assumed and the exterior air temperature is assumed to be the monthly average outside air temperature of the three coldest months.

5.2. In Climate Zones 1, 2 and 3, air-permeable insulation installed in unvented attics shall meet the following requirements:

- 5.2.1. A vapor diffusion port shall be installed not more than 12 inches (305 mm) from the highest point of the roof, measured vertically from the highest point of the roof to the lower edge of the port.
- 5.2.2. The port area shall be greater than or equal to  $1/150$  of the ceiling area. Where there are multiple ports in the attic, the sum of the port areas shall be greater than or equal to the area requirement.
- 5.2.3. The vapor permeable membrane in the vapor diffusion port shall have a vapor permeance rating of greater than or equal to 20 perms when tested in accordance with Procedure A of ASTM E96.
- 5.2.4. The vapor diffusion port shall serve as an air barrier between the attic and the exterior of the building.
- 5.2.5. The vapor diffusion port shall protect the attic against the entrance of rain and snow.
- 5.2.6. Framing members and blocking shall not block the free flow of water vapor to the port. Not less than a 2-inch (50 mm) space shall be provided between any blocking and the roof sheathing. Air-permeable insulation shall be permitted within that space.
- 5.2.7. The roof slope shall be greater than or equal to 3 units vertical in 12 units horizontal (3:12).
- 5.2.8. Where only air-permeable insulation is used, it shall be installed directly below the structural roof sheathing, on top of the attic floor, or on top of the ceiling.
- 5.2.9. Where only air-permeable insulation is used and is installed directly below the structural roof sheathing, air shall be supplied at a flow rate greater than or equal to 50 cubic feet per minute (23.6 L/s) per 1,000 square feet ( $93\text{ m}^2$ ) of ceiling.

5.3. The air shall be supplied from ductwork providing supply air to the occupiable space when the conditioning system is operating. Alternatively, the air shall be supplied by a supply fan when the conditioning system is operating. Where preformed insulation board is used as the air-impermeable insulation layer, it shall be sealed at the perimeter of each individual sheet interior surface to form a continuous layer.

**Exceptions:**

1. Section 1202.3 does not apply to special use structures or enclosures such as swimming pool enclosures, data processing centers, hospitals or art galleries.
2. Section 1202.3 does not apply to enclosures in Climate Zones 5 through 8 that are humidified beyond 35 percent during the three coldest months.

**TABLE 1202.3—INSULATION FOR CONDENSATION CONTROL**

CLIMATE ZONE	MINIMUM <i>R</i> -VALUE OF AIR-IMPERMEABLE INSULATION EXPRESSED AS A PERCENTAGE OF TOTAL <i>R</i> -VALUE <sup>a</sup>
2B and 3B tile roof only	0 (none required)
1, 2A, 2B, 3A, 3B, 3C	10%
4C	20%
4A, 4B	30%
5	40%
6	50%
7	60%
8	70%

a. Contributes to, but does not supersede, thermal resistance requirements for attic and roof assemblies in the *California Energy Code*.

**1202.3.1 California Energy Code and International Energy Conservation Code Climate Zones.** The IECC climate zones used by this section differ from those used by the California Energy Code to determine applicability of energy efficiency measures. Comparison of IECC and California Energy Code climate zones is shown in Table 1202.3.1.

TABLE 1202.3.1—IECC VERSUS CALIFORNIA ENERGY CODE CLIMATE ZONE COMPARISON		
IECC <sup>a</sup>	CALIFORNIA ENERGY CODE	DESCRIPTION <sup>b</sup>
6	16	Includes Alpine, Mono Counties
5	11, 12, 16	Includes Siskiyou, Modoc, Lassen, Plumas, Sierra, Nevada Counties
4 (marine)	1, 2, 16	Includes Del Norte and Humboldt Counties
4	2, 12, 13, 16	Includes Inyo, Trinity, Lake, El Dorado, Amador, Calaveras, Tuolumne, Mariposa Counties
3	8, 9, 10, 11, 12, 13, 14, 15, 16	Includes Shasta, Tehama, Butte, Glenn, Colusa, Yuba, Contra Costa, Sutter, Yolo, Sacramento, Placer, San Joaquin, Solano, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, Kern, Ventura, Los Angeles, Orange, San Bernardino, Riverside Counties
3 (marine)	1, 2, 3, 4, 5, 6, 7, 9, 12, 16	Includes Mendocino, Sonoma, Marin, San Francisco, San Mateo, Alameda, Santa Cruz, Monterey, San Benito, San Luis Obispo, Santa Barbara, Ventura, San Diego Counties
2	14, 16	Includes Imperial County

a. IECC Climate Zones 1, 7 and 8 do not occur in California, nor do any IECC moist climate zones.  
b. IECC boundaries are defined by county political boundary lines. California Energy Code boundaries are based on a metes and bounds specifications aligned with climate-affecting geographic features, which often do not coincide with county lines.

**1202.4 Under-floor ventilation.** The space between the bottom of the floor joists and the earth under any building except spaces occupied by basements or cellars shall be provided with ventilation in accordance with Section 1202.4.1, 1202.4.2 or 1202.4.3.

**1202.4.1 Ventilation openings.** Ventilation openings through foundation walls shall be provided. The openings shall be placed so as to provide cross ventilation of the under-floor space. The net area of ventilation openings shall be in accordance with Section 1202.4.1.1 or 1202.4.1.2. Ventilation openings shall be covered for their height and width with any of the following materials, provided that the least dimension of the covering shall be not greater than  $\frac{1}{4}$  inch (6.4 mm):

1. Perforated sheet metal plates not less than 0.070 inch (1.8 mm) thick.
2. Expanded sheet metal plates not less than 0.047 inch (1.2 mm) thick.
3. Cast-iron grilles or gratings.
4. Extruded load-bearing vents.
5. Hardware cloth of 0.035-inch (0.89 mm) wire or heavier.
6. Corrosion-resistant wire mesh, with the least dimension not greater than  $\frac{1}{8}$  inch (3.2 mm).
7. Operable louvres, where ventilation is provided in accordance with Section 1202.4.1.2.

**1202.4.1.1 Ventilation area for crawl spaces with open earth floors.** The net area of ventilation openings for crawl spaces with uncovered earth floors shall be not less than 1 square foot for each 150 square feet ( $0.67 \text{ m}^2$  for each  $100 \text{ m}^2$ ) of crawl space area.

**1202.4.1.2 Ventilation area for crawl spaces with covered floors.** The net area of ventilation openings for crawl spaces with the ground surface covered with a Class I vapor retarder shall be not less than 1 square foot for each 1,500 square feet ( $0.67 \text{ m}^2$  for each  $1000 \text{ m}^2$ ) of crawl space area.

**1202.4.1.3 [SPCB]** Openings for under-floor ventilation shall be not less than  $1 \frac{1}{2}$  square feet ( $0.135 \text{ m}^2$ ) for each 25 linear feet (7620 linear mm) of exterior wall. They shall be covered with corrosion-resistant wire mesh with mesh openings not less than  $\frac{1}{4}$  inch (6.4 mm) nor more than  $\frac{1}{2}$  inch (13 mm) in any dimension.

**1202.4.2 Ventilation in cold climates.** In extremely cold climates, where a ventilation opening will cause a detrimental loss of energy, ventilation openings to the interior of the structure shall be provided.

**1202.4.3 Mechanical ventilation.** Mechanical ventilation shall be provided to crawl spaces where the ground surface is covered with a Class I vapor retarder. Ventilation shall be in accordance with Section 1202.4.3.1 or 1202.4.3.2.

**1202.4.3.1 Continuous mechanical ventilation.** Continuously operated mechanical ventilation shall be provided at a rate of 1.0 cubic foot per minute (cfm) for each 50 square feet (1.02 L/s for each 10 m<sup>2</sup>) of crawl space ground surface area and the ground surface shall be covered with a Class I vapor retarder.

**1202.4.3.2 Conditioned space.** The crawl space shall be conditioned in accordance with the California Mechanical Code and the walls of the crawl space shall be insulated in accordance with the California Energy Code.

**1202.4.4 Flood hazard areas.** For buildings in flood hazard areas as established in Section 1612.3, the openings for under-floor ventilation shall be deemed as meeting the flood opening requirements of ASCE 24 provided that the ventilation openings are designed and installed in accordance with ASCE 24.

**1202.5 Natural ventilation.** Natural ventilation of an occupied space shall be through windows, doors, louvers or other openings to the outdoors. The operating mechanism for such openings shall be provided with ready access so that the openings are readily controllable by the building occupants.

**[HCD 1]** *In employee housing, all openable windows in rooms used for living, dining, cooking or sleeping purposes, and toilet and bath buildings, shall be provided and maintained with insect screening.*

**[HCD 1]** *Door openings of rooms used for dining, cooking, toilet and bathing facilities in employee housing shall be provided and maintained with insect screening or with solid doors equipped with self-closing devices in lieu thereof, when approved by the enforcement agency.*

**[HCD 1]** *The windows, doors, louvers or other approved closeable openings not required by Section 1030 may open into a passive solar energy collector for ventilation required by this section. The area of ventilation openings to the outside of the passive solar energy collector shall be increased to compensate for the openings required by the interior space.*

**1202.5.1 Ventilation area required.** The openable area of the openings to the outdoors shall be not less than 4 percent of the floor area being ventilated.

**1202.5.1.1 Adjoining spaces.** Where rooms and spaces without openings to the outdoors are ventilated through an adjoining room, the opening to the adjoining room shall be unobstructed and shall have an area of not less than 8 percent of the floor area of the interior room or space, but not less than 25 square feet ( $2.3\text{ m}^2$ ). The openable area of the openings to the outdoors shall be based on the total floor area being ventilated.

**Exception:** Exterior openings required for ventilation shall be allowed to open into a sunroom with thermal isolation or a patio cover provided that the openable area between the sunroom addition or patio cover and the interior room shall have an area of not less than 8 percent of the floor area of the interior room or space, but not less than 20 square feet ( $1.86\text{ m}^2$ ). The openable area of the openings to the outdoors shall be based on the total floor area being ventilated.

**1202.5.1.2 Openings below grade.** Where openings below grade provide required natural ventilation, the outside horizontal clear space measured perpendicular to the opening shall be one and one-half times the depth of the opening. The depth of the opening shall be measured from the average adjoining ground level to the bottom of the opening.

**1202.5.2 Contaminants exhausted.** Contaminant sources in naturally ventilated spaces shall be removed in accordance with the *California Mechanical Code* and the *California Fire Code*.

**1202.5.2.1 Bathrooms.** Rooms containing bathtubs, showers, spas and similar bathing fixtures shall be mechanically ventilated in accordance with the *California Mechanical Code*.

*The minimum exhaust rate shall not be less than that established by Table 403.7 "Minimum Exhaust Rates." See California Mechanical Code, Chapter 5, for additional provisions related to environmental air ducts.*

**[HCD 1]** *In addition to the requirements in this section and in the California Mechanical Code, bathrooms in Group R occupancies shall be mechanically ventilated in accordance with the California Green Building Standards Code (CALGreen), Chapter 4, Division 4.5.*

**1202.5.3 Openings on yards or courts.** Where natural ventilation is to be provided by openings onto yards or courts, such yards or courts shall comply with Section 1205.

**1202.6 Other ventilation and exhaust systems.** Ventilation and exhaust systems for occupancies and operations involving flammable or combustible hazards or other contaminant sources as covered in the *California Mechanical Code* or the *California Fire Code* shall be provided as required by both codes.

## SECTION 1203—TEMPERATURE CONTROL

**1203.1 Equipment and systems.** Interior spaces intended for human occupancy shall be provided with active or passive space heating systems capable of maintaining an indoor temperature of not less than  $68^\circ\text{F}$  ( $20^\circ\text{C}$ ) at a point 3 feet (914 mm) above the floor on the design heating day.

**Exceptions:**

1. Space heating systems are not required for:
  - 1.1. Interior spaces where the primary purpose of the space is not associated with human comfort.
  - 1.2. Group F, H, S or U occupancies.
2. **[HCD 1]** *For limited-density owner-built rural dwellings, a heating facility or appliance shall be installed in each dwelling subject to the provisions of Subchapter 1, Chapter 1, Title 25, California Code of Regulations, commencing with Section 74; however, there shall be no specified requirement for heating capacity or temperature maintenance. The use of solid-fuel or solar-heating devices shall be deemed as complying with the requirements of this section. If nonrenewable fuel is used in these dwellings, rooms so heated shall meet current installation standards.*
3. **[OSHPD 1, 1R, 2, 3, 4 & 5]** *Space heating systems shall comply with the requirements of the California Mechanical Code.*
4. **[HCD 1]** *When a passive solar energy collector is designed as a conditioned area it shall comply with the California Energy Code. Nonconditioned passive solar energy collectors are exempt from compliance with the California Energy Code.*

**1226.2.1 Outpatient clinical services.** Hospitals providing outpatient clinical services and clinics licensed under Health and Safety Code Section 1200 providing services that are not covered by this section shall meet the applicable requirements in Section 1224.

**1226.2.2 Special services.** A general acute care hospital referenced in Health and Safety Code Section 1255 (d) (3) (E), that provides special services in conformance with Health and Safety Code Section 1255, shall meet all the provisions of Section 1224.28.3 in addition to Section 1226.2. The Office of Statewide Hospital Planning and Development (OSHPD) shall review any proposed construction or alteration for OSHPD compliance.

**1226.3 Definitions.** Refer to Section 1224.3.

**1226.4 General construction.** Clinics and outpatient clinical services under a hospital license shall comply with the provisions under Section 1224.4, General Construction, where applicable, except as supplemented, amended or modified below.

**1226.4.1 Examination and treatment areas.**

**1226.4.1.1 Service spaces.** Refer to Section 1224.4.2.

**1226.4.1.2 Treatment spaces.** Refer to Section 1224.4.3.

**1226.4.1.3 Examination or treatment room.** Refer to Section 1224.4.4.1.

**1226.4.1.4 Airborne infection isolation exam/treatment room.** Refer to Section 1224.4.4.1.3.

**1226.4.2 Miscellaneous requirements.**

**1226.4.2.1 Station outlets.** When provided, refer to Section 1224.4.6.1.

**1226.4.2.2 Gas and vacuum systems.** When provided refer to Section 1224.4.6.2.

**1226.4.2.3 Hyperbaric facilities.** When provided, refer to Section 1224.4.6.3.

**1226.4.2.4 Laboratories.** Refer to Section 1224.4.6.4.

**1226.4.2.5 Nurse call systems.** Refer to Section 1224.4.6.5.

**1226.4.2.6 Noise reduction.** The noise reduction criteria shown in Table 1224.4.19 shall apply to partitions, floors and ceiling construction in patient treatment areas.

**1226.4.3 Corridors.**

**1226.4.3.1 Outpatient services.** Refer to Section 1224.4.7.3

**1226.4.3.2 Corridor width.** For clinics with bed/gurney patient(s) refer to Section 1224.4.7.1.

**1226.4.3.3 Light traffic.** Refer Section 1224.4.7.2.

**1226.4.3.4 Handrails.** For rehabilitation services space, refer to Section 1224.4.7.4.

**1226.4.3.5 Contiguous functions.** Basic services of a single licensed clinic may be located in separate suites. Each clinic suite shall be contiguous and include internal circulation to access each of the required functions identified for that specific basic service.

**Exceptions:**

1. Various functions including but not limited to reception, waiting, staff support areas such as toilets, storage and lounge may be located outside of the clinic suite with approval from the California Department of Public Health.
2. If toilets and drinking fountain(s) serving the public are provided as part of the overall building features, they need not be provided within the clinic suite.
3. Shared services. Space for general storage, laundry, housekeeping and waste management may be shared with other tenants.

**1226.4.4 Doors and door openings.**

**1226.4.4.1 Toilet room doors.** Refer to Section 1224.4.8.1.

**1226.4.4.2 Pocket doors.** Refer to Section 1224.4.8.2.

**1226.4.5 Windows.**

**1226.4.5.1 Window screens.** Refer to Section 1224.4.9.4.

**1226.4.5.2 Light and ventilation.** Refer to Section 1224.4.9.5.

**1226.4.6 Ceiling heights.**

**1226.4.6.1 Minimum height.** For minimum ceiling height requirements, refer to Section 1224.4.10.1.

**1226.4.6.2 Minimum height with fixed ceiling equipment.** Refer to Section 1224.4.10.2.

**1226.4.7 Interior finishes.**

**1226.4.7.1 Floor finishes.** Refer to Section 1224.4.11.1 and Table 1224.4.11.

**1226.4.7.1.1 Coved base.** Refer to Section 1224.4.11.1.1.

**1226.4.7.1.2 Wet cleaning.** Refer to Section 1224.4.11.1.3.

**1226.4.7.1.3 Airborne infection isolation exam/treatment room.** Refer to Section 1224.11.1.4.

**1226.4.7.2 Wall bases.**

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**1226.4.7.2.1 Material.** Refer to Section 1224.4.11.2.1.

**1226.4.7.2.2 Wet cleaning.** Refer to Section 1224.4.11.2.2.

**1226.4.7.3 Wall finishes.** Refer to Section 1224.4.11.3.

**1226.4.7.4 Ceilings.** Ceiling finishes shall comply with Section 1224.4.11.4 and Table 1224.4.11.

#### 1226.4.8 Elevators.

**1226.4.8.1 Elevator cab requirements.** Buildings over one story in height with accommodations or services for patients on floors without grade-level entrance shall provide at least one elevator in compliance with Section 3002.4.

**1226.4.8.2 Dimensions.** Elevators used for the routine transport of wheeled stretchers shall have minimum inside platform dimensions of 5 feet by 8 feet (1524 mm by 2438 mm) and a minimum clear door opening of 3 feet 8 inches (1118 mm).

**1226.4.9 Garbage, solid waste, medical waste and trash storage.** These facilities shall comply with the appropriate local health and environmental authorities' requirements, California Department of Public Health requirements for medical waste management, and comply with the following minimum requirements:

**1226.4.9.1 Location.** A location shall be provided for waste collection and storage with sufficient space based upon the volume of projected waste and length of anticipated storage. The location of compactors, balers, sharps containers and recycling container staging at docks or other waste removal areas shall comply with Section 1224.4.2.

**1226.4.9.2 Enclosure.** A lockable room or screened enclosure of at least 25 square feet ( $2.32 \text{ m}^2$ ) shall be provided for the washing and cleaning of garbage containers and for the storage of garbage, trash and other solid wastes.

**Exception:** This amount of space may not be required by the enforcing agency if there is a proposed method of handling and storage which requires a lesser amount of space. Additional space may be required by the enforcing agency when special operations or collection and disposal methods result in greater than usual accumulation of solid wastes.

The room or screened enclosure shall include the following:

1. **Floor and curb.** A concrete floor with a curb and with a drain connected to the sewer.
2. **Water.** Steam or hot water and cold water supplies in accordance with the California Plumbing Code.
3. **Size.** A minimum floor area of not less than 25 square feet ( $2.32 \text{ m}^2$ ), the least dimension of which shall be 4 feet (1219 mm). This amount of space may not be required by the enforcing agency if there is proposed a method of handling, storage or cleaning of containers which requires a lesser amount of space. Additional space may be required by the enforcing agency when special operations or collection and disposal methods result in greater than usual accumulation of solid wastes.

**1226.4.9.3 Waste holding room.** As an alternative to the requirements in Section 1226.4.9.2, a holding room for medical waste and garbage may be provided.

**Exception:** This amount of space may not be required by the enforcing agency if there is a proposed method of handling and storage which requires a lesser amount of space. Additional space may be required by the enforcing agency when special operations or collection and disposal methods result in greater than usual accumulation of solid wastes.

The waste holding room shall comply with the following:

1. The waste holding room shall be a minimum of 25 square feet, with the least dimension of which is 4 feet.
2. The waste holding room shall have 100 percent exhaust ventilation.
3. All finishes in the waste holding room shall comply with the requirements in Section 1224.4.11.
4. The waste holding room shall be immediately accessible to an exterior door.

**1226.4.10 Compactors.** Trash compactor systems shall meet the drainage and wash-down requirements under Section 1226.4.9.2, Items 1 and 2.

**Exception:** If a dumpster system is proposed, operational procedures for handling and storage must be specifically approved by the local health officials.

**1226.4.11 Housekeeping room.** Refer to Section 1224.4.15.

**1226.4.12 Laundry and trash chutes.** Gravity-type laundry and trash chutes shall comply with Section 1224.4.16.

**1226.4.13 Support areas for examination and treatment rooms.**

**1226.4.13.1 Nurse station(s).** If required, this area shall have space for counters and storage and shall have direct access to a handwashing stations (refer to Section 1224.3 for definition of handwashing station). It may be combined with or include centers for reception, charting and communication.

**1226.4.13.2 Medication station.** Provision shall be made for distribution of medications. This shall be done from a medicine preparation room or a self-contained medicine dispensing unit.

**1226.4.13.2.1 Medication preparation room or area.** When provided, the entry of the medication preparation room or area shall be under the visual control of the staff. This may be a part of the nurse station and shall include all of the following:

1. Work counter
2. Sink
3. Lockable refrigerator

and tested for resistance in accordance with Test Methods RE-1, RE-2 and RE-3 of ANSI/SPRI ES-1, except basic wind speed,  $V$ , shall be determined from Figures 1609.3(1) through 1609.3(4), as applicable.

**1504.6.1 Gutter securement for low-slope roofs.** Gutters that are used to secure the perimeter edge of the roof membrane on low-slope built-up, modified bitumen, and single-ply roofs, shall be designed, constructed and installed to resist wind loads in accordance with Section 1609 and shall be tested in accordance with Test Methods G-1 and G-2 of SPRI GT-1.

**1504.7 Impact resistance.** Roof coverings installed on low-slope roofs 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 FM 4470.

**1504.8 Wind resistance of aggregate-surfaced roofs.** Parapets shall be provided for aggregate surfaced roofs and shall comply with Table 1504.8. Such parapets shall be provided on the perimeter of the roof at all exterior sides except where an adjacent wall extends above the roof to a height at least equivalent to that required for the parapet. For roofs with differing surface elevations due to slope or sections at different elevations, the minimum parapet height shall be determined based on each roof surface elevation, and at no point shall the parapet height be less than that required by Table 1504.8.

**Exception:** Ballasted single-ply roof coverings shall be designed and installed in accordance with Section 1504.5.

TABLE 1504.8—MINIMUM REQUIRED PARAPET HEIGHT (INCHES) FOR AGGREGATE SURFACED ROOFS <sup>a, b, c, d, e</sup>																			
AGGREGATE SIZE	MEAN ROOF HEIGHT (feet)	WIND EXPOSURE AND BASIC WIND SPEED, $V$ (MPH)																	
		Exposure B										Exposure C <sup>f</sup>							
		≤ 95	100	105	110	115	120	130	140	150	≤ 95	100	105	110	115	120	130	140	150
ASTM D1863 (No. 7 or No. 67)	15	2	2	2	2	12	12	16	20	24	2	13	15	18	20	23	27	32	37
	20	2	2	2	2	12	14	18	22	26	12	15	17	19	22	24	29	34	39
	30	2	2	2	13	15	17	21	25	30	14	17	19	22	24	27	32	37	42
	50	12	12	14	16	18	21	25	30	35	17	19	22	25	28	30	36	41	47
	100	14	16	19	21	24	27	32	37	42	21	24	26	29	32	35	41	47	53
	150	17	19	22	25	27	30	36	41	46	23	26	29	32	35	38	44	50	56
ASTM D1863 (No. 6)	15	2	2	2	2	12	12	12	15	18	2	2	2	13	15	17	22	26	30
	20	2	2	2	2	12	12	13	17	21	2	2	12	15	17	19	23	28	32
	30	2	2	2	2	12	12	16	20	24	2	12	14	17	19	21	26	31	35
	50	12	12	12	12	14	16	20	24	28	12	15	17	19	22	24	29	34	39
	100	12	12	14	16	19	21	26	30	35	16	18	21	24	26	29	34	39	45
	150	12	14	17	19	22	24	29	34	39	18	21	23	26	29	32	37	43	48

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s.

a. Parapet height is measured vertically from the top surface of the coping down to the surface of the roof covering in the field of the roof adjacent to the parapet and outbound of any cant strip.

b. Interpolation shall be permitted for wind speed, mean roof height and parapet height. Extrapolation is not permitted.

c. Basic wind speed,  $V$ , and wind exposure shall be determined in accordance with Section 1609.

d. Where the minimum required parapet height is indicated to be 2 inches (51 mm), a gravel stop shall be permitted and shall extend not less than 2 inches (51 mm) from the roof surface and not less than the height of the aggregate.

e. The tabulated values apply only to conditions where the topographic factor ( $K_{zt}$ ) determined in accordance with Chapter 26 of ASCE 7 is 1.0 or where  $K_{zt}$  is incorporated in the basic wind speed in Section 1609.

f. For Exposure D, add 8 inches (203 mm) to the parapet height required for Exposure C and the parapet height shall not be less than 12 inches (305 mm).

## SECTION 1505—FIRE CLASSIFICATION

**[BF] 1505.1 General.** Fire classification of roof assemblies shall be in accordance with Section 1505. The minimum fire classification of roof assemblies installed on buildings shall comply with Table 1505.1 based on type of construction of the building. 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; *fire-retardant-treated shingles and shakes shall comply with Section 1505.6*.

**Exception:** Skylights and sloped glazing that comply with Chapter 24 or Section 2610.

[BF] TABLE 1505.1—MINIMUM ROOF ASSEMBLY CLASSIFICATION FOR TYPES OF CONSTRUCTION <sup>a, b</sup>									
IA	IB	IIA	IIB	IIIA	IIIB	IV	VA	VB	
B	B	B	C <sup>c</sup>	B	C <sup>c</sup>	B	B	C <sup>c</sup>	
For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m <sup>2</sup> .									
a. Unless otherwise required in accordance with the <i>California Wildland-Urban Interface Code</i> or due to the location of the building within a fire district in accordance with Appendix D.									
b. Nonclassified roof coverings shall be permitted on buildings of Group U occupancies, where there is a minimum fire-separation distance of 6 feet measured from the leading edge of the roof.									
c. Buildings that are not more than two stories above grade plane and having not more than 6,000 square feet of projected roof area and where there is a minimum 10-foot fire-separation distance from the leading edge of the roof to a lot line on all sides of the building, except for street fronts or public ways, shall be permitted to have roofs of No. 1 cedar or redwood shakes and No. 1 shingles constructed in accordance with Section 1505.7.									

**1505.1.1 Roofing requirements within Fire Hazard Severity Zones or in the Wildland-Urban Interface (WUI).** Roofing requirements for structures located within Fire Hazard Severity Zones or in the Wildland-Urban Interface (WUI) shall also comply with Chapter 5 of the California Wildland-Urban Interface Code.

**1505.1.2 Roof coverings within all other areas other than Fire Hazard Severity Zones or a Wildland-Urban Interface (WUI).** 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 fire classification.

**[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 noncombustible 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 or ASTM D4869, Type IV 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 assembly or 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 or ASTM E108 or UL 790 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 (BIPV) systems.** BIPV 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 (PV) panel systems.** Rooftop mounted photovoltaic (PV) panel systems shall be tested, listed and identified with a fire classification in accordance with UL 2703. Listed systems shall be installed in accordance with the manufacturer's installation instructions and their listing. The fire classification shall comply with Table 1505.1 based on the type of construction of the building.

**[BF] 1505.10 Landscaped and vegetative roofs.** Landscaped and vegetative roofs shall comply with Sections 1505.1 and 1507.15. Vegetative roofs 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 roof covering listing as required by Section 1505. 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.

**1507.12.3 Ballasted low-slope roofs.** Ballasted low-slope roofs shall be installed in accordance with this section and Section 1504.5. Stone used as ballast shall comply with ASTM D448 or ASTM D7655.

**1507.13 Sprayed polyurethane foam roofing.** The installation of sprayed polyurethane foam roofing shall comply with the provisions of this section.

**1507.13.1 Slope.** Sprayed polyurethane foam roofs shall have a design slope of not less than  $\frac{1}{4}$  unit vertical in 12 units horizontal (2-percent slope) for drainage.

**1507.13.2 Material standards.** Spray-applied polyurethane foam insulation shall comply with ASTM C1029 Type III or IV or ASTM D7425.

**1507.13.3 Application.** Foamed-in-place roof insulation shall be installed in accordance with the manufacturer's instructions. A liquid-applied protective coating that complies with Table 1507.13.3 shall be applied not less than 2 hours nor more than 72 hours following the application of the foam.

TABLE 1507.13.3—PROTECTIVE COATING MATERIAL STANDARDS	
MATERIAL	STANDARD
Acrylic coating	ASTM D6083
Silicone coating	ASTM D6694
Moisture-cured polyurethane coating	ASTM D6947

**1507.13.4 Foam plastics.** Foam plastic materials and installation shall comply with Chapter 26.

**1507.14 Liquid-applied roofing.** The installation of liquid-applied roofing shall comply with the provisions of this section.

**1507.14.1 Slope.** Liquid-applied roofing shall have a design slope of not less than  $\frac{1}{4}$  unit vertical in 12 units horizontal (2-percent slope).

**1507.14.2 Material standards.** Liquid-applied roofing shall comply with ASTM C836, ASTM C957 or ASTM D3468.

**1507.14.3 Application.** Liquid-applied roofing shall be installed in accordance with this chapter and the manufacturer's installation instructions.

**1507.15 Vegetative roofs and landscaped roofs.** Vegetative roofs and landscaped roofs shall comply with the requirements of this chapter, Section 1604.12 and the *California Fire Code*.

**[BF] 1507.15.1 Structural fire resistance.** The structural frame and roof construction supporting the load imposed on the roof by the vegetative roof or landscaped roofs shall comply with the fire-resistance-rating requirements of Table 601.

**1507.16 BIPV shingles.** The installation of building-integrated photovoltaic (BIPV) shingles shall comply with the provisions of this section.

**1507.16.1 Deck requirements.** BIPV shingles shall be applied to a solid or closely fitted deck, except where the shingles are specifically designed to be applied over spaced sheathing.

**1507.16.2 Deck slope.** BIPV shingles shall be installed on roof slopes of not less than 2 units vertical in 12 units horizontal (2:12).

**1507.16.3 Underlayment.** Underlayment shall comply with Section 1507.1.1.

**1507.16.4 Ice barrier.** Where required, ice barriers shall comply with Section 1507.1.2.

**1507.16.5 Fasteners.** Fasteners for BIPV shingles shall be galvanized, stainless steel, aluminum or copper roofing nails, minimum 12-gage [0.105 inch (2.67 mm)] shank with a minimum  $\frac{3}{8}$ -inch-diameter (9.5 mm) head, of a length to penetrate through the roofing materials and not less than  $\frac{3}{4}$  inch (19.1 mm) into the roof sheathing. Where the roof sheathing is less than  $\frac{3}{4}$  inch (19.1 mm) thick, the nails shall penetrate through the sheathing. Fasteners shall comply with ASTM F1667.

**1507.16.6 Material standards.** BIPV shingles shall be listed and labeled in accordance with UL 7103.

**1507.16.7 Attachment.** BIPV shingles shall be attached in accordance with the manufacturer's installation instructions.

**1507.16.8 Wind resistance.** BIPV shingles shall comply with the classification requirements of Table 1504.2 for the appropriate maximum basic wind speed.

**1507.16.9 Flashing.** Flashing for BIPV shingles shall be installed in accordance with the roof covering manufacturer's installation instructions to prevent water from entering the wall and roof through joints in copings, through moisture-permeable materials and at intersections with parapet walls and other penetrations through the roof plane.

**1507.17 Building-integrated photovoltaic roof panels.** The installation of BIPV roof panels shall comply with the provisions of this section.

**1507.17.1 Deck requirements.** BIPV roof panels shall be applied to a solid or closely fitted deck, except where the roof covering is specifically designed to be applied over spaced sheathing.

**1507.17.2 Deck slope.** BIPV roof panels shall be used only on roof slopes of 2 units vertical in 12 units horizontal (2:12) or greater.

**1507.17.3 Underlayment.** Underlayment shall comply with ASTM D226, ASTM D4869 or ASTM D6757.

**1507.17.4 Underlayment application.** Underlayment shall be applied shingle fashion, parallel to and starting from the eave, lapped 2 inches (51 mm) and fastened sufficiently to hold in place.

**1507.17.4.1 High-wind attachment.** Underlayment applied in areas subject to high winds [ $V_{asd}$  greater than 110 mph (49 m/s) as determined in accordance with Section 1609.3.1] shall be applied in accordance with the manufacturer's instructions. Fasteners shall be applied along the overlap at not more than 36 inches (914 mm) on center. Underlayment installed where  $V_{asd}$  is not less than 120 mph (54 m/s) shall comply with ASTM D226, Type III, ASTM D4869, Type IV or ASTM D6757. The underlayment shall be attached in a grid pattern of 12 inches (305 mm) between side laps with a 6-inch (152 mm) spacing at the side laps. The underlayment shall be applied in accordance with Section 1507.1.1 except all laps shall be not less than 4 inches (102 mm). Underlayment shall be attached using cap nails or cap staples. Caps shall be metal or plastic with a nominal head diameter of not less than 1 inch (25.4 mm). Metal caps shall have a thickness of not less than 0.010 inch (0.25 mm). Power-driven metal caps shall have a thickness of not less than 0.010 inch (0.25 mm). Thickness of the outside edge of plastic caps shall be not less than 0.035 inch (0.89 mm). The cap nail shank shall be not less than 0.083 inch (2.11 mm) for ring shank cap nails and 0.091 inch (2.31 mm) for smooth shank cap nails. Staple gage shall be not less than 21 gage [0.02 inch (0.81 mm)]. Cap nail shank and cap staple legs shall have a length sufficient to penetrate through-the-roof sheathing or not less than  $\frac{3}{4}$  inch (19.1 mm) into the roof sheathing.

**Exception:** As an alternative, adhered underlayment complying with ASTM D1970 shall be permitted.

**1507.17.4.2 Ice barrier.** In areas where there has been a history of ice forming along the eaves causing a back-up of water, an ice barrier consisting of not fewer than two layers of underlayment cemented together or of a self-adhering polymer modified bitumen sheet shall be used instead of normal underlayment and extend from the lowest edges of all roof surfaces to a point not less than 24 inches (610 mm) inside the exterior wall line of the building.

**Exception:** Detached accessory structures that do not contain conditioned floor area.

**1507.17.5 Material standards.** BIPV roof panels shall be listed and labeled in accordance with UL 7103.

**1507.17.6 Attachment.** BIPV roof panels shall be attached in accordance with the manufacturer's installation instructions.

**1507.17.7 Flashing.** Flashing for BIPV roof panels shall be installed in accordance with the roof covering manufacturer's installation instructions to prevent water from entering the wall and roof through joints in copings, through moisture-permeable materials and at intersections with parapet walls and other penetrations through the roof plane.

## SECTION 1508—ROOF INSULATION

**[BF] 1508.1 General.** The use of above-deck thermal insulation shall be permitted provided that such insulation is covered with an approved roof covering and passes the tests of NFPA 276 or UL 1256 when tested as an assembly.

**Exceptions:**

1. Foam plastic roof insulation shall conform to the material and installation requirements of Chapter 26.
2. Where a concrete or composite metal and concrete roof deck is used and the above-deck thermal insulation is covered with an approved roof covering.

**[BF] 1508.2 Material standards.** Above-deck thermal insulation board shall comply with the standards in Table 1508.2.

<b>[BF] TABLE 1508.2—MATERIAL STANDARDS FOR ROOF INSULATION</b>	
<b>MATERIAL</b>	<b>STANDARD</b>
Cellular glass board	ASTM C552 or ASTM C1902
Composite boards	ASTM C1289, Type III, IV, V or VII
Expanded polystyrene	ASTM C578
Extruded polystyrene	ASTM C578
Fiber-reinforced gypsum board	ASTM C1278
Glass-faced gypsum board	ASTM C1177
High-density polyisocyanurate board	ASTM C1289, Type II, Class 4
Mineral fiber insulation board	ASTM C726
Perlite board	ASTM C728
Polyisocyanurate board	ASTM C1289, Type I or II
Wood fiberboard	ASTM C208, Type II

## SECTION 1509—ROOF COATINGS

**1509.1 General.** The installation of a roof coating on a roof covering shall comply with the requirements of Section 1505 and this section.

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## HISTORY NOTE APPENDIX

### 2025 California Building Code California Code of Regulations, Title 24, Part 2 Volume 1

#### HISTORY:

For prior code history, see the History Note Appendix to the *California Building Code*, 2022 Triennial Edition, effective January 1, 2023.

1. (BSC 05/24, DSA-SS 05/24, DSA-AC 01/24, HCD 05/24, HCD 1-AC 01/24, SFM 04/24, DCA 01/24, OSHPD 04/24 and OSHPD 05/24)—Adoption by reference of the 2024 *International Building Code* with necessary amendments to become the 2025 *California Building Code*, and repeal of the 2021 edition of the *International Building Code*. Approved by the California Building Standards Commission on February 26, 2025, filed with Secretary of State on March 7, 2025, and effective on January 1, 2026.
2. Erratum to address miscellaneous corrections in Matrix Adoption Tables and throughout Chapters 1, 2, 3, 4, 5, 7, 9, 10, 11B, 12 and 15, effective January 1, 2026.

