REVISION RECORD
FOR THE STATE OF CALIFORNIA

ERRATA

January 1, 2023

2022 Title 24, Part 2, Vol. 1, California Building Code

General Information:

1. The date of this erratum is for identification purposes only. See the History Note Appendix on the back side or accompanying page.
2. This erratum is issued by the California Building Standards Commission to correct nonsubstantive printing errors or omissions in the 2022 *California Building Code*, California Code of Regulations, Title 24, Part 2. 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 nonregulatory 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 You may wish to retain the superseded material with this revision record so that the prior wording of any section can be easily ascertained.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, Vol. 1

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HIST-1 and HIST-2	HIST-1 and HIST-2

Regulations, Title 25, Division 1, Chapter 2, commencing with Section 1000.

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

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

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

SECTION 1.8.10
OTHER BUILDING REGULATIONS

1.8.10.1 Existing structures. *Notwithstanding other provisions of law, the replacement, retention and extension of original materials and the use of original methods of construction for any existing building or accessory structure, or portions thereof, shall be permitted in accordance with the provisions of this code and the California Existing Building Code, as adopted by the Department of Housing and Community Development. For additional information, see California Health and Safety Code, Sections 17912, 17920.3, 17922 and 17958.8.*

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

SECTION 1.9
DIVISION OF THE STATE ARCHITECT

1.9.1 Division of the State Architect—Access Compliance.

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

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

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

Some of these regulations may be more stringent than state law in order to meet the federal requirement.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

1.9.1.4 Enforcing agency.

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

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

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

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

1.9.1.6 Authority cited—*Government Code Section 4450.*

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

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

1.9.2 Division of the State Architect—Structural Safety.

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

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

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

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

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

1.9.2.1.1 Applicable administrative standards.

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

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

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

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

2.1. *Sections 1.1 and 1.9.2.1 of Chapter 1, Division I.*

2.2. *Sections 102.1, 102.2, 102.3, 102.4, 102.5, 104.9, 104.10, 104.11, 106.1, 107.2.5 and 110.3.6 of Chapter 1, Division II.*

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

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

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

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

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

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

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

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

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

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

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

Authority cited—*Education Code Section 81053.*

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

1.9.2.2.1 Applicable administrative standards.

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

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

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

2.1. *Sections 1.1 and 1.9.2 of Chapter 1, Division I.*

2.2. *Sections 102.1, 102.2, 102.3, 102.4, 102.5, 104.9, 104.10, 104.11, 106.1, 107.2.5 and 110.3.6 of Chapter 1, Division II.*

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

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

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

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

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

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

SECTION 1.10
OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT

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

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

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

1.10.1.1 Applicable administrative standards.

1. *Title 24, Part 1, California Code of Regulations: Chapters 6 and 7.*

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

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

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

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

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

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

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

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

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

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

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

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

Application—*[OSHPD 2A] Skilled nursing facility and intermediate care facility buildings of single-story, wood frame or light steel frame construction or buildings of single-story, wood-frame or light steel frame construction where only skilled nursing or intermediate care services are provided if the building is separated from a building housing other patients of the health facility receiving higher levels of care. [OSHPD 2B] Skilled nursing facility and intermediate care facility buildings of all other types. [OSHPD 2] The OSHPD 2 designation applies to both 2A and 2B.*

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

1.10.2.1 Applicable administrative standards.

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

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

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

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

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

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

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

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

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

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

Enforcing agency—*Local building department.*

1.10.3.1 Applicable administrative standards.

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

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

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

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

Chapter 12.

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

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

CHAPTER 2
DEFINITIONS

User notes:

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

Code development reminder: *Code change proposals to sections preceded by the designation [A] or [BS] will be considered by one of the code development committees meeting during the 2022 (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 65852.2)*

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

[BF] AIR-IMPERMEABLE INSULATION. An insulation having an air permeance equal to or less than 0.02 l/s × 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

[BG] PROSCENIUM WALL. The wall that separates the stage from the auditorium or assembly seating area.

PROTECTIVE SOCIAL CARE FACILITY. [SFM] *A facility housing persons, who are referred, placed or caused to be placed in the facility, by any governmental agency and for whom the services, or a portion thereof, are paid for by any governmental agency. These occupancies shall include, but are not limited to, those commonly referred to as "assisted living facilities," "social rehabilitation facilities," "certified family care homes," "out-of-home placement facilities," and "halfway houses."*

PSYCHIATRIC HOSPITALS. See "Hospitals and psychiatric hospitals."

PUBLIC BUILDING OR FACILITY. [DSA-AC] *A building or facility or portion of a building or facility designed, constructed, or altered by, on behalf of, or for the use of a public entity subject to Chapter 1, Section 1.9.1.1.*

PUBLIC ENTITY. *Any state or local government; any department, agency, special-purpose district, or other instrumentality of a state or local government.*

[BE] PUBLIC ENTRANCE. An entrance that is not a service entrance or a restricted entrance.

PUBLIC HOUSING. [DSA-AC & HCD 1-AC] *Housing facilities constructed or altered by, for, or on behalf of a public entity, or constructed or altered as part of a public entity's program to provide housing pursuant to United States Code of Federal Regulations, 28 CFR Part 35, Section 35.102(a), including but not limited to the following:*

1. *One- or two-family dwelling units or congregate residences;*
2. *Buildings or complexes with three or more residential dwelling units;*
3. *Homeless shelters, group homes, halfway houses and similar social service establishments;*
4. *Transient lodging, such as hotels, motels, hostels and other facilities providing accommodations of a short-term nature of not more than 30 days duration;*
5. *Housing at a place of education, such as housing on or serving a public school, public college or public university.*

Note: *A public entity's program to provide housing may include but is not limited to: the allocation of local, state or federal financial assistance, Community Development Block Grants, Low Income Housing Tax Credits, the California Multifamily Housing Program, loan agreements and housing bonds. Examples that are not considered a public entity's program to provide housing may include but are not limited to: density bonuses, the receipt of public funds for the installation of energy efficiency features, seismic strengthening, water conservation and fire safety features. For additional information see "Guide to Public Housing Regulated in Chapter 11B of the California Building Code" and the "California Access Compliance Advisory Reference Manual" available on the Division of the State Architect's website.*

PUBLIC POOL. *A pool other than a private pool.*

PUBLIC USE. [DSA-AC] *Interior or exterior rooms, spaces or elements that are made available to the public. Public use may be provided at a building or facility that is privately or publicly owned. Private interior or exterior rooms, spaces or elements associated with a residential dwelling unit provided by a public housing program or in a public housing facility are not public use areas and shall not be required to be made available to the public.*

[A] PUBLIC WAY. A street, alley or other parcel of land open to the outside air leading to a street, that has been deeded, dedicated or otherwise permanently appropriated to the public for public use and which has a clear width and height of not less than 10 feet (3048 mm).

PUBLIC-USE AREAS. [HCD 1-AC] *Interior or exterior rooms or spaces of a building or facility that are made available to the general public and do not include common use areas. Public use areas may be provided at a building or facility that is privately or publicly owned.*

[F] PYROPHORIC. A chemical with an auto-ignition temperature in air, at or below a temperature of 130°F (54.4°C).

[F] PYROTECHNIC COMPOSITION. A chemical mixture that produces visible light displays or sounds through a self-propagating, heat-releasing chemical reaction which is initiated by ignition.

QUALIFIED HISTORIC BUILDING OR FACILITY. [DSA-AC] *A building or facility that is listed in or eligible for listing in the National Register of Historic Places, or designated as historic under an appropriate State or local law. See C.C.R. Title 24, Part 8.*

QUALITY ASSURANCE (QA). [DSA-SS, DSA-SS/CC, OSHPD 1R, 1, 2, 4 & 5] *Special inspections and testing provided by an approved agency employed by the Owner. Project specific testing required by approved construction documents shall be performed by the approved agency responsible for Quality Assurance (QA), unless approved otherwise by the building official.*

QUALITY CONTROL (QC). [DSA-SS, DSA-SS/CC, OSHPD 1R, 1, 2, 4 & 5] *Inspections and materials/functionality testing provided by the fabricator, erector, manufacturer or other responsible contractor as applicable.*

[BF] RADIANT BARRIER. A material having a low-emittance surface of 0.1 or less installed in building assemblies.

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

[BE] RAMP. A walking surface that has a running slope steeper than one unit vertical in 20 units horizontal (5-percent slope).

RAMP, EXIT ACCESS. See "Exit access ramp."

RAMP, EXTERIOR EXIT. See "Exterior exit ramp."

RAMP, INTERIOR EXIT. See "Interior exit ramp."

[BG] RAMP-ACCESS OPEN PARKING GARAGES. Open parking garages employing a series of continuously rising floors or a series of interconnecting ramps between floors permitting the movement of vehicles under their own power from and to the street level.

REASONABLE PORTION. [DSA-AC] *That segment of a building, facility, area, space or condition, which would normally be necessary if the activity therein is to be accessible by persons with disabilities.*

RECESSED STEPS. *A riser/tread or series of risers/treads extending down into the deck with the bottom riser or tread terminating at the pool wall (thus creating a "stairwell").*

RECESSED TREADS. *A series of vertically spaced cavities in the pool wall creating tread areas for step holes.*

RECIRCULATION SYSTEM. *The interconnected system traversed by the recirculated water from the pool until it is returned to the pool, i.e., from the pool through the collector or surge tank, recirculation pump, filters, chemical treatment and heater (if provided), and returned to the pool.*

RECOMMEND. [DSA-AC, HCD 1 & HCD 2] *Does not require mandatory acceptance, but identifies a suggested action that shall be considered for the purpose of providing a greater degree of accessibility to persons with disabilities.*

[A] RECORD DRAWINGS. Drawings ("as builts") that document the location of all devices, appliances, wiring sequences, wiring methods and connections of the components of a fire alarm system as installed.

[BF] REFLECTIVE PLASTIC CORE INSULATION. An insulation material packaged in rolls, that is less than $^1/_2$ inch (12.7 mm) thick, with not less than one exterior low-emittance surface (0.1 or less) and a core material containing voids or cells.

[A] REGISTERED DESIGN PROFESSIONAL. An individual who is registered or licensed to practice their respective design profession as defined by the statutory requirements of the professional registration laws of the state or jurisdiction in which the project is to be constructed.

[A] REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A registered design professional engaged by the owner or the owner's authorized agent to review and coordinate certain aspects of the project, as determined by the building official, for compatibility with the design of the building or structure, including submittal documents prepared by others, deferred submittal documents and phased submittal documents.

[BG] RELIGIOUS WORSHIP, PLACE OF. A building or portion thereof intended for the performance of religious services.

[A] RELOCATABLE BUILDING. A partially or completely assembled building constructed and designed to be reused multiple times and transported to different building sites.

RELOCATABLE BUILDING (PUBLIC SCHOOL). *Any building with an integral floor structure which is capable of being readily moved. (See Education Code Section 17350.) Relocatable buildings that are to be placed on substandard foundations not complying with the requirements of Part 2, Title 24, C.C.R., require a statement from the school district stating that the durability requirements for those foundations may be waived and acknowledging the temporary nature of the foundations.*

REMODELING. [DSA-AC] *See "Alteration."*

REMOVED FROM ACUTE CARE SERVICE. [OSHPD 1R] *Buildings that previously provided basic and/or supplemental services, as defined in Section 1224.3 that have been removed from acute care service in compliance with Part 10 California Existing Building Code Chapter 3A through a project approved by OSHPD, and remain under the jurisdiction of OSHPD.*

[A] REPAIR. The reconstruction, replacement or renewal of any part of an existing building for the purpose of its maintenance or to correct damage.

[BG] REPAIR GARAGE. A building, structure or portion thereof used for servicing or repairing motor vehicles.

[BS] REROOFING. The process of recovering or replacing an existing roof covering. See "Roof recover" and "Roof replacement."

[BG] RESIDENTIAL AIRCRAFT HANGAR. An accessory building less than 2,000 square feet (186 m^2) and 20 feet (6096 mm) in building height constructed on a one- or two-family property where aircraft are stored. Such use will be considered as a residential accessory use incidental to the dwelling.

RESIDENTIAL CARE FACILITY FOR THE CHRONICALLY ILL (RCF/CI). *As termed, means a housing arrangement with a maximum capacity of 25 residents that provides a range of services to residents who have chronic, life-threatening illnesses.*

RESIDENTIAL CARE FACILITY FOR THE ELDERLY (RCFE). *As defined in Health and Safety Code Section 1569.2, shall mean a facility with a housing arrangement chosen voluntarily by persons 60 years of age or over, or their authorized representative, where varying levels and intensities of care and supervision, protective supervision or personal care are provided, based on their varying needs, as determined in order to be admitted and to remain in the facility. Persons under 60 years of age with compatible needs, as determined by the Department of Social Services in regulations, may be allowed to be admitted or retained in a residential-care facility for the elderly.*

Pursuant to Health and Safety Code Section 13133, regulations of the state fire marshal pertaining to Group R-2.1, Occupancies classified as residential facilities (RF) and residential- care facilities for the elderly (RCFE) shall apply uniformly throughout the state and no city, county, city and county, including a charter city or charter county, or fire protection district shall adopt or enforce any ordinance or local rule or regulation relating to fire and panic safety which is in consistent with these regulations. A city, county, city and county, including a charter city or charter county may pursuant to Health and Safety Code Section 13143.5, or a fire protection district may pursuant to Health and Safety Code Section 13869.7, adopt standards more stringent than those adopted by the state fire marshal that are reasonably necessary to accommodate local climate, geological or topographical conditions relating to roof coverings for residential-care facilities for the elderly.

vapor, or more than 2 milligrams per liter but not more than 20 milligrams per liter of mist, fume or dust, when administered by continuous inhalation for 1 hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

TRANSFER DEVICE. [DSA-AC] *Equipment designed to facilitate the transfer of a person from a wheelchair or other mobility aid to and from an amusement ride seat.*

[BG] TRANSIENT. Occupancy of a dwelling unit or sleeping unit for not more than 30 days.

[BG] TRANSIENT AIRCRAFT. Aircraft based at another location and that is at the transient location for not more than 90 days.

TRANSIENT LODGING. *A building or facility containing one or more guest room(s) for sleeping that provides accommodations that are primarily short-term in nature (generally 30 days or less). Transient lodging does not include residential dwelling units intended to be used as a residence, inpatient medical care facilities, licensed long-term care facilities, detention or correctional facilities, or private buildings or facilities that contain no more than five rooms for rent or hire and that are actually occupied by the proprietor as the residence of such proprietor.*

[DSA-AC] *See also the definition of Place of Public Accommodation.*

TRANSIT BOARDING PLATFORM. [DSA-AC] *A horizontal, generally level surface, whether raised above, recessed below or level with a transit rail, from which persons embark/disembark a fixed rail vehicle.*

TRANSITION PLATE. [DSA-AC] *A sloping pedestrian walking surface located at the end(s) of a gangway.*

TREATED WOOD. See "Fire-retardant-treated wood" and "Preservative-treated wood."

TREAD. *The horizontal part of a step.*

TREATMENT OF WATER. *The process of conditioning and disinfection of pool water by means of a combination of filtration and the addition of chemicals to the water.*

[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.*

[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.*

[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 (2.9×10^{-10} kg/Pa $\times$ s $\times$ 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 < perm ≤ 1.0 perm.

Class III: 1.0 < perm ≤ 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. An assembly of interacting components designed to waterproof a building's top surface that includes, by design, vegetation and related landscape elements.

[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. *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.

[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.

2. Doors or grilles shall not be brought to the closed position when there are 10 or more persons occupying spaces served by a single exit or 50 or more persons occupying spaces served by more than one exit.
3. The doors or grilles shall be openable from within without the use of any special knowledge or effort where the space is occupied.
4. Where two or more exits are required, not more than one-half of the exits shall be permitted to include either a horizontal sliding or vertical rolling grille or door.

SECTION 403
HIGH-RISE BUILDINGS *AND GROUP I-2 OCCUPANCIES HAVING OCCUPIED FLOORS LOCATED MORE THAN 75 FEET ABOVE THE LOWEST LEVEL OF FIRE DEPARTMENT VEHICLE ACCESS*

403.1 Applicability. *New high-rise buildings (see Section 202 for definition of a high-rise) and new Group I-2 occupancies having occupied floors located more than 75 feet above the lowest level of fire department vehicle access* shall comply with Sections 403.2 through *403.7.*

Exceptions: The provisions of Sections 403.2 through *403.7* shall not apply to the following buildings and structures:

1. Airport traffic control towers in accordance with Section 412.2.
2. Open parking garages in accordance with Section 406.5.
3. The portion of a building containing a Group A-5 occupancy in accordance with Section 303.6.
4. Special industrial occupancies in accordance with Section 503.1.1.

➡

5. *Buildings such as power plants, lookout towers, steeples, grain houses and similar structures with noncontinuous human occupancy, when so determined by the enforcing agency.*

For existing high-rise buildings and for existing Group R occupancies, see California Fire Code Chapter 11 and California Existing Building Code.

For the purpose of this section, in determining the level from which the highest occupied floor is to be measured, the enforcing agency should exercise reasonable judgment, including consideration of overall accessibility to the building by fire department personnel and vehicular equipment. When a building is located on sloping terrain and there is building access on more than one level, the enforcing agency may select the level that provides the most logical and adequate fire department access.

403.2 Construction. The construction of high-rise buildings shall comply with the provisions of Sections 403.2.1 through 403.2.3.

403.2.1 Reduction in fire-resistance rating. The fire-resistance rating reductions specified in Sections 403.2.1.1 and 403.2.1.2 shall be allowed in buildings that have sprinkler control valves equipped with supervisory initiating devices and water-flow initiating devices for each floor.

Exception: *Buildings, or portions of buildings, classified as a Group H-1, H-2 or H-3 occupancy.*

403.2.1.1 Type of construction. The following reductions in the minimum fire-resistance rating of the building elements in TABLE 601 shall be permitted as follows:

1. For buildings not greater than 420 feet (128 m) in building height, the fire-resistance rating of the building elements in Type IA construction shall be permitted to be reduced to the minimum fire-resistance ratings for the building elements in Type IB.

   Exception: The required fire-resistance rating of *the primary structural frame* columns supporting floors shall not be reduced.

2. In other than Group F-1, H-2, H-3, H-5, M and S-1 occupancies, the fire-resistance rating of the building elements in Type IB construction shall be permitted to be reduced to the fire-resistance ratings in Type IIA.

   Exception: *The required fire-resistance rating of the primary structural frame shall not be permitted to be reduced.*

3. The building height and building area limitations of a building containing building elements with reduced fire-resistance ratings shall be permitted to be the same as the building without such reductions.

403.2.1.2 Shaft enclosures. For buildings not greater than 420 feet (128 m) in building height, the required fire-resistance rating of the fire barriers enclosing vertical shafts, other than interior exit stairway and elevator hoistway enclosures, is permitted to be reduced to 1 hour where automatic sprinklers are installed within the shafts at the top and at alternate floor levels.

[BS] 403.2.2 Structural integrity of interior exit stairways and elevator hoistway enclosures. For high-rise buildings of Risk Category III or IV in accordance with Section 1604.5, and for all buildings that are more than 420 feet (128 m) in building height, enclosures for interior exit stairways and elevator hoistway enclosures shall comply with Sections 403.2.2.1 through 403.2.2.4.

[BS] 403.2.2.1 Wall assembly materials—soft body impact. The panels making up the enclosures for interior exit stairways and elevator hoistway enclosures shall meet or exceed Soft Body Impact Classification Level 2 as measured by the test method described in

ASTM C1629/C1629M when tested from the exterior side of the enclosure.

[BS] 403.2.2.2 Wall assembly materials—hard body impact. The panels making up the enclosures for interior exit stairways and elevator hoistway enclosures that are not exposed to the interior of the enclosure shall be in accordance with one of the following:

1. The wall assembly shall incorporate not fewer than two layers of impact-resistant panels, each of which meets or exceeds Hard Body Impact Classification Level 2 as measured by the test method described in ASTM C1629/C1629M.
2. The wall assembly shall incorporate not fewer than one layer of impact-resistant panels that meet or exceed Hard Body Impact Classification Level 3 as measured by the test method described in ASTM C1629/C1629M.
3. The wall assembly incorporates multiple layers of any material, tested in tandem, that meets or exceeds Hard Body Impact Classification Level 3 as measured by the test method described in ASTM C1629/C1629M.

[BS] 403.2.2.3 Concrete and masonry walls. Concrete or masonry walls shall be deemed to satisfy the requirements of Sections 403.2.2.1 and 403.2.2.2.

[BS] 403.2.2.4 Other wall assemblies. Any other wall assembly that provides impact resistance equivalent to that required by Sections 403.2.2.1 for Soft Body Impact Classification Level 2 and 403.2.2.2 for Hard Body Impact Classification Level 3, as measured by the test method described in ASTM C1629/C1629M, shall be permitted.

403.2.3 Sprayed fire-resistant materials (SFRM). The bond strength of the SFRM installed throughout the building shall be in accordance with Table 403.2.3.

TABLE 403.2.3
MINIMUM BOND STRENGTH

HEIGHT OF BUILDING[a]	SFRM MINIMUM BOND STRENGTH
Up to 420 feet	430 psf
Greater than 420 feet	1,000 psf

For SI: 1 foot = 304.8 mm, 1 pound per square foot (psf) = 0.0479 kW/m^2.
a. Above the lowest level of fire department vehicle access.

[F] 403.3 Automatic sprinkler system. Buildings and structures shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 and a secondary water supply where required by Section 403.3.3. *A sprinkler water-flow alarm-initiating device and a control valve with a supervisory signal-initiating device shall be provided at the lateral connection to the riser for each floor.*

Exception: An automatic sprinkler system shall not be required in spaces or areas of telecommunications equipment buildings used exclusively for telecommunications equipment, associated electrical power distribution equipment, batteries and standby engines, provided that those spaces or areas are equipped throughout with an automatic fire detection system in accordance with Section 907.2 and are separated from the remainder of the building by not less than 1-hour fire barriers constructed in accordance with Section 707 or not less than 2-hour horizontal assemblies constructed in accordance with Section 711, or both.

[F] 403.3.1 Number of sprinkler *system* risers and system design. Each sprinkler system *serving a floor* in buildings that are more than 420 feet (128 m) in building height shall be *connected to a minimum of* two *sprinkler* risers *or combination standpipe system* risers *located in separate shafts. Each sprinkler system shall be hydraulically designed so that when one connection is shut down, the other connection shall be capable of supplying the sprinkler system design demand.*

[F] 403.3.1.1 Riser location. Sprinkler risers shall be placed in interior exit stairways and ramps that are remotely located in accordance with Section 1007.1.

[F] 403.3.2 Water supply to required fire pumps. In all buildings *having an occupied floor* that *is* more than *120* feet (*36 576 mm*) *above the lowest level of fire department vehicle access,* required fire pumps shall be supplied by connections to not fewer than two water mains located in different streets. Separate supply piping shall be provided between each connection to the water main and the pumps. Each connection and the supply piping between the connection and the pumps shall be sized to supply the flow and pressure required for the pumps to operate.

Exception: Two connections to the same main shall be permitted provided that the main is valved such that an interruption can be isolated so that the water supply will continue without interruption through not fewer than one of the connections.

403.3.2.1 Fire pumps. *Redundant fire pump systems shall be required for high-rise buildings having an occupied floor more than 200 feet above the lowest level of fire department vehicle access. Each fire pump system shall be capable of automatically supplying the required demand for the automatic sprinkler and standpipe systems.*

[F] 403.3.3 Secondary water supply. An automatic secondary on-site water supply having a *usable* capacity *of* not less than the hydraulically calculated sprinkler demand, including the hose stream requirement, shall be provided for high-rise buildings *and Group I-2 occupancies having occupied floors located more than 75 ft above the lowest level of fire department vehicle access* assigned to Seismic Design Category C, D, E or F as determined by Section 1613. An additional fire pump shall not be required for the secondary water supply unless needed to provide the minimum design intake pressure at the suction side of the fire pump supplying the automatic sprinkler system. The secondary water supply shall have a duration of not less than 30 minutes as determined by the occupancy hazard classification in accordance with NFPA 13. *The Class I standpipe 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.

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.

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.

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.

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 simultaneously without unlatching upon a signal from the fire command center. *Upon failure of electrical power to the locking mechanism, the door shall unlock.*

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.

403.5.4 Smokeproof enclosures. *Every exit enclosure in high-rise buildings shall comply with Sections 909.20 and 1023.11.* 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 1023.11.

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.*

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* Condition 2, 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.

[F] 406.8.2 Gas detection system. Repair garages used for repair of vehicles fueled by nonodorized gases including but not limited to hydrogen and nonodorized LNG, shall be provided with a gas detection system that complies with Section 916. The gas detection system shall be designed to detect leakage of nonodorized gaseous fuel. Where lubrication or chassis service pits are provided in garages used for repairing nonodorized LNG-fueled vehicles, gas sensors shall be provided in such pits.

[F] 406.8.2.1 System activation. Activation of a gas detection alarm shall result in all of the following:

1. Initiation of distinct audible and visual alarm signals in the repair garage, where the ventilation system is interlocked with gas detection.
2. Deactivation of all heating systems located in the repair garage.
3. Activation of the mechanical ventilation system, where the system is interlocked with gas detection.

[F] 406.8.2.2 Failure of the gas detection system. Failure of the gas detection system shall automatically deactivate the heating system, activate the mechanical ventilation system where the system is interlocked with the gas detection system, and cause a trouble signal to sound at an approved location.

[F] 406.8.3 Automatic sprinkler system. A repair garage shall be equipped with an automatic sprinkler system in accordance with Section 903.2.9.1.

406.9 Electric vehicle. [SFM]

406.9.1 Charging. *In any building or interior area used for charging electric vehicles, electrical equipment shall be installed in accordance with the California Electrical Code.*

406.9.2 Ventilation. *Mechanical exhaust ventilation, when required by the California Electrical Code shall be provided at a rate as required by Article 625 or as required by Section 1203 of the California Building Code whichever is greater. The ventilation system shall include both the supply and exhaust equipment and shall be permanently installed and located to intake supply air from the outdoors, and vent the exhaust directly to, the outdoors without conducting the exhaust air through other spaces within the building.*

Exception: *Positive pressure ventilation systems shall only be allowed in buildings or areas that have been designed and approved for that application.*

406.9.3 Electrical interface. *The electrical supply circuit to electrically powered mechanical ventilation equipment shall be interlocked with the recharging equipment used to supply the vehicle(s) being charged, and shall remain energized during the entire charging cycle. Electric 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 *AND GROUP I-2.1*

407.1 General. Occupancies in Group I-2 *and I-2.1* shall comply with the provisions of Sections 407.1 through *407.13* and other applicable provisions of this code.

407.1.1 Construction. *Group I-2 occupancies wherein mental health patients are restrained shall be housed in buildings of Type IA or Type IB construction.*

Exception: *Occupancies in Group I-2 wherein mental health patients are restrained are permitted to be housed in one-story buildings of Type IIA, Type IIIA or Type VA construction provided the floor area does not exceed 5,200 square feet (483 m^2) between fire walls of two-hour fire-resistive construction with openings protected by fire assemblies having a $1^1/_2$-hour fire protection rating.*

407.2 Corridors continuity and separation. Corridors in occupancies in Group I-2 *and I-2.1* shall be continuous to the exits and shall be separated from other areas in accordance with Section 407.3 except spaces conforming to Sections 407.2.1 through *407.2.5*.

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 *smoke* detection system installed in accordance with Section 907.
3. The corridors onto which the spaces open, in the same smoke compartment, are protected by an automatic *smoke* detection system installed in accordance with Section 907, *and* the smoke compartment in which the spaces are located is equipped throughout with quick-response sprinklers in accordance with Section 903.3.2.
4. The space is arranged so as not to obstruct access to the required exits.
5. *Each space is located to permit direct visual supervision by the facility staff.*

407.2.2 *Nurse* stations. Spaces for care providers', supervisory staff, doctors' and nurses' charting, communications and related clerical areas shall be permit-

ted 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^2).
2. The area is located to permit supervision by the facility staff.
3. The area is arranged so as not to obstruct any access to the required exits.
4. The area is equipped with an automatic *smoke* detection system installed in accordance with Section 907.2.
5. Not more than one such space is permitted in any one smoke compartment.
6. The walls and ceilings of the space are constructed as required for corridors.

407.2.4 Gift shops. Gift shops and associated storage that are less than 500 square feet (455 m^2) 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, Condition 1 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 the *California Mechanical Code* shall be provided over cooktops and ranges.
3. Cooktops and ranges shall be protected in accordance with Section 904.14.
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 within a 30-foot (9144 mm) distance of travel 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*.

408.3.10 Travel distance. *The travel distance may be increased to 300 feet for portions of Group I-3 occupancies open only to staff or where inmates are escorted at all times by staff.*

408.3.11 Number of exits required. *In temporary holding areas of noncombustible construction, a second means of egress is required when the occupant load is greater than 20.*

408.3.12 Custody station. *Spaces for custody stations, communications and related clerical areas shall be permitted to be open to, or located within the corridor, provided the required construction along the perimeter of the corridor is maintained. Construction of custody stations or portions of custody stations, within the envelope of the corridor, is not required to be fire-resistance rated. These provisions shall also apply to an enclosed custody station within the corridor.*

TABLE 408.3.13
MAXIMUM FLOOR AREA ALLOWANCES FOR I-3 FACILITIES[c]

FUNCTION OF SPACE	OCCUPANT LOAD FACTOR
Detention facilities[a,b]	
Housing pod	*Number of beds and staff*
Refuge area	*6 net*
Safe disposal area	*7 net*
Instructional classroom	*20 net*
Exercise yard or rooms	*50 gross*
Dorms sleeping area	*50 gross*
Holding cell	*10 ft^2 per person/40 ft^2 minimum*
Bench seating	*18 inches per person*

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

a. Temporary holding cells, rooms or areas shall be calculated based on policies and procedures approved by the authority having jurisdiction. See 408.3.11 for number of exits required.

b. Program rooms, day rooms and recreational yards which are dedicated to a housing pod or unit are not factored into the total occupant load of the building. Exiting from individual rooms shall meet the egress requirements of Chapter 10.

c. Refer to Chapter 10, Section 1004 or elsewhere in the code for specific requirements based on type of detention facility.

408.4 Locks. Egress doors are permitted to be locked in accordance with the applicable use condition. Doors from a refuge area to the outside are permitted to be locked with a key in lieu of locking methods described in Section 408.4.1. The keys to unlock the exterior doors shall be available at all times and the locks shall be operable from both sides of the door. *Security hardware may be used on any fire-rated door.*

408.4.1 Remote release. Remote release of locks on doors in a means of egress shall be provided with reliable means of operation, remote from the resident living areas, to release locks on all required doors. In Occupancy Condition 3 or 4, the arrangement, accessibility and security of the release mechanisms required for egress shall be such that with the minimum available staff at any time, the lock mechanisms are capable of being released within 2 minutes.

Exception: Provisions for remote locking and unlocking of occupied rooms in Occupancy Condition 4 are not required provided that not more than 10 locks are necessary to be unlocked in order to move occupants from one smoke compartment to a refuge area within 3 minutes. The opening of necessary locks shall be accomplished with not more than two separate keys.

[F] 408.4.2 Power-operated doors and locks. Power-operated sliding doors or power-operated locks for swinging doors shall be operable by a manual release mechanism at the door. Emergency power shall be provided for the doors and locks in accordance with Section 2702.

Exceptions:

1. Emergency power is not required in facilities with 10 or fewer locks complying with the exception to Section 408.4.1.
2. Emergency power is not required where remote mechanical operating releases are provided.

408.4.3 Redundant operation. Remote release, mechanically operated sliding doors or remote release, mechanically operated locks shall be provided with a mechanically operated release mechanism at each door, *and* shall be provided with a redundant remote release control.

408.4.4 Relock capability. Doors remotely unlocked under emergency conditions shall not automatically relock when closed unless specific action is taken at the remote location to enable doors to relock.

408.5 Protection of vertical openings. Any vertical opening shall be protected by a shaft enclosure in accordance with Section 713, or shall be in accordance with Section 408.5.1.

408.5.1 Floor openings. *The open space in front of a cell tier and connected chases, not exceeding two tiers in height, shall not be considered a vertical shaft and need not meet the fire-resistive shaft enclosure requirements of Section 713.*

408.5.2 Shaft openings in communicating floor levels. Where a floor opening is permitted between communicating floor levels of a housing unit in accordance with Section 408.5.1, plumbing chases serving vertically stacked individual cells contained with the housing unit shall be permitted without a shaft enclosure.

408.6 Smoke barrier. Occupancies in Group I-3 shall have smoke barriers complying with Sections 408.6 and 709 to divide every story occupied by residents for sleeping, or any other story having an occupant load of 50 or more persons, into not fewer than two smoke compartments.

Exception: Spaces having a direct exit to one of the following, provided that the locking arrangement of the doors involved complies with the requirements for doors at the smoke barrier for the use condition involved:

1. A public way.
2. A building separated from the resident housing area by a 2-hour fire-resistance-rated assembly or 50 feet (15 240 mm) of open space.

3. A secured yard or court having a holding space 50 feet (15 240 mm) from the housing area that provides 6 square feet (0.56 m^2) or more of refuge area per occupant, including residents, staff and visitors.

4. Holding facility.

408.6.1 Smoke compartments. The number of residents in any smoke compartment shall be not more than 200. The distance of travel to a door in a smoke barrier from any room door required as exit access shall be not greater than 150 feet (45 720 mm). The distance of travel to a door in a smoke barrier from any point in a room shall be not greater than 200 feet (60 960 mm).

Exception: *The travel distance may be increased by 50 feet from areas open only to the staff.*

408.6.2 Refuge area. Not less than 6 net square feet (0.56 m^2) per occupant shall be provided on each side of each smoke barrier for the total number of occupants in adjoining smoke compartments. This space shall be readily available wherever the occupants are moved across the smoke barrier in a fire emergency.

408.6.3 Independent egress. A means of egress shall be provided from each smoke compartment created by smoke barriers without having to return through the smoke compartment from which means of egress originates.

408.7 Security glazing. In occupancies in Group I-3, windows and doors in 1-hour fire barriers constructed in accordance with Section 707, fire partitions constructed in accordance with Section 708 and smoke barriers constructed in accordance with Section 709 shall be permitted to have security glazing installed provided that the following conditions are met.

1. Individual panels of glazing shall not exceed 1,296 square inches (0.84 m^2).
2. The glazing shall be protected on both sides by an automatic sprinkler system. The sprinkler system shall be designed to, when actuated, wet completely the entire surface of any glazing affected by fire.
3. The glazing shall be in a gasketed frame and installed in such a manner that the framing system will deflect without breaking (loading) the glass before the sprinkler system operates.
4. Obstructions, such as curtain rods, drapery traverse rods, curtains, drapes or similar materials shall not be installed between the automatic sprinklers and the glazing.

408.8 Subdivision of resident housing areas. Sleeping areas and any contiguous day room, group activity space or other common spaces where residents are housed shall be separated from other spaces in accordance with Sections 408.8.1 through 408.8.4.

408.8.1 Occupancy Conditions 3 and 4. Each sleeping area in Occupancy Conditions 3 and 4 shall be separated from the adjacent common spaces by a smoke-tight partition where the distance of travel from the sleeping area through the common space to the corridor exceeds 50 feet (15 240 mm).

408.8.2 Occupancy Condition 5. Each sleeping area in Occupancy Condition 5 shall be separated from adjacent sleeping areas, corridors and common spaces by a smoke-tight partition. Additionally, common spaces shall be separated from the corridor by a smoke-tight partition.

408.8.3 Openings in room face. The aggregate area of openings in a solid sleeping room face in Occupancy Conditions 2, 3, 4 and 5 shall not exceed 120 square inches (0.77 m^2). The aggregate area shall include all openings including door undercuts, food passes and grilles. Openings shall be not more than 36 inches (914 mm) above the floor. In Occupancy Condition 5, the openings shall be closeable from the room side.

408.8.4 Smoke-tight doors. Doors in openings in partitions required to be smoke tight by Section 408.8 shall be substantial doors, of construction that will resist the passage of smoke. Latches and door *closers* are not required on cell doors.

408.9 Windowless buildings. For the purposes of this section, a windowless building or portion of a building is one with nonopenable windows, windows not readily breakable or without windows.

408.9.1 Smoke venting. *The housing portions of windowless buildings containing use conditions 3, 4 or 5 shall be provided with an engineered smoke control system in accordance with Section 909, windows or doors, smoke vents or equivalent means to provide a tenable environment for exiting from the smoke compartment in the area of fire origin. A tenable environment for egress shall be as defined in NFPA 92. If windows, smoke vents or doors are used to meet this section, at least two windows, smoke vents or doors to the exterior must be provided at or above the highest occupied level in each smoke compartment, and the windows or doors must be operable or readily breakable and arranged to manually vent smoke.*

Exceptions:

1. Windowless buildings or portions of a building that meet all of the following requirements:

1.1. Are Type IA or IB construction.

1.2. Are protected with sprinklers throughout in accordance with Section 903.3.1.1.

1.3. Include a fire alarm system with smoke detection in accordance with NFPA 72 in the dayroom and/or corridor serving as exit access from the cells, reporting to a 24 hour central control at the institution.

1.4. Include at least one exit from each housing unit direct to the exterior where smoke will not accumulate or to the exterior through a 1-hour-rated corridor serving only that unit.

the interior surface shall be completely covered with noncombustible materials. Aluminum shall not be used.

[F] 416.2.2 Surfaces. The interior surfaces of spray rooms shall be smooth and shall be so constructed to permit the free passage of exhaust air from all parts of the interior and to facilitate washing and cleaning, and shall be so designed to confine residues within the room.

[F] 416.2.3 Ventilation. Mechanical ventilation and interlocks with the spraying operation shall be in accordance with the *California Fire Code* and *California Mechanical Code*.

[F] 416.3 Spraying spaces. Spraying spaces shall be ventilated with an exhaust system to prevent the accumulation of flammable mist or vapors in accordance with the *California Mechanical Code*. Where such spaces are not separately enclosed, noncombustible spray curtains shall be provided to restrict the spread of flammable vapors.

[F] 416.3.1 Surfaces. The interior surfaces of spraying spaces shall be smooth; shall be so constructed to permit the free passage of exhaust air from all parts of the interior and to facilitate washing and cleaning; and shall be so designed to confine residues within the spraying space. Aluminum shall not be used.

[F] 416.4 Spray booths. Spray booths shall be designed, constructed and operated in accordance with the *California Fire Code*.

[F] 416.5 Fire protection. An automatic sprinkler system or fire-extinguishing system shall be provided in all spray rooms and spray booths, and shall be installed in accordance with Chapter 9.

SECTION 417
DRYING ROOMS

[F] 417.1 General. A drying room or dry kiln installed within a building shall be constructed entirely of approved noncombustible materials or assemblies of such materials regulated by the approved rules or as required in the general and specific sections of this chapter for special occupancies and where applicable to the general requirements of the *California Mechanical Code*.

[F] 417.2 Piping clearance. Overhead heating pipes shall have a clearance of not less than 2 inches (51 mm) from combustible contents in the dryer.

[F] 417.3 Insulation. Where the operating temperature of the dryer is 175°F (79°C) or more, metal enclosures shall be insulated from adjacent combustible materials by not less than 12 inches (305 mm) of airspace, or the metal walls shall be lined with $^1/_4$-inch (6.4 mm) insulating mill board or other approved equivalent insulation.

[F] 417.4 Fire protection. Drying rooms designed for high-hazard materials and processes, including special occupancies as provided for in Chapter 4, shall be protected by an approved automatic fire-extinguishing system complying with the provisions of Chapter 9.

SECTION 418
ORGANIC COATINGS

[F] 418.1 Building features. Manufacturing of organic coatings shall be done only in buildings that do not have pits or basements.

[F] 418.2 Location. Organic coating manufacturing operations and operations incidental to or connected therewith shall not be located in buildings having other occupancies.

[F] 418.3 Process mills. Mills operating with close clearances and that process flammable and heat-sensitive materials, such as nitrocellulose, shall be located in a detached building or noncombustible structure.

[F] 418.4 Tank storage. Storage areas for flammable and combustible liquid tanks inside of structures shall be located at or above grade and shall be separated from the processing area 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.

[F] 418.5 Nitrocellulose storage. Nitrocellulose storage shall be located on a detached pad or in a separate structure or a room enclosed with not less than 2-hour fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both.

[F] 418.6 Finished products. Storage rooms for finished products that are flammable or combustible liquids shall be separated from the processing area 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.

SECTION 419
ARTIFICIAL DECORATIVE VEGETATION

[F] 419.1 Artificial decorative vegetation. Artificial decorative vegetation exceeding 6 feet (1830 mm) in height and permanently installed outdoors within 5 feet (1524 mm) of a building, or on the roof of a building, shall comply with Section 321.1 of the *California Fire Code.*

Exception: Artificial decorative vegetation located more than 30 feet (9144 mm) from the exterior wall of a building.

SECTION 420
GROUPS R-1, R-2, *R-2.1, R-2.2,* R-3, *R-3.1* AND R-4

420.1 General. Occupancies in Groups R-1, R-2, *R-2.1, R-2.2,* R-3, *R-3.1* and R-4 shall comply with the provisions of Sections 420.1 through 420.11 and other applicable provisions of this code.

420.2 Separation walls. Walls separating dwelling units in the same building, walls separating sleeping units in the same building and walls separating dwelling or sleeping units from other occupancies contiguous to them in the same building shall be constructed as fire partitions in accordance with Section 708.

420.3 Horizontal separation. Floor assemblies separating dwelling units in the same buildings, floor assemblies separating sleeping units in the same building and floor assemblies separating dwelling or sleeping units from other occupancies contiguous to them in the same building shall be constructed as horizontal assemblies in accordance with Section 711.

[F] 420.4 Automatic sprinkler system. Group R occupancies shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.2.8. *Group R-2.2 shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. Group R-2.1* occupancies shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.2.6. Quick-response or residential automatic sprinklers shall be installed in accordance with Section 903.3.2.

[F] 420.5 Fire alarm systems and smoke alarms. Fire alarm systems and smoke alarms shall be provided in Group R-1, R-2 *and R-2.1* occupancies in accordance with Sections 907.2.6, 907.2.8 and 907.2.9 *and 907.2.10*, respectively. Single- or multiple-station smoke alarms shall be provided in Groups R-2, *R-2.1,* R-3 and R-4 in accordance with Section 907.2.11. *Group R-2.2 shall be equipped throughout with an automatic fire alarm systems per 907.2.9.2 and shall have a manual fire alarm pull station at the 24-hour staff watch office.*

420.6 Smoke barriers in Group *R-2.1*. Smoke barriers shall be provided in Group *R-2.1* to subdivide every story used by persons receiving care, treatment or sleeping and to provide other stories with an occupant load of 50 or more persons, into not fewer than two smoke compartments. Such stories shall be divided into smoke compartments with an area of not more than 22,500 square feet (2092 m^2) and the distance of travel from any point in a smoke compartment to a smoke barrier door shall not exceed 200 feet (60 960 mm). The smoke barrier shall be in accordance with Section 709.

420.6.1 Smoke barrier in Group R-2.2. *Occupancies in Group R-2.2 shall have smoke barriers complying with Sections 709 to divide every story occupied by residents for sleeping, into no fewer than two smoke compartments.*

Exception: *Spaces having a direct exit to a public way.*

420.6.2 **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 15 net square feet (1.4 m^2) for each care recipient.
2. Not less than 6 net square feet (0.56 m^2) for other occupants.

Areas or spaces permitted to be included in the calculation of the refuge area are corridors, lounge or dining areas and other low-hazard areas.

420.7 Reserved.

420.8 Reserved.

420.9 Domestic cooking appliances. In Group *R-2.1* occupancies, installation of cooking appliance 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 or ranges.
3. Cooktops and ranges shall be protected in accordance with Section 904.14.
4. A shutoff for the fuel and electrical 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 within a 30-foot (9144 mm) distance of travel from each domestic cooking appliance.

Exceptions:

1. Cooking facilities provided within care recipients' individual dwelling units are not required to comply with 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

420.10 Group R cooking facilities. In Group R occupancies, cooking appliances used for domestic cooking operations shall be in accordance with Section *920.0* of the *California Mechanical Code*.

420.11 Group R-2 dormitory cooking facilities. Domestic cooking appliances for use by residents of Group R-2 college dormitories shall be in accordance with Sections 420.11.1 and 420.11.2.

420.11.1 Cooking appliances. Where located in Group R-2 college dormitories, domestic cooking appliances for use by residents shall be in compliance with all of the following:

1. The types of domestic cooking appliances shall be limited to ovens, cooktops, ranges, warmers, coffee makers and microwaves.
2. Domestic cooking appliances shall be limited to approved locations.
3. Cooktops and ranges shall be protected in accordance with Section 904.14.
4. Cooktops and ranges shall be provided with a domestic cooking hood installed and constructed in accordance with Section 505 of the *California Mechanical Code*. *Kitchen range hoods shall also*

452.1.5 Special hazards. *School classrooms constructed after January 1, 1990, not equipped with automatic sprinkler systems, which have metal grilles or bars on all their windows and do not have at least two exit doors within 3 feet (914 mm) of each end of the classroom opening to the exterior of the building or to a common hallway used for evacuation purposes, shall have an inside release for the grilles or bars on at least one window farthest from the exit doors. The window or windows with the inside release shall be clearly marked as emergency exits.*

452.1.6 *Class I, II or III-A flammable liquids shall not be placed, stored or used in Group E occupancies, except in approved quantities as necessary in laboratories and classrooms and for operation and maintenance as set forth in the California Fire Code.*

SECTION 453
GROUP L [SFM]

453.1 Scope. *The provisions of this section shall apply to buildings or structures, or portions thereof, containing one or more Group L laboratory suites as defined in Section 202.*

The provisions of this section are optional and may apply to buildings or structures. See Section 304 for Group B Laboratories.

453.1.1 Technical report. *The enforcing agency may require a technical opinion and report to identify and develop methods of protection from the hazards presented by the hazardous materials. A qualified person, firm or corporation, approved by the enforcing agency, shall prepare the opinion and report, and shall be provided without charge to the enforcing agency. The opinion and report may include, but is not limited to, the preparation of a hazardous material management plan (HMMP); chemical analysis; recommendations for methods of isolation, separation, containment or protection of hazardous materials or processes, including appropriate engineering controls to be applied; the extent of changes in the hazardous behavior to be anticipated under conditions of exposure to fire or from hazard control procedures; and the limitations or conditions of use necessary to achieve and maintain control of the hazardous materials or operations. The report shall be entered into the files of the code enforcement agencies. Proprietary and trade secret information shall be protected under the laws of the state or jurisdiction having authority.*

453.2 Definitions. *The following terms are defined in Chapter 2:*

LABORATORY SUITE.

[F] LIQUID TIGHT FLOOR.

453.3 Laboratory suite requirements.

453.3.1 *The gross floor area of an individual laboratory suite shall not exceed 10,000 square feet (929 m^2).*

453.3.2 *An individual laboratory suite shall not serve more than a single tenant.*

Exception: *An individual laboratory suite shall have a responsible party or department for all hazardous materials within a suite.*

453.4 Construction

453.4.1 Separation of laboratory suites.

453.4.1.1 *Laboratory suites shall be separated from other occupancies in accordance with Table 508.4.*

453.4.1.2 *Laboratory suites shall be separated from other laboratory suites by a fire barrier having a fire-resistance rating of not less than 1-hour.*

453.4.1.3 *Laboratory suites shall be separated from control areas by a minimum 2-hour fire-resistance rating in accordance with Sections 707 and 711.*

Exception: *Laboratory suites shall be separated from control areas by a minimum 1-hour fire-resistance rating on floor levels below the 4th story.*

453.4.1.4 Horizontal separation. *The floor construction of the laboratory suite and the construction supporting the floor of the laboratory suite shall have a minimum 2-hour fire-resistance rating in accordance with Section 711.*

Exceptions:

1. *The floor construction of the laboratory suite and the construction supporting the floor of the laboratory suite are allowed to be 1-hour fire-resistance rated in buildings of Type IIA, IIIA and VA construction.*
2. *When an individual laboratory suite occupies more than one story, the intermediate floors contained within the suite shall comply with the requirements of Table 601.*

453.4.2 Reserved.

453.4.3 Fire barrier and fire-smoke barrier.

453.4.3.1 Fire barrier. *A fire barrier having a fire resistance rating of not less than 2-hours shall divide any story containing more than one laboratory suite on the 4th story and above.*

453.4.3.1.1 *Fire barriers shall be continuous from exterior wall to exterior wall,*

453.4.3.1.2 *The fire barrier shall divide the floor so that the square footage on each side of the 2-hour fire barrier is not less than 30 percent of the total floor area, and*

453.4.3.1.3 *The number of laboratory suites on each side of the 2-hour fire barrier shall not be less than 25 percent of the total number of laboratory suites on the floor.*

453.4.3.2 Fire-smoke barrier. *Any story containing a Group L occupancy on the 11th story and above shall be subdivided by a fire-smoke barrier constructed as a fire barrier having a fire-resistance rating of not less than 2 hours and shall also comply with the smoke barrier requirements of Section 709.*

The 2-hour fire-smoke barrier shall be in accordance with Sections 453.4.3 through 453.4.3.2.3.

453.4.3.2.1 *A minimum of one door opening shall be provided in the 2-hour fire-smoke barrier for emergency access.*

453.4.3.2.2 *Each side of the 2-hour fire-smoke barrier shall be designed as a separate smoke zone designed in accordance with Section 909.6.*

453.4.3.2.3 *The area on each side of the 2-hour fire-smoke barrier shall be served by a minimum of one exit enclosure in accordance with Section 1022.*

453.4.4 Emergency response equipment area. *When required by the fire code official, an area for emergency response equipment shall be provided on each floor in an approved location. The area shall be a minimum of 50 square feet (4.6 m^2), for spill mitigation supplies per California Fire Code 5001.3.3.4 in a location approved by the fire code official, and identified with signage.*

Exception: *The area size for spill mitigation supplies may be reduced by the fire code official when adequate supplies are provided.*

453.4.5 Liquid tight floor. *All portions of the laboratory suite where hazardous materials may be stored, dispensed, handled or used shall be provided with a liquid tight floor. The intersections of such floors shall have an integral coved base that extends upward onto the wall not less than 2 inches. Where the floor is designed to provide spill control or secondary containment the floor shall be designed in accordance with California Fire Code Section 5004.2.*

453.4.6 Secondary power systems. *A legally required standby power system shall have an automatic transfer time of not more than 10 seconds.*

453.4.6.1 Required systems. *Standby power shall be provided for all electrically operated equipment, systems and connected control circuits including:*

1. *Mechanical ventilation systems. See Section 453.4.7.2.*
2. *Temperature control systems required to prevent unsafe process excursions or chemical reactions.*
3. *Treatment systems and scrubbers.*
4. *Emergency Responder Radio Coverage (ERRCS). See Section 510 of the California Fire Code.*
5. *Electrically operated systems required elsewhere in this code and the California Fire Code.*

453.4.7 Ventilation.

453.4.7.1 Compatibility. *Incompatible materials shall not be conveyed in the same duct system. Combined products in mechanical exhaust ducts shall not create a physical hazard or reaction that could degrade the duct material. The building official may require a technical report in accordance with Section 453.7.1.*

453.4.7.2 Fire dampers, smoke dampers and combination fire/smoke dampers. *Fire dampers, smoke dampers or fire/smoke dampers shall not be permitted in mechanical exhaust duct systems used to maintain a safe laboratory environment. When the exhaust duct penetrates the laboratory suite boundary the exhaust duct shall be located within a horizontal or vertical assembly having a fire resistance rating equal to the fire barrier.*

453.4.7.3 Reserved.

453.4.7.4 Laboratory suite exhaust air.

453.4.7.4.1 *Exhaust air from laboratory suites shall not be recirculated.*

453.4.7.4.2 *Laboratory suite exhaust air shall be independently ducted to a point outside the building or an approved roof top structure.*

Exception: *Exhaust ducts serving separate laboratory suites may be connected to a common duct within a fire rated vertical shaft when the subduct extends vertically upward at least 22 inches.*

453.4.7.4.3 *Laboratory suite exhaust ducts shall not penetrate the fire barriers required by Section 453.4.1.*

Exception: *Where the exhaust duct is enclosed in a rated shaft in accordance with Section 713.*

453.4.7.5 Ventilation rates. *Mechanical exhaust ventilation systems shall provide a minimum ventilation rate not less than 1 cubic feet per minute per square foot [0.00508 $m^3/(s \cdot m^2)$] of floor area, or 6 air exchanges per hour, whichever is greater. Systems shall operate continuously at the designed ventilation rate*

Exception: *Refer to California Fire Code Section 5001.3 Performance-based design alternatives, as approved by the Fire Code Official.*

453.4.7.6 Reserved.

453.4.7.7 Mechanical ventilation system balancing. *Mechanical ventilation systems shall be designed and balanced such that during normal and emergency conditions the door opening forces comply with the requirements of Sections 1010.1.3 and Chapter 11B as applicable. Emergency conditions shall include: supply fan shutdown or failure, closing of smoke dampers or combination fire/smoke dampers, or emergency power.*

453.5 Fire protection systems. See Chapter 9.

453.6 Means of egress.

453.6.1 Access to exits. *Every room of a laboratory suite containing hazardous materials and having a floor area of 500 square feet (19 m^2) or more shall have access to not less than two separate exits or exit-access doorways in accordance with Section 1006.2.*

453.6.2 Door swing. *All exit and exit-access doors serving areas with hazardous materials shall swing in the direction of exit travel, regardless of the occupant load served.*

453.6.3 Panic hardware. *Exit and exit access doors from areas with hazardous materials shall not be provided with a latch or lock unless it is panic hardware or fire exit hardware.*

453.6.4 Buildings of four stories or more. *A minimum of one exit shall be provided to serve the floor on each side of*

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.

504.2 Mixed occupancy. In a building containing mixed occupancies in accordance with Section 508, no individual occupancy shall exceed the height and number of story limits specified in this section for the applicable occupancies.

504.3 Height in feet. The maximum height, in feet, of a building shall not exceed the limits specified in Table 504.3.

Exception: Towers, spires, steeples and other rooftop structures shall be constructed of materials consistent with the required type of construction of the building except where other construction is permitted by Section 1511.2.4. Such structures shall not be used for habitation or storage. The structures shall be unlimited in height where of noncombustible materials and shall not extend more than 20 feet (6096 mm) above the allowable building height where of combustible materials (see Chapter 15 for additional requirements).

504.4 Number of stories. The maximum number of stories above grade plane of a building shall not exceed the limits specified in Table 504.4.

SECTION 505
MEZZANINES AND EQUIPMENT PLATFORMS

505.1 General. Mezzanines shall comply with Section 505.2. Equipment platforms shall comply with Section 505.3.

505.2 Mezzanines. A mezzanine or mezzanines in compliance with Section 505.2 shall be considered a portion of the story below. Such mezzanines shall not contribute to either the building area or number of stories as regulated by Section 503.1. The area of the mezzanine shall be included in determining the fire area. The clear height above and below the mezzanine floor construction shall be not less than 7 feet (2134 mm).

505.2.1 Area limitation. The aggregate area of a mezzanine or mezzanines within a room shall be not greater than one-third of the floor area of that room or space in which they are located. The enclosed portion of a room shall not be included in a determination of the floor area of the room in which the mezzanine is located. In determining the allowable mezzanine area, the area of the mezzanine shall not be included in the floor area of the room.

Exceptions:

1. The aggregate area of mezzanines in buildings and structures of Type I or II construction for special industrial occupancies in accordance with Section 503.1.1 shall be not greater than two-thirds of the floor area of the room.
2. The aggregate area of mezzanines in buildings and structures of Type I or II construction shall be not greater than one-half of the floor area of the room in buildings and structures equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 and an approved emergency voice/alarm communication system in accordance with Section 907.5.2.2.
3. The aggregate area of a mezzanine within a dwelling unit that is located in a building equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 shall not be greater than one-half of the floor area of the room, provided that:
    - 3.1. Except for enclosed closets and bathrooms, the mezzanine shall be open to the room in which such mezzanine is located;
    - 3.2. The opening to the room shall be unobstructed except for walls not more than 42 inches (1067 mm) in height, columns and posts; and
    - 3.3. Exceptions to Section 505.2.3 shall not be permitted.

505.2.1.1 Aggregate area of mezzanines and equipment platforms. Where a room contains both a mezzanine and an equipment platform, the aggregate area of the two raised floor levels shall be not greater than two-thirds of the floor area of that room or space in which they are located. The area of the mezzanine shall not exceed the area determined in accordance with Section 505.2.1.

505.2.2 Means of egress. The means of egress for mezzanines shall comply with the applicable provisions of Chapter 10.

TABLE 504.3
ALLOWABLE BUILDING HEIGHT IN FEET ABOVE GRADE PLANE [a, i]

OCCUPANCY CLASSIFICATION	TYPE OF CONSTRUCTION													
	See Footnotes	Type I		Type II		Type III		Type IV				Type V	
		A	B	A	B	A	B	A	B	C	HT	A	B
B, F, M, S, U	NS[b]	UL	160	65	55	65	55	65	65	65	65	50	40
	S	UL	180	85	75	85	75	270	180	85	85	70	60
A, E	*NS[b]*	*UL*	*160*	*65*	*55*	*65*	*55*	*65*	*65*	*65*	*65*	*50*	*40*
	S (without area increase)	*UL*	*180*	*85*	*75*	*85*	*75*	*270*	*180*	*85*	*85*	*70*	*60*
	S (with area increase)	*UL*	*160*	*65*	*55*	*65*	*55*	*250*	*160*	*65*	*65*	*50*	*40*
H-1, H-2, H-3, H-5, *L*	NS[c, d]	UL	160	65	55	65	55	120	90	*85*	65	50	40
	S *(without area increase)*												
	S (with area increase)	*UL*	*160*	*65*	*55*	*65*	*55*				*65*	*50*	*40*
H-4	NS[c, d]	UL	160	65	55	65	55	65	65	65	65	50	40
	S *(without area increase)*	UL	180	85	75	85	75	140	100	85	85	70	60
	S (with area increase)	*UL*	*160*	*65*	*55*	*65*	*55*	*120*	*160*	*65*	*65*	*50*	*40*
I-3	NS[d, e]	UL	160	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*
	S *(without area increase)*	UL	180	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*
	S (with area increase)	*UL*	*160*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*
I-2, *I-2.1*	NS[d, e, f]	UL	160	65	55	65	55	*NP*	*NP*	*NP*	65	50	40
	S *(without area increase)*	UL	180	85				*NP*	*NP*	*NP*			
	S (with area increase)	*UL*	*160*	*65*				*NP*	*NP*	*NP*			
I-4	NS[d, g]	UL	160	65	55	65	55	*65*	*65*	*65*	65	50	40
	S *(without area increase)*	UL	180	85	75	85	75	*180*	*120*	*85*	85	70	60
	S (with area increase)	*UL*	*160*	*65*	*55*	*65*	*55*	*160*	*100*	*65*	*65*	*50*	*50*
R-*1*[h]	NS[d]	UL	160	65	55	65	55	65	65	65	65	50	40
	S13D	60	60	60	60	60	60	60	60	60	60	50	40
	S13R	60	60	60	*55*	60	*55*	60	60	60	60	60	60
	S *(without area increase)*	UL	180	85	75	85	75	270	180	85	85	70	60
	S (with area increase)	*UL*	*160*	*65*	*55*	*65*	*55*	*250*	*160*	*65*	*65*	*50*	*40*
R-2[h]	*NS[d]*	UL	160	65	55	65	55	*65*	*65*	*65*	65	50	40
	S13R	60	60	60	*55*	60	*55*	*60*	*60*	*60*	60	*50*	*40*
	S (without area increase)	UL	180	85	75	85	75	*270*	*180*	*85*	85	70	60
	S (with area increase)	*UL*	*160*	*65*	*55*	*65*	*55*	*250*	*160*	*65*	*65*	*60[j]*	*40*
R-2.1[h]	*NS[d]*	*UL*	*160*	*65*	*55*	*65*	*55*	*65*	*NP*	*NP*	*NP*	*50*	*40*
	S13D	*60*	*60*	*60*	*55*	*60*	*55*	*60*	*NP*	*NP*	*NP*	*50*	*40*
	S13R	*60*	*60*	*60*	*55*	*60*	*55*	*60*	*NP*	*NP*	*NP*	*50*	*40*
	S	*UL*	*160*	*65*	*55*	*65*	*55*	*270*	*NP*	*NP*	*NP*	*50*	*40*
R-2.2[h]	*NS[d]*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*
	S (without area increase)	*UL*	*180*	*85*	*NP*	*85*	*NP*	*270*	*180*	*85*	*85*	*70*	*NP*
	S (with area increase)	*UL*	*160*	*65*	*NP*	*65*	*NP*	*250*	*160*	*65*	*65*	*60[j]*	*NP*
R-3, R-3.1[h]	*NS[d]*	*UL*	*160*	*65*	*55*	*65*	*55*	*65*	*65*	*65*	*65*	*50*	*40*
	S13D	*60*	*60*	*60*	*60*	*60*	*60*	*60*	*60*	*60*	*60*	*50*	*40*
	S13R	*60*	*60*	*60*	*55*	*60*	*55*	*60*	*60*	*60*	*60*	*60*	*60*
	S	*UL*	*160*	*65*	*55*	*65*	*55*	*270*	*180*	*85*	*65*	*70*	*60*
R-4[h]	*NS[d]*	*UL*	*160*	*65*	*55*	*65*	*55*	*65*	*65*	*65*	*65*	*50*	*40*
	S13D	*60*	*60*	*60*	*55*	*60*	*55*	*60*	*60*	*60*	*60*	*50*	*40*
	S13R	*60*	*60*	*60*	*55*	*60*	*55*	*60*	*60*	*60*	*60*	*50*	*40*
	S	*UL*	*160*	*65*	*55*	*65*	*55*	*270*	*180*	*85*	*65*	*50*	*40*

For SI: 1 foot = 304.8 mm.

UL = Unlimited; *NP = Not Permitted;* NS = Buildings not equipped throughout with an automatic sprinkler system; S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2; S13D = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.3.

a. See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.

b. See Section 903.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.

c. New Group H *and all Group L* occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.5.

d. The NS value is only for use in evaluation of existing building height in accordance with the *California Existing Building Code.*

e. New Group I-3 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6.

f. New and existing Group I-2 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6.

g. For new Group I-4 occupancies, see Exceptions 2 and 3 of Section 903.2.6.

h. New Group R occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.8.

i. In other than Group A, E, H, I, L and R occupancies, high-rise buildings, and other applications listed in Section 1.11 regulated by the Office of the State Fire Marshal, the S increases for height and stories in Tables 504.3 and 504.4 are permitted in addition to the S area increase in accordance with Table 506.2.

j. For Group R-2 buildings of Type VA construction equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, S area increase is permitted in addition to the height and story increase provided the height shall not exceed 60 feet and 4 stories.

TABLE 506.2
ALLOWABLE AREA FACTOR (A_t = NS, S1, S13R, S13D or SM, as applicable) IN SQUARE FEET[a, b, j]

OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION											
		Type I		Type II		Type III		Type IV				Type V	
		A	B	A	B	A	B	A	B	C	HT	A	B
A-1	NS	UL	UL	15,500	8,500	14,000	8,500	45,000	30,000	18,750	15,000	11,500	5,500
	S1	UL	UL	62,000	34,000	56,000	34,000	180,000	120,000	75,000	60,000	46,000	22,000
	SM *(without height increase)*	UL	UL	46,500	25,500	42,000	25,500	135,000	90,000	56,250	45,000	34,500	16,500
	SM (with height increase)	*UL*	*UL*	*15,500*	*8,500*	*14,000*	*8,500*	*45,000*	*30,000*	*18,750*	*15,000*	*11,500*	*5,500*
A-2	NS	UL	UL	15,500	9,500	14,000	9,500	45,000	30,000	18,750	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	180,000	120,000	75,000	60,000	46,000	24,000
	SM *(without height increase)*	UL	UL	46,500	28,500	42,000	28,500	135,000	90,000	56,250	45,000	34,500	18,000
	SM (with height increase)	*UL*	*UL*	*15,500*	*9,500*	*14,000*	*9,500*	*45,000*	*30,000*	*18,750*	*15,000*	*11,500*	*6,000*
A-3	NS	UL	UL	15,500	9,500	14,000	9,500	45,000	30,000	18,750	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	180,000	120,000	75,000	60,000	46,000	24,000
	SM *(without height increase)*	UL	UL	46,500	28,500	42,000	28,500	135,000	90,000	56,250	45,000	34,500	18,000
	SM (with height increase)	*UL*	*UL*	*15,500*	*9,500*	*14,000*	*9,500*	*45,000*	*30,000*	*18,750*	*15,000*	*11,500*	*6,000*
A-4	NS	UL	UL	15,500	9,500	14,000	9,500	45,000	30,000	18,750	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	180,000	120,000	75,000	60,000	46,000	24,000
	SM *(without height increase)*	UL	UL	46,500	28,500	42,000	28,500	135,000	90,000	56,250	45,000	34,500	18,000
	SM (with height increase)	*UL*	*UL*	*15,500*	*9,500*	*14,000*	*9,500*	*45,000*	*30,000*	*18,750*	*15,000*	*11,500*	*6,000*
A-5	NS	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL
	S1												
	SM												
B	NS	UL	UL	37,500	23,000	28,500	19,000	108,000	72,000	45,000	36,000	18,000	9,000
	S1	UL	UL	150,000	92,000	114,000	76,000	432,000	288,000	180,000	144,000	72,000	36,000
	SM	UL	UL	112,500	69,000	85,500	57,000	324,000	216,000	135,000	108,000	54,000	27,000
E	NS	UL	UL	26,500	14,500	23,500	14,500	76,500	51,000	31,875	25,500	18,500	9,500
	S1	UL	UL	106,000	58,000	94,000	58,000	306,000	204,000	127,500	102,000	74,000	38,000
	SM *(without height increase)*	UL	UL	79,500	43,500	70,500	43,500	229,500	153,000	95,625	76,500	55,500	28,500
	SM (with height increase)	*UL*	*UL*	*26,500*	*14,500*	*23,500*	*14,500*	*76,500*	*51,000*	*31,875*	*25,500*	*18,500*	*9.500*
F-1	NS	UL	UL	25,000	15,500	19,000	12,000	100,500	67,000	41,875	33,500	14,000	8,500
	S1	UL	UL	100,000	62,000	76,000	48,000	402,000	268,000	167,500	134,000	56,000	34,000
	SM	UL	UL	75,000	46,500	57,000	36,000	301,500	201,000	125,625	100,500	42,000	25,500
F-2	NS	UL	UL	37,500	23,000	28,500	18,000	151,500	101,000	63,125	50,500	21,000	13,000
	S1	UL	UL	150,000	92,000	114,000	72,000	606,000	404,000	252,500	202,000	84,000	52,000
	SM	UL	UL	112,500	69,000	85,500	54,000	454,500	303,000	189,375	151,500	63,000	39,000
H-1	NS[c]	21,000	16,500	11,000	7,000	9,500	7,000	10,500	10,500	10,500	10,500	7,500	NP
	S1												
H-2	NS[c]	21,000	16,500	11,000	7,000	9,500	7,000	10,500	10,500	10,500	10,500	7,500	3,000
	S1												
	SM												
H-3	NS[c]	UL	60,000	26,500	14,000	17,500	13,000	25,500	25,500	25,500	25,500	10,000	5,000
	S1												
	SM												
H-4	NS[c, d]	UL	UL	37,500	17,500	28,500	17,500	72,000	54,000	40,500	36,000	18,000	6,500
	S1	UL	UL	150,000	70,000	114,000	70,000	288,000	216,000	162,000	144,000	72,000	26,000
	SM *(without height increase)*	UL	UL	112,500	52,500	85,500	52,500	216,000	162,000	121,500	108,000	54,000	19,500
	SM (with height increase)	*UL*	*UL*	*37,500*	*17,500*	*28,500*	*17,500*	*72,000*	*54,000*	*40,500*	*36,000*	*18,000*	*6,500*
H-5	NS[c, d]	UL	UL	37,500	23,000	28,500	19,000	72,000	54,000	40,500	36,000	18,000	9,000
	S1	UL	UL	150,000	92,000	114,000	76,000	288,000	216,000	162,000	144,000	72,000	36,000
	SM *(without height increase)*	UL	UL	112,500	69,000	85,500	57,000	216,000	162,000	121,500	108000	54,000	27,000
	SM (with height increase)	*UL*	*UL*	*37,500*	*23,000*	*28,500*	*19,000*	*72,000*	*54,000*	*40,500*	*36,000*	*18,000*	*9,000*

(continued)

TABLE 506.2—continued
ALLOWABLE AREA FACTOR (A_t = NS, S1, S13R, S13D or SM, as applicable) IN SQUARE FEET[a, b, j]

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
I-2, *I-2.1*	NS[d, f]	UL	UL	15,000	11,000	12,000	NP	*NP*	*NP*	*NP*	12,000	9,500	NP
	S1	UL	UL	60,000	44,000	48,000	NP	*NP*	*NP*	*NP*	48,000	38,000	NP
	SM *(without height increase)*	UL	UL	45,000	33,000	36,000	NP	*NP*	*NP*	*NP*	36,000	28,500	NP
	SM (with height increase)	*UL*	*UL*	*15,000*	*11,000*	*12,000*	*NP*	*NP*	*NP*	*NP*	*12,000*	*9,500*	*NP*
I-3	NS[d, e]	UL	*15,100*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*
	S1	UL	*45,300*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*
	SM *(without height increase)*	UL	*30,200*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*
	SM (with height increase)	*UL*	*15,100*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*
I-4	NS[d, g]	UL	60,500	26,500	13,000	23,500	13,000	76,500	51,000	25,500	25,500	18,500	9,000
	S1	UL	121,000	106,000	52,000	94,000	52,000	306,000	204,000	102,000	102,000	74,000	36,000
	SM *(without height increase)*	UL	181,500	79,500	39,000	70,500	39,000	229,500	153,000	76,500	76,500	55,500	27,000
	SM (with height increase)	*UL*	*60,500*	*26,500*	*13,000*	*23,500*	*13,000*	*76,500*	*51,000*	*25,500*	*25,500*	*18,500*	*9,000*
L	*NS*[c]	*UL*	*60,000*	*37,500*	*17,500*	*28,500*	*17,500*	*60,000*	*37,500*	*36,000*	*36,000*	*18,000*	*6,500*
	S1												
	SM												
M	NS	UL	UL	21,500	12,500	18,500	12,500	61,500	41,000	*25,625*	20,500	14,000	9,000
	S1	UL	UL	86,000	50,000	74,000	50,000	246,000	164,000	102,500	82,000	56,000	36,000
	SM	UL	UL	64,500	37,500	55,500	37,500	184,500	123,000	76,875	61,500	42,000	27,000
R-1[h]	NS[d]	UL	UL	24,000	16,000	24,000	16,000	61,500	41,000	25,625	20,500	12,000	7,000
	S13R												
	S1	UL	UL	96,000	64,000	96,000	64,000	246,000	164,000	102,500	82,000	48,000	28,000
	SM *(without height increase)*	UL	UL	72,000	48,000	72,000	48,000	184,500	123,000	76,875	61,500	36,000	21,000
	SM (with height increase)	*UL*	*UL*	*24,000*	*16,000*	*24,000*	*16,000*	*61,500*	*41,000*	*25,625*	*20,500*	*12,000*	*7,000*
R-2[h]	NS[d]	UL	UL	24,000	16,000	24,000	16,000	61,500	41,000	25,625	20,500	12,000	7,000
	S13R												
	S1	UL	UL	96,000	64,000	96,000	64,000	246,000	164,000	102,500	82,000	48,000	28,000
	SM *(without height increase)*	UL	UL	72,000	48,000	72,000	48,000	184,500	123,000	76,875	61,500	36,000	21,000
	SM (with height increase)	*UL*	*UL*	*24,000*	*16,000*	*24,000*	*16,000*	*61,500*	*41,000*	*25,625*	*20,500*	*12,000*	*7,000*
R-2 Type VA construction[k]	*NS*[d]	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*12,000*	*NP*
	S13R	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*12,000*	*NP*
	S1	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*48,000*	*NP*
	SM (without height increase)	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*36,000*	*NP*
	SM (with height increase)	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*NP*	*36,000*[l]	*NP*
R-2.1[h]	*NS*[d]	*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[h]	*NS*[l]	*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*[h]	NS[d]	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL
	S13D												
	S13R												
	S1												
	SM												

(continued)

508.4 Separated occupancies. Buildings or portions of buildings that comply with the provisions of this section shall be considered as separated occupancies.

508.4.1 Occupancy classification. Separated occupancies shall be individually classified in accordance with Section 302.1. Each separated space shall comply with this code based on the occupancy classification of that portion of the building. The most restrictive provisions of Chapter 9 that apply to the separate occupancies shall apply to the total nonfire-barrier-separated occupancy areas. Occupancy separations that serve to define fire area limits established in Chapter 9 for requiring a fire protection system shall also comply with Section 901.7.

508.4.2 Allowable building area. In each story, the building area shall be such that the sum of the ratios of the actual building area of each separated occupancy divided by the allowable building area of each separated occupancy shall not exceed 1.

508.4.3 Allowable building height and number of stories. Each separated occupancy shall comply with the building height limitations and story limitations based on the type of construction of the building in accordance with Section 503.1.

Exception: Special provisions of Section 510 shall permit occupancies at building heights and number of stories other than provided in Section 503.1.

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 occu-

TABLE 508.4
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)[h]

OCCUPANCY	A, E		I-4[i], R-2.1		I-2[j], I-2.1		I-3		R-1[a], R-2[a], R-2.2[a], R-3[a], R-3.1[a], R-4[a]		F-2, S-2[b], U		B[e], F-1[g, h], M, S-1		L		H-1		H-2		H-3, H-4		H-5	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
A, E	N	N	2	2	2	NP	2	NP	1	2	N	1	1	2	2	NP	NP	NP	3	4	2	3	2	NP
I-4[i], R-2.1	2	2	1[e]	NP	2	NP	2	NP	1	NP	1	2	1	2	2	NP	NP	NP	4	NP	4	NP	4	NP
I-2[j], I-2.1	2	NP	2	NP	N	NP	2	NP	2	NP	2	NP	2	NP	2	NP	NP	NP	4	NP	4	NP	4	NP
I-3	2	NP	2	NP	2	NP	N	NP	2	NP	2	2	2	2	2	NP	NP	NP	4	NP	4	NP	4	NP
R-1[a], R-2[a], R-2.2[a], R-3[a], R-3.1[a], R-4[a]	1	2	1	NP	2	NP	2	NP	N	N	1[c]	2[c]	1	2	4	NP	NP	NP	3	NP	2	NP	2	NP
F-2, S-2[b], U	N	1	1	2	2	NP	2	2	1[c]	2[c]	N	N	1	2	1	NP	NP	NP	3	4	2	3	2	NP
B[e], F-1[g, h], 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	NP	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	NP	2	3	1	2	1	NP	NP	NP	1	NP	1[d]	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 903.3.1.1.*

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.*

pancies 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 $^1/_2$ 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.

508.5 Live/work units A live/work unit shall comply with Sections 508.5 through 508.5.11.

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 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.
4. Not more than five nonresidential workers or employees are allowed to occupy the nonresidential area at any one time.

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.

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.*

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.

508.5.5 Spiral stairways. Spiral stairways that conform to the requirements of Section 1011.10 shall be permitted.

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. The live/work unit shall be provided with a monitored fire alarm system where required by Section 907.2.9 and an automatic sprinkler system in accordance with Section 903.2.8.

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.*

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.

509.2 Occupancy classification. Incidental uses shall not be individually classified in accordance with Section 302.1. Incidental uses shall be included in the building occupancies within which they are located.

509.3 Area limitations. *The aggregate floor area of* incidental uses shall not occupy more than 10 percent of the building area of the story in which they are located.

509.4 Separation and protection. The incidental uses specified in Table 509.1 shall be separated from the remainder of the building or equipped with an automatic sprinkler system, or both, in accordance with the provisions of that table.

509.4.1 Separation. Where Table 509.1 specifies a fire-resistance-rated separation, the incidental uses shall be separated from the remainder of the building by a fire barrier constructed in accordance with Section 707 or a

horizontal assembly constructed in accordance with Section 711, or both. Construction supporting 1-hour fire barriers or horizontal assemblies used for incidental use separations in buildings of Type IIB, IIIB and VB construction is not required to be fire-resistance rated unless required by other sections of this code.

509.4.1.1 Type IV-B and IV-C construction. Where Table 509.1 specifies a fire-resistance-rated separation, mass timber elements serving as fire barriers or horizontal assemblies in Type IV-B or IV-C construction shall be separated from the interior of the incidental use with an approved thermal barrier consisting of gypsum board that is not less than $^1/_2$ 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.

509.4.2 Protection. Where Table 509.1 permits an automatic sprinkler system without a fire barrier, the incidental uses shall be separated from the remainder of the building by construction capable of resisting the passage of smoke. The walls shall extend from the top of the foundation or floor assembly below to the underside of the ceiling that is a component of a fire-resistance-rated floor assembly or roof assembly above or to the underside of the floor or roof sheathing, deck or slab above. Doors shall be self- or automatic-closing upon detection of smoke in accordance with Section 716.2.6.6. Doors shall not have air transfer openings and shall not be undercut in excess of the clearance permitted in accordance with NFPA 80. Walls surrounding the incidental use shall not have air transfer openings unless provided with smoke dampers in accordance with Section 710.8.

509.4.2.1 Protection limitation. Where an automatic sprinkler system is provided in accordance with Table 509.1, only the space occupied by the incidental use need be equipped with such a system.

[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
[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.*	*1 hour*
In Group I-2 *and I-2.1* occupancies, laboratories not classified as Group H	1 hour[a]
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 *and I-2.1* laundry rooms over 100 square feet	1 hour[a]
Group I-3 cells and Group I-2 *and I-2.1* patient rooms equipped with padded surfaces	1 hour[a]
In Group I-2 *and I-2.1* physical plant maintenance shops	1 hour[a]
In ambulatory care facilities or Group I-2 *and I-2.1* occupancies, waste and linen collection rooms with containers that have an aggregate volume of 10 cubic feet or greater	1 hour[a]
In other than ambulatory care facilities and Group I-2 *and I-2.1* occupancies, waste and linen collection rooms over 100 square feet	1 hour or provide automatic sprinkler system
In ambulatory care facilities or Group I-2 *and I-2.1* occupancies, storage rooms greater than 100 square feet	1 hour[a]
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^2, 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^3.

a. ***[SFM]*** *Fire barrier protection and automatic sprinkler protection required throughout the fire area in I-2 and I-2.1 occupancies as indicated.*

SECTION 510
SPECIAL PROVISIONS

510.1 General. The provisions in Sections 510.2 through 510.9 shall permit the use of special conditions that are exempt from, or modify, the specific requirements of this chapter regarding the allowable building heights and areas of buildings based on the occupancy classification and type of construction, provided the special condition complies with the provisions specified in this section for such condition and other applicable requirements of this code. The provisions of Sections 510.2 through 510.8 are to be considered independent and separate from each other.

510.2 Horizontal building separation allowance. A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of fire walls, limitation of number of stories and type of construction where the following conditions are met:

1. The buildings are separated with a horizontal assembly having a fire-resistance rating of not less than 3 hours. Where vertical offsets are provided as part of a horizontal assembly, the vertical offset and the structure supporting the vertical offset shall have a fire-resistance rating of not less than 3 hours.
2. The building below, including the horizontal assembly, is of Type IA construction.
3. Shaft, stairway, ramp and escalator enclosures through the horizontal assembly shall have not less than a 2-hour fire-resistance rating with opening protectives in accordance with Section 716.

   Exception: Where the enclosure walls below the horizontal assembly have not less than a 3-hour fire-resistance rating with opening protectives in accordance with Section 716, the enclosure walls extending above the horizontal assembly shall be permitted to have a 1-hour fire-resistance rating, provided that the following conditions are met:

   1. The building above the horizontal assembly is not required to be of Type I construction.
   2. The enclosure connects fewer than four stories.
   3. The enclosure opening protectives above the horizontal assembly have a fire protection rating of not less than 1 hour.
4. Interior exit stairways located within the Type IA building are permitted to be of combustible materials where the following requirements are met:

   4.1. The building above the Type IA building is of Type III, IV, or V construction.

   4.2. The stairway located in the Type IA building is enclosed by 3-hour fire-resistance-rated construction with opening protectives in accordance with Section 716.
5. The building or buildings above the horizontal assembly shall be permitted to have multiple Group A occupancy uses, each with an occupant load of less *than* 300, or Group B, M, R or S occupancies.
6. The building below the horizontal assembly shall be protected throughout by an approved automatic sprinkler system in accordance with Section 903.3.1.1, and shall be permitted to be any occupancy allowed by this code except Group H.
7. The maximum building height in feet (mm) shall not exceed the limits set forth in Section 504.3 for the building having the smaller allowable height as measured from the grade plane.

510.3 Group S-2 enclosed parking garage with Group S-2 open parking garage above. A Group S-2 enclosed parking garage with not more than one story above grade plane and located below a Group S-2 open parking garage shall be classified as a separate and distinct building for the purpose of determining the type of construction where the following conditions are met:

1. The allowable area of the building shall be such that the sum of the ratios of the actual area divided by the allowable area for each separate occupancy shall not exceed 1.
2. The Group S-2 enclosed parking garage is of Type I or II construction and is at least equal to the fire-resistance requirements of the Group S-2 open parking garage.
3. The height and the number of tiers of the Group S-2 open parking garage shall be limited as specified in Table 406.5.4.
4. The floor assembly separating the Group S-2 enclosed parking garage and Group S-2 open parking garage shall be protected as required for the floor assembly of the Group S-2 enclosed parking garage. Openings between the Group S-2 enclosed parking garage and Group S-2 open parking garage, except exit openings, shall not be required to be protected.
5. The Group S-2 enclosed parking garage is used exclusively for the parking or storage of private motor vehicles, but shall be permitted to contain an office, waiting room and toilet room having a total area of not more than 1,000 square feet (93 m^2) and mechanical equipment rooms associated with the operation of the building.

510.4 Parking beneath Group R. Where a maximum one story above grade plane Group S-2 parking garage, enclosed or open, or combination thereof, of Type I construction or open of Type IV construction, with grade entrance, is provided under a building of Group R, the number of stories to be used in determining the minimum type of construction shall be measured from the floor above such a parking area. The floor assembly between the parking garage and the Group R above shall comply with the type of construction required for the parking garage and shall also provide a fire-resistance rating not less than the mixed occupancy separation required in Section 508.4.

510.5 Group R-1 and R-2 buildings of Type IIIA construction. For buildings of Type IIIA construction in Groups R-1 and R-2, the maximum allowable height in Table

behind and below the projecting element has not less than 1-hour fire-resistance-rated construction for a distance not less than the depth of the projecting element on both sides of the fire wall. Openings within such exterior walls shall be protected by opening protectives having a fire protection rating of not less than $^3/_4$ hour.

2. Noncombustible horizontal projecting elements with concealed spaces, provided that a minimum 1-hour fire-resistance-rated wall extends through the concealed space. The projecting element shall be separated from the building by not less than 1-hour fire-resistance-rated construction for a distance on each side of the fire wall equal to the depth of the projecting element. The wall is not required to extend under the projecting element where the building exterior wall is not less than 1-hour fire-resistance rated for a distance on each side of the fire wall equal to the depth of the projecting element. Openings within such exterior walls shall be protected by opening protectives having a fire protection rating of not less than $^3/_4$ hour.
3. For combustible horizontal projecting elements with concealed spaces, the fire wall need only extend through the concealed space to the outer edges of the projecting elements. The exterior wall behind and below the projecting element shall be of not less than 1-hour fire-resistance-rated construction for a distance not less than the depth of the projecting elements on both sides of the fire wall. Openings within such exterior walls shall be protected by opening protectives having a fire protection rating of not less than $^3/_4$ hour.

706.6 Vertical continuity. Fire walls shall extend from the foundation to a termination point not less than 30 inches (762 mm) above both adjacent roofs.

Exceptions:

1. Stepped buildings in accordance with Section 706.6.1.
2. Two-hour fire-resistance-rated walls shall be permitted to terminate at the underside of the roof sheathing, deck or slab, provided that:
   2.1. The lower roof assembly within 4 feet (1220 mm) of the wall has not less than a 1-hour fire-resistance rating and the entire length and span of supporting elements for the rated roof assembly has a fire-resistance rating of not less than 1 hour.
   2.2. Openings in the roof shall not be located within 4 feet (1220 mm) of the fire wall.
   2.3. Each building shall be provided with not less than a Class B roof covering.
3. Walls shall be permitted to terminate at the underside of noncombustible roof sheathing, deck or slabs where both buildings are provided with not less than a Class B roof covering. Openings in the roof shall not be located within 4 feet (1220 mm) of the fire wall.
4. In buildings of Types III, IV and V construction, walls shall be permitted to terminate at the underside of combustible roof sheathing or decks, provided that all of the following requirements are met:
   4.1. Roof openings are not less than 4 feet (1220 mm) from the fire wall.
   4.2. The roof is covered with a minimum Class B roof covering.
   4.3. The roof sheathing or deck is constructed of fire-retardant-treated wood for a distance of 4 feet (1220 mm) on both sides of the wall or the roof is protected with $^5/_8$-inch (15.9 mm) Type X gypsum board directly beneath the underside of the roof sheathing or deck, supported by not less than 2-inch (51 mm) nominal ledgers attached to the sides of the roof framing members for a distance of not less than 4 feet (1220 mm) on both sides of the fire wall.
5. In buildings designed in accordance with Section 510.2, fire walls located above the 3-hour horizontal assembly required by Section 510.2, Item 1 shall be permitted to extend from the top of this horizontal assembly.
6. Buildings with sloped roofs in accordance with Section 706.6.2.

706.6.1 Stepped buildings. Where a fire wall also serves as an exterior wall for a building and separates buildings having different roof levels, such wall shall terminate at a point not less than 30 inches (762 mm) above the lower roof level. Exterior walls above the fire wall extending more than 30 inches (762 mm) above the lower roof shall be of not less than 1-hour fire-resistance-rated construction from both sides with openings protected by fire assemblies having a fire protection rating of not less than $^3/_4$ hour. Portions of the exterior walls greater than 15 feet (4572 mm) above the lower roof shall be of non-fire-resistance-rated construction unless otherwise rated construction is required by other provisions of this code.

Exception: A fire wall serving as part of an exterior wall that separates buildings having different roof levels shall be permitted to terminate at the underside of the roof sheathing, deck or slab of the lower roof, provided that Items 1, 2 and 3 are met. The exterior wall above the fire wall is not required to be of fire-resistance-rated construction unless required by other provisions of this code.

1. The lower roof assembly within 10 feet (3048 mm) of the fire wall has not less than a 1-hour fire-resistance rating.
2. The entire length and span of supporting elements for the rated roof assembly shall have a fire-resistance rating of not less than 1 hour.

3. Openings in the lower roof shall not be located within 10 feet (3048 mm) of the fire wall.

706.6.2 Buildings with sloped roofs. Where a fire wall serves as an interior wall for a building, and the roof on one side or both sides of the fire wall slopes toward the fire wall at a slope greater than 2 units vertical in 12 units horizontal (2:12), the fire wall shall extend to a height equal to the height of the roof located 4 feet (1219 mm) from the fire wall plus 30 inches (762 mm). The extension of the fire wall shall be not less than 30 inches (762 mm).

706.7 Combustible framing in fire walls. Adjacent combustible members entering into a concrete or masonry fire wall from opposite sides shall not have less than a 4-inch (102 mm) distance between embedded ends. Where combustible members frame into hollow walls or walls of hollow units, hollow spaces shall be solidly filled for the full thickness of the wall and for a distance not less than 4 inches (102 mm) above, below and between the structural members, with noncombustible materials approved for fireblocking.

706.8 Openings. Each opening through a fire wall shall be protected in accordance with Section 716 and shall not exceed 156 square feet (15 m^2). The aggregate width of openings at any floor level shall not exceed 25 percent of the length of the wall.

Exceptions:

1. Openings are not permitted in party walls constructed in accordance with Section 706.1.1.
2. Openings shall not be limited to 156 square feet (15 m^2) where both buildings are equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

706.9 Penetrations. Penetrations of fire walls shall comply with Section 714.

706.10 Joints. Joints made in or between fire walls shall comply with Section 715.

706.11 Ducts and air transfer openings. Ducts and air transfer openings shall not penetrate fire walls.

Exception: Penetrations by ducts and air transfer openings of fire walls that are not on a lot line shall be allowed provided that the penetrations comply with Section 717. The size and aggregate width of all openings shall not exceed the limitations of Section 706.8.

SECTION 707
FIRE BARRIERS

707.1 General. Fire barriers installed as required elsewhere in this code or the *California Fire Code* shall comply with this section.

707.2 Materials. Fire barriers shall be of materials permitted by the building type of construction.

707.3 Fire-resistance rating. The fire-resistance rating of fire barriers shall comply with this section.

707.3.1 Shaft enclosures. The fire-resistance rating of the fire barrier separating building areas from a shaft shall comply with Section 713.4.

707.3.2 Interior exit stairway and ramp construction. The fire-resistance rating of the fire barrier separating building areas from an interior exit stairway or ramp shall comply with Section 1023.1.

707.3.3 Enclosures for exit access stairways. The fire-resistance rating of the fire barrier separating building areas from an exit access stairway or ramp shall comply with Section 713.4.

707.3.4 Exit passageway. The fire-resistance rating of the fire barrier separating building areas from an exit passageway shall comply with Section 1024.3.

707.3.5 Horizontal exit. The fire-resistance rating of the separation between building areas connected by a horizontal exit shall comply with Section 1026.1.

707.3.6 Atriums. The fire-resistance rating of the fire barrier separating atriums shall comply with Section 404.6.

707.3.7 Incidental uses. The fire barrier separating incidental uses from other spaces in the building shall have a fire-resistance rating of not less than that indicated in Table 509.1.

707.3.8 Control areas. Fire barriers separating control areas shall have a fire-resistance rating of not less than that required in Section 414.2.4.

707.3.9 Separated occupancies. Where the provisions of Section 508.4 are applicable, the fire barrier separating mixed occupancies shall have a fire-resistance rating of not less than that indicated in Table 508.4 based on the occupancies being separated.

707.3.10 Fire areas. The fire barriers, fire walls, horizontal assemblies or combinations thereof separating a single occupancy into different fire areas shall have a fire-resistance rating of not less than that indicated in Table 707.3.10. The fire barriers, fire walls, horizontal assemblies or combinations thereof separating fire areas of mixed occupancies shall have a fire-resistance rating of not less than the highest value indicated in Table 707.3.10 for the occupancies under consideration.

TABLE 707.3.10
FIRE-RESISTANCE-RATING REQUIREMENTS FOR FIRE BARRIERS, FIRE WALLS OR HORIZONTAL ASSEMBLIES BETWEEN FIRE AREAS

OCCUPANCY GROUP	FIRE-RESISTANCE RATING (hours)
H-1, H-2	4
F-1, H-3, S-1	3
A, B, E, F-2, H-4, H-5, I, *L,* M, R, S-2	2
U	1

707.4 Exterior walls. Where exterior walls serve as a part of a required fire-resistance-rated shaft, or separation or enclosure for a stairway, ramp or exit passageway, such walls shall comply with the requirements of Section 705 for exterior

walls and the fire-resistance-rated enclosure or separation requirements shall not apply.

Exceptions:

1. Exterior walls required to be fire-resistance rated in accordance with Section 1021 for exterior egress balconies, Section 1023.7 for interior exit stairways and ramps, Section 1024.8 for exit passageways and Section 1027.6 for exterior exit stairways and ramps.
2. Exterior walls required to be fire-resistance rated in accordance with Section 1207 of the *California Fire Code* for enclosure of energy storage systems.

707.5 Continuity. Fire barriers shall extend from the top of the foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing, slab or deck above and shall be securely attached thereto. Such fire barriers shall be continuous through concealed space, such as the space above a suspended ceiling. Joints and voids at intersections shall comply with Sections 707.8 and 707.9

Exceptions:

1. Shaft enclosures shall be permitted to terminate at a top enclosure complying with Section 713.12.
2. Interior exit stairway and ramp enclosures required by Section 1023 and exit access stairway and ramp enclosures required by Section 1019 shall be permitted to terminate at a top enclosure complying with Section 713.12.
3. An exit passageway enclosure required by Section 1024.3 that does not extend to the underside of the roof sheathing, slab or deck above shall be enclosed at the top with construction of the same fire-resistance rating as required for the exit passageway.

707.5.1 Supporting construction. The supporting construction for a *fire barrier* shall be protected to afford the required fire-resistance rating of the fire barrier supported. Hollow vertical spaces within a fire barrier shall be fireblocked in accordance with Section 718.2 at every floor level.

Exceptions:

1. The maximum required fire-resistance rating for assemblies supporting fire barriers separating tank storage as provided for in Section 415.9.1.2 shall be 2 hours, but not less than required by Table 601 for the building construction type.
2. Supporting construction for 1-hour fire barriers required by Table 509.1 in buildings of Types IIB, IIIB and VB construction is not required to be fire-resistance rated unless required by other sections of this code.

707.6 Openings. Openings in a fire barrier shall be protected in accordance with Section 716. Openings shall be limited to a maximum aggregate width of 25 percent of the length of the wall, and the maximum area of any single opening shall not exceed 156 square feet (15 m^2). Openings in enclosures for exit access stairways and ramps, interior exit stairways and ramps and exit passageways shall also comply with Sections 1019, 1023.4 and 1024.5, respectively.

Exceptions:

1. Openings shall not be limited to 156 square feet (15 m^2) where adjoining floor areas are equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
2. Openings shall not be limited to 156 square feet (15 m^2) or an aggregate width of 25 percent of the length of the wall where the opening protective is a fire door serving enclosures for exit access stairways and ramps, and interior exit stairways and ramps.
3. Openings shall not be limited to 156 square feet (15 m^2) or an aggregate width of 25 percent of the length of the wall where the opening protective has been tested in accordance with ASTM E119 or UL 263 and has a minimum fire-resistance rating not less than the fire-resistance rating of the wall.
4. Fire window assemblies permitted in atrium separation walls shall not be limited to a maximum aggregate width of 25 percent of the length of the wall.
5. Openings shall not be limited to 156 square feet (15 m^2) or an aggregate width of 25 percent of the length of the wall where the opening protective is a fire door assembly in a fire barrier separating an enclosure for exit access stairways and ramps, and interior exit stairways and ramps from an exit passageway in accordance with Section 1023.3.1.

707.7 Penetrations. Penetrations of fire barriers shall comply with Section 714.

707.7.1 Prohibited penetrations. Penetrations into enclosures for exit access stairways and ramps, interior exit stairways and ramps, and exit passageways shall be allowed only where permitted by Sections 1019, 1023.5 and 1024.6, respectively.

707.8 Joints. Joints made in or between fire barriers, and joints made at the intersection of fire barriers with underside of a fire-resistance-rated floor or roof sheathing, slab or deck above, and the exterior vertical wall intersection shall comply with Section 715.

707.9 Voids at intersections. The voids created at the intersection of a fire barrier and a non-fire-resistance-rated roof assembly or a non-fire-resistance-rated exterior wall assembly shall be filled. An approved material or system shall be used to fill the void, and shall be securely installed in or on the intersection for its entire length so as not to dislodge, loosen or otherwise impair its ability to accommodate expected building movements and to retard the passage of fire and hot gases.

707.10 Ducts and air transfer openings. Penetrations in a fire barrier by ducts and air transfer openings shall comply with Section 717.

SECTION 708
FIRE PARTITIONS

708.1 General. The following wall assemblies shall comply with this section:

1. Separation walls as required by Section 420.2 for Group R occupancies.
2. Walls separating tenant spaces in covered and open mall buildings as required by Section 402.4.2.1.
3. Corridor walls as required by Section 1020.3 *and in Group I-2 and I-2.1 as required by Section 407.3.*
4. Enclosed elevator lobby separation as required by Section 3006.3.
5. Egress balconies as required by Section 1021.2
6. Walls separating ambulatory care facilities from adjacent spaces, corridors or tenant as required by Section 422.2.
7. Walls separating dwelling and sleeping units in Groups R-1 and R-2 in accordance with Sections 907.2.8.1 and 907.2.9.1.
8. Vestibules in accordance with Section 1028.2.
9. *Walls separating enclosed tenant spaces in high-rise buildings and in buildings of Types I, IIA, IIIA, IV or VA construction of Group A, E, H, I, L and R-2.1 occupancies and other applications listed in Section 1.11 regulated by the Office of the State Fire Marshal.*

708.2 Materials. The walls shall be of materials permitted by the building type of construction.

708.3 Fire-resistance rating. Fire partitions shall have a fire-resistance rating of not less than 1 hour.

Exceptions:

1. Corridor walls permitted to have a $^1/_2$-hour fire-resistance rating by Table 1020.2.
2. Dwelling unit and sleeping unit separations in buildings of Types IIB, IIIB and VB construction shall have fire-resistance ratings of not less than $^1/_2$ hour in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
3. *Walls separating enclosed tenant spaces in Group B high-rise buildings of Type I and II construction equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.*

708.4 Continuity. Fire partitions shall extend from the top of the foundation or floor/ceiling assembly below and be securely attached to one of the following:

1. The underside of the floor or roof sheathing, deck or slab above.
2. The underside of a floor/ceiling or roof/ceiling assembly having a fire-resistance rating that is not less than the fire-resistance rating of the fire partition.

Exceptions:

1. Fire partitions shall not be required to extend into a crawl space below where the floor above the crawl space has a minimum 1-hour fire-resistance rating.
2. Fire partitions serving as a corridor wall shall not be required to extend above the lower membrane of a corridor ceiling provided that the corridor ceiling membrane is equivalent to corridor wall membrane, and either of the following conditions is met:
   2.1. The room-side membrane of the corridor wall extends to the underside of the floor or roof sheathing, deck or slab of a fire-resistance-rated floor or roof above.
   2.2. The building is equipped with an automatic sprinkler system installed throughout in accordance with Section 903.3.1.1 or 903.3.1.2, including automatic sprinklers installed in the space between the top of the fire partition and underside of the floor or roof sheathing, deck or slab above.
3. Fire partitions serving as a corridor wall shall be permitted to terminate at the upper membrane of the corridor ceiling assembly where the corridor ceiling is constructed as required for the corridor wall.
4. Fire partitions separating tenant spaces in a covered or open mall building complying with Section 402.4.2.1 shall not be required to extend above the underside of a ceiling. Such ceiling shall not be required to be part of a fire-resistance-rated assembly, and the attic or space above the ceiling at tenant separation walls shall not be required to be subdivided by fire partitions.

708.4.1 Supporting construction. The supporting construction for a fire partition shall have a fire-resistance rating that is equal to or greater than the required fire-resistance rating of the supported fire partition.

Exception: In buildings of Types IIB, IIIB and VB construction, the supporting construction requirement shall not apply to fire partitions separating tenant spaces in covered and open mall buildings, fire partitions separating dwelling units, fire partitions separating sleeping units, 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.

708.4.2 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. Draftstopping up to the underside of the floor or roof sheathing, deck or slab above using materials com-

plying with Section 718.3.1 for floors or Section 718.4.1 for attics.

Exceptions:

1. Buildings equipped with an automatic sprinkler system installed throughout in accordance with Section 903.3.1.1, or in accordance with Section 903.3.1.2 provided that protection is provided in the space between the top of the fire partition and underside of the floor or roof sheathing, deck or slab above as required for systems complying with Section 903.3.1.1.
2. Where corridor walls provide a sleeping unit or dwelling unit separation, draftstopping shall only be required above one of the corridor walls.
3. In Group R-2 occupancies with fewer than four dwelling units, fireblocking and draftstopping shall not be required.
4. In Group R-2 occupancies up to and including four stories in height in buildings not exceeding 60 feet (18 288 mm) in height above grade plane, the attic space shall be subdivided by draftstops into areas not exceeding 3,000 square feet (279 m^2) or above every two dwelling units, whichever is smaller.
5. In Group R-3 occupancies with fewer than three dwelling units, fireblocking and draftstopping shall not be required in floor assemblies.

708.5 Exterior walls. Where exterior walls serve as a part of a required fire-resistance-rated separation, such walls shall comply with the requirements of Section 705 for exterior walls, and the fire-resistance-rated separation requirements shall not apply.

Exception: Exterior walls required to be fire-resistance rated in accordance with Section 1021.2 for exterior egress 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 level of fire protection rating not less than 1 hour, another smoke barrier wall or an outside wall. A smoke and draft control door assembly as specified in Section 716.2.2.1.1 shall not be required at each elevator hoistway door opening or at each exit doorway between an area of refuge and the exit enclosure.

709.5 Openings. Openings in a smoke barrier shall be protected in accordance with Section 716.

Exceptions:

1. In Group I-2, *I-2.1, R-2.1* and ambulatory care facilities, where a pair of opposite-swinging doors are installed across a corridor in accordance with Section 709.5.1, the doors shall be protected in accordance with Section 716. The doors shall not have a center mullion. Factory-applied or field-applied protective plates are not required to be labeled. *Doors installed across corridors shall comply with Section 1010.1.1.*
2. In Group I-2, *R-2.1* and *ambulatory care facilities*, special purpose horizontal sliding, accordion or folding doors installed in accordance with Section 1010.3.3 and protected in accordance with Section

716. *Doors installed across corridors shall comply with Section 1010.1.1.*

709.5.1 Group I-2, *I-2.1, R-2.1* and ambulatory care facilities. In Group I-2, *I-2.1, R-2.1* and ambulatory care facilities, where doors protecting openings in smoke barriers are installed across a corridor and have hold-open devices, the doors shall be automatic-closing in accordance with Section 716.2.6.6. Such doors shall have a vision panel with fire-protection-rated glazing materials in fire-protection-rated frames, the area of which shall not exceed that tested. *In Group I-2, where swinging doors are installed across a corridor, such doors shall be opposite swinging pairs.*

709.6 Penetrations. Penetrations of smoke barriers shall comply with Section 714.

709.7 Joints. Joints made in or between smoke barriers shall comply with Section 715.

709.8 Ducts and air transfer openings. Penetrations in a smoke barrier by ducts and air transfer openings shall comply with Section 717.

SECTION 710
SMOKE PARTITIONS

710.1 General. Smoke partitions installed as required elsewhere in the code shall comply with this section.

710.2 Materials. The walls shall be of materials permitted by the building type of construction. *In Group I-2 and I-2.1, smoke partitions shall have framing covered with noncombustible materials having an approved thermal barrier with an index of not less than 15 in accordance with FM 4880, UL 1040, NFPA 286 or UL 1715.*

710.3 Fire-resistance rating. Unless required elsewhere in the code, smoke partitions are not required to have a fire-resistance rating.

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.

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 $m^3/(s \times m^2)$] of door opening at 0.10 inch (24.9 Pa) of water 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, Condition 2. Where pass-through openings are provided in smoke partitions in Group I-2, Condition 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^2).

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*

Felt) Surfaced with Mineral Granules," shall be installed over the roof deck. Bird stops shall be used at the eaves when the profile fits, to prevent debris at the eave. Hip and ridge caps shall be mudded in to prevent intrusion of fire or embers.

***Exception:** Cap sheet is not required when no less than 1" of mineral wool board or other noncombustible material is located between the roofing material and wood framing or deck.*

Alternately, a Class A fire rated roof underlayment, tested in accordance with ASTM E108, shall be permitted to be used. If the sheathing consists of exterior fire-retardant-treated wood, the underlayment shall not be required to comply with a Class A classification. Bird stops shall be used at the eaves when the profile fits, to prevent debris at the eave. Hip and ridge caps shall be mudded in to prevent intrusion of fire or embers.

***705A.3 Roof valleys.** Where valley flashing is installed, the flashing shall be not less than 0.019-inch (0.48 mm) No. 26 gage galvanized sheet corrosion-resistant metal installed over not less than one layer of minimum 72 pound (32.4 kg) mineral-surfaced nonperforated cap sheet complying with ASTM D3909, at least 36-inch-wide (914 mm) running the full length of the valley.*

***705A.4 Roof gutters.** Roof gutters shall be provided with the means to prevent the accumulation of leaves and debris in the gutter.*

SECTION 706A
VENTS

***706A.1 General.** Where provided, ventilation openings for enclosed attics, gable ends, ridge ends, under eaves and cornices, enclosed eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, underfloor ventilation, foundations and crawl spaces, or any other opening intended to permit ventilation, either in a horizontal or vertical plane, shall be in accordance with Section 1202 and Sections 706A.1 through 706A.2 to resist building ignition from the intrusion of burning embers and flame through the ventilation openings.*

***706A.2 Requirements.** Ventilation openings shall be fully covered with Wildfire Flame and Ember Resistant vents approved and listed by the California State Fire Marshal, or WUI vents tested to ASTM E2886 and listed, by complying with all of the following requirements:*

1. *There shall be no flaming ignition of the cotton material during the Ember Intrusion Test.*
2. *There shall be no flaming ignition during the Integrity Test portion of the Flame Intrusion Test.*
3. *The maximum temperature of the unexposed side of the vent shall not exceed 662°F (350°C).*

***706A.2.1 Off ridge and ridge vents.** Vents that are installed on a sloped roof, such as dormer vents, shall comply with all of the following:*

1. *Vents shall be covered with a mesh where the dimensions of the mesh therein shall be a minimum of $^{1}/_{16}$-inch (1.6 mm) and shall not exceed $^{1}/_{8}$-inch (3.2 mm) in diameter.*
2. *The mesh material shall be noncombustible.*
3. *The mesh material shall be corrosion resistant.*

SECTION 707A
EXTERIOR COVERING

***707A.1 Scope.** The provisions of this section shall govern the materials and construction methods used to resist building ignition and/or safeguard against the intrusion of flames resulting from small ember and short-term direct flame contact exposure.*

***707A.2 General.** The following exterior covering materials and/or assemblies shall comply with this section:*

1. *Exterior wall coverings.*
2. *Exterior wall assemblies.*
3. *Exterior exposed underside of roof eave overhangs.*
4. *Exterior exposed underside of roof eave soffits.*
5. *Exposed underside of exterior porch ceilings.*
6. *Exterior exposed underside of floor projections.*
7. *Exterior underfloor areas.*

Exceptions to Section 707A.2:

1. *Exterior wall architectural trim, embellishments, fascias and gutters.*
2. *Roof or wall top cornice projections and similar assemblies.*
3. *Deck walking surfaces shall comply with Section 709A.4 only.*

***707A.3 Exterior wall coverings.** The exterior wall covering shall comply with one or more of the following requirements, except as permitted for exterior wall assemblies complying with Section 707A.4:*

1. *Noncombustible material.*
2. *Ignition-resistant material. The ignition-resistant material shall be labeled for exterior use and shall meet the requirements of Section 704A.2.*
3. *Fire-retardant-treated wood. The fire-retardant-treated wood shall be labeled for exterior use and shall meet the requirements of Section 2303.2.*

***707A.3.1 Extent of exterior wall covering.** Exterior wall coverings shall extend from the top of the foundation to the roof, and terminate at 2 inch (50.8 mm) nominal solid wood blocking between rafters at all roof overhangs, or in the case of enclosed eaves, terminate at the enclosure.*

***707A.4 Exterior wall assemblies**. Exterior wall assemblies of buildings or structures shall be constructed using one or more of the following methods, unless they are covered by an exterior wall covering complying with Section 707A.3:*

1. *Assembly of sawn lumber or glue-laminated wood with the smallest minimum nominal dimension of 4 inches (102 mm). Sawn or glue-laminated planks splined, tongue-and-groove, or set close together and well spiked.*
2. *Log wall construction assembly.*

3. *Assembly that has been tested in accordance with the test procedures for a 10-minute direct flame contact exposure test set forth in ASTM E2707 with the conditions of acceptance shown in Section 707A.4.1.*
4. *Assembly that meets the performance criteria in accordance with the test procedures for a 10-minute direct flame contact exposure test set forth in SFM Standard 12-7A-1.*
5. *Assembly suitable for exterior fire exposure with a 1-hour fire-resistance rating, rated from the exterior side, as tested in accordance with ASTM E119 or UL 263.*
6. *Assembly suitable for exterior fire exposure containing one layer of $^{5}/_{8}$-inch (15.9 mm) Type X gypsum sheathing applied behind the exterior wall covering or cladding on the exterior side of the framing.*
7. *Assembly suitable for exterior fire exposure containing any of the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual as complying with a 1-hour fire-resistance rating, as tested in accordance with ASTM E119 or UL 263.*

707A.4.1 Conditions of acceptance when tested in accordance with ASTM E2707. *The ASTM E2707 test shall be conducted on a minimum of three test specimens, and the conditions of acceptance in Items 1 and 2 below shall be met. If any one of the three tests do not meet the conditions of acceptance, three additional tests shall be run. All the additional tests shall meet the conditions of acceptance.*

1. *Absence of flame penetration through the wall assembly at any time.*
2. *Absence of evidence of glowing combustion on the interior surface of the assembly at the end of the 70-minute test.*

707A.5 Open roof eaves. *The exposed roof deck on the underside of unenclosed roof eaves shall consist of one or more of the following:*

1. *Noncombustible material.*
2. *Ignition-resistant material. The ignition-resistant material shall be labeled for exterior use and shall meet the requirements of Section 704A.2.*
3. *Fire-retardant-treated wood. The fire-retardant-treated wood shall be labeled for exterior use and shall meet the requirements of Section 2303.2.*
4. *Materials approved for not less than 1-hour fire-resistance-rated construction on the exterior side, as tested in accordance with ASTM E119 or UL 263.*
5. *One layer of $^{5}/_{8}$-inch (15.9 mm) Type X gypsum sheathing applied behind an exterior covering on the underside of the roof deck.*
6. *The exterior portion of a 1-hour fire-resistance-rated exterior assembly, as tested in accordance with ASTM E119 or UL 263, applied to the underside of the roof deck designed for exterior fire exposure, including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.*

Exception to Section 707A.5: *The following materials do not require protection:*

Fascia and other architectural trim boards.

707A.6 Enclosed roof eaves and roof eave soffits. *The exposed underside of enclosed roof eaves having either a boxed-in roof eave soffit with a horizontal underside, or sloping rafter tails with an exterior covering applied to the underside of the rafter tails, shall be protected by one or more of the following:*

1. *Noncombustible material.*
2. *Ignition-resistant material. The ignition-resistant material shall be labeled for exterior use and shall meet the requirements of Section 704A.2.*
3. *Fire-retardant-treated wood. The fire-retardant-treated wood shall be labeled for exterior use and shall meet the requirements of Section 2303.2.*
4. *Materials approved for not less than 1-hour fire-resistance-rated construction on the exterior side, as tested in accordance with ASTM E119 or UL 263.*
5. *One layer of $^{5}/_{8}$-inch (15.9 mm) Type X gypsum sheathing applied behind the exterior covering or cladding on the underside of the rafter tails or soffit.*
6. *The exterior portion of a 1-hour fire-resistive exterior assembly applied to the underside of the rafter tails or soffit, including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.*
7. *Boxed-in roof eave soffit assemblies with a horizontal underside that meet the performance criteria in Section 707A.11 when tested in accordance with the test procedures set forth in ASTM E2957.*
8. *Boxed-in roof eave soffit assemblies with a horizontal underside that meet the performance criteria in accordance with the test procedures set forth in SFM Standard 12-7A-3.*

Exception to Section 707A.6: *The following materials do not require protection:*

Fascia and other architectural trim boards.

707A.7 Exterior porch ceilings. *The exposed underside of exterior porch ceilings shall be protected by one or more of the following:*

1. *Noncombustible material.*
2. *Ignition-resistant material. The ignition-resistant material shall be labeled for exterior use and shall meet the requirements of Section 704A.2.*
3. *Fire-retardant-treated wood. The fire-retardant-treated wood shall be labeled for exterior use and shall meet the requirements of Section 2303.2.*
4. *Materials approved for not less than 1-hour fire-resistance-rated construction on the exterior side, as tested in accordance with ASTM E119 or UL 263.*
5. *One layer of $^{5}/_{8}$-inch (15.9 mm) Type X gypsum sheathing applied behind the exterior covering or cladding on the underside of the rafter tails or soffit.*

accordance with Section 907.2 that will respond to visible or invisible particles of combustion. Sprinklers shall not be omitted from a room merely because it is damp, of fire-resistance-rated construction or contains electrical equipment.

1. A room where the application of water, or flame and water, constitutes a serious life or fire hazard *as determined by the authority having jurisdiction*.
2. A room or space where sprinklers are considered undesirable because of the nature of the contents *as determined by the authority having jurisdiction*.
3. *Machine rooms, machinery spaces, control rooms, control spaces and hoistways associated with f*ire service access elevator*s provided in accordance with Section 3007.*
4. Machine rooms, machinery spaces, control rooms and control spaces *and hoistways* associated with occupant evacuation elevators designed in accordance with Section 3008.
5. *Spaces or areas in telecommunications buildings used exclusively for telecommunications equipment, and associated electrical power distribution equipment, provided those spaces or areas are equipped throughout with an automatic smoke detection system in accordance with Section 907.2 and are separated from the remainder of the building by not less than 1-hour fire barriers constructed in accordance with Section 707 or not less than 2-hour horizontal assemblies constructed in accordance with Section 712, or both.*
6. *Elevator hoistways, machine rooms, machinery spaces, control spaces and control rooms in accordance with Section 3005.4.1 of the California Building Code.*

[F] 903.3.1.1.2 Bathrooms. In Group R occupancies sprinklers shall not be required in bathrooms that do not exceed 55 square feet (5 m^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.

903.3.1.1.3 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. The floor level of the highest story is 30 feet (9144 mm) or less above the lowest level of fire department vehicle access.
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; Group R-4, Condition 1; 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 *a*utomatic sprinkler systems are required by this code, quick-response or residential automatic sprinklers shall be installed in all of the following areas in accordance with Section 903.3.1 and their listings:

1. Throughout all spaces within a smoke compartment containing care recipient sleeping units in Group I-2 in accordance with this code.
2. Throughout all spaces within a smoke compartment containing gas fireplace appliances and decorative gas appliances in Group I-2.
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.

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

903.3.8.2 Occupancy hazard classification. Only areas classified by NFPA 13 as Light Hazard or Ordinary Hazard Group 1 shall be permitted to be protected by limited area sprinkler systems.

903.3.8.3 Piping arrangement. Where a limited area sprinkler system is installed in a building with an automatic wet standpipe system, sprinklers shall be supplied by the standpipe system. Where a limited area sprinkler system is installed in a building without an automatic wet standpipe system, water shall be permitted to be supplied by the plumbing system provided that the plumbing system is capable of simultaneously supplying domestic and sprinkler demands.

903.3.8.4 Supervision. Control valves shall not be installed between the water supply and sprinklers unless the valves are of an approved indicating type that are supervised or secured in the open position.

903.3.8.5 Calculations. Hydraulic calculations in accordance with NFPA 13 shall be provided to demonstrate that the available water flow and pressure are adequate to supply all sprinklers installed in any single fire area with discharge densities corresponding to the hazard classification.

[F] 903.3.9 Floor control valves. *Floor control valves and waterflow detection assemblies shall be installed at each floor where any of the following occur:*

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

Exception: *Group R-3 and R-3.1 occupancies floor control valves and waterflow detection assemblies shall not be required.*

[F] 903.4 Sprinkler system supervision and alarms. Valves controlling the water supply for automatic sprinkler systems, pumps, tanks, water levels and temperatures, critical air pressures and waterflow switches on all sprinkler systems shall be electrically supervised by a listed fire alarm control unit.

Exceptions:

1. Automatic sprinkler systems protecting one- and two-family dwellings.
2. Limited area sprinkler systems in accordance with Section 903.3.8.
3. Automatic sprinkler systems installed in accordance with NFPA 13R where a common supply main is used to supply both domestic water and the automatic sprinkler system, and a separate shutoff valve for the automatic sprinkler system is not provided.
4. Jockey pump control valves that are sealed or locked in the open position.
5. Control valves to commercial kitchen hoods, paint spray booths or dip tanks that are sealed or locked in the open position.
6. Valves controlling the fuel supply to fire pump engines that are sealed or locked in the open position.
7. Trim valves to pressure switches in dry, preaction and deluge sprinkler systems that are sealed or locked in the open position.
8. Underground key or hub gate valves in roadway boxes.

[F] 903.4.1 Monitoring. Alarm, supervisory and trouble signals shall be distinctly different and shall be automatically transmitted to an approved supervising station or, where approved by the fire code official, shall sound an audible signal at a constantly attended location.

Exception: Backflow prevention device test valves located in limited area sprinkler system supply piping shall be locked in the open position. In occupancies required to be equipped with a fire alarm system, the backflow preventer valves shall be electrically supervised by a tamper switch installed in accordance with NFPA 72 and separately annunciated.

[F] 903.4.2 Alarms. *One exterior approved* audible device, located on the exterior of the building in an approved location, shall be connected to each automatic sprinkler system. Such sprinkler waterflow alarm devices shall be activated by water flow equivalent to the flow of a single sprinkler of the smallest orifice size installed in the system. Where a fire alarm system is installed, actuation of the automatic sprinkler system shall actuate the building fire alarm system. *Visible alarm notification appliances shall not be required except when required by Section 907.*

[F] 903.4.3 Floor control valves. Approved supervised indicating control valves shall be provided at the point of connection to the riser on each floor in high-rise buildings *and Group I-2 occupancies having occupied floors located more than 75 feet above the lowest level of fire department vehicle access*.

[F] 903.5 Testing and maintenance. *Automatic* sprinkler systems shall be 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,* NFPA 11 and NFPA 16 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,* NFPA 2001 and

CHAPTER 10
MEANS OF EGRESS

User notes:

About this chapter: *Chapter 10 provides the general criteria for designing the means of egress established as the primary method for protection of people in buildings by allowing timely relocation or evacuation of building occupants. Both prescriptive and performance language is utilized in this chapter to provide for a basic approach in the determination of a safe exiting system for all occupancies. It addresses all portions of the egress system (exit access, exits and exit discharge) and includes design requirements as well as provisions regulating individual components. The requirements detail the size, arrangement, number and protection of means of egress components. Functional and operational characteristics that will permit the safe use of components without special knowledge or effort are specified.*

The means of egress protection requirements work in coordination with other sections of the code, such as protection of vertical openings (see Chapter 7), interior finish (see Chapter 8), fire suppression and detection systems (see Chapter 9) and numerous others, all having an impact on life safety. Chapter 10 is subdivided into four main sections: general (Sections 1003–1015), exit access (Sections 1016–1021), exit (Sections 1022–1027) and exit discharge (Sections 1028–1029). Special allowances for the unique requirements for assembly spaces (Section 1030) and emergency escape and rescue openings (Section 1031) complete the chapter. Chapter 10 of this code is duplicated in Chapter 10 of the California Fire Code*; however, the* California Fire Code *contains one additional section on maintenance of the means of egress system in existing buildings.*

Section 1010 was extensively reorganized for the 2021 edition. For complete information, see the moved sections table in the preface information for the California Building Code.

SECTION 1001
ADMINISTRATION

1001.1 General. Buildings or portions thereof shall be provided with a means of egress system as required by this chapter. The provisions of this chapter shall control the design, construction and arrangement of means of egress components required to provide an approved means of egress from structures and portions thereof.

1001.2 Minimum requirements. It shall be unlawful to alter a building or structure in a manner that will reduce the number of exits or the minimum width or required capacity of the means of egress to less than required by this code.

[F] SECTION 1002
MAINTENANCE AND PLANS

[F] 1002.1 Maintenance. Means of egress shall be maintained in accordance with the *California Fire Code*.

[F] 1002.2 Fire safety and evacuation plans. Fire safety and evacuation plans shall be provided for all occupancies and buildings where required by the *California Fire Code*. Such fire safety and evacuation plans shall comply with the applicable provisions of Sections 401.2 and 404 of the *California Fire Code*.

SECTION 1003
GENERAL MEANS OF EGRESS

1003.1 Applicability. The general requirements specified in Sections 1003 through 1015 shall apply to all three elements of the means of egress system, in addition to those specific requirements for the exit access, the exit and the exit discharge detailed elsewhere in this chapter.

[DSA-AC & HCD 1-AC] *In addition to the requirement of this chapter, means of egress, which provide access to, or egress from, buildings or facilities where accessibility is required for applications listed in Section 1.8.2.1.2 regulated by the Department of Housing and Community Development, or Section 1.9.1 regulated by the Division of the State Architect-Access Compliance, shall also comply with Chapter 11A or Chapter 11B, as applicable.*

Exception: *Exiting requirements for Fixed Guideway Transit Systems shall be as per Section 443.*

1003.1.1 Means of egress for hospitals. [OSHPD 1] *In addition to the requirements of this chapter, means of egress for hospitals shall comply with Part 10 California Existing Building Code Section 308A.*

1003.1.2 Means of egress for hospital buildings removed from acute care service, skilled nursing facilities, intermediate care facilities and acute psychiatric hospitals. [OSHPD 1R, 2 & 5] *In addition to the requirements of this chapter, means of egress for hospital buildings removed from acute care service, skilled nursing facilities, intermediate care facilities and acute psychiatric hospitals shall comply with OSHPD amendments to Part 10 California Existing Building Code Section 308.*

1003.2 Ceiling height. The means of egress shall have a ceiling height of not less than 7 feet 6 inches (2286 mm) above the finished floor.

Exceptions:

1. Sloped ceilings in accordance with Section 1208.2.
2. Ceilings of dwelling units and sleeping units within residential occupancies in accordance with Section 1208.2.

3. Allowable projections in accordance with Section 1003.3.
4. Stair headroom in accordance with Section 1011.3.
5. Door height in accordance with Section 1010.1.1.
6. Ramp headroom in accordance with Section 1012.5.2.
7. The clear height of floor levels in vehicular and pedestrian traffic areas of public and private parking garages in accordance with Section 406.2.2.
8. Areas above and below mezzanine floors in accordance with Section 505.2.
9. *In Group I-2, I-2.1 and I-3 occupancies, the means of egress shall have a ceiling height of not less than 8 feet (2439 mm).*

1003.3 Protruding objects. Protruding objects on circulation paths shall comply with the requirements of Sections 1003.3.1 through 1003.3.4.

Exception: *In Group I-2 and Group I-2.1 occupancies, protruding objects shall not extend more than 12 inches (305 mm) below the minimum ceiling height required by Section 1003.2.*

1003.3.1 Headroom. Protruding objects are permitted to extend below the minimum ceiling height required by Section 1003.2 where a minimum headroom of 80 inches (2032 mm) is provided over any circulation paths, including walks, corridors, aisles and passageways. *In other than Group I-2 and Group I-2.1 occupancies,* Not more than 50 percent of the ceiling area of a means of egress shall be *permitted to be* reduced in height by protruding objects.

Exception: Door closers and stops shall not reduce headroom to less than 78 inches (1981 mm).

A barrier shall be provided where the vertical clearance above a circulation path is less than 80 inches (2032 mm) high above the finished floor. The leading edge of such a barrier shall be located 27 inches (686 mm) maximum above the finished floor.

1003.3.2 Post-mounted objects. A free-standing object mounted on a post or pylon shall not overhang that post or pylon more than 4 inches (102 mm) where the lowest point of the leading edge is more than 27 inches (686 mm) and less than 80 inches (2032 mm) above the finished floor. Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches (305 mm), the lowest edge of such sign or obstruction shall be 27 inches (686 mm) maximum or 80 inches (2032 mm) minimum above the finished floor or ground.

Exception: These requirements shall not apply to sloping portions of handrails between the top and bottom riser of stairs and above the ramp run.

1003.3.3 Horizontal projections. Objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finished floor shall not project horizontally more than 4 inches (102 mm) into the circulation path.

Exception: Handrails are permitted to protrude $4^{1}/_{2}$ inches (114 mm) from the wall or guard.

1003.3.3.1 Horizontal projections for Group I-2 and I-2.1 occupancies. *Structural elements, fixtures or furnishings shall not project horizontally from either side more than $1\text{-}^{1}/_{2}$ inches (38 mm) into the required width of an exit access corridor serving any area caring for one or more nonambulatory or bedridden persons.*

Exceptions:

1. *Handrails are permitted to protrude $3^{1}/_{2}$ inches (89 mm) from the wall.*
2. *Alcohol-based hand-rub dispensers are permitted to protrude 4 inches.*
3. *Manual fire alarm boxes with a protective cover installed are permitted to protrude 4 inches.*

1003.3.4 Clear width. Protruding objects shall not reduce the minimum clear width of accessible routes *as required in Chapter 11A or Chapter 11B.*

1003.4 Slip-resistant surface. Circulation paths of the means of egress shall have a slip-resistant surface and be securely attached.

1003.5 Elevation change. Where changes in elevation of less than 12 inches (305 mm) exist in the means of egress, sloped surfaces shall be used. Where the slope is greater than one unit vertical in 20 units horizontal (5-percent slope), ramps complying with Section 1012 shall be used. Where the difference in elevation is 6 inches (152 mm) or less, the ramp shall be equipped with either handrails or floor finish materials that contrast with adjacent floor finish materials.

Exceptions:

1. Steps at exterior doors complying with Section 1010.1.4.
2. A stair with a single riser or with two risers and a tread is permitted at locations not required to be accessible by Chapter 11*A or 11B* where the risers and treads comply with Section 1011.5, the minimum depth of the tread is 13 inches (330 mm) and not less than one handrail complying with Section 1014 is provided within 30 inches (762 mm) of the centerline of the normal path of egress travel on the stair.
3. A step is permitted in aisles serving seating that has a difference in elevation less than 12 inches (305 mm) at locations not required to be accessible by Chapter 11*A or 11B*, provided that the risers and treads comply with Section 1030.14 and the aisle is provided with a handrail complying with Section 1030.16.

Throughout a story in a Group I-2 *and I-2.1 occupancies*, any change in elevation in portions of the means of egress that serve nonambulatory persons shall be by means of a ramp or sloped walkway.

shower or sauna compartments, *as specified in Chapter 11A.*

10. Doors serving *nonadaptable or* nonaccessible single-user shower or sauna compartments, toilet stalls or dressing, fitting or changing rooms shall have a minimum clear opening width of 20 inches (508 mm).

1010.1.1.1 Projections into clear opening. There shall not be projections into the required clear opening width lower than 34 inches (864 mm) above the floor or ground. Projections into the clear opening width between 34 inches (864 mm) and 80 inches (2032 mm) above the floor or ground shall not exceed 4 inches (102 mm).

Exception*s*:

1. Door closers, overhead door stops, power door operators, and electromagnetic door locks shall be permitted to be 78 inches (1980 mm) minimum above the floor.

2. In a Group I-2 or I-2.1 occupancy, there shall be no projections into the clear width of doors used for the movement of beds and stretcher patients in the means of egress.

1010.1.2 Egress door types. Egress doors shall be of the side-hinged swinging door, pivoted door, or balanced door types.

Exceptions:

1. Private garages, office areas, factory and storage areas with an occupant load of 10 or less.
2. Group I-3 occupancies used as a place of detention.
3. Critical or intensive care patient rooms within suites of health care facilities.
4. Doors within or serving a single dwelling unit in Groups R-2 and R-3.
5. In other than Group H occupancies, revolving doors complying with Section 1010.3.1.
6. In other than Group H occupancies, special purpose horizontal sliding, accordion or folding door assemblies complying with Section 1010.3.3.
7. Power-operated doors in accordance with Section 1010.3.2.
8. Doors serving a bathroom within an individual sleeping unit in Group R-1.
9. In other than Group H occupancies, manually operated horizontal sliding doors are permitted in a means of egress from spaces with an occupant load of 10 or less.
10. *In I-2 and I-2.1 occupancies, exit doors serving an occupant load of 50 or more, shall not be of the pivoted or balanced type.*

1010.1.2.1 Direction of swing. Side-hinged swinging doors, pivoted doors and balanced doors shall swing in the direction of egress travel where serving a room or area containing an occupant load of 50 or more persons or a Group H occupancy. *For Group L occupancies, see Section 453.6.2.*

In a Group I-2 occupancy, all required exterior egress doors shall open in the direction of egress regardless of the occupant load served.

1010.1.3 Forces to unlatch and open doors. The forces to unlatch doors shall comply with the following:

1. Where door hardware operates by push or pull, the operational force to unlatch the door shall not exceed 15 pounds (67 N).
2. Where door hardware operates by rotation, the operational force to unlatch the door shall not exceed 28 inch-pounds (315 N-cm).

The force to open doors shall comply with the following:

1. For interior swinging egress doors that are manually operated, other than doors required to be fire rated, the force for pushing or pulling open the door shall not exceed 5 pounds (22 N).
2. For other swinging doors, sliding doors or folding doors, and doors required to be fire rated, the door shall require not more than a 30-pound (133 N) force to be set in motion and shall move to a full-open position when subjected to not more than a 15-pound (67 N) force.

1010.1.3.1 Location of applied forces. Forces shall be applied to the latch side of the door.

1010.1.3.2 Manual horizontal sliding doors. Where a manual horizontal sliding door is required to latch, the latch or other mechanism shall prevent the door from rebounding into a partially open position when the door is closed.

1010.1.4 Floor elevation. There shall be a floor or landing on each side of a door. Such floor or landing shall be at the same elevation on each side of the door. Landings shall be level except for exterior landings, which are permitted to have a slope not to exceed 0.25 unit vertical in 12 units horizontal (2-percent slope).

Exceptions:

1. At doors serving individual dwelling units or sleeping units in Groups R-2 and R-3: a door is permitted to open at the top step of an interior flight of stairs, provided that the door does not swing over the top step.
2. At exterior doors serving Groups F, H, R-2 and S and where such doors are not part of an *adaptable or* accessible route *or, not required to be accessible by Chapter 11A or 11B of the California Building Code,* the landing at an exterior door shall not be more than 7 inches (178 mm) below the landing on the egress side of the door, provided that the door, other than an exterior storm or screen door, does not swing over the landing.

3. At exterior doors serving Group U and individual dwelling units and sleeping units in Groups R-2 and R-3, and where such units are not required to be *adaptable or accessible,* the landing at an exterior doorway shall be not more than $7^3/_4$ inches (197 mm) below the landing on the egress side of the door. Such doors, including storm or screen doors, shall be permitted to swing over either landing.
4. Variations in elevation due to differences in finish materials, but not more than $^1/_2$ inch (12.7 mm).
5. Exterior decks, patios or balconies that are part of *adaptable or accessible* dwelling units, have impervious surfaces and that are not more than 4 inches (102 mm) below the finished floor level of the adjacent interior space of the dwelling unit. *See also Chapter 11A, Section 1132A.4.*
6. Doors serving equipment spaces not required to be *adaptable or* accessible and serving an occupant load of five or less shall be permitted to have a landing on one side to be not more than 7 inches (178 mm) above or below the landing on the egress side of the door.

1010.1.5 Landings at doors. Landings shall have a width not less than the width of the stairway or the door, whichever is greater. Doors in the fully open position shall not reduce a required dimension by more than 7 inches (178 mm). Where a landing serves an 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 $^3/_4$ inch (19.1 mm) in height above the finished floor or landing for sliding doors serving dwelling units or $^1/_2$ inch (12.7 mm) above the finished floor or landing for other doors. Raised thresholds and floor level changes greater than $^1/_4$ 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 $7^3/_4$ 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 $4^3/_4$ inches (120 mm) in height above the exterior deck, patio or balcony for sliding doors or $4^1/_2$ 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.

Exceptions:

1. Places of detention or restraint.
2. Where manually operated bolt locks are permitted by Section 1010.2.5.
3. Doors with automatic flush bolts as permitted by Section 1010.2.4, Item 4.
4. 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. Locks used only for

1012.5.1 Width and capacity. The minimum width and required capacity of a means of egress ramp shall be not less than that required for corridors by Section 1020.3. The clear width of a ramp between handrails, if provided, or other permissible projections shall be 36 inches (914 mm) minimum.

1012.5.2 Headroom. The minimum headroom in all parts of the means of egress ramp shall be not less than 80 inches (2032 mm) above the finished floor of the ramp run and any intermediate landings. The minimum clearance shall be maintained for the full width of the ramp and landing.

1012.5.3 Restrictions. Means of egress ramps shall not reduce in width in the direction of egress travel. Projections into the required ramp and landing width are prohibited. Doors opening onto a landing shall not reduce the clear width to less than 42 inches (1067 mm).

1012.6 Landings. Ramps shall have landings at the bottom and top of each ramp, points of turning, entrance, exits and at doors. Landings shall comply with Sections 1012.6.1 through 1012.6.5.

1012.6.1 Slope. Landings shall have a slope not steeper than one unit vertical in 48 units horizontal (2-percent slope) in any direction. Changes in level are not permitted.

1012.6.2 Width. The landing width shall be not less than the width of the widest ramp run adjoining the landing.

1012.6.3 Length. The landing length shall be 60 inches (1525 mm) minimum.

Exceptions:

1. In Group R-2 and R-3 individual dwelling and sleeping units that are not required to be *accessible* in accordance with *Chapter 11A*, landings are permitted to be 36 inches (914 mm) minimum.
2. Where the ramp is not a part of an accessible route, the length of the landing shall not be required to be more than 48 inches (1219 mm) in the direction of travel.

1012.6.4 Change in direction. Where changes in direction of travel occur at landings provided between ramp runs, the landing shall be 60 inches by 60 inches (1524 mm by 1524 mm) minimum.

Exception: In Group R-2 and R-3 individual dwelling or sleeping units that are not required to be *accessible* in accordance with *Chapter 11A*, landings are permitted to be 36 inches by 36 inches (914 mm by 914 mm) minimum.

1012.6.5 Doorways. Where doorways are located adjacent to a ramp landing, maneuvering clearances required *for accessibility* are permitted to overlap the required landing area *as specified in Chapter 11A or 11B, as applicable.*

1012.7 Ramp construction. Ramps shall be built of materials consistent with the types permitted for the type of construction of the building, except that wood handrails shall be permitted for all types of construction.

1012.7.1 Ramp surface. The surface of ramps shall be of slip-resistant materials that are securely attached.

1012.7.2 Outdoor conditions. Outdoor ramps and outdoor approaches to ramps shall be designed so that water will not accumulate on walking surfaces.

1012.8 Handrails. Ramps with a rise greater than 6 inches (152 mm) shall have handrails on both sides. Handrails shall comply with Section 1014.

1012.9 Guards. Guards shall be provided where required by Section 1015 and shall be constructed in accordance with Section 1015.

1012.10 Edge protection. Edge protection complying with Section 1012.10.1 or 1012.10.2 shall be provided on each side of ramp runs and at each side of ramp landings.

Exceptions:

1. Edge protection is not required on ramps that are not required to have handrails, provided they have flared sides that comply with *Chapter 11A or 11B.*
2. Edge protection is not required on the sides of ramp landings serving an adjoining ramp run or stairway.
3. Edge protection is not required on the sides of ramp landings having a vertical dropoff of not more than $^1/_2$ inch (12.7 mm) within 10 inches (254 mm) horizontally of the required landing area.

1012.10.1 Curb, rail, wall or barrier. A curb, rail, wall or barrier shall be provided to serve as edge protection. A curb shall be not less than 4 inches (102 mm) in height. Barriers shall be constructed so that the barrier prevents the passage of a 4-inch-diameter (102 mm) sphere, where any portion of the sphere is within 4 inches (102 mm) of the floor or ground surface.

1012.10.2 Extended floor or ground surface. The floor or ground surface of the ramp run or landing shall extend 12 inches (305 mm) minimum beyond the inside face of a handrail complying with Section 1014.

SECTION 1013
EXIT SIGNS

1013.1 Where required. Exits and exit access doors shall be marked by an approved exit sign readily visible from any direction of egress travel. The path of egress travel to exits and within exits shall be marked by readily visible exit signs to clearly indicate the direction of egress travel in cases where the exit or the path of egress travel is not immediately visible to the occupants. Intervening means of egress doors within exits shall be marked by exit signs. Exit sign placement shall be such that any point in an exit access corridor or exit passageway is within 100 feet (30 480 mm) or the listed viewing distance of the sign, whichever is less, from the nearest visible exit sign.

Exceptions:

1. Exit signs are not required in rooms or areas that require only one exit or exit access.

2. Main exterior exit doors or gates that are obviously and clearly identifiable as exits need not have exit signs where approved by the building official.
3. Exit signs are not required in occupancies in Group U and individual sleeping units or dwelling units in Group R-1, R-2 or R-3 *or R-3.1*.
4. Exit signs are not required *where inmates are housed or held* in dayrooms, sleeping rooms or dormitories in occupancies in Group I-3.
5. In occupancies in Groups A-4 and A-5, exit signs are not required on the seating side of vomitories or openings into seating areas where exit signs are provided in the concourse that are readily apparent from the vomitories. Egress lighting is provided to identify each vomitory or opening within the seating area in an emergency.

1013.2 Low-level exit signs in Group R-1. *See Section 1013.7.*

1013.3 Illumination. Exit signs shall be internally or externally illuminated.

Exception: Tactile signs required by Section 1013.4 need not be provided with illumination.

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.

1013.6 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 $^3/_4$ 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 $^3/_8$ 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.*

1224.4.11.1.2 Food preparation areas. *Floors in areas used for food preparation and assembly shall be water-resistant. Floor surfaces, including tile joints, shall be resistant to food acids. Floor construction in dietary and food preparation areas shall be free of spaces that can harbor pests.*

1224.4.11.1.3 Wet cleaning. *In all areas subject to frequent wet-cleaning methods, flooring materials shall not be physically affected by germicidal or other types of cleaning solutions.*

1224.4.11.1.4 Airborne infection isolation, airborne infection isolation exam/treatment and protective environment rooms. *These rooms and anterooms shall have seamless flooring with integral coved base.*

1224.4.11.2 Wall bases.

1224.4.11.2.1 Material. *The material and textures of bases and the installation thereof shall be such as to minimize dust-catching surfaces, moisture, infiltration and the harboring of vermin.*

> ***Exception:*** *In locations where carpet is permitted as a floor finish material, the use of carpeted base (coved or strip base) up to a maximum height of 5 inches (127 mm) is also permissible.*

1224.4.11.2.2 Wet cleaning. *Floor and wall base assemblies in the following rooms shall be monolithic and have an integral coved wall base that is carried up the wall a minimum of 6 inches (150 mm) and is tightly sealed to the wall:*

1. *Operating rooms*
2. *Interventional imaging rooms, including cardiac catheterization labs*
3. *Cesarean delivery rooms*
4. *Cystoscopy, urology and minor surgical procedure rooms*
5. *Endoscopy procedure rooms*
6. *Endoscopy instrument processing rooms*
7. *IV and chemotherapy preparation rooms*
8. *Airborne infection isolation (AII) rooms*
9. *Protective environment (PE) rooms*
10. *Anterooms to AII and PE rooms, where provided*
11. *Cast rooms*

The floors and wall bases of kitchens, soiled and clean utility rooms, housekeeping rooms with mop sinks, patient, public and staff sanitary facilities and other areas subject to frequent wet cleaning, shall also be homogeneous, nonabsorbent, smooth, easily cleaned and not physically affected by germicidal cleaning solutions, but may have tightly sealed joints and shall be constructed without voids at the intersection of floor and wall surfaces.

1224.4.11.3 Wall finishes. *Wall finishes shall comply with the following requirements:*

1. *Wall finishes shall be washable. In the vicinity of plumbing fixtures, wall finishes shall be smooth, scrubbable and water-resistant.*
2. *Wall finishes in areas such as operating rooms, delivery rooms and trauma rooms shall be monolithic, scrubbable and able to withstand cleaning with chemicals.*
3. *Wall finishes in operating rooms, cesarean delivery rooms, isolation rooms and sterile processing rooms shall be free of fissures, open joints or crevices that may retain or permit passage of dirt particles.*
4. *Wall finishes in areas such as clean corridors, central sterile supply spaces, specialized radiographic rooms and minor surgical procedure rooms shall be washable, smooth and able to withstand cleaning with chemicals.*
5. *Wall areas penetrated by pipes, ducts and conduits shall be tightly sealed to minimize entry of rodents and insects. Joints of structural elements shall be similarly sealed.*
6. *Wall finish requirements of Section 1224.4.11.3 do not apply to boiler rooms, mechanical equipment rooms, administration departments, other offices, enclosed stairways, maintenance shops and similar spaces.*

1224.4.11.3.1 Dietary and food preparation areas. *Dietary and food preparation areas shall comply with the following requirements:*

1. *In dietary and food preparation areas, wall construction, finish and trim, including the joints between the walls and the floors, shall be free of spaces that can harbor insects and rodents.*
2. *Wall surfaces in wet areas (e.g., kitchens, environmental services closets) shall be monolithic and all seams shall be covered and/or sealed.*

1224.4.11.4 Ceilings. *Ceilings in areas occupied by patients and the public shall be cleanable with the use of routine housekeeping equipment. Acoustic and lay-in ceiling, where used, shall not create ledges or crevices.*

1224.4.11.4.1 Ceiling finishes. *Ceiling finishes shall comply with Table 1224.4.11, Table 1224.4.11.4.1a and the following requirements:*

Semirestricted areas:

1. *Ceiling finishes in semirestricted areas such as airborne infection isolation exam/treatment rooms, surgical corridors, central sterile supply spaces and minor surgical procedure rooms, shall be nonabsorptive, nonperforated, capable of withstanding cleaning with chemicals, and without crev-*

ices that can harbor mold and bacterial growth.

2. *If a lay-in ceiling is provided in semirestricted areas, it shall be gasketed or each ceiling tile shall weigh at least one pound per square foot to prevent the passage of particles from the cavity above the ceiling plane into the semirestricted environment. Perforated, tegular, serrated cut or highly textured tiles are not acceptable.*

Restricted areas:

3. *Ceilings in restricted areas shall be monolithic with no cracks or perforations.*
4. *Ceilings in restricted areas shall be scrubbable and able to withstand cleaning and/or disinfecting chemicals.*
5. *All access openings in restricted area ceilings shall be gasketed.*

Dietary and laundry areas:

6. *Provide either a sealed monolithic and scrubbable gypsum board ceiling or a lay-in ceiling.*
7. *If a lay-in ceiling is provided, it shall include the following:*
   a) *A rust-free grid.*
   b) *Ceiling tiles that weigh at least one pound per square foot and are smooth, scrubbable, nonabsorptive, nonperforated and able to withstand cleaning with chemicals.*
8. *Ceiling finish requirements of Section 1224.4.11.4.1 do not apply to boiler rooms, mechanical equipment rooms, administration departments, other offices, enclosed stairways, maintenance shops and similar spaces.*

1224.4.12 Courts. *Where one or more walls of a court contain a door or window of one or more patients' bedrooms, the least dimension of the court shall be 20 feet (6096 mm) between facing structures.*

1224.4.13 Elevators.

1224.4.13.1 Patient. *Patient elevators shall have minimum inside platform dimensions of 5 feet by 8 feet (1524 mm by 2438 mm), and a minimum clear door opening of 4 feet 0 inches (1219 mm).*

1224.4.13.2 Passenger. *Passenger elevators shall have minimum inside platform dimensions of 4 feet 8 inches by 7 feet 4 inches (1422 mm by 2236 mm).*

1224.4.13.3 Patient services. *Buildings over one story in height with accommodations or services for patients on floors without grade-level entrance shall provide at least one patient elevator.*

1224.4.13.4 Low patient capacity. *If bed patients are accommodated on one or more floors, other than the main entrance floor or where operating rooms or delivery rooms are above or below the main entrance floor, at least one patient elevator shall be provided.*

1224.4.13.5 Medium patient capacity. *At least one patient elevator and one service elevator shall be provided in hospitals with a capacity of from 60 to 149 beds on floors other than the main entrance floor.*

1224.4.13.6 High patient capacity. *At least one patient elevator, one passenger elevator and one service elevator shall be provided in hospitals with a capacity of 150 or more beds on floors other than the main entrance floor.*

1224.4.14 Garbage, solid waste and trash storage. *Rooms or screening enclosures shall be provided for the washing and cleaning of garbage containers and for the storage of garbage, trash and other solid wastes. Such rooms or screening enclosures shall include the following:*

1. *A concrete floor with a curb and with a drain connected to the sewer.*
2. *Steam or hot-water and cold-water supply.*
3. *A minimum floor area of $^1/_2$ square foot (0.046 m^2) per bed, but not less than 25 square feet (2.3 m^2), the least dimension of which shall be 4 feet (1219 mm).*
4. *A method of limiting access to the material except by authorized persons.*

1224.4.15 Housekeeping room. *This room shall be a minimum floor area of 15 square feet (1.4 m^2). It shall contain a service sink or floor receptor and provisions for storage of supplies and housekeeping equipment.*

1224.4.16 Laundry and trash chutes. *Gravity-type laundry and trash chutes shall have a minimum diameter of 2 feet (610 mm) and shall be designed to prevent distribution of airborne contaminating elements to all floors served.*

1224.4.17 Telephone. *Each floor accommodating patients shall have a telephone installed for patient use. Such telephones shall be readily accessible to patients who are limited to wheel chairs and stretchers. This may not be required in separate buildings having six or fewer beds which are restricted to occupancy by ambulatory patients.*

1224.4.18 Grab bars. *Each toilet, bathtub and shower serving patients in rooms not required to provide mobility features, shall have conveniently placed grab bars that shall comply with Chapter 11B, Sections 11B-609.2, 11B-609.3, 11B-609.5, 11B-609.6 and 11B-609.8.*

Exception: *Excluding facilities designed for use by persons with disabilities, grab bars may be deleted from those facilities serving chemical dependency recovery and psychiatric patients.*

1224.4.19 Noise control.

1224.4.19.1 Impact noises. *Recreation rooms, exercise rooms, equipment rooms and similar spaces where impact noises may be generated, shall not be located directly over patient bed areas or delivery and operat-*

ing suites, unless special provisions are made to minimize such noise.

1224.4.19.2 Noise reduction. *The noise reduction criteria shown in Table 1224.4.19 shall apply to partitions, floors and ceiling construction in patient areas.*

TABLE 1224.4.19
SOUND TRANSMISSION LIMITATIONS IN HOSPITALS

NEW CONSTRUCTION	AIRBORNE SOUND TRANSMISSION CLASS (STC)[1]	
	Partitions	Floors
Patient room to patient room	45	50
Public space to patient room[3]	50	40
Service areas to patient room[4]	60	45
Patient room access corridor[5]	35	45
Exam room to corridor	35	
Exam room to exam room	50[2]	
Exam room to public space[3]	50	
Treatment room to room	50	
Treatment room to corridor	35	
Toilet room to public space[3]	45	
Consultation rooms/conference rooms to public space	50	
Consultation rooms/conference rooms to patient rooms	50	
Consultation room to corridor	35	
Patient room to MRI room	60	
Exam room to MRI room	60	
Public space to MRI room	50	
Staff lounges to patient rooms	45	

1. *Sound Transmission Class (STC) shall be determined by tests in accordance with methods set forth in ASTM 90 and ASTM 413. Where partitions do not extend to the structure above, sound transmission through ceilings and composite STC performance shall be considered.*
2. *Treatment rooms shall be treated the same as patient rooms. STC rating may be reduced to 40 dBA for rooms with electronic masking. Electronic masking shall provide a maximum background level of 48 dBA.*
3. *Public space includes corridors (except patient room access corridors), lobbies, dining rooms, recreation rooms and similar space.*
4. *Service areas for the purposes of this table include kitchens, elevators, elevator machine rooms, laundries, garages, maintenance rooms, boiler and mechanical equipment rooms and similar spaces of high noise. Mechanical equipment located on the same floor or above patient rooms, offices, nurse stations and similar occupied space shall be effectively isolated from the floor.*
5. *Patient room access corridors contain composite walls with doors/windows and have direct access to patient rooms.*
6. *Renovation projects of existing spaces where the existing function is not changed, are not required to comply with the requirements of Table 1224.4.19.*

1224.5 Communications Systems. *Technology and medical communication rooms shall comply with the California Electrical Code, California Mechanical Code, California Plumbing Code and the requirements of this section.*

1224.5.1 Telecommunications service entrance room. *The telecommunications service entrance room houses the point at which outside carrier data and voice circuits and services enter the facility and outdoor cabling interfaces with the building's internal cabling infrastructure. Each hospital facility shall have at least one telecommunications service entrance room, and each room that is provided shall be dedicated to the telecommunications function with related support facilities and meet the requirements of this section.*

1224.5.2 Technology equipment center.

1224.5.2.1 Number. *Each hospital shall have at least one technology equipment center space that is not used for any purpose other than electronic data storage, processing and networking.*

1224.5.2.2 Size. *The technology equipment center shall be sized to provide space to meet the service requirements for the required equipment.*

1224.5.2.3 Location. *The technology equipment center shall be located to minimize the risk of water damage, both from internal and external sources. The technology equipment center shall be located above any floodways or flood hazard areas as described in the National Flood Insurance Program.*

1224.5.3 Technology distribution room.

1224.5.3.1 Number. *There shall be a minimum of one technology distribution room on each floor of the facility.*

Exception: *For existing facilities not undergoing major renovation, a technology distribution room may serve adjacent floors.*

1224.5.3.2 Size.

1. *Technology distribution rooms shall be sized based on the area of the floor being served, with minimum clear dimensions as follows:*

Area Served in Square Feet (m^2)	Minimum Technology Distribution Room Size
≤ 8,000 square feet (740 m^2)	10 feet by 10 feet (3.05 m by 3.05 m)
8,001 – 15,000 square feet (1400 m^2)	10 feet by 12 feet (3.05 m by 3.66 m)
15,001 – 25,000 square feet (2325 m^2)	10 feet by 14 feet (3.05 m by 4.27 m)
> 25,000 square feet (2325 m^2)	12 feet by 14 feet (3.66 m by 4.27 m)

2. *Where ceilings are provided, the minimum clear height shall be 9 feet (2.75 m).*

   Exception: *Existing buildings shall be permitted to have a minimum clear height of 8 feet (2.44 m).*

1224.5.3.3 Location. *Technology distribution rooms shall be provided throughout the facility as necessary to meet the maximum cable distance requirement for the cabling system specified.*

1224.5.4 SPC/NPC compliance. *The location of spaces required by this section shall meet the requirements of*

California Existing Building Code, Section 310A, Compliance Alternatives for Services/Systems and Utilities.

1224.5.5 Access. *Access to the spaces required by this section shall be controlled and not require passage through patient-care or sterile space.*

1224.5.6 Combining spaces. *The combining of the telecommunications service entrance room, technology equipment center and technology distribution room shall be permitted, provided that the requirements for each of the individual spaces are met.*

BASIC SERVICES

1224.6 Reserved

1224.7 Reserved

1224.8 Reserved

1224.9 Reserved

1224.10 Reserved

1224.11 Reserved

1224.12 Reserved

1224.13 Reserved

1224.14 NURSING SERVICE SPACE.

1224.14.1 Patient rooms.

1224.14.1.1 Capacity. *No patient room shall be designed to accommodate more than four beds.*

Exception: *Where renovation of existing individual patient rooms is undertaken in facilities built under the 2013, or prior, California Building Code, maximum room capacity shall be no more than the present capacity, to a maximum of eight patients per patient room. Placement of beds shall not be more than three deep from the exterior window.*

1224.14.1.2 Space requirements. *In new construction, patient rooms shall have a minimum of 100 square feet (9.29 m^2) of clear floor area per bed in multiple-bed rooms and 120 square feet (11.15 m^2) of clear floor area for single-bed rooms. The dimensions and arrangement of rooms shall be such that there is a minimum of 3 feet (914 mm) between the sides and foot of the bed and any wall or any other fixed obstruction. In multiple-bed rooms, a minimum clearance of 3 feet (914 mm) shall be provided between beds and a clearance of 4 feet (1219 mm) shall be available at the foot of each bed to permit the passage of equipment and beds.*

Exception: *Where renovation of existing patient rooms is undertaken in facilities built under the 2001 or prior California Building Code, patient rooms shall have no less than 80 square feet (7.43 m^2) of clear floor area per bed in multiple-bed rooms and 110 square feet. (10.22 m^2) of clear floor area in single-bed rooms.*

1224.14.1.3 Windows. *Each patient room shall have a window in accordance with Section 1224.4.9.*

1224.14.1.4 Arrangement. *Patient rooms shall not be designed to permit the placement of beds more than three deep from the exterior window, but shall be of such shape and dimensions to allow for the performance of routine functions, including the easy transfer of patients to and from bed to wheelchair or wheeled gurney.*

1224.14.1.5 Outside exposure. *All patient bedrooms shall have an outside exposure and shall not be below ground level.*

1224.14.1.6 Handwashing stations. *A handwashing station shall be provided in the patient room. This handwashing station shall be located at or adjacent to the entrance to the patient room with unobstructed access for use by health care personnel and others entering and leaving the room. Water spouts used shall have clearances adequate to avoid contaminating utensils and the contents of carafes, etc. In multiple-bed rooms the handwashing station shall be located outside of the patient's cubicle curtain so that it is immediately accessible to staff. Where renovation of patient rooms is undertaken a handwashing station shall be located in the patient toilet room or patient room.*

1224.14.1.7 Toilet room. *Each patient shall have access to a toilet room without having to enter the general corridor area. One toilet room shall serve no more than four beds and no more than two patient rooms. The toilet room shall contain a water closet and a lavatory and the door shall swing outward or be double acting. Unless located in a toilet room, bedpan-washing fixtures shall be installed in dedicated rooms, separate from patient care areas.*

1224.14.1.8 Patient storage. *Each patient shall have within his or her room a separate wardrobe, locker or closet suitable for hanging full-length garments and for storing personal effects.*

1224.14.1.9 Privacy. *A method of assuring visual privacy for each patient shall be maintained in patient rooms and in tub, shower and toilet rooms. Windows or doors within a normal sightline that would permit observation into the room shall be arranged or curtained as necessary for patient privacy. In multiple-bed rooms, visual privacy from casual observation by other patients and visitors shall be provided for each patient. The design for privacy shall not restrict patient access to the entrance, lavatory or toilet room.*

1224.14.1.10 Grab bars. *Grab bars shall be installed in accordance with Section 1224.4.18.*

1224.14.1.11 Room identification. *Each patient room shall be labeled with an identification number, letter or combination of the two.*

1224.14.2 Support areas. *The size and location of each support area will depend upon the numbers and types of beds served. If it has direct access to the unit, some support areas may be arranged and located to serve more than one nursing unit as indicated below, but, unless noted*

1224.19.2 Pharmacy areas.

1224.19.2.1 Dispensing facilities. *Hospital pharmacies shall provide the following areas for patient-specific compounding and dose repackaging of non-sterile preparations.*

1224.19.2.1.1 Receiving. *A room or area for receiving, breakout and inventory control of materials used in the pharmacy.*

1224.19.2.1.1.1 Size. *A minimum of 120 square feet (11.15 m^2) shall be provided.*

1224.19.2.1.2 Dispensing. *Work counters and space for automated and/or manual dispensing activities shall be provided to serve the volume of doses per day for in-patient and out-patient needs.*

1224.19.2.1.3 Non-sterile compounding areas. *An extemporaneous compounding/dose repackaging area shall be located next to bulk storage and include the following:*

1224.19.2.1.3.1 Size. *Work stations shall have sufficient counter space for drug preparation, with a minimum area of 120 square feet (11.15 m^2) per station.*

1224.19.2.1.3.2 Handwashing station. *Handwashing station(s) shall be in or immediately accessible to all areas where pharmaceuticals are handled without going through a door unless the door is equipped with hands-free operation.*

1224.19.2.1.3.3 Utility sink. *A utility sink shall be provided.*

1224.19.2.1.3.4. *If carousel or analogous robotic technologies are used, the area shall respond to the special system requirements.*

1224.19.2.1.4 Recording. *An area for reviewing and recording shall be provided. The area shall include counter space and electronic workstation(s).*

1224.19.2.1.5 Temporary storage. *An area for temporary storage, exchange and restocking of carts.*

1224.19.2.1.6 Security. *Security provisions shall be provided for drugs and personnel in the dispensing counter area.*

1224.19.2.2 Reserved.

1224.19.2.3 Storage. *The following storage facilities shall be provided in the pharmaceutical service area.*

1224.19.2.3.1 Bulk storage. *A separate bulk storage area, or room, may be provided.*

1224.19.2.3.2 Active storage. *Active storage in support of repackaging and dispensing activities shall be provided.*

1224.19.2.3.3 Refrigerated storage. *Refrigeration/freezer area shall be provided.*

1224.19.2.3.4 Hazardous materials. *Storage for volatile fluids and alcohol shall comply with Section 307.*

1224.19.2.3.5 Secured storage. *Secured lockable storage shall be provided for narcotics and controlled drugs.*

1224.19.2.3.6 Equipment and supplies. *Equipment and supply storage for general supplies and equipment not in use.*

1224.19.3 Sterile compounding areas.

1224.19.3.1 General. *If sterile compounding areas are provided, the requirements in this section shall be met. Buffer rooms (also known as clean rooms) and their anterooms, and Segregated Compounding Areas (SCA) are classified as semi-restricted areas. The pharmacy shall be laid out to preclude unrelated traffic to hazardous and nonhazardous preparation rooms. The buffer room, anteroom and SCA must be separated from areas not directly related to compounding and must be appropriately controlled to achieve and maintain required air quality classifications. A monitoring system shall be used in a cleanroom suite to continuously monitor the pressure differential between the ante-room(s) and buffer room(s) and between the ante-room and the general pharmacy area. Sterile compounding areas in hospitals shall comply with Sections 1735 and 1751 in Article 4.5 of Division 17 of Title 16 of the California Code of Regulations and US Pharmacopeia (USP) Chapters 797 and 800, and the requirements in this section.*

Note: *Where robotic systems are used in the preparation of IV solutions in either the positive pressure nonhazardous preparation room or the negative pressure hazardous prep room, the robotics shall be separate systems and not pass through from one area to the other.*

1224.19.3.2 Nonhazardous sterile preparation area. *If IV solutions are prepared in the pharmacy, a sterile compounding work area with a laminar airflow workstation designed for product protection shall be provided in accordance with Title 16, Section 1735, and USP Chapter 797 and include the following.*

1224.19.3.2.1 Workstation. *The Primary Engineering Control (PEC) shall be a laminar airflow work bench or isolator (CAI) as required. The workstation shall have a visible pressure gauge for detection of filter leaks or defects. All exposed sides of the workstation shall be accessible for cleaning and allow for reach behind the unit if not built against a wall. If built against a wall, the space behind the unit shall be sealed to prevent intrusion of moisture, contaminants and bacteria growth.*

1224.19.3.2.2 Buffer room. *Workstations shall be located in a Secondary Engineering Control (SEC) room. The SEC shall be a buffer/clean room, with the following requirements:*

1224.19.3.2.2.1 Size. *The minimum size for a nonhazardous buffer room is 120 square feet (11.15 m^2) for a single workstation, and 75 square feet (6.97 m^2) for each additional workstation.*

1224.19.3.2.2.2 Air quality. *Nonhazardous buffer rooms shall be sealed tight, and be under positive pressure relative to the anteroom. Air supply shall be laminar airflow with a low-level return. Refer to California Mechanical Code Table 4A, Title 16 Section 1735 and USP Chapter 797 for additional requirements.*

1224.19.3.2.2.3 Finishes. *The buffer room is considered a semi-restricted area with non-porous and cleanable surfaces, ceilings, walls and floors subject to wet cleaning. The surfaces of ceilings, walls, floors, fixtures, shelving, counters and cabinets shall be smooth, seamless, impervious, free from cracks and crevices and be non-shedding. Ceilings shall be monolithic or utilize cleanroom style scrubbable and gasketed panels, able to withstand cleaning with chemicals. Junctures of ceilings to walls shall be coved or caulked to avoid cracks and crevices where dirt can accumulate. Sprinkler systems shall be recessed, covered, easily cleanable and of a type suitable for a cleanroom environment. Wall finishes shall be 2-coat epoxy-covered gypsum board, seamless vinyl or other impervious covering. Work surfaces, shelving and cabinets shall be constructed of smooth, impervious materials, such as stainless steel or molded plastic, so that they are easily cleaned and disinfected. Plastic laminate finish over a pervious substrate is not permitted.*

1224.19.3.2.2.4 Eyewash station. *If provided in the buffer room, the eyewash station shall be located just inside the door from the anteroom, and must be dry, unless in use. Drains are not permitted in the buffer room.*

1224.19.3.2.2.5 Sealed tight room. *Room perimeter walls, ceiling, floors, doors and penetrations shall be sealed tightly to minimize air infiltration from the outside or from other rooms. Buffer room doors shall be glass, metal or other phenolic material, self-closing and with hands-free door operation. Normal operation may include automatic door controls sequencing such that only the buffer room door or the anteroom door is open at one time. Egress provisions shall not be impeded.*

1224.19.3.2.2.6. *If a pass-through is used, both doors shall not be capable of being open at the same time, and the doors should be interlocking.*

1224.19.3.2.3 Anteroom. *Nonhazardous buffer rooms shall be accessed through an anteroom with the following requirements:*

1224.19.3.2.3.1 Size. *The anteroom shall be of adequate size to accommodate a demarked area for donning and doffing, and anticipated staging of carts and supplies. The minimum size for the anteroom is 120 square feet (11.15 m^2).*

Note: *A common anteroom may be shared between hazardous and nonhazardous buffer rooms. The anteroom must comply with both 1224.19.3.2.3 and 1224.19.3.3.3, provide a minimum of 5 feet (1524 mm) between the buffer room doors, and provide automatic door controls sequencing such that only one of the buffer room doors may be open at one time. Egress provisions shall not be impeded.*

1224.19.3.2.3.2 Air quality. *Nonhazardous anterooms shall be under negative pressure relative to the buffer room and positive pressure relative to nonrestricted areas. Refer to California Mechanical Code Table 4A, Title 16 Section 1735 and USP Chapter 797 for additional requirements.*

1224.19.3.2.3.3 Handwashing station. *A handwashing station, with hands-free controls and nonrefillable closed soap dispensing system, providing support for scrubbing up to the elbows, shall be located in the anteroom.*

1224.19.3.2.3.4 Eyewash station. *An eyewash station shall be provided in the anteroom if one is not provided in the buffer room.*

1224.19.3.2.3.5 Housekeeping. *Dedicated environmental services, materials and supplies for the buffer room and the anteroom shall be located in the anteroom.*

1224.19.3.2.3.6 Finishes. *The anteroom room is considered a semi-restricted area with non-porous and cleanable surfaces, ceilings, walls and floors subject to wet cleaning. The surfaces of ceilings, walls, floors, fixtures, shelving, counters and cabinets shall be smooth, seamless, impervious, free from cracks and crevices and be non-shedding. Ceilings shall be monolithic or utilize cleanroom style scrubbable and gasketed panels, able to withstand cleaning with chemicals. Junctures of ceilings to walls shall be coved or caulked to avoid cracks and crevices where dirt can accumulate. Sprinkler systems shall be recessed, covered, easily cleanable and of a type suitable for a cleanroom environment. Wall finishes shall be 2-coat epoxy-covered gypsum board, seamless vinyl or other impervious covering. Work surfaces, shelving and cabinets shall be constructed of smooth, impervious materials, such as stainless steel or molded plastic so that they are easily cleaned and disinfected. Plastic laminate finish over a pervious substrate is not permitted.*

1224.19.3.2.3.7 Sealed tight room. *Room perimeter walls, ceiling, floors, doors and penetrations shall be sealed tightly to minimize air infiltration from the outside or from other rooms. Buffer room doors shall be glass, metal or other phenolic material, self-closing and with hands-free door operation.*

CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE
CHAPTER 14 – EXTERIOR WALLS

(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**								
Adopt only those sections that are listed below		**X**	**X**																	**X**			
Chapter / Section																							
1401			X																				
1402			X																				
1402.2.1		X																					
1403			X																				
1404			X																				
1404.1.1								X	X	X	X	X		X	X								
1404.3.1				X	X																		
1404.3.2				X	X																		
1404.3.3				X	X																*X*		
Table 1404.3.3				†	†																		
1405			X																				
1406			X																				
1407			X																				
1408			X																				
1410								X	X	X	X	X		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.

HISTORY NOTE APPENDIX

2022 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* 2019 Triennial Edition, effective January 1, 2020.

1. BSC 05/21, CEC 03/21, HCD 05/21, DSA/AC 01/21, DSA-SS/CC 05/21, SFM 04/21, OSHPD 04/21, 06/21—Adoption by reference of the 2021 *International Building Code* with necessary amendments to become the 2022 *California Building Code*, and repeal of the 2018 edition of the *International Building Code*; effective on January 1, 2023.
2. Erratum to correct editorial errors in Matrix Adoption Tables and miscellaneous corrections throughout chapters 1, 2, 4, 5, 7, 7A, 9, 10, 12, 14, 16, 17, 18A, 19, 19A, 21A, 27, and 35, effective January 1, 2023.

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Fire Code Essentials: Based on the 2021 IFC	Search #4431S21
Existing Building Code Essentials: Based on the 2021 IEBC	Search #4552S21

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