

REVISION RECORD FOR THE STATE OF CALIFORNIA

ERRATA

January 1, 2023

2022 Title 24, Part 9, California Fire 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 in order to correct nonsubstantive printing errors or omissions in California Code of Regulations, Title 24, Part 9, of the 2022 *California Fire Code*. Instructions are provided below.
3. Health and Safety Code Section 18938.5 establishes that only building standards in effect at the time of the application for a building permit may be applied to the project plans and construction. This rule applies to both adoptions of building standards for Title 24 by the California Building Standards Commission, and local adoptions and ordinances imposing building standards. 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 You may wish to retain the superseded material with this revision record so that the prior wording of any section can be easily ascertained.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 9

Remove Existing Pages

1-1 and 1-2
1-17 and 1-18
2-13 and 2-14
4-1 and 4-2
4-7 and 4-8
4-11 and 4-12
9-7 and 9-8
9-29 and 9-30
10-35 and 10-36
10-61 and 10-62
24-5 and 24-6
33-1 and 33-2
80-21 and 80-22
HIST-1 and HIST-2

Insert Buff-Colored Pages

1-1 and 1-2
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10-35 and 10-36
10-61 and 10-62
24-5 and 24-6
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80-21 and 80-22
HIST-1 and HIST-2

CALIFORNIA FIRE CODE – MATRIX ADOPTION TABLE

CHAPTER 1 – SCOPE AND ADMINISTRATION

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

Adopting Agency	BSC	BSC- CG	SFM		HCD			DSA		OSHPD						BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
			T-24	T-19*	1	2	1/AC	AC	SS	1	1R	2	3	4	5								
Adopt Entire Chapter																							
Adopt Entire Chapter as amended (amended sections listed below)																							
Adopt only those sections that are listed below	X		X																				
[California Code of Regulations, Title 19, Division 1]				X																			
Chapter / Section																							
Division I																							
1.1 – 1.1.12			X																				
1.1.3.2	X																						
1.11 – 1.11.2.1.1			X																				
1.11.4.5			X																				
1.11.6			X																				
1.11.11			X																				
[T-19 §1.11]				X																			
[T-19 §3.12]				X																			
1.11.2.1.2 – 1.11.2.2			X																				
[T-19 §1.08]				X																			
[T-19 §1.13]				X																			
1.11.2.3 – 1.11.10			X																				
[T-19 §1.03]				X																			
[T-19 §1.09.1]				X																			
Division II																							
102.1 – 102.5			X																				
102.7 – 102.12			X																				
104.2			X																				
104.5			X																				
104.7 – 104.7.1			X																				
104.10			X																				
105.1 – 105.2.2			X																				
105.2.4			X																				
105.3			X																				
105.3.1.1	X																						
105.3.3 – 105.5.9			X																				
Table 105.5.9			X																				
105.5.11 – 105.5.12			X																				
105.5.14 – 105.5.18			X																				
Table 105.5.22 – 105.5.28			X																				
105.5.32			X																				
105.5.38			X																				
105.5.40			X																				
105.5.42			X																				
105.5.49			X																				
105.5.51			X																				
105.5.53 – 105.5.54			X																				
105.6 – 105.6.24			X																				
108.2 – 108.4			X																				
112.1 – 112.3.1			X																				
113.1 – 113.4			X																				
114			X																				

* The California Code of Regulations (CCR), Title 19, Division 1 provisions that are found in the California Fire Code are a reprint from the current CCR, Title 19, Division 1 text for the code user's convenience only. The scope, applicability and appeals procedures of CCR, Title 19, Division I remain the same.

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

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

into a single permit provided that each provision is listed in the permit.

[A] 105.1.4 Emergency repairs. Where equipment replacement and repairs must be performed in an emergency situation, the permit application shall be submitted within the next working business day to the fire code official.

[A] 105.1.5 Repairs. Application or notice to the fire code official is not required for ordinary repairs to structures, equipment or systems. Such repairs shall not include the cutting away of any wall, partition or portion thereof, the removal or change of any required means of egress, or rearrangement of parts of a structure affecting the egress requirements; nor shall any repairs include addition to, alteration of, replacement or relocation of any standpipe, fire protection water supply, automatic sprinkler system, fire alarm system or other work affecting fire protection or life safety.

[A] 105.1.6 Annual permit. Instead of an individual construction permit for each alteration to an already approved system or equipment installation, the fire code official is authorized to issue an annual permit on application therefor to any person, firm or corporation regularly employing one or more qualified tradespersons in the building, structure or on the premises owned or operated by the applicant for the permit.

[A] 105.1.6.1 Annual permit records. The person to whom an annual permit is issued shall keep a detailed record of alterations made under such annual permit. The fire code official shall have access to such records at all times or such records shall be filed with the fire code official as designated.

[A] 105.2 Application. Application for a permit required by this code shall be made to the fire code official in such form and detail as prescribed by the fire code official. Applications for permits shall be accompanied by such plans as prescribed by the fire code official.

[A] 105.2.1 Refusal to issue permit. If the application for a permit describes a use that does not conform to the requirements of this code and other pertinent laws and ordinances, the fire code official shall not issue a permit, but shall return the application to the applicant with the refusal to issue such permit. Such refusal shall, where requested, be in writing and shall contain the reasons for refusal.

[A] 105.2.2 Inspection authorized. Before a new operational permit is approved, the fire code official is authorized to inspect the receptacles, vehicles, buildings, devices, premises, storage spaces or areas to be used to determine compliance with this code or any operational constraints required.

[A] 105.2.3 Time limitation of application. An application for a permit for any proposed work or operation shall be deemed to have been abandoned 180 days after the date of filing, unless such application has been diligently prosecuted or a permit shall have been issued; except that the fire code official is authorized to grant one or more exten-

sions of time for additional periods not exceeding 90 days each. The extension shall be requested in writing and justifiable cause demonstrated.

[A] 105.2.4 Action on application. The fire code official shall examine or cause to be examined applications for permits and amendments thereto within a reasonable time after filing. If the application or the construction documents do not conform to the requirements of pertinent laws, the fire code official shall reject such application in writing, stating the reasons therefor. If the fire code official is satisfied that the proposed work or operation conforms to the requirements of this code and laws and ordinances applicable thereto, the fire code official shall issue a permit therefor as soon as practicable.

[A] 105.3 Conditions of a permit. A permit shall constitute permission to maintain, store or handle materials; or to conduct processes that produce conditions hazardous to life or property; or to install equipment utilized in connection with such activities; or to install or modify any fire protection system or equipment or any other construction, equipment installation or modification in accordance with the provisions of this code where a permit is required by Section 105.5 or 105.6. Such permission shall not be construed as authority to violate, cancel or set aside any of the provisions of this code or other applicable regulations or laws of the jurisdiction.

[A] 105.3.1 Expiration. An operational permit shall remain in effect until reissued, renewed or revoked, or for such a period of time as specified in the permit. Construction permits shall automatically become invalid unless the work authorized by such permit is commenced within 180 days after its issuance, or if the work authorized by such permit is suspended or abandoned for a period of 180 days after the time the work is commenced. Before such work recommences, a new permit shall be first obtained and the fee to recommence work, if any, shall be one-half the amount required for a new permit for such work, provided that changes have not been made and will not be made in the original construction documents for such work, and provided further that such suspension or abandonment has not exceeded one year. Permits are not transferable and any change in occupancy, operation, tenancy or ownership shall require that a new permit be issued.

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

[A] 105.3.2 Extensions. A permittee holding an unexpired permit shall have the right to apply for an extension of the time within which the permittee will commence work under that permit where work is unable to be commenced

within the time required by this section for good and satisfactory reasons. The fire code official is authorized to grant, in writing, one or more extensions of the time period of a permit for periods of not more than 180 days each. Such extensions shall be requested by the permit holder in writing and justifiable cause demonstrated.

[A] 105.3.3 Occupancy prohibited before approval. The building or structure shall not be occupied prior to the fire code official issuing a permit and conducting associated inspections indicating the applicable provisions of this code have been met.

[A] 105.3.4 Conditional permits. Where permits are required and on the request of a permit applicant, the fire code official is authorized to issue a conditional permit to occupy the premises or portion thereof before the entire work or operations on the premises is completed, provided that such portion or portions will be occupied safely prior to full completion or installation of equipment and operations without endangering life or public welfare. The fire code official shall notify the permit applicant in writing of any limitations or restrictions necessary to keep the permit area safe. The holder of a conditional permit shall proceed only to the point for which approval has been given, at the permit holder's own risk and without assurance that approval for the occupancy or the utilization of the entire premises, equipment or operations will be granted.

[A] 105.3.5 Posting the permit. Issued permits shall be kept on the premises designated therein at all times and shall be readily available for inspection by the fire code official.

[A] 105.3.6 Compliance with code. The issuance or granting of a permit shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of any other ordinance of the jurisdiction. Permits presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction shall not be valid. The issuance of a permit based on construction documents and other data shall not prevent the fire code official from requiring the correction of errors in the construction documents and other data. Any addition to or alteration of approved construction documents shall be approved in advance by the fire code official, as evidenced by the issuance of a new or amended permit.

[A] 105.3.7 Information on the permit. The fire code official shall issue all permits required by this code on an approved form furnished for that purpose. The permit shall contain a general description of the operation or occupancy and its location and any other information required by the fire code official. Issued permits shall bear the signature of the fire code official or other approved legal authorization.

[A] 105.3.8 Validity of permit. The issuance or granting of a permit shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of any other ordinances of the jurisdiction. Permits presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction

shall not be valid. The issuance of a permit based on construction documents, operational documents and other data shall not prevent the fire code official from requiring correction of errors in the documents or other data.

[A] 105.4 Revocation. The fire code official is authorized to revoke a permit issued under the provisions of this code where it is found by inspection or otherwise that there has been a false statement or misrepresentation as to the material facts in the application or construction documents on which the permit or approval was based including, but not limited to, any one of the following:

1. The permit is used for a location or establishment other than that for which it was issued.
2. The permit is used for a condition or activity other than that listed in the permit.
3. Conditions and limitations set forth in the permit have been violated.
4. There have been any false statements or misrepresentations as to the material fact in the application for permit or plans submitted or a condition of the permit.
5. The permit is used by a different person or firm than the name for which it was issued.
6. The permittee failed, refused or neglected to comply with orders or notices duly served in accordance with the provisions of this code within the time provided therein.
7. The permit was issued in error or in violation of an ordinance, regulation or this code.

105.5 Required operational permits. The fire code official is authorized to issue operational permits for the operations set forth in Sections 105.5.2 through 105.5.4.

105.5.1 Additive manufacturing. An operational permit is required to conduct additive manufacturing operations regulated by Section 320.3.

105.5.2 Aerosol products, aerosol cooking spray products and plastic aerosol 3 products. An operational permit is required to manufacture, store or handle an aggregate quantity of Level 2 or Level 3 aerosol products, aerosol cooking spray products or plastic aerosol 3 products in excess of 500 pounds (227 kg) net weight.

105.5.3 Amusement buildings. An operational permit is required to operate a special amusement building.

105.5.4 Aviation facilities. An operational permit is required to use a Group H or Group S occupancy for aircraft servicing or repair and aircraft fuel-servicing vehicles. Additional permits required by other sections of this code include, but are not limited to, hot work, hazardous materials and flammable or combustible finishes.

105.5.5 Carnivals and fairs. An operational permit is required to conduct a carnival or fair.

105.5.6 Cellulose nitrate film. An operational permit is required to store, handle or use cellulose nitrate film in a Group A occupancy.

COURTHOUSE HOLDING FACILITY. *[SFM] Court-house Holding Facility shall mean a room, cell, cell complex or building for the confinement of persons for the purpose of a court appearance for a period not to exceed 12 hours.*

COURTROOM DOCK. *Courtroom Dock shall mean an area within a courtroom where persons may be restrained and are awaiting court proceedings.*

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

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

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

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

CRITICAL AREAS. Areas that are designated for the highest level of emergency responder radio coverage including but not limited to areas such as exit stairs, exit passageways, elevator lobbies, fire protection equipment room and control valve locations, and fire command centers.

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

CRYOGENIC CONTAINER. A cryogenic vessel of any size used for the transportation, handling or storage of cryogenic fluids.

CRYOGENIC FLUID. A fluid having a boiling point lower than -130°F (-89.9°C) at 14.7 pounds per square inch atmosphere (psia) (an absolute pressure of 101.3 kPa).

CRYOGENIC VESSEL. A pressure vessel, low-pressure tank or atmospheric tank designed to contain a cryogenic fluid on which venting, insulation, refrigeration or a combination of these is used in order to maintain the operating pressure within the design pressure and the contents in a liquid phase.

CURRENT TAP. An electrical device that, where connected to a permanently installed receptacle outlet, provides multiple receptacle outlet configurations.

[BG] CUSTODIAL CARE. Assistance with day-to-day living tasks; such as assistance with cooking, taking medication, bathing, using toilet facilities and other tasks of daily

living. Custodial care includes persons receiving care who have the ability to respond to emergency situations and evacuate at a slower rate and/or who have mental and psychiatric complications.

CYLINDER. A pressure vessel designed for pressures higher than 40 psia (275.6 kPa) and having a circular cross section. It does not include a portable tank, multiunit tank car tank, cargo tank or tank car.

DAMPER. See “Fire damper” and “Smoke damper.”

DAY BOX. A portable magazine designed to hold explosive materials and constructed in accordance with the requirements for a Type 3 magazine as defined and classified in Chapter 56.

DAY-CARE. *For the purposes of these regulations, shall mean the care of persons during any period of a 24-hour day where permanent sleeping accommodations are not provided. The time period shall not be more than 24 hours.* ||

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

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

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

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

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

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

DEFINITIONS

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

DELIVERED AUDIO QUALITY (DAQ). A measure of audio quality over a transmission medium. This metric is often used to quantify the quality of audio heard over a radio system. DAQ levels are defined by the following scale:

DAQ 1 = unusable. Speech is present but not understandable.

DAQ 2 = speech is understandable with considerable effort. Requires frequent repetition due to noise or distortion.

DAQ 3 = speech understandable with slight effort. Requires occasional repetition due to noise or distortion.

DAQ 3.4 = speech understandable without repetition. Some noise or distortion present.

DAQ 4 = speech easily understandable. Little noise or distortion.

DAQ 5 = perfect. No distortion or noise discernible.

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

DESIGN PRESSURE. The maximum gauge pressure that a pressure vessel, device, component or system is designed to withstand safely under the temperature and conditions of use expected.

DESOLVENTIZING. The act of removing a solvent from a material.

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

DETEARING. A process for rapidly removing excess wet coating material from a dipped or coated object or material by passing it through an electrostatic field.

DETECTOR, HEAT. A fire detector that senses heat, either abnormally high temperature or rate of rise, or both.

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

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

DETONATING CORD. A flexible cord containing a center core of high explosive used to initiate other explosives.

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

DETONATOR. A device containing any initiating or primary explosive that is used for initiating detonation. A detonator shall not contain more than 154.32 grains (10 grams) of total explosives by weight, excluding ignition or delay charges. The term includes, but is not limited to, electric blasting caps of instantaneous and delay types, blasting caps for use with safety fuses, detonating cord delay connectors, and noninstantaneous and delay blasting caps which use detonating cord, shock tube or any other replacement for electric leg wires. All types of detonators in strengths through No. 8 cap should be rated at 1½ pounds (0.68 kg) of explosives per 1,000 caps. For strengths higher than No. 8 cap, consult the manufacturer.

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

DIP TANK. A tank, vat or container of flammable or combustible liquid in which articles or materials are immersed for the purpose of coating, finishing, treating and similar processes.

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

DISPENSING DEVICE, OVERHEAD TYPE. A dispensing device that consists of one or more individual units intended for installation in conjunction with each other, mounted above a dispensing area typically within the motor fuel-dispensing facility canopy structure, and characterized by the use of an overhead hose reel.

DOOR, BALANCED. See “Balanced door.”

DOOR, DUTCH. See “Dutch door.”

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

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

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

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

[BG] DORMITORY. A space in a building where group sleeping accommodations are provided in one room, or in a series of closely associated rooms, for persons not members of the same family group, under joint occupancy and single management, as in college dormitories or fraternity houses.

DRAFT CURTAIN. A structure arranged to limit the spread of smoke and heat along the underside of the ceiling or roof.

[BF] DRAFTSTOP. A material, device or construction installed to restrict the movement of air within open spaces of concealed areas of building components such as crawl

CALIFORNIA FIRE CODE – MATRIX ADOPTION TABLE

CHAPTER 4 – EMERGENCY PLANNING AND PREPAREDNESS

(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		OSHDPD						CSA	DPH	AGR	DWR	CEC	CA	SL	SLC
			T-24	T-19*	1	2	1/AC	AC	SS	1	1R	2	3	4	5								
Adopt Entire Chapter																							
Adopt Entire Chapter as amended (amended sections listed below)																							
Adopt only those sections that are listed below			X																				
[California Code of Regulations, Title 19, Division 1]				X																			
Chapter / Section																							
401 – 401.9			X																				
402			X																				
403.1			X																				
403.2			X																				
403.4 – 403.4.4			X																				
[T-19 §3.13 (a)(1)]				X																			
403.9.2.1.1			X																				
403.10.6			X																				
403.12 – 403.12.3			X																				
[T-19 §3.13 (c)(1)]				X																			
[T-19 §3.10]				X																			
[T-19 §3.13 (a)(2)]				X																			
[T-19 §3.13 (b)]				X																			
404.5-404.6.6			X																				
[T-19 §3.13 (a)(1)]				X																			
[T-19 §3.13 (c)(2 & 3)]				X																			
407			X																				

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ately adjacent to every required egress door from each hotel or motel sleeping unit.

403.9.1.2 Emergency duties. Upon discovery of a fire or suspected fire, hotel and motel employees shall perform the following duties:

1. Activate the fire alarm system, where provided.
2. Notify the public fire department.
3. Take other action as previously instructed.

403.9.1.3 Fire safety and evacuation instructions. Information shall be provided in the fire safety and evacuation plan required by Section 404 to allow guests to decide whether to evacuate to the outside, evacuate to an area of refuge, remain in place, or any combination of the three.

403.9.2 Group R-2 occupancies. Group R-2 occupancies shall comply with Sections 403.9.2.1 through 403.9.2.3.

403.9.2.1 College and university buildings. An approved fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group R-2 college and university buildings. Group R-2 college and university buildings shall comply with Sections 403.9.2.1.1 through 403.9.2.1.3.

403.9.2.1.1 College and University Pre-Fire Planning. *The Chancellor, President, or his designated representative, shall, in cooperation with the enforcing agency, propose procedures to be followed in case of fire or other emergency. They should include the following:*

1. *Posting the telephone number of the fire department in the office and/or at the main switchboard.*
2. *Assignment of a responsible person to call the fire department upon notification of any fire or activation of the alarm system for any reason other than fire drills.*
3. *Posting in a conspicuous place in each classroom or assembly area a plan showing paths of travel to evacuate the room in case of emergency and including an alternate route.*
4. *Posting in each classroom instructions to be followed by the teacher. These should include:*
 - 4.1. *Maintaining order during evacuation.*
 - 4.2. *Removal of roll call book and calling of roll when designated evacuation area is reached.*

403.9.2.1.2 First emergency evacuation drill. The first emergency evacuation drill of each school year shall be conducted within 10 days of the beginning of classes.

403.9.2.1.3 Time of day. Emergency evacuation drills shall be conducted at different hours of the day or evening, during the changing of classes, when school is at assembly, during recess or gymnastic periods or during other times to avoid distinction

between drills and actual fires. One required drill shall be held during hours after sunset or before sunrise.

403.9.2.2 Emergency guide. Fire emergency guides shall be provided for Group R-2 occupancies. Guide contents, maintenance and distribution shall comply with Sections 403.9.2.2.1 through 403.9.2.2.3.

403.9.2.2.1 Guide contents. A fire emergency guide shall describe the location, function and use of fire protection equipment and appliances available for use by residents, including fire alarm systems, smoke alarms and portable fire extinguishers. Guides shall include an emergency evacuation plan for each dwelling unit.

403.9.2.2.2 Emergency guide maintenance. Emergency guides shall be reviewed and approved by the fire code official.

403.9.2.2.3 Emergency guide distribution. A copy of the emergency guide shall be given to each tenant prior to initial occupancy.

403.9.2.3 Evacuation diagrams for dormitories. A diagram depicting two evacuation routes shall be posted on or immediately adjacent to every required egress door from each dormitory sleeping unit or dwelling unit. Evacuation diagrams shall be reviewed and updated as needed to maintain accuracy.

403.9.3 Group R-4 occupancies. An approved fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group R-4 occupancies. Group R-4 occupancies shall comply with Sections 403.9.3.1 through 403.9.3.4.

403.9.3.1 Fire safety and evacuation plan. The fire safety and evacuation plan required by Section 404 shall include a description of special staff actions. Plans shall include procedures necessary for full evacuation of care recipients, and shall be amended or revised upon admission of care recipients with unusual needs.

403.9.3.1.1 Fire safety plan. A copy of the fire safety plan shall be maintained at the facility at all times. The plan shall include the following in addition to the requirements of Section 404.2.2:

1. Location and number of care recipient sleeping rooms.
2. Location of special locking arrangements.

403.9.3.2 Staff training. Staff shall be periodically instructed and kept informed of their duties and responsibilities under the plan. Records of instruction shall be maintained. Such instruction shall be reviewed by staff at intervals not exceeding three months. Training of new staff shall be provided promptly upon entrance to duty.

Staff shall be instructed in the proper use of portable fire extinguishers and other manual fire suppression equipment.

403.9.3.3 Resident training. Residents capable of assisting in their own evacuation shall be trained in the proper actions to take in the event of a fire. The training shall include actions to take if the primary escape route is blocked. Residents shall be trained to assist each other in case of fire to the extent their physical and mental abilities permit them to do so without additional personal risk.

403.9.3.4 Drill frequency. In addition to the evacuation drills required in Section 405.3, staff shall participate in drills an additional two times a year on each shift. Twelve drills with all occupants shall be conducted in the first year of operation.

403.10 Special uses. Special uses shall be in accordance with Sections 403.10.1 through 403.10.6.

403.10.1 Covered and open mall buildings. Covered and open mall buildings shall comply with the requirements of Sections 403.10.1.1 through 403.10.1.6.

403.10.1.1 Malls and mall buildings exceeding 50,000 square feet. An approved fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for covered malls exceeding 50,000 square feet (4645 m²) in aggregate floor area and for open mall buildings exceeding 50,000 square feet (4645 m²) in aggregate area within the perimeter line.

403.10.1.2 Lease plan. In addition to the requirements of Section 404.2.2, a lease plan that includes the following information shall be prepared for each covered and open mall building:

1. Each occupancy, including identification of tenant.
2. Exits from each tenant space.
3. Fire protection features, including the following:
 - 3.1. Fire department connections.
 - 3.2. Fire command center.
 - 3.3. Smoke management system controls.
 - 3.4. Elevators, elevator machine rooms and controls.
 - 3.5. Hose valve outlets.
 - 3.6. Sprinkler and standpipe control valves.
 - 3.7. Areas protected with automatic sprinkler systems and automatic fire-extinguishing systems.
 - 3.8. Automatic fire detector zones.
 - 3.9. Fire barriers.

403.10.1.3 Lease plan approval. The lease plan shall be submitted to the fire code official for approval, and shall be maintained on-site for immediate reference by responding fire service personnel.

403.10.1.4 Lease plan revisions. The lease plans shall be revised annually or as often as necessary to keep them current. Modifications or changes in tenants or

occupancies shall not be made without prior approval of the fire code official and building official.

403.10.1.5 Tenant identification. Tenant identification shall be provided for secondary exits from occupied tenant spaces that lead to an exit corridor or directly to the exterior of the building. Tenant identification shall be posted on the exterior side of the exit or exit access door and shall identify the business name and address using plainly legible letters and numbers that contrast with their background.

Exception: Tenant identification is not required for anchor stores.

403.10.1.6 Unoccupied tenant spaces. The fire safety and evacuation plan shall provide for compliance with the requirements for unoccupied tenant spaces in Section 311.

403.10.2 High-rise buildings. An approved fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for high-rise buildings.

403.10.3 Underground buildings. An approved fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for underground buildings.

403.10.4 Buildings using occupant evacuation elevators. In buildings using occupant evacuation elevators in accordance with Section 3008 of the *California Building Code*, the fire safety and evacuation plan and the training required by Sections 404 and 406, respectively, shall incorporate specific procedures for the occupants using such elevators.

403.10.5 Buildings with high-piled storage. An approved fire safety and evacuation plan in accordance with Section 404 shall be prepared for buildings with high-piled combustible storage in any of the following situations:

1. The high-piled storage area exceeds 500,000 square feet (46 450 m²) for Class I-IV commodities.
2. The high-piled storage area exceeds 300,000 square feet (27 870 m²) for high-hazard commodities.
3. The high-piled storage is located in a Group H occupancy.
4. The high-piled storage is located in a Group F occupancy with an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.
5. The high-piled storage is located in a Group M occupancy with an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.
6. Where required by the fire code official for other high-piled storage areas.

403.10.6 Lithium-ion and lithium metal batteries. An approved fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for occupancies that involve activities for the research and

- 4.4.1. Areas of refuge.
- 4.4.2. Exterior areas for assisted rescue.
- 4.5. Refuge areas associated with smoke barriers and horizontal exits.
- 4.6. Manual fire alarm boxes.
- 4.7. Portable fire extinguishers.
- 4.8. Occupant-use hose stations.
- 4.9. Fire alarm annunciators and controls.
- 5. A list of major fire hazards associated with the normal use and occupancy of the premises, including maintenance and housekeeping procedures.
- 6. Identification and assignment of personnel responsible for maintenance of systems and equipment installed to prevent or control fires.
- 7. Identification and assignment of personnel responsible for maintenance, housekeeping and controlling fuel hazard sources.

[California Code of Regulations, Title 19, Division 1, §3.13(a)(2)] Fire Drills. (Group E Occupancies)

(a) Group E Occupancies.

(2) Emergency Pre-Fire Planning. Each school principal, district superintendent or day nursery manager shall, in cooperation with the enforcing agency, prepare procedures to be followed in case of fire or other emergency. They should include the following:

(A) Posting of the telephone number of the fire department in the office and/or at the main switchboard.

(B) Assignment of a responsible person to call the fire department upon notification of any fire or activation of the alarm system for any reason other than fire drills.

(C) Posting in a conspicuous place in each classroom or assembly area a plan showing paths of travel to evacuate the room in case of emergency and including an alternate route.

(D) Posting in each classroom instructions to be followed by the teacher. These should include:

- 1. Maintaining of order during evacuation.*
- 2. Removal of roll call book and calling of roll when designated evacuation area is reached.*

[California Code of Regulations, Title 19, Division 1, §3.13(b)] Fire Drills. (College and University)

(b) College and University Pre-Fire Planning. The Chancellor, President, or his designated representative, shall, in cooperation with the enforcing agency, propose procedures to be followed in case of fire or other emergency in accordance with the provisions of California Code of Regulations, Title 19, Division 1, Section 3.13 (a)(2).

404.2.3 Lockdown plans. Lockdown plans shall only be permitted where such plans are approved by the fire code official and are in compliance with Sections 404.2.3.1 and 404.2.3.2.

404.2.3.1 Lockdown plan contents. Lockdown plans shall include the following:

1. Identification of individuals authorized to issue a lockdown order.
2. Security measures used during normal operations, when the building is occupied, that could adversely affect egress or fire department operations.
3. A description of identified emergency and security threats addressed by the plan, including specific lockdown procedures to be implemented for each threat condition.
4. Means and methods of initiating a lockdown plan for each threat, including:
 - 4.1. The means of notifying occupants of a lockdown event, which shall be distinct from the fire alarm signal.
 - 4.2. Identification of each door or other access point that will be secured.
 - 4.3. A description of the means or methods used to secure doors and other access points.
 - 4.4. A description of how locking means and methods are in compliance with the requirements of this code for egress and accessibility.
5. Procedures for reporting to the fire department any lockdown condition affecting egress or fire department operations.
6. Procedures for determining and reporting the presence or absence of occupants to emergency response agencies during a lockdown.
7. Means for providing two-way communication between a central location and each area subject to being secured during a lockdown.
8. Identification of the prearranged signal for terminating the lockdown.
9. Identification of individuals authorized to issue a lockdown termination order.
10. Procedures for unlocking doors and verifying that the means of egress has been returned to normal operations upon termination of the lockdown.
11. Training procedures and frequency of lockdown plan drills.

404.2.3.2 Drills. Lockdown plan drills shall be conducted in accordance with the approved plan. Such drills shall not be substituted for fire and evacuation drills required by Section 405.3.

404.3 Maintenance. Fire safety, evacuation and lockdown plans shall be reviewed or updated annually or as necessitated by changes in staff assignments, occupancy or the physical arrangement of the building.

404.4 Availability. Fire safety, evacuation and lockdown plans shall be available in the workplace for reference and review by employees, and copies shall be furnished to the fire code official for review on request.

404.4.1 Distribution. The fire safety, evacuation and lockdown plans shall be distributed to the tenants and building service employees by the owner or owner's agent. Tenants shall distribute to their employees applicable parts of the fire safety plan and lockdown plan affecting the employees' actions in the event of a fire or other emergency.

404.5 College and university pre-fire planning. The Chancellor, President, or his designated representative, shall, in cooperation with the enforcing agency, propose procedures to be followed in case of fire or other emergency in accordance with the provisions of Section 403.9.2.1.1.

404.6 Office buildings. All office buildings two or more stories in height, except high-rise buildings as defined by Health and Safety Code Section 13210, shall comply with this section.

404.6.1 Owner(s) or operator(s) shall employ either one of the following methods of providing emergency procedures and information to the building occupants:

1. Emergency procedures information published in the form of a leaflet, brochure or pamphlet shall be available to all persons entering the building. Emergency procedures information shall be located immediately inside all entrances to the building, as determined by the authority having jurisdiction. Locations shall be clearly marked.
2. A floor plan providing emergency procedures information shall be posted at every stairway landing, at every elevator landing and immediately inside all public entrances to the building. The information shall be posted so that it describes the represented floor level and can be easily seen immediately upon entering the floor level of the building. Emergency procedures information shall be printed with a minimum of $\frac{3}{16}$ -inch high nondecorative lettering providing a sharp contrast to the background.

404.6.1.2 Emergency procedures information shall provide all ambulatory, nonambulatory and the physically disabled instructions to be followed in the event of an emergency. Emergency procedures information shall include, but not be limited to, the following:

1. Location of exits.
2. Location of fire alarm initiating stations, if required.
3. What the fire alarm, if required, sounds and looks like (audible and visual warning devices).

4. Fire department emergency telephone number 911.

5. The prohibition of elevator use during emergencies, if any.

404.6.2 Hotels, motels and lodging houses. Every guestroom available for rental in a hotel, motel or lodging house shall have clearly visible emergency procedures information printed on a floor plan representative of the floor level and posted on the interior of each entrance door or immediately adjacent to such door. The owner/operator of a hotel, motel or lodging house may, in lieu of posting emergency procedures information in each guestroom, provide such information through the use of leaflets, brochures, pamphlets, videotapes or any other method as approved by the authority having jurisdiction. Oral communication in itself does not fulfill the intent of this section. However, oral communication can be incorporated as a part of the transfer of emergency procedures information. When emergency procedures information signage is posted on the interior of the guestroom entrance door, the bottom of the information shall not be located more than 4-feet above the floor level. Visually impaired persons shall receive instructions of a type they will understand, for example: taping of instructions, instructions in Braille or other appropriate methods.

404.6.2.1 Each method of providing information shall include, but not be limited to that described in Section 404.6.1.2.

404.6.2.2 Hotels, motels and lodging houses shall maintain at the registration desk a list noting the guestrooms assigned to guests with disabilities when such guests have indicated that they have special emergency evacuation requirements. The innkeeper shall, at the innkeeper's option, do one of the following:

1. Provide a place on the registration form for physically disabled guests who have such requirements to so identify themselves.
2. Provide a notice on the room key jacket advising guests with disabilities who have special emergency evacuation requirements to so notify the front desk.
3. Utilize such other means for allowing such guests with disabilities to so identify themselves as may be approved by the authority having jurisdiction.

404.6.3 Stairways. Hotels, motels, lodging houses, high-rise office buildings and Group I, Division 1 and 2 occupancies as defined in the California Building Code (except honor farms and conservation camps) shall comply with this section.

404.6.3.1 Emergency procedures information printed on a floor plan shall be posted at every stairway landing, at every elevator landing and immediately inside all public entrances to the building. The information shall be representative of the floor level and be posted so that the bottom edge of such information is not

CHAPTER 9

FIRE PROTECTION AND LIFE SAFETY SYSTEMS

User note:

About this chapter: Chapter 9 prescribes the minimum requirements for active fire protection equipment systems to perform the functions of detecting a fire, alerting the occupants or fire department of a fire emergency, mass notification, gas detection, controlling smoke and controlling or extinguishing the fire. Generally, the requirements are based on the occupancy, the height and the area of the building because these are the factors that most affect fire-fighting capabilities and the relative hazard of a specific building or portion thereof. This chapter parallels and is substantially duplicated in Chapter 9 of the California Building Code; however, this chapter also contains periodic testing criteria that are not contained in the California Building Code. In addition, the special fire protection system requirements based on use and occupancy found in Chapter 4 of the California Building Code are duplicated in this chapter as a user convenience.

SECTION 901 GENERAL

901.1 Scope. The provisions of this chapter shall specify where fire protection and life safety systems are required and shall apply to the design, installation, inspection, operation, testing and maintenance of all fire protection and life safety systems.

901.2 Construction documents. The fire code official shall have the authority to require construction documents and calculations for all fire protection and life safety systems and to require permits be issued for the installation, rehabilitation or modification of any fire protection and life safety systems. Construction documents for fire protection and life safety systems shall be submitted for review and approval prior to system installation.

901.2.1 Statement of compliance. Before requesting final approval of the installation, where required by the fire code official, the installing contractor shall furnish a written statement to the fire code official that the subject fire protection or life safety system has been installed in accordance with approved plans and has been tested in accordance with the manufacturer's specifications and the appropriate installation standard. Any deviations from the design standards shall be noted and copies of the approvals for such deviations shall be attached to the written statement.

901.3 Permits. Permits shall be required as set forth in Sections 105.5 and 105.6.

901.4 Fire protection and life safety systems. Fire protection and life safety systems shall be installed, repaired, operated and maintained in accordance with this code and the *California Building Code*.

901.4.1 Required fire protection and life safety systems. Fire protection and life safety systems required by this code or the *California Building Code* shall be installed, repaired, operated, tested and maintained in accordance with this code. A fire protection or life safety system for which a design option, exception or reduction to the provisions of this code or the *California Building Code* has been granted shall be considered to be a required system.

901.4.2 Nonrequired fire protection and life safety systems. Fire protection and life safety systems or portion thereof not required by this code or the *California Building Code* shall be allowed to be furnished for partial or complete protection provided that such installed systems meet the applicable requirements of this code and the *California Building Code*.

901.4.3 Alterations in buildings and structures. For any alteration within a building or structure, the fire protection and life safety systems shall be extended, altered or augmented to maintain and continue protection within the building or structure. Persons shall not remove or modify any fire protection or life safety system installed or maintained under the provisions of this code or the *California Building Code* without approval from the fire code official.

901.4.4 Fire areas. Where buildings, or portions thereof, are divided into fire areas so as not to exceed the limits established for requiring a fire protection system in accordance with this chapter, such fire areas shall be separated by fire barriers constructed in accordance with Section 707 of the *California Building Code* or horizontal assemblies constructed in accordance with Section 711 of the *California Building Code*, or both, having a fire-resistance rating of not less than that determined in accordance with Section 707.3.10 of the *California Building Code*.

901.4.5 Additional fire protection systems. In occupancies of a hazardous nature, where special hazards exist in addition to the normal hazards of the occupancy, or where the fire code official determines that access for fire apparatus is unduly difficult, the fire code official shall have the authority to require additional safeguards and fire protection systems. Fire protection and life safety systems required under this section shall be installed in accordance with this code and the applicable referenced standards.

901.4.6 Appearance of equipment. Any device that has the physical appearance of life safety or fire protection equipment but that does not perform that life safety or fire protection function shall be prohibited.

901.4.7 Pump and riser room size. Where provided, fire pump rooms and automatic sprinkler system riser rooms shall be designed with adequate space for all equipment necessary for the installation, as defined by the manufacturer, with sufficient working space around the stationary equipment. Clearances around equipment to elements of permanent construction, including other installed equipment and appliances, shall be sufficient to allow inspection, service, repair or replacement without removing such elements of permanent construction or disabling the function of a required fire-resistance-rated assembly. Fire pump and automatic sprinkler system riser rooms shall be provided with doors and unobstructed passageways large enough to allow removal of the largest piece of equipment.

901.4.7.1 Access. Automatic sprinkler system risers, fire pumps and controllers shall be provided with ready access. Where located in a fire pump room or automatic sprinkler system riser room, the door shall be permitted to be locked provided that the key is available at all times.

901.4.7.2 Marking on access doors. Access doors for automatic sprinkler system riser rooms and fire pump rooms shall be labeled with an approved sign. The lettering shall be in contrasting color to the background. Letters shall have a minimum height of 2 inches (51 mm) with a minimum stroke of $\frac{3}{8}$ inch (10 mm).

901.4.7.3 Environment. Automatic sprinkler system riser rooms and fire pump rooms shall be maintained at a temperature of not less than 40°F (4°C). Heating units shall be permanently installed.

901.4.7.4 Lighting. Permanently installed artificial illumination shall be provided in the automatic sprinkler system riser rooms and fire pump rooms.

901.5 Administration of installation acceptance testing. Fire protection and life safety systems and appurtenances thereto shall be subject to acceptance tests as contained in the installation standards and as approved by the fire code official. The fire code official shall be notified before any required acceptance testing.

901.5.1 Occupancy. It shall be unlawful to occupy any portion of a building or structure until the required fire protection and life safety systems have been tested and approved.

901.6 Inspection, testing and maintenance. Fire protection and life safety systems shall be maintained in an operative condition at all times, and shall be replaced or repaired where defective. Nonrequired fire protection and life safety systems and equipment shall be inspected, tested and maintained or removed in accordance with Section 901.8.

All fire alarm systems, fire detection systems, automatic sprinkler or extinguishing systems, communication systems, and all other equipment, material or systems required by these regulations shall be maintained in an operable condition at all times in accordance with this code and California Code of Regulations, Title 19, Division 1. Upon disruption or

diminishment of the fire protective qualities of such equipment, material or systems, immediate action shall be instituted to affect a reestablishment of such equipment, material or systems to their original normal and operational condition.

[California Code of Regulations, Title 19, Division 1, §1.14] Maintenance.

Every fire alarm system or device, sprinkler system, fire extinguisher, fire hose, fire-resistive assembly or any other fire safety assembly, device, material or equipment installed and retained in service in any building or structure subject to California Code of Regulations, Title 19, Division 1 regulations shall be maintained in an operable condition at all times in accordance with California Code of Regulations, Title 19, Division 1 regulations and with their intended use.

[California Code of Regulations, Title 19, Division 1, §3.24] Maintenance of Equipment.

All fire alarm systems, fire detection systems, automatic sprinkler or extinguishing systems, communication systems, and all other equipment, material or systems required by California Code of Regulations, Title 19, Division 1 shall be maintained in an operable condition at all times. Upon disruption or diminishment of the fire protective qualities of such equipment, material or systems, immediate action shall be instituted to affect a reestablishment of such equipment material or systems to their original normal and operational condition.

[California Code of Regulations, Title 19, Division 1, §904(a)] Required Inspection, Testing and Maintenance Frequencies.

(a) All automatic fire extinguishing systems, including systems installed as an alternate to other building requirements, shall be inspected, tested and maintained in accordance with the following frequencies. Local authorities may require more frequent inspection, testing and maintenance and additional procedures.

[California Code of Regulations, Title 19, Division 1, §904(a)(1)] Required Inspection, Testing and Maintenance Frequencies.

(1) Water-based fire protection systems shall be inspected, tested and maintained in accordance with the frequencies required by NFPA 25 (2011 edition) including Annexes A, B, C, D and G as amended by the State of California. (Published as NFPA 25, 2013 California Edition.) <

[California Code of Regulations, Title 19, Division 1, §904(b)] Required Inspection, Testing and Maintenance Frequencies.

(b) When proof of the installation date of standpipe systems or automatic fire sprinkler systems cannot be furnished, such systems shall receive initial testing and maintenance by July 1, 1985.

[California Code of Regulations, Title 19, Division 1, §904.2(a)] Testing and Maintenance Requirements.

(a) All testing and maintenance on automatic fire extinguishing systems in accordance with Health & Safety Code Section 13195 shall be performed by those licensed

905.6.1 Protection. Risers and laterals of Class III standpipe systems shall be protected as required for Class I systems in accordance with Section 905.4.1.

905.6.2 Interconnection. In buildings where more than one Class III standpipe is provided, the standpipes shall be interconnected in accordance with NFPA 14.

905.7 Cabinets. Cabinets containing fire-fighting equipment, such as standpipes, fire hose, fire extinguishers or fire department valves, shall not be blocked from use or obscured from view.

905.7.1 Cabinet equipment identification. Cabinets shall be identified in an approved manner by a permanently attached sign with letters not less than 2 inches (51 mm) high in a color that contrasts with the background color, indicating the equipment contained therein.

Exceptions:

1. Doors not large enough to accommodate a written sign shall be marked with a permanently attached pictogram of the equipment contained therein.
2. Doors that have either an approved visual identification clear glass panel or a complete glass door panel are not required to be marked.

905.7.2 Locking cabinet doors. Cabinets shall be unlocked.

Exceptions:

1. Visual identification panels of glass or other approved transparent frangible material that is easily broken and allows access.
2. Approved locking arrangements.
3. Group I-3 occupancies *and in mental health areas of Group I-2 occupancies.*

905.8 Dry standpipes. Dry standpipes shall not be installed.

Exception: Where subject to freezing and in accordance with NFPA 14.

905.9 Valve supervision. Valves controlling water supplies shall be supervised in the open position so that a change in the normal position of the valve will generate a supervisory signal at the supervising station required by Section 903.4. Where a fire alarm system is provided, a signal shall be transmitted to the control unit.

Exceptions:

1. Valves to underground key or hub valves in roadway boxes do not require supervision.
2. Valves locked in the normal position and inspected as provided in this code in buildings not equipped with a fire alarm system.

905.10 During construction. Standpipe systems required during construction and demolition operations shall be provided in accordance with Section 3313.

905.11 Locking standpipe outlet caps. The fire code official is authorized to require locking caps on the outlets on standpipes where the responding fire department carries key

wrenches for the removal that are compatible with locking FDC connection caps.

905.12 Existing buildings. Where required in Chapter 11, existing structures shall be equipped with standpipes installed in accordance with Section 905.

SECTION 906 PORTABLE FIRE EXTINGUISHERS

906.1 Where required. Portable fire extinguishers shall be installed in all of the following locations:

1. In new and existing Group A, B, E, F, H, I, L, M, R-1, R-2, *R-2.1, R-2.2, R-3.1, R-4* and S occupancies.

Exception: In Group R-2 occupancies, portable fire extinguishers shall be required only in locations specified in Items 2 through 6 where each dwelling unit is provided with a portable fire extinguisher having a minimum rating of 1-A:10-B:C.

2. Within 30 feet (9144 mm) distance of travel from commercial cooking equipment and from domestic cooking equipment in Group I-2 and R-2 college dormitory occupancies.
3. In areas where flammable or combustible liquids are stored, used or dispensed.
4. On each floor of structures under construction, except Group R-3 occupancies, in accordance with Section 3316.1.
5. Where required by the sections indicated in Table 906.1.
6. Special-hazard areas, including but not limited to laboratories, computer rooms and generator rooms, where required by the fire code official.
7. *Large and small family day-care homes shall be equipped with a portable fire extinguisher having a minimum 2-A:10-B:C rating.*
8. *Where required by California Code of Regulations, Title 19, Division 1.*
9. *Within 30 feet (9144 mm) of domestic cooking equipment located in a Group I-2.*

[California Code of Regulations, Title 19, Division 1, §3.29(a) through (d)] Portable Fire Extinguishing Equipment.

(a) *General. Portable fire extinguishers conforming to the requirements of California Code of Regulations, Title 19, Division 1, Chapter 3, shall be installed and maintained in accordance with guides established therein.*

(b) *Special Coverage. Additional Class A, B and C units of adequate extinguishing potential shall be provided for any other hazard, as determined by the enforcing agency.*

(c) *Group A Occupancies.*

(1) *One additional Class 2-A unit shall be provided in Group A Occupancies as follows:*

(A) *On each side of the stage or platform.*

Exception: *Platforms 1000 square feet or less in area need have only one such extinguishing unit.*

(B) On each side of every fly gallery.

(C) In basements beneath the stage or platform.

(D) In every hallway or passageway leading to a dressing room.

(E) In every property room, carpenter shop or similar workroom.

(2) Not less than one 10-B:C unit (not less than 4-B:C for existing extinguishers in existing occupancies) shall be provided:

(A) For each motor and fan room.

(B) Adjacent to each switchboard on the stage or platform.

(C) For each motion picture machine in projection rooms.

Exception: One 20-B:C unit (not less than 8-B:C for existing extinguishers in existing occupancies) in each projection room may be accepted as providing substantially equal protection.

(3) The enforcing agency may allow modifications or deviations relative to the number and location of portable fire extinguishers as required by this section provided such authority finds that the basic intent of this section and the ease of accessibility to extinguishers is otherwise achieved.

(d) Group R-2.1, R-3.1 and R-4 Occupancies. In Group R-2.1, R-3.1 and R-4 occupancies, a continuously attached garden hose, equipped with a water flow control nozzle, may be provided in lieu of one or more required fire extinguishers when acceptable to the enforcing agency. The location and length of such hose shall be as designated or approved by the enforcing agency.

NOTE: It is recommended that, wherever possible, portable fire extinguishers be located adjacent to manual fire alarm sending stations.

[California Code of Regulations, Title 19, Division 1, §565(a)] Selection of Fire Extinguishers.

(a) The selection of extinguishers for a given situation shall be determined by the authority having jurisdiction in accordance with adopted codes or ordinances. The character of the fires anticipated, the construction and occupancy of the individual property, the vehicle or hazard to be protected, ambient-temperature conditions and other factors shall be considered. The number, size, placement and limitations of use of extinguishers required shall be determined by using California Code of Regulations, Title 19, Division 1, Sections 567 through 573.

Exception: Portable fire extinguishers are not required at normally unmanned Group U occupancy buildings or structures where a portable fire extinguisher suitable to the hazard of the location is provided on the vehicle of visiting personnel.

**TABLE 906.1
ADDITIONAL REQUIRED PORTABLE FIRE EXTINGUISHERS**

SECTION	SUBJECT
303.5	Asphalt kettles
307.5	Open burning
308.1.3	Open flames—torches
309.4	Powered industrial trucks
1204.10	Portable generators
2005.2	Aircraft towing vehicles
2005.3	Aircraft welding apparatus
2005.4	Aircraft fuel-servicing tank vehicles
2005.5	Aircraft hydrant fuel-servicing vehicles
2005.6	Aircraft fuel-dispensing stations
2007.7	Heliports and helistops
2108.4	Dry cleaning plants
2305.5	Motor fuel-dispensing facilities
2310.6.4	Marine motor fuel-dispensing facilities
2311.6	Repair garages
2404.4.1	Spray-finishing operations
2405.4.2	Dip-tank operations
2406.4.2	Powder-coating areas
2804.3	Lumberyards/woodworking facilities
2808.8	Recycling facilities
2809.5	Exterior lumber storage
2903.5	Organic-coating areas
3006.3	Industrial ovens
3107.9	Tents and membrane structures
3206.10	High-piled storage
3316.1	Buildings under construction or demolition
3318.3	Roofing operations
3408.2	Tire rebuilding/storage
3504.2.6	Welding and other hot work
3604.4	Marinas
3703.6	Combustible fibers
5703.2.1	Flammable and combustible liquids, general
5704.3.3.1	Indoor storage of flammable and combustible liquids
5704.3.7.5.2	Liquid storage rooms for flammable and combustible liquids
5705.4.9	Solvent distillation units
5706.2.7	Farms and construction sites—flammable and combustible liquids storage
5706.4.10.1	Bulk plants and terminals for flammable and combustible liquids
5706.5.4.5	Commercial, industrial, governmental or manufacturing establishments—fuel dispensing
5706.6.4	Tank vehicles for flammable and combustible liquids
5906.5.7	Flammable solids
6108.2	LP-gas

[BE] 1013.6 Externally illuminated exit signs. Externally illuminated exit signs shall comply with Sections 1013.6.1 through 1013.6.3.

[BE] 1013.6.1 Graphics. Every exit sign and directional exit sign shall have plainly legible letters not less than 6 inches (152 mm) high with the principal strokes of the letters not less than $\frac{3}{4}$ inch (19.1 mm) wide. The word “EXIT” shall have letters having a width not less than 2 inches (51 mm) wide, except the letter “I,” and the minimum spacing between letters shall be not less than $\frac{3}{8}$ inch (9.5 mm). Signs larger than the minimum established in this section shall have letter widths, strokes and spacing in proportion to their height.

The word “EXIT” shall be in high contrast with the background and shall be clearly discernible when the means of exit sign illumination is or is not energized. If a chevron directional indicator is provided as part of the exit sign, the construction shall be such that the direction of the chevron directional indicator cannot be readily changed.

[BE] 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).

[BE] 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 Section 1203. Group I-2 exit sign illumination shall not be provided by unit equipment batteries only.

Exception: Approved exit sign illumination types that provide continuous illumination independent of external power sources for a duration of not less than 90 minutes, in case of primary power loss, are not required to be connected to an emergency electrical system.

1013.7 Floor-level exit signs. *Where exit signs are required by Chapter 10, additional approved low-level exit signs which are internally or externally illuminated photoluminescent or self-luminous shall be provided in all interior corridors of Group A, E, I and R-2.1 occupancies and in all areas serving guest rooms of hotels in Group R, Division 1 occupancies.*

Exceptions:

1. Group A occupancies that are protected throughout by an approved supervised fire sprinkler system.
2. Group E occupancies where direct exits have been provided from each classroom.
3. Group I and R-2.1 occupancies which are provided with smoke barriers constructed in accordance with Section 407.5 of the California Building Code.
4. Group I-3 occupancies.

The bottom of the sign shall not be less than 6 inches (152 mm) or more than 8 inches (203 mm) above the floor level and shall indicate the path of exit travel. For

exit and exit-access doors, the sign shall be on the door or adjacent to the door with the closest edge of the sign or marker within 4 inches (102 mm) of the door frame.

Note: Pursuant to Health and Safety Code Section 13143, this California amendment applies to all newly constructed buildings or structures, subject to this section, for which a building permit is issued (or construction commenced, where no building permit is issued) on or after January 1, 1989.

1013.8 Path marking. *When exit signs are required by Chapter 10, in addition to approved floor-level exit signs, approved path marking shall be installed at floor level or no higher than 8 inches (203 mm) above the floor level in all interior-rated exit corridors of unsprinklered Group A, R-1 and R-2 occupancies.*

Such marking shall be continuous, except as interrupted by door-ways, corridors or other such architectural features, in order to provide a visible delineation along the path of travel.

Note: Pursuant to Health and Safety Code Section 13143, the California amendments of this section shall apply to all newly constructed buildings or structures, subject to this section, for which a building permit is issued (or construction commenced, where no building permit is issued) on or after January 1, 1989.

SECTION 1014 HANDRAILS

[BE] 1014.1 Where required. Handrails serving flights of stairways, ramps, stepped aisles and ramped aisles shall be adequate in strength and attachment in accordance with Section 1607.8 of the *California Building Code*. Handrails required for flights of stairways by Section 1011.11 shall comply with Sections 1014.2 through 1014.9. Handrails required for ramps by Section 1012.8 shall comply with Sections 1014.2 through 1014.8. Handrails for stepped aisles and ramped aisles required by Section 1030.16 shall comply with Sections 1014.2 through 1014.8.

[BE] 1014.2 Height. Handrail height, measured above stair tread nosings, or finish surface of ramp slope, shall be uniform, not less than 34 inches (864 mm) and not more than 38 inches (965 mm). Handrail height of alternating tread devices and ship’s ladders, measured above tread nosings, shall be uniform, not less than 30 inches (762 mm) and not more than 34 inches (864 mm).

Exceptions:

1. Where handrail fittings or bendings are used to provide continuous transition between flights, the fittings or bendings shall be permitted to exceed the maximum height.
2. In Group R-3 occupancies; within dwelling units in Group R-2 occupancies; and in Group U occupancies that are associated with a Group R-3 occupancy or associated with individual dwelling units in Group R-2 occupancies; where handrail fittings or bendings are used to provide continuous transition

between flights, transition at winder treads, transition from handrail to guard, or where used at the start of a flight, the handrail height at the fittings or bendings shall be permitted to exceed the maximum height.

3. Handrails on top of a guard where permitted along stepped aisles and ramped aisles in accordance with Section 1030.16.

[BE] 1014.3 Handrail graspability. Required handrails shall comply with Section 1014.3.1 or shall provide equivalent graspability.

Exception: In Group R-3 occupancies; within dwelling units in Group R-2 occupancies; and in Group U occupancies that are accessory to a Group R-3 occupancy or accessory to individual dwelling units in Group R-2 occupancies; handrails shall be Type I in accordance with Section 1014.3.1, Type II in accordance with Section 1014.3.2 or shall provide equivalent graspability.

[BE] 1014.3.1 Type I. Handrails with a circular cross section shall have an outside diameter of not less than $1\frac{1}{4}$ inches (32 mm) and not greater than 2 inches (51 mm). Where the handrail is not circular, it shall have a perimeter dimension of not less than 4 inches (102 mm) and not greater than $6\frac{1}{4}$ inches (160 mm) with a maximum cross-sectional dimension of $2\frac{1}{4}$ inches (57 mm) and minimum cross-sectional dimension of 1 inch (25 mm). Edges shall have a minimum radius of 0.01 inch (0.25 mm).

[BE] 1014.3.2 Type II. Handrails with a perimeter greater than $6\frac{1}{4}$ inches (160 mm) shall provide a graspable finger recess area on both sides of the profile. The finger recess shall begin within a distance of $\frac{3}{4}$ inch (19 mm) measured vertically from the tallest portion of the profile and achieve a depth of not less than $\frac{5}{16}$ inch (8 mm) within $\frac{7}{8}$ inch (22 mm) below the widest portion of the profile. This required depth shall continue for not less than $\frac{3}{8}$ inch (10 mm) to a level that is not less than $1\frac{3}{4}$ inches (45 mm) below the tallest portion of the profile. The width of the handrail above the recess shall be not less than $1\frac{1}{4}$ inches (32 mm) to not greater than $2\frac{3}{4}$ inches (70 mm). Edges shall have a minimum radius of 0.01 inch (0.25 mm).

[BE] 1014.4 Continuity. Handrail gripping surfaces shall be continuous, without interruption by newel posts or other obstructions.

Exceptions:

1. Handrails within dwelling units are permitted to be interrupted by a newel post at a turn or landing.
2. Within a dwelling unit, the use of a volute, turnout, starting easing or starting newel is allowed over the lowest tread.
3. Handrail brackets or balusters attached to the bottom surface of the handrail that do not project horizontally beyond the sides of the handrail within $1\frac{1}{2}$ inches (38 mm) of the bottom of the handrail shall not be considered obstructions. For each $\frac{1}{2}$ inch (12.7 mm) of additional handrail perimeter dimension above 4 inches (102 mm), the vertical clearance

dimension of $1\frac{1}{2}$ inches (38 mm) shall be permitted to be reduced by $\frac{1}{8}$ inch (3.2 mm).

4. Where handrails are provided along walking surfaces with slopes not steeper than 1:20, the bottoms of the handrail gripping surfaces shall be permitted to be obstructed along their entire length where they are integral to crash rails or bumper guards.
5. Handrails serving stepped aisles or ramped aisles are permitted to be discontinuous in accordance with Section 1030.16.1.

[BE] 1014.5 Fittings. Handrails shall not rotate within their fittings.

[BE] 1014.6 Handrail extensions. Handrails shall return to a wall, guard or the walking surface or shall be continuous to the handrail of an adjacent flight of stairs or ramp run. Where handrails are not continuous between flights the handrails shall extend horizontally not less than 12 inches (305 mm) beyond the top riser and continue to slope for the depth of one tread beyond the bottom riser. At ramps where handrails are not continuous between runs, the handrails shall extend horizontally above the landing 12 inches (305 mm) minimum beyond the top and bottom of ramp runs. The extensions of handrails shall be in the same direction of the flights of stairs at stairways and the ramp runs at ramps.

Exceptions:

1. Handrails within a dwelling unit that is not required to be accessible need extend only from the top riser to the bottom riser.
2. Handrails serving aisles in rooms or spaces used for assembly purposes are permitted to comply with the handrail extensions in accordance with Section 1030.16.
3. Handrails for alternating tread devices and ship's ladders are permitted to terminate at a location vertically above the top and bottom risers. Handrails for alternating tread devices are not required to be continuous between flights or to extend beyond the top or bottom risers.

[BE] 1014.7 Clearance. Clear space between a handrail and a wall or other surface shall be not less than $1\frac{1}{2}$ inches (38 mm). A handrail and a wall or other surface adjacent to the handrail shall be free of any sharp or abrasive elements.

[BE] 1014.8 Projections. On ramps and on ramped aisles that are part of an accessible route, the clear width between handrails shall be 36 inches (914 mm) minimum. Projections into the required width of aisles, stairways and ramps at each side shall not exceed $4\frac{1}{2}$ inches (114 mm) at or below the handrail height. Projections into the required width shall not be limited above the minimum headroom height required in Section 1011.3. Projections due to intermediate handrails shall not constitute a reduction in the egress width. Where a pair of intermediate handrails are provided within the stairway width without a walking surface between the pair of intermediate handrails and the distance between the pair of intermediate handrails is greater than 6 inches (152 mm), the available egress width shall be reduced by the distance

SECTION 1032 MAINTENANCE OF THE MEANS OF EGRESS

1032.1 General. The means of egress for buildings or portions thereof shall be maintained in accordance with this section.

[California Code of Regulations, Title 19, Division 1, §3.11(a) through (d)] Exits, Aisles, Ramps, Corridors and Passageways.

(a) No person shall install, place or permit the installation or placement of any bed, chair, equipment, concession, turnstile, ticket office or anything whatsoever, in any manner which would block or obstruct the required width of any exit.

(b) No person shall install, place or permit the installation or placement of any combustible material or equipment in or exposed to any exit.

Exceptions:

(1) Furniture or equipment constructed of wood or other material of similar combustibility may be permitted in an exit or exposed to an exit when approved by the enforcing agency.

(2) When approved by the enforcing agency, combustible materials may be permitted in exit foyers and lobbies.

(c) No person shall install, place or permit the installation or placement of any storage material of any kind in any exit regardless of the required width of such exit.

Exception: *Personal material located in metal lockers in Group B and E occupancies as defined in California Code of Regulations, Title 24, Part 2.*

(d) Aisles shall not be occupied by any person for whom seating is not available.

1032.2 Reliability. Required exit accesses, exits and exit discharges shall be continuously maintained free from obstructions or impediments to full instant use in the case of fire or other emergency where the building area served by the means of egress is occupied. An exit or exit passageway shall not be used for any purpose that interferes with a means of egress.

1032.2.1 Security devices and egress locks. Security devices affecting means of egress shall be subject to approval of the fire code official. Security devices and locking arrangements in the means of egress that restrict, control, or delay egress shall be installed and maintained as required by this chapter.

1032.2.1.1 Fire escapes. Security enclosures, fences or screening for fire escape stairways shall be approved by the fire code official and shall be constructed such that they do not impede egress to the public way. Means shall be provided for emergency personnel to access the fire escape stair from the exterior of the enclosure.

1032.2.1.2 Maintenance. *Fire escape stairways and balconies shall be kept clear and unobstructed at all times and shall be maintained in good working order.*

1032.2.1.3 Examination. *Fire escape stairways and balconies shall be examined for structural adequacy*

and safety by a registered design professional or other person acceptable to the fire code official every 5 years. The examination shall determine whether the fire escape stairways and balconies can support the dead load plus a live load of not less than 100 pounds per square foot (4.78 kN/m²). An inspection report shall be submitted to the fire code official after such examination.

[BE] 1032.2.2 Locking arrangements in educational occupancies. In Group E occupancies, Group B educational occupancies and Group I-4 occupancies, egress doors with locking arrangements designed to keep intruders from entering the room shall comply with Section 1010.2.8.

1032.3 Obstructions. A means of egress shall be free from obstructions that would prevent its use, including the accumulation of snow and ice.

1032.3.1 Group I-2. In Group I-2, the required clear width for aisles, corridors and ramps that are part of the required means of egress shall comply with Section 407.4.3 of the California Building Code and Section 1020.3. The facility shall have a plan to maintain the required clear width during emergency situations.

Exception: In areas required for bed movement, equipment shall be permitted in the required width where all of the following provisions are met:

1. The equipment is low hazard and wheeled.
2. The equipment does not reduce the effective clear width for the means of egress to less than 5 feet (1525 mm).
3. The equipment is limited to:
 - 3.1. Equipment and carts in use.
 - 3.2. Medical emergency equipment.
 - 3.3. Infection control carts.
 - 3.4. Patient lift and transportation equipment.
4. Medical emergency equipment and patient lift and transportation equipment, when not in use, are required to be located on one side of the corridor.
5. The equipment is limited in number to not more than one per patient sleeping room or patient care room within each smoke compartment.

[BE] 1032.4 Exit signs. Exit signs shall be installed and maintained in accordance with the building code that was in effect at the time of construction and the applicable provisions in Section 1104. Decorations, furnishings, equipment or adjacent signage that impairs the visibility of exit signs, creates confusion or prevents identification of the exit shall not be allowed.

1032.5 Nonexit identification. Where a door is adjacent to, constructed similar to and can be confused with a means of egress door, that door shall be identified with an approved sign that identifies the room name or use of the room.

1032.6 Finishes, furnishings and decorations. Means of egress doors shall be maintained in such a manner as to be distinguishable from the adjacent construction and finishes such that the doors are easily recognizable as doors. Furnishings, decorations or other objects shall not be placed so as to obstruct exits, access thereto, egress therefrom, or visibility thereof. Hangings and draperies shall not be placed over exit doors or otherwise be located to conceal or obstruct an exit. Mirrors shall not be placed on exit doors. Mirrors shall not be placed in or adjacent to any exit in such a manner as to confuse the direction of egress.

1032.7 Emergency escape and rescue openings. Required emergency escape and rescue openings shall be maintained in accordance with the code in effect at the time of construction, and both of the following:

1. Required emergency escape and rescue openings shall be operational from the inside of the room without the use of keys or tools.
2. Bars, grilles, grates or similar devices are permitted to be placed over emergency escape and rescue openings provided that the minimum net clear opening size complies with the code that was in effect at the time of construction and the unit is equipped with smoke alarms installed in accordance with Section 907.2.11. Such devices shall be releasable or removable from the inside without the use of a key, tool or force greater than that which is required for normal operation of the emergency escape and rescue opening.

1032.8 Inspection, testing and maintenance. Two-way communication systems shall be inspected and tested on a yearly basis to verify that all components are operational. Where required, the tests shall be conducted in the presence of the fire code official. Records of inspection, testing and maintenance shall be maintained.

1032.9 Floor identification signs. The floor identification signs required by Sections 1023.9 and 1104.24 shall be maintained in an approved manner.

1032.10 Emergency lighting equipment inspection and testing. Emergency lighting shall be maintained in accordance with Section 109 and shall be inspected and tested in accordance with Sections 1032.10.1 and 1032.10.2.

1032.10.1 Activation test. Emergency lighting equipment shall be tested monthly for a duration of not less than 30 seconds. The test shall be performed manually or by an automated self-testing and self-diagnostic routine. Where testing is performed by self-testing and self-diagnostics, a visual inspection of the emergency lighting equipment shall be conducted monthly to identify any equipment displaying a trouble indicator or that has become damaged or otherwise impaired.

1032.10.2 Power test. Battery-powered emergency lighting equipment shall be tested annually by operating the equipment on battery power for not less than 90 minutes.

quantity of solvent used in a machine shall not exceed the design capacity of the machine.

2403.3.5.2 Within spray booths and spray rooms.

Where solvents are used for cleaning spray nozzles and auxiliary equipment within spray booths and spray rooms, the ventilating equipment shall be operated during cleaning.

2403.3.6 Class II and III liquids. Solvents used outside of spray booths, spray rooms or listed and approved spray gun and equipment cleaning machines shall be restricted to Class II and III liquids.

2403.4 Operations and maintenance. Flammable vapor areas, exhaust fan blades and exhaust ducts shall be kept free from the accumulation of deposits of combustible residues. Where excessive residue accumulates in such areas, spraying operations shall be discontinued until conditions are corrected.

2403.4.1 Tools. Scrapers, spuds and other tools used for cleaning purposes shall be constructed of nonsparking materials.

2403.4.2 Residue. Residues removed during cleaning and debris contaminated with residue shall be immediately removed from the premises and properly disposed.

2403.4.3 Waste cans. Approved metal waste cans equipped with self-closing lids shall be provided wherever rags or waste are impregnated with finishing material. Such rags and waste shall be deposited therein immediately after being utilized. The contents of waste cans shall be properly disposed of not less than once daily and at the end of each shift.

2403.4.4 Solvent recycling. Solvent distillation equipment used to recycle and clean dirty solvents shall comply with Section 5705.4.

SECTION 2404 SPRAY FINISHING

2404.1 General. The application of flammable or combustible liquids by means of spray apparatus in continuous or intermittent processes shall be in accordance with the requirements of Sections 2403 and 2404.2 through 2404.9.4.

2404.2 Location of spray-finishing operations. Spray-finishing operations conducted in buildings used for Group A, E, I or R occupancies shall be located in a spray room protected with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 and separated vertically and horizontally from the remainder of the building by fire barrier walls and horizontal assemblies with not less than a 1-hour fire-resistance rating in accordance with the *California Building Code*. In other occupancies, spray-finishing operations shall be conducted in a spray room, spray booth or limited spraying space approved for such use.

Exceptions:

1. Automobile undercoating spray operations and spray-on automotive lining operations conducted in areas with approved natural or mechanical ventila-

tion shall be exempt from the provisions of Section 2404 when approved and where utilizing Class IIIA or IIIB combustible liquids.

2. In buildings other than Group A, E, I or R occupancies, approved limited spraying space in accordance with Section 2404.9.
3. Resin application areas used for manufacturing of reinforced plastics complying with Section 2409 shall not be required to be located in a spray room, spray booth or spraying space.

2404.3 Design and construction. Design and construction of spray rooms, spray booths and spray spaces shall be in accordance with Sections 2404.3.1 through 2404.3.4.1.

2404.3.1 Spray rooms. Spray rooms shall be constructed and designed in accordance with Section 416 of the *California Building Code* and Section 2404.3.2 of this code, and shall comply with Sections 2404.4 through 2404.8 of this code.

2404.3.2 Floor. Combustible floor construction in spray rooms shall be covered by approved, noncombustible, nonsparking material, except where combustible coverings, including but not limited to thin paper or plastic and strippable coatings, are utilized over noncombustible materials to facilitate cleaning operations in spray rooms.

2404.3.3 Spray booths. The design and construction of spray booths shall be in accordance with Sections 2404.3.3.1 through 2404.3.3.6, Sections 2404.4 through 2404.8 and NFPA 33.

2404.3.3.1 Construction. Spray booths shall be constructed of approved noncombustible materials. Aluminum shall not be used. Where walls or ceiling assemblies are constructed of sheet metal, single-skin assemblies shall be not thinner than 0.0478 inch (18 gage) (1.2 mm) and each sheet of double-skin assemblies shall be not thinner than 0.0359 inch (20 gage) (0.9 mm). Structural sections of spray booths are allowed to be sealed with latex-based or similar caulks and sealants.

2404.3.3.2 Surfaces. The interior surfaces of spray booths shall be smooth; shall be constructed so as to permit the free passage of exhaust air from all parts of the interior, and to facilitate washing and cleaning; and shall be designed to confine residues within the booth. Aluminum shall not be used.

2404.3.3.3 Floor. Combustible floor construction in spray booths shall be covered by approved, noncombustible, nonsparking material, except where combustible coverings, including but not limited to thin paper or plastic and strippable coatings, are utilized over noncombustible materials to facilitate cleaning operations in spray booths.

2404.3.3.4 Means of egress. Means of egress shall be provided in accordance with Chapter 10.

Exception: Means of egress doors from premanufactured spray booths shall be not less than 30 inches (762 mm) in width by 80 inches (2032 mm) in height.

2404.3.3.5 Clear space. Spray booths shall be installed so that all parts of the booth are able to be accessed for cleaning. A clear space of not less than 3 feet (914 mm) shall be maintained on all sides of the spray booth. This clear space shall be kept free of any storage or combustible construction.

Exceptions:

1. This requirement shall not prohibit locating a spray booth closer than 3 feet (914 mm) to or directly against an interior partition, wall or floor/ceiling assembly that has a fire-resistance rating of not less than 1 hour, provided that the spray booth can be adequately maintained and cleaned.
2. This requirement shall not prohibit locating a spray booth closer than 3 feet (914 mm) to an exterior wall or a roof assembly, provided that the wall or roof is constructed of noncombustible material and the spray booth can be adequately maintained and cleaned.

2404.3.3.6 Size. The aggregate area of spray booths in a building shall not exceed the lesser of 10 percent of the area of any floor of a building or the basic area allowed for a Group H-2 occupancy without area increases, as set forth in the *California Building Code*.

Exception: One individual booth not exceeding 500 square feet (46 m²).

2404.3.4 Spraying spaces. Spraying spaces shall be designed and constructed in accordance with the *California Building Code*, and Section 2404.3.4.1 and Sections 2404.4 through 2404.8 of this code.

2404.3.4.1 Floor. Combustible floor construction in spraying spaces shall be covered by approved, noncombustible, nonsparking material, except where combustible coverings, such as thin paper or plastic and strippable coatings, are utilized over noncombustible materials to facilitate cleaning operations in spraying spaces.

2404.4 Fire protection. Spray booths and spray rooms shall be protected by an approved automatic fire-extinguishing system complying with Chapter 9. Protection shall extend to exhaust plenums, exhaust ducts and both sides of dry filters where such filters are used.

2404.4.1 Fire extinguishers. Portable fire extinguishers complying with Section 906 shall be provided for spraying areas in accordance with the requirements for an extra (high) hazard occupancy.

2404.5 Housekeeping, maintenance and storage of hazardous materials. Housekeeping, maintenance, storage and use of hazardous materials shall be in accordance with Sections 2403.3, 2403.4, 2404.5.1 and 2404.5.2.

2404.5.1 Different coatings. Spray booths, spray rooms and spraying spaces shall not be alternately utilized for different types of coating materials where the combination of materials is conducive to spontaneous ignition, unless

all deposits of one material are removed from the booth, room or space and exhaust ducts prior to spraying with a different material.

2404.5.2 Protection of sprinklers. Automatic sprinklers installed in flammable vapor areas shall be protected from the accumulation of residue from spraying operations in an approved manner. Bags used as a protective covering shall be 0.003-inch-thick (0.076 mm) polyethylene or cellophane or shall be thin paper. Automatic sprinklers contaminated by overspray particles shall be replaced with new automatic sprinklers.

2404.6 Sources of ignition. Control of sources of ignition shall be in accordance with Section 2403.2 and Sections 2404.6.1 through 2404.6.2.4.

2404.6.1 Drying operations. Spray booths and spray rooms shall not be alternately used for the purpose of drying by arrangements or methods that could cause an increase in the surface temperature of the spray booth or spray room except in accordance with Sections 2404.6.1.1 and 2404.6.1.2. Except as specifically provided in this section, drying or baking units utilizing a heating system having open flames or that are capable of producing sparks shall not be installed in a flammable vapor areas.

2404.6.1.1 Spraying procedure. The spraying procedure shall use low-volume spray application.

2404.6.1.2 Drying apparatus. Fixed drying apparatus shall comply with this chapter and the applicable provisions of Chapter 30. Where recirculation ventilation is provided in accordance with Section 2404.7.2, the heating system shall not be within the recirculation air path.

2404.6.1.2.1 Interlocks. The spraying apparatus, drying apparatus and ventilating system for the spray booth or spray room shall be equipped with interlocks arranged to accomplish all of the following:

1. Prevent operation of the spraying apparatus while drying operations are in progress.
2. Where the drying apparatus is located in the spray booth or spray room, prevent operation of the drying apparatus until a timed purge of spray vapors from the spray booth or spray room is complete. This purge time shall be based on completing not fewer than four air changes of spray booth or spray room volume or for a period of not less than 3 minutes, whichever is greater.
3. Have the ventilating system maintain a safe atmosphere within the spray booth or spray room during the drying process and automatically shut off drying apparatus in the event of a failure of the ventilating system.
4. Shut off the drying apparatus automatically if the air temperature within the booth exceeds 200°F (93°C).

2404.6.1.2.2 Portable infrared apparatus. Where a portable infrared drying apparatus is used, electrical

CALIFORNIA FIRE CODE – MATRIX ADOPTION TABLE

CHAPTER 33 – FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION

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

Adopting Agency	BSC	BSC- CG	SFM		HCD			DSA		OSHDP						BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
			T-24	T-19*	1	2	1/AC	AC	SS	1	1R	2	3	4	5								
Adopt Entire Chapter			X																				
Adopt Entire Chapter as amended (amended sections listed below)																							
Adopt only those sections that are listed below																							
[California Code of Regulations, Title 19, Division 1]																							
Chapter / Section																							

* The *California Code of Regulations* (CCR), Title 19, Division 1 provisions that are found in the *California Fire Code* are a reprint from the current CCR, Title 19, Division 1 text for the code user's convenience only. The scope, applicability and appeals procedures of CCR, Title 19, Division I remain the same.

NFPA—continued

- 80—19: Standard for Fire Doors and Other Opening Protectives**
410.2.5, 509.4.2, 716.1, 716.2.5.1, 716.2.6.4, 716.2.9, 716.3.4.1, 716.3.5, 716.4.3, 1010.3.3
- 82—19: Standard on Incinerators and Waste and Linen Handling Systems and Equipment**
713.13
- 85—19: Boiler and Combustion System Hazards Code**
426.1
- 92—18: Standard for Smoke Control Systems**
909.7, 909.8
- 96—20: Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations**
606.2, 904.13
- 99—21: Health Care Facilities Code**
407.11, 422.6, 425.1
- 101—21: Life Safety Code**
1030.6.2
- 105—19: Standard for Smoke Door Assemblies and Other Opening Protectives**
405.4.2, 710.5.2.2, 716.2.10, 909.20.4.1
- 110—19: Standard for Emergency and Standby Power Systems**
2702.1.3, *3111F*
- 111—19: Standard on Stored Electrical Energy Emergency and Standby Power Systems**
2702.1.3, *3111F*
- 120—20: Standard for Fire Prevention and Control in Coal Mines**
426.1
- 170—18: Standard for Fire Safety and Emergency Symbols**
1025.2.6.1
- 211—19: Standard for Chimneys, Fireplaces, Vents and Solid Fuel-burning Appliances**
2112.5
- 221—21: Standard for High Challenge Fire Walls, Fire Walls and Fire Barrier Walls**
706.2, Table 716.1(2)
- 241—19: Standard for Safeguarding Construction, Alteration and Demolition Operations**
3301.1, 3303.2
- 252—17: Standard Methods of Fire Tests of Door Assemblies**
Table 716.1(1), 716.1.1, 716.1.2.2.1, 716.2.1.1, 716.2.1.2, 716.2.2.1, 716.2.2.2, 716.2.2.3.1, 716.2.5.1.1
- 253—19: Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source**
406.2.4, 424.2, 804.2, 804.3
- 257—17: Standard for Fire Test for Window and Glass Block Assemblies**
Table 716.1(1), 716.1.1, 716.1.2.2.2, 716.3.1.1, 716.3.1.2, 716.3.2.1.3, 716.3.4
- 259—18: Standard Test Method for Potential Heat of Building Materials**
2603.4.1.10, 2603.5.3
- 260—19 Methods of Tests and Classification System for Cigarette Ignition Resistance of Components of Upholstered Furniture**
805.1.1.1, 805.2.1.1, 805.3.1.1, 805.4.1.1
- 265—19: Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Textile or Expanded Vinyl Wall Coverings on Full Height Panels and Walls**
803.5.1, 803.5.1.1
- 268—19: Standard Test Method for Determining Ignitability of Exterior Wall Assemblies Using a Radiant Heat Energy Source**
1405.1.1.1, 1405.1.1.1.1, 1405.1.1.1.2, 2603.5.7
- 275—17: Standard Method of Fire Tests for the Evaluation of Thermal Barriers**
508.4.4.1, 509.4.1.1, 1406.10.2, 1408.10.2, 2603.4
- 276—19: Standard Method of Fire Tests for Determining the Heat Release Rate of Roofing Assemblies with Combustible Above-deck Roofing Components**
1508.1, 2603.3, 2603.4.1.5
- 285—19: Standard Fire Test Method for the Evaluation of Fire Propagation Characteristics of Exterior Nonload-bearing Wall Assemblies Containing Combustible Components**
718.2.6, 1402.5, 1406.10.3, 1408.10.4, 1511.6.2, 2603.5.5

REFERENCED STANDARDS

NFPA—continued

- 286—15: Standard Methods of Fire Test for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth**
402.6.4.4, 424.2, 803.1.1.1, 803.1.1.1.1, 803.11, 803.12, 803.13, 1406.10.2, 1408.10.3, 2603.7, 2603.9, 2604.2.4, 2614.4, 3105.3
- 288—17: Standard Methods of Fire Tests of Horizontal Fire Door Assemblies Installed in Horizontal in Fire-resistance-rated Floor Systems**
712.1.13.1
- 289—19: Standard Method of Fire Test for Individual Fuel Packages**
402.6.2, 402.6.4.5, 424.2, 806.4
- 409—16: Standard for Aircraft Hangars**
412.3.6, Table 412.3.6, 412.3.6.1, 412.5.5
- 418—16: Standard for Heliports**
412.7.4
- 484—19: Standard for Combustible Metals**
426.1
- 495—18: Explosive Materials Code**
202, 911.1, 911.4, 5601.1.1, 5601.1.5, 5604.2, 5604.6.2, 5604.6.3, 5604.7.1, 5605.1, 5606.1, 5606.5.2.1, 5605.2.3, 5607.1, 5607.9, 5607.11, 5607.15
- 502—14: Standard for Road Tunnels, Bridges, and Other Limited Access Highways**
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- 652—19: Standard on the Fundamentals of Combustible Dust**
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- 654—20: Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing and Handling of Combustible Particulate Solids**
426.1
- 655—17: Standard for the Prevention of Sulfur Fires and Explosions**
426.1
- 664—20: Standard for the Prevention of Fires and Explosions in Wood Processing and Woodworking Facilities**
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- 701—19: Standard Methods of Fire Tests for Flame Propagation of Textiles and Films**
410.2.6, 424.2, 806.4, 3102.3, 3102.3.1, 3102.6.1.1, 3105.3
- 704—17: Standard System for the Identification of the Hazards of Materials for Emergency Response**
202, 415.5.2
- 750—19: Standard on Water Mist Fire Protection Systems**
202, 904.11.1.1, 904.13
- 1123—18: Code for Fireworks Display**
202, 5604.2, 5608.1, 5608.2.2, 5608.5, 5608.6
- 1124—06: Code for the Manufacture, Transportation and Storage and Retail Sales of Fireworks and Pyrotechnic Articles**
5601.1.3
- 1124—17: Code for the Manufacture, Transportation and Storage and Retail Sales of Fireworks and Pyrotechnic Articles**
202, 5604.2, 5605.1, 5605.3, 5605.4, 5605.5, 5609.1
- 1221—19: Standard for the Installation, Maintenance and Use of Emergency Services Communications Systems**
510.4.2, 510.5
- 2001—18: Standard on Clean Agent Fire Extinguishing Systems, as amended***
904.10
- *NFPA 2001, Amended Sections as follows:*
Add Sections 4.3.5.1.1 and 4.3.5.2.1 to read as follows:
4.3.5.1.1 Alarms signals from the fire extinguishing system shall not interfere with the building fire alarm signal.
4.3.5.2.1 The lens on visual appliances shall be “red” in color.
Exception: Other lens colors are permitted where approved by the enforcing agency.
- 2010—20: Standard for Fixed Aerosol Fire-extinguishing Systems**
904.12
- 2245—2006: Below-grade Vaults for Flammable Liquid Storage Tanks**
5704.2.8.1
- 2335—2010: Fire Tests of Storage Pallets—with revisions through August 2017**
315.7.5, 3206.4.1.1
- 2360—2000: Test Methods for Determining the Combustibility Characteristics of Plastics Used in Semi-conductor Tool Construction—with revisions through October 2017**
2703.10.1.2

HISTORY NOTE APPENDIX

2022 California Fire Code California Code of Regulations, Title 24, Part 9

HISTORY:

For prior code history, see the History Note Appendix to the *California Fire Code*, 2019 Triennial Edition, effective January 1, 2020.

1. (BSC 08/21, SFM 06/21) Adoption by reference of the 2021 *International Fire Code* with necessary amendments to become the 2022 *California Fire Code*, and repeal of the 2018 edition of the *International Fire Code*; effective on January 1, 2023.
2. Erratum to correct editorial errors in Matrix Adoption Tables and miscellaneous corrections throughout chapters 1, 2, 4, 9, 10, 24 and 80 effective January 1, 2023.



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