REVISION RECORD FOR THE STATE OF CALIFORNIA

SUPPLEMENT

January 1, 2009

2007 Title 24, Part 9, California Fire Code

PLEASE NOTE: The date of this Supplement is for identification purposes only. See the History Note Appendix for the adoption and effective dates of the provisions.

It is suggested that the section number as well as the page number be checked when inserting this material and removing the superseded material. In case of doubt, rely on the section numbers rather than the page numbers because the section numbers must run consecutively.

It is further suggested that the material be retained with this revision record sheet so that the prior wording of any section can be easily ascertained.

Please keep the removed pages with this revision page for future reference.

Note

Due to the fact that the application date for a building permit establishes the California Building Standards Code provisions that are effective at the local level, which apply to the plans, specifications, and construction for that permit, it is strongly recommended that the removed pages be retained for historical reference.

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PREFACE

This document is Part 9 of the official triennial compilation and publication of the adoptions, amendments and repeal of administrative regulations to *California Code of Regulations, Title 24*, also referred to as the *California Building Standards Code*. This Part is known as the *California Fire Code* and incorporates, by adoption, the 2006 edition of the *International Fire Code* of the *International Code Council* with the California amendments.

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

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

To familiarize yourself with the format of this code, it is suggested that users review the following contents:

- How To Distinguish Model Code Language From California Amendments
- Matrix Adoption Tables

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

California Building Standards Commission
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Sacramento, CA 95833-2936

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Web Page: www.bsc.ca.gov

Acknowledgement

The 2007 *California Building Standards Code* (Code) was developed through the outstanding collaborative efforts of the Department of Housing and Community Development, the Division of State Architect, the Office of the State Fire Marshal, the Office of Statewide Health Planning and Development, the California Energy Commission, and the Building Standards Commission (Commission).

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

Members of the Building Standards Commission

Secretary Rosario Marin – Chair
Isam Hasenin – Vice-Chair
James Barthman
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Susan Dowty
Christina Jamison
Stephen Jensen
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Richard Sawhill
Steven Winkel

David Walls – Executive Director
Thomas Morrison – Deputy
Executive Director

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

California Code of Regulations, Title 24

California Agency Information Contact List

California Energy Commission

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

California State Lands Commission

Marine Oil Terminals ..... *(562) 499-6317*

California State Library

Construction Standards ..... *(918) 445-9604*

Corrections Standards Authority

Local Adult Jail Standards ..... *(916) 324-1914*
Local Juvenile Facility Standards ..... *(916) 324-1914*

Department of Consumer Affairs – Acupuncture Board

Office Standards ..... *(916) 445-3021*

Department of Consumer Affairs – Board of Pharmacy

Pharmacy Standards ..... *(916) 574-7900*

Department of Consumer Affairs – Bureau of Barbering And Cosmetology

Barber and Beauty Shop and
College Standards ..... *(916) 952-5210*

Department of Consumer Affairs – Bureau of Home Furnishings and

Thermal Insulation
Insulation Testing Standards ..... *(916) 574-2041*

Department of Consumer Affairs – Structural Pest Control Board

Structural Standards ..... *(800) 737-8188*

Department of Consumer Affairs – Veterinary Medical Board

Veterinary Hospital Standard ..... *(916) 263-2610*

Department of Food and Agriculture

Meat & Poultry Packing Plant
Standards ..... *(916) 654-0509*
Dairy Standards ..... *(916) 654-0773*

Department of Health Services

Organized Camps Standards ..... *(916) 449-5661*
Public Swimming Pools Standards ..... *(916) 449-5661*
Asbestos Standards ..... *(510) 620-2874*

Department of Housing and Community Development

Residential – Hotels, Motels, Apartments, Single-Family Dwellings ..... *(916) 445-9471*
Permanent Structures in Mobilehome And Special Occupancy Parks ..... *(916) 445-9471*
Factory-Built Housing, Manufactured Housing and Commercial Modular ..... *(916) 445-3338*
Mobile Homes – Permits & Inspections
Northern Region ..... *(916) 225-2501*
Southern Region ..... *(951) 782-4420*
Employee Housing Standards ..... *(916) 445-9471*

Department of Water Resources

Gray Water Installations Standards ..... *(916) 651-9687*

Division of the State Architect – Access Compliance

Access Compliance Standards ..... *(916) 445-8100*

Division of the State Architect – Structural Safety

Public Schools Standards ..... *(916) 445-8100*
Essential Services Building Standards ..... *(916) 445-8100*

Office of Statewide Health Planning and Development

Hospital Standards ..... *(916) 654-3139*
Skilled Nursing Facility Standards ..... *(916) 654-3139*
Clinic Standards ..... *(916) 654-3139*
Permits ..... *(916) 654-3392*

Office of the State Fire Marshal

Code Development and Analysis ..... *(916) 445-8200*
Fire Safety Standards ..... *(916) 445-8200*
Fireplace Standards ..... *(916) 445-8200*
Day Care Centers Standards ..... *(916) 445-8200*
Exit Standards ..... *(916) 445-8200*

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				1	2	1/AC	AC	SS	1	2	3	4								
Adopt Entire Chapter																				
Adopt Entire Chapter as amended (amended sections listed below)			X																	
Adopt only those sections that are listed below							X													
Chapter / Section	Codes																			
201.3	CA		X																	
202.0	IFC		X																	
Accessible Means of Egress	IFC						X													
Aged Home or Institution	CA		X																	
Area of Refuge	IFC						X													
Assembly	CA		X																	
Assembly Building	CA		X																	
Bedridden Person	CA		X																	
Building	CA		X																	
Care and Supervision	CA		X																	
Catastrophically Injured	CA		X																	
Cell	CA		X																	
Cell Complex	CA		X																	
Cell Tiers	CA		X																	
Child-Care Center	CA		X																	
Child or Children	CA		X																	
Chronically Ill	CA		X																	
Congregate Living Health Facility (CLHF)	CA		X																	
Congregate Residence	CA		X																	
Daycare	CA		X																	
Day-Care Home, Large Family	CA		X																	
Day-Care Home, Small Family	CA		X																	
Day Room	CA		X																	
Enforcing Agency	CA		X																	
Exit	IFC						X													
Fire-Retardant Treated Wood	CA		X																	
Fire Appliance	CA		X																	
Fixed Guideway Transit System	CA		X																	
Full-Time Care	CA		X																	
Guard or Guardrail	IFC						X													
Handrail	IFC						X													
High-Rise Building	CA		X																	
Holding Facility	CA		X																	
Housing Unit	CA		X																	
Infant	CA		X																	
Lodging House	CA		X																	
Mentally Retarded Persons, Profoundly or Severely	CA		X																	
Modernization Project	CA		X																	
New Public School Campus	CA		X																	

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Adopting Agency		BSC	SFM	HCD			DSA		OSHPD				CSA	DHS	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	1	2	3	4								
Adopt Entire Chapter																				
Adopt Entire Chapter as amended (amended sections listed below)			X																	
Adopt only those sections that are listed below							X													
Chapter / Section	Codes																			
Non-Accessible Area	CA		X																	
Nonambulatory Persons	CA		X																	
Noncombustible	CA		X																	
Occupancy Classification	CA		X																	
Permanent Portable Building	CA		X																	
Photoluminescent	CA		X																	
Portable Building	CA		X																	
Protective Social Care	CA		X																	
Public Way	IFC		X				X													
Residential Care Facility for the Chronically Ill (RCF/CI)	CA		X																	
Residential Care Facility For The Elderly (RCFE)	CA		X																	
Residential Facility (RF)	CA		X																	
Restraint	CA		X																	
Self-luminous	CA		X																	
Stair	IFC						X													
Stairway	IFC						X													
Terminally Ill	CA																			
Winery Caves	CA																			

FIRE ALARM BOX, MANUAL. See Section 902.1.

FIRE ALARM CONTROL UNIT. See Section 902.1.

FIRE ALARM SIGNAL. See Section 902 1

FIRE ALARM SYSTEM. See Section 902.1.

FIRE APPARATUS ACCESS ROAD. See Section 502.1.

FIRE APPLIANCE. *See Section 902.1*

FIRE AREA. See Section 902 1.

FIRE CHIEF. The chief officer of the fire department serving the jurisdiction, or a duly authorized representative.

FIRE CODE OFFICIAL. The fire chief or other designated authority charged with the administration and enforcement of the code, or a duly authorized representative

FIRE COMMAND CENTER. See Section 502 1.

FIRE DEPARTMENT MASTER KEY. See Section 502.1

FIRE DETECTOR, AUTOMATIC. See Section 902.1

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

[B] FIRE EXIT HARDWARE. See Section 1002.1.

FIRE LANE. See Section 502.1.

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

FIRE POINT. See Section 3402.1.

FIRE PROTECTION SYSTEM. See Section 902.1

[B] FIRE-RETARDANT-TREATED WOOD. *Fire-retardant wood is any wood product impregnated with chemicals by a pressure process or other means during manufacture, and which, when tested in accordance with ASTM E 84-05 for a period of 30 minutes, shall have a flame spread of not over 25 and show no evidence of progressive combustion. In addition, the flame front shall not progress more than 10 $^1/_2$ feet (3200 mm) beyond the center line of the burner at any time during the test. Materials that may be exposed to the weather shall pass the accelerated weathering test and be identified as Exterior type, in accordance with ASTM D 2898-94 and ASTM D 3201-94. Where material is not directly exposed to rainfall but exposed to high humidity conditions, it shall be subjected to the hygroscopic test and identified as Interior Type A in accordance with ASTM D 2898-94 and ASTM D 3201-94.*

All materials shall bear identification showing the fire performance rating thereof. Such identifications shall be issued by an approved agency having a service for inspection of materials at the factory.

Fire-retardant-treated wood shall not be construed as "noncombustible"

FIRE SAFETY FUNCTIONS. See Section 902.1

FIRE WATCH. A temporary measure intended to ensure continuous and systematic surveillance of a building or portion thereof by one or more qualified individuals for the purposes of identifying and controlling fire hazards, detecting early signs of unwanted fire, raising an alarm of fire and notifying the fire department

FIREWORKS. See Section 3302.1

Fireworks, 1.4G. See Section 3302.1.

Fireworks, 1.3G. See Section 3302.1.

FIREWORKS DISPLAY. See Section 3302 1

[B] FIXED GUIDEWAY TRANSIT SYSTEMS. *See California Building Code, Section 443.*

FLAMMABLE CRYOGENIC FLUID. See Section 3202.1.

FLAMMABLE FINISHES. See Section 1502.1.

FLAMMABLE GAS. See Section 3502.1

FLAMMABLE LIQUEFIED GAS. See Section 3502.1.

FLAMMABLE LIQUID. See Section 3402.1.

Class IA. See Section 3402.1

Class IB. See Section 3402.1.

Class IC. See Section 3402.1

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

FLAMMABLE SOLID. See Section 3602 1.

FLAMMABLE VAPOR AREA. See Section 1502.1.

FLAMMABLE VAPORS OR FUMES. See Section 2702 1.

FLASH POINT. See Section 3402.1.

FLEET VEHICLE MOTOR FUEL-DISPENSING FACILITY. See Section 2202.1

[B] FLOOR AREA, GROSS. See Section 1002.1.

[B] FLOOR AREA, NET. See Section 1002.1.

FLUIDIZED BED. See Section 1502.1.

FOAM-EXTINGUISHING SYSTEM. See Section 902.1.

[B] FOLDING AND TELESCOPIC SEATING. See Section 1002.1

FUEL LIMIT SWITCH. See Section 3402 1.

[B][SFM] FULL-TIME CARE. *The establishment and routine care of persons on an hourly, daily, weekly, monthly, yearly or permanent basis, whether for 24 hours per day or less, and where sleeping accommodations are provided*

FUMIGANT. See Section 1702 1.

FUMIGATION. See Section 1702.1.

FURNACE CLASS A. See Section 2102.1.

FURNACE CLASS B. See Section 2102.1.

FURNACE CLASS C. See Section 2102.1.

FURNACE CLASS D. See Section 2102.1

GAS CABINET. See Section 2702.1.

GAS ROOM. See Section 2702.1.

[B] GRANDSTAND. See Section 1002 1.

[B] GUARD. See Section 1002.1.

HALOGENATED EXTINGUISHING SYSTEM. See Section 902.1.

HANDLING. See Section 2702.1.

[B] HANDRAIL. See Section 1002.1.

HAZARDOUS MATERIAL. See Section 2702.1.

HAZARDOUS PRODUCTION MATERIAL (HPM). See Section 1802.1.

HAZARDOUS SUBSTANCE. *A substance which, by reason of being explosive, flammable, toxic, poisonous, corrosive, oxidizing, irritant or otherwise harmful, is likely to cause injury.*

HEALTH HAZARD. See Section 2702.1.

HELIPORT. See Section 1102.1.

HELISTOP. See Section 1102.1.

HI-BOY. See Section 302.1.

HIGH-PILED COMBUSTIBLE STORAGE. See Section 2302.1.

HIGH-PILED STORAGE AREA. See Section 2302.1.

[B] HIGH-RISE BUILDING. *As used in this code:*

1. *"Existing high-rise structure" means a high-rise structure, the construction of which is commenced or completed prior to July 1, 1974.*
2. *"High-rise structure" means every building of any type of construction or occupancy having floors used for human occupancy located more than 75 feet above the lowest floor level having building access (see California Building Code, Section 403.1.2), except buildings used as hospitals as defined in Health and Safety Code Section 1250.*
3. *"New high-rise structure" means a high-rise structure, the construction of which is commenced on or after July 1, 1974.*

HIGHLY TOXIC. See Section 3702.1.

HIGHLY VOLATILE LIQUID. A liquefied compressed gas with a boiling point of less than 68°F (20°C).

HIGHWAY. See Section 3302.1.

HOGGED MATERIALS. See Section 1902.1.

[B] HOLDING FACILITY. *A detention or correctional facility or area where inmates, staff and public are not housed but are restrained.*

[M] HOOD. See Section 602.1.

Type I. See Section 602.1.

HOT WORK. See Section 2602.1.

HOT WORK AREA. See Section 2602.1.

HOT WORK EQUIPMENT. See Section 2602.1.

HOT WORK PERMITS. See Section 2602.1.

HOT WORK PROGRAM. See Section 2602.1.

[B] HOUSING UNIT. *An area intended to lodge inmates on a 24-hour basis where accommodations are provided for sleeping.*

HPM FLAMMABLE LIQUID. See Section 1802.1.

HPM ROOM. See Section 1802.1.

IMMEDIATELY DANGEROUS TO LIFE AND HEALTH (IDLH). See Section 2702.1.

IMPAIRMENT COORDINATOR. See Section 902.1.

INCOMPATIBLE MATERIALS. See Section 2702.1.

[B] INFANT. *For the purpose of these regulations, shall mean any child who because of age only, is unable to walk and requires the aid of another person to evacuate the building. In no case shall the term "infant" mean a child beyond two years of age.*

INHABITED BUILDING. See Section 3302.1.

INITIATING DEVICE. See Section 902.1.

IRRITANT. A chemical which is not corrosive, but which causes a reversible inflammatory effect on living tissue by chemical action at the site of contact. A chemical is a skin irritant if, when tested on the intact skin of albino rabbits by the methods of CPSC 16CFR Part 1500.41 for an exposure of four or more hours or by other appropriate techniques, it results in an empirical score of 5 or more. A chemical is classified as an eye irritant if so determined under the procedure listed in CPSC 16CFR Part 1500.42 or other approved techniques.

KEY BOX. See Section 502.1.

LABELED. Equipment or material to which has been attached a label, symbol or other identifying mark of a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of production of labeled equipment or materials, and by whose labeling is indicated compliance with nationally recognized standards or tests to determine suitable usage in a specified manner.

LIMITED SPRAYING SPACE. See Section 1502.1.

LIQUEFIED NATURAL GAS (LNG). See Section 2202.1.

LIQUEFIED PETROLEUM GAS (LP-gas). See Section 3802.1.

LIQUID. See Section 2702.1.

LIQUID STORAGE ROOM. See Section 3402.1.

LIQUID STORAGE WAREHOUSE. See Section 3402.1.

LISTED. Equipment or materials included on a list published by an approved testing laboratory, inspection agency or other organization concerned with current product evaluation that maintains periodic inspection of production of listed equipment or materials, and whose listing states that equipment or materials comply with approved nationally recognized standards and have been tested or evaluated and found suitable for use in a specified manner.

[B] LODGING HOUSE. *Any building or portion thereof containing not more than five guestrooms where rent is paid in money, goods, labor or otherwise.*

LONGITUDINAL FLUE SPACE. See Section 2302.1.

LOW-PRESSURE TANK. See Section 3202.1.

LOWER EXPLOSIVE LIMIT (LEL). See Section 2702.1.

LOWER FLAMMABLE LIMIT (LFL). See Section 2702.1.

MAGAZINE. See Section 3302.1

Indoor. See Section 3302.1.

Type 1. See Section 3302.1.

Type 2. See Section 3302.1.

Type 3. See Section 3302.1.

Type 4. See Section 3302.1.

Type 5. See Section 3302.1.

MAGNESIUM. See Section 3602.1.

MANUAL FIRE ALARM BOX. See Section 902.1.

MANUAL STOCKING METHODS. See Section 2302.1.

MARINE MOTOR FUEL-DISPENSING FACILITY. See Section 2202.1.

MATERIAL SAFETY DATA SHEET (MSDS). See Section 2702.1.

MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA. See Section 2702.1.

[B] MEANS OF EGRESS. See Section 1002.1.

MECHANICAL STOCKING METHODS. See Section 2302.1.

MEMBRANE STRUCTURE. See Section 2402.1.

[B] MENTALLY RETARDED PERSONS, PROFOUNDLY OR SEVERELY. *Any retarded person who is unable to evacuate a building unassisted during emergency conditions*

Note: The determination as to such incapacity shall be made by the Director of the State Department of Public Health or his or her designated representative pursuant to Health and Safety Code Section 13131.3

[B] MERCHANDISE PAD. See Section 1002.

MOBILE FUELING. See Section 3402.1.

MODERNIZATION PROJECT. *Any construction effort that has an estimated total cost in excess of $200,000.00 that is intended to modify a permanent school building or structure and or the addition of a new school building or structure used to serve or house students from kindergarten through twelfth grade (K-12). Modernization efforts shall apply strictly to a public school that was established prior to July 1, 2002, and is funded pursuant to the Education Code, Section 17074.56 and Education Code commencing with Section 17070.10. Modernization projects that are to be completed in more than one phase, may defer the installation of the automatic fire detection and alarm systems until the final phase of the modernization project. Solely for the purposes of Education Code Section 17074.20, routine maintenance and repair work shall not be considered a modernization project.*

MORTAR. See Section 3302.1

MULTIPLE-STATION ALARM DEVICE. See Section 902.1.

MULTIPLE-STATION SMOKE ALARM. See Section 902.1.

NESTING. See Section 3002.1.

NET EXPLOSIVE WEIGHT (net weight). See Section 3302.1.

NEW PUBLIC SCHOOL CAMPUS. *An educational institution established on or after July 1, 2002, that houses and or serves students from kindergarten through twelfth grade (K-12) and is funded pursuant to the Education Code, commencing with Section 17070.10.*

NONACCESSIBLE AREA. *An enclosed area that creates a cavity by the application of any construction feature and/or building materials. This area shall be recognized by the enforcing agency as a separation between the nonaccessible space and any adjacent, occupied space of the building.*

[B] NONAMBULATORY PERSONS. *Persons unable to leave a building unassisted under emergency conditions. It includes, but is not limited to, persons who depend on mechanical aids such as crutches, walkers and wheelchairs and any person who is unable to physically and mentally respond to a sensory signal approved by the State Fire Marshal or an oral instruction relating to fire danger.*

The determination of ambulatory or nonambulatory status of persons with developmental disabilities shall be made by the Director of Social Services or his or her designated representative, in consultation with the director of Developmental Services or his or her designated representative. The determination of ambulatory or nonambulatory status of all other disabled persons placed after January 1, 1984, who are not developmentally disabled shall be made by the Director of Social Services or his or her designated representative

[B] NONCOMBUSTIBLE. *Noncombustible as applied to building construction material means a material which, in the form in which it is used, is either one of the following:*

1. *Material of which no part will ignite and burn when subjected to fire. Any material passing ASTM 136 shall be considered noncombustible*
2. *Material having a structural base of noncombustible material as defined in Item 1 above, with a surfacing material not over $^1/_8$ inch (3.2 mm) thick which has a flame spread index of 50 or less*

"Noncombustible" does not apply to surface finish materials. Material required to be noncombustible for reduced clearances to flues, heating appliances or other sources of high temperature shall refer to material conforming to Item 1. No material shall be classed as noncombustible which is subject to increase in combustibility or flame spread index, beyond the limits herein established, through the effects of age, moisture or other atmospheric condition

NORMAL TEMPERATURE AND PRESSURE (NTP). See Section 2702.1

[B] NOSING. See Section 1002.1.

NUISANCE ALARM. See Section 902.1.

OCCUPANCY CLASSIFICATION. For the purposes of this code, certain occupancies are defined as follows:

[B] Assembly Group A. Assembly Group A occupancy includes, among others, the use of a building or structure, or a portion thereof, for the gathering together of persons for purposes such as civic, social or religious functions; recreation, food or drink consumption; or awaiting transportation; or *motion picture and television production studio sound stages, approved production facilities and production locations.*

Exceptions:

1. A building used for assembly purposes with an occupant load of less than 50 persons shall be classified as a Group B occupancy.
2. A room or space used for assembly purposes with an occupant load of less than 50 persons and accessory to another occupancy shall be classified as a Group B occupancy or classified as part of that occupancy.
3. A room or space used for assembly purposes that is less than 750 square feet (70 m^2) in area and is accessory to another occupancy shall be classified as a Group B occupancy or classified as part of that occupancy

Assembly occupancies shall include the following:

A-1 Assembly uses, usually with fixed seating, intended for the production and viewing of performing arts or motion pictures including but not limited to:

Motion picture and television production studio sound stages, approved production facilities and production locations (with live audiences)
Motion picture theaters
Symphony and concert halls
Televison and radio studios admitting an audience
Theaters

A-2 Assembly uses intended for food and/or drink consumption including, but not limited to:

Banquet halls
Night clubs
Restaurants
Taverns and bars

A-3 Assembly uses intended for worship, recreation or amusement and other assembly uses not classified elsewhere in Group A, including, but not limited to: Amusement arcades

Art galleries
Bowling alleys
Community halls
Courtrooms
Dance halls (not including food or drink consumption)
Exhibition halls
Funeral parlors
Gymnasiums (without spectator seating)
Indoor swimming pools (without spectator seating)
Indoor tennis courts (without spectator seating)
Lecture halls
Libraries
Museums
Places of religious worship
Pool and billiard parlors
Waiting areas in transportation terminals

A-4 Assembly uses intended for viewing of indoor sporting events and activities with spectator seating including, but not limited to:

Arenas
Skating rinks
Swimming pools
Tennis courts

A-5 Assembly uses intended for participation in or viewing outdoor activities including, but not limited to:

Amusement park structures
Bleachers
Grandstands
Stadiums

[B] Business Group B. Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:

Airport traffic control towers
Animal hospitals, kennels and pounds
Banks
Barber and beauty shops
Car wash
Civic administration
Clinic-outpatient *(Not classified as Group I-2.1)*
Dry cleaning and laundries; pick-up and delivery stations and self-service
Educational occupancies for students above the 12th grade
Electronic data processing
Laboratories; testing and research
Motor vehicle showrooms
Post offices
Print shops
Professional services (architects, attorneys, dentists, physicians, engineers, etc)
Radio and television stations
Telephone exchanges
Training and skill development not within a school or academic program

[B] Group C (CAMPS, ORGANIZED). *An organized camp is a site with programs and facilities established for the primary purpose of providing an outdoor group living experience with social, spiritual, educational or recreational objectives, for five days or more during one or more seasons of the year.*

[B] Educational Group E. Educational Group E occupancy includes, among others, the use of a building or structure, or a portion thereof, by more *than six* persons at any one time for educational purposes through the 12th grade.

Such materials shall include, but not be limited to, the following:

Class I, II or IIIA flammable or combustible liquids that are used or stored in normally closed containers or systems pressurized at 15 pounds per square inch gauge (103.4 kPa) or less
Combustible fibers, other than densely packed baled cotton
Consumer fireworks, 1.4G (Class C, Common)
Cryogenic fluids, oxidizing
Flammable solids
Organic peroxides, Class II and III
Oxidizers, Class 2
Oxidizers, Class 3, that are used or stored in normally closed containers or systems pressurized at 15 pounds per square inch gauge (103 kPa) or less
Oxidizing gases
Unstable (reactive) materials, Class 2
Water-reactive materials, Class 2

High-hazard Group H-4. Buildings and structures which contain materials that are health hazards shall be classified as Group H-4. Such materials shall include, but not be limited to, the following:

Corrosives
Highly toxic materials
Toxic materials

High-hazard Group H-5. Semiconductor fabrication facilities and comparable research and development areas in which hazardous production materials (HPM) are used and the aggregate quantity of materials is in excess of those listed in Tables 2703.1.1(1) and 2703.1.1(2) shall be classified as Group H-5. Such facilities and areas shall be designed and constructed in accordance with Section 415.8 of the *California Building Code*.

[B] Institutional Group I. Institutional Group I occupancy includes, among others, the use of a building or structure, or a portion thereof, in which people, cared for or living in a supervised environment and having physical limitations because of health or age, are harbored for medical treatment or other care or treatment, or in which people are detained for penal or correctional purposes or in which the liberty of the occupants is restricted. Institutional occupancies shall be classified as Group I-1, I-2, I-3 or I-4. *Restraint shall not be permitted in any building except in Group I-3 occupancies constructed for such use. See California Building Code, Section 308.4. See special provisions for I-2.1 occupancies in California Building Code, Section 407.*

Group I occupancies shall not include buildings used only for private residential purposes for a family group.

Where occupancies house both ambulatory and nonambulatory persons, the more restrictive requirements shall apply.

Group I-1. This occupancy shall include buildings, structures or parts thereof housing *clients*, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment that provides personal care services.

This occupancy may contain more than six nonambulatory and/or bedridden clients. (See California Building Code, Section 425, Special Provisions For Licensed 24-Hour Care Facilities in a Group I-1, R-3.1, or R-4 Occupancy). This group shall include, but not be limited to, the following:

Assisted living facilities *such as:* Residential Care Facilities, *Residential Care Facilities for the Elderly (RCFE's), Adult Residential Facilities,* Congregate *Living Health* facilities, Group homes, *Residential Care Facilities for the Chronically Ill, and Congregate Living Health Facilities for the Terminally Ill.*

Social rehabilitation facilities *such as:* Halfway houses, *Community Correctional Centers, Community Correction Reentry Centers, Community Treatment Programs, Work Furlough Programs, and Alcoholism or* drug *abuse recovery or treatment facilities.*

[B] Group I-2. This occupancy shall include buildings and structures used for medical, surgical, psychiatric, nursing or custodial care on a 24-hour basis of more than *six* persons who are *classified as nonambulatory or bedridden.* This group shall include, but not be limited to, the following:

Hospitals
Nursing homes (both intermediate care facilities and skilled nursing facilities)
Mental hospitals
Detoxification facilities

A child care facility that provides care on a 24-hour basis to more than *six* children $2^1/_2$ years of age or less shall be classified as Group I-2.

[SFM] Group I-2.1 Ambulatory Care Facility. *A healthcare facility that receives persons for outpatient medical care that may render the patient incapable of unassisted self-preservation and where each tenant space accommodates more than five such patients.*

Group I-3. This occupancy shall include buildings *or portions of buildings* and structures which are inhabited by *one or more* persons who are under restraint. An I-3 facility is occupied by persons who are *restrained.* This group shall include, but not be limited to, the following:

Correctional centers
Detention centers
Jails
Juvenile Halls
Prisons
Reformatories

Buildings of Group I-3 shall be classified as one of the occupancy conditions indicated below:

Condition 1. This occupancy condition shall include buildings in which free movement is allowed from sleeping areas, and other spaces where access or occupancy is permitted, to the exterior via means of

egress without restraint. A Condition 1 facility is permitted to be constructed as Group R

Condition 2. This occupancy condition shall include buildings in which free movement is allowed from sleeping areas and any other occupied smoke compartment to one or more other smoke compartments. Egress to the exterior is impeded by locked exits.

Condition 3. This occupancy condition shall include buildings in which free movement is allowed within individual smoke compartments, such as within a residential unit comprised of individual sleeping units and group activity spaces, where egress is impeded by remote-controlled release of means of egress from such smoke compartment to another smoke compartment.

Condition 4. This occupancy condition shall include buildings in which free movement is restricted from an occupied space. Remote-controlled release is provided to permit movement from sleeping units, activity spaces and other occupied areas within the smoke compartment to other smoke compartments.

Condition 5. This occupancy condition shall include buildings in which free movement is restricted from an occupied space. Staff-controlled manual release is provided to permit movement from sleeping units, activity spaces and other occupied areas within the smoke compartment to other smoke compartments

Group I-4, day care facilities. This group shall include buildings and structures occupied by persons of any age who receive custodial care for less than 24 hours by individuals other than parents or guardians, relatives by blood marriage, or adoption, and in a place other than the home of the person cared for. A facility such as the above with *six* or fewer persons shall be classified as Group R-3. Places of worship during religious functions are not included.

Adult care facility. A facility that provides accommodations for less than 24 hours for more than *six* unrelated adults and provides supervision and personal care services shall be classified as Group I-4

Child care facility. A facility that provides supervision and personal care on less than a 24-hour basis for more than *six* children $2^1/_2$ years of age or less shall be classified as Group I-4.

Exception: A child day care facility which provides care for more than *six* but no more than 100 children $2^1/_2$ years or less of age, when the rooms where such children are cared for are located on the level of exit discharge and each of these child care rooms has an exit door directly to the exterior, shall be classified as Group E.

[B] Group L Laboratories. *For applications listed in Section 111 regulated by the Office of the State Fire Marshal, Group L occupancies shall include buildings and structures or portions thereof, used as laboratories for scientific experimentation or research having quantities of materials not in excess of those listed in Tables 307.1(1) and 307.1 (2) of the California Building Code except as modified in this section and not classified as Group B occupancy. This occupancy shall be designed and constructed in accordance with the requirements for a Group B occupancy except as specified in this section.*

[B] Mercantile Group M. Mercantile Group M occupancy includes, among others, buildings and structures or a portion thereof, for the display and sale of merchandise, and involves stocks of goods, wares or merchandise incidental to such purposes and accessible to the public. Mercantile occupancies shall include, but not be limited to, the following.

Department stores
Drug stores
Markets
Motor fuel-dispensing facilities
Retail or wholesale stores
Sales rooms

[B] Residential Group R. Residential Group R includes, among others, the use of a building or structure, or a portion thereof, for sleeping purposes when not classified as an Institutional Group I. Residential occupancies shall include the following:

R-1 Residential occupancies containing sleeping units where the occupants are primarily transient in nature, including:

Boarding houses (transient)
Hotels (transient)
Motels (transient)

R-2 Residential occupancies containing sleeping units or more than two dwelling units where the occupants are primarily permanent in nature, including:

Apartment houses
Boarding houses (not transient)
Convents
Dormitories
Fraternities and sororities
Hotels (nontransient)
Monasteries
Motels (nontransient)
Vacation timeshare properties

Congregate living facilities with 16 or fewer occupants are permitted to comply with the construction requirements for Group R-3

R-3 Residential occupancies where the occupants are primarily permanent in nature and not classified as R-1, R-2, *R-3.1,* R-4 or I, including:

Buildings that do not contain more than two dwelling units.
Adult care facilities that provide accommodations for *clients* of any age for less than 24 hours. *Licensing categories that may use this classification include, but are not limited to: Adult Day-care Facilities, Adult Day-support Center.*
Child care facilities that provide accommodations for

due to visual or audio distractions or an intentionally confounded egress path, or is not readily available because of the mode of conveyance through the building or structure.

SPECIAL INDUSTRIAL EXPLOSIVE DEVICE. See Section 3302.1.

SPRAY BOOTH. See Section 1502.1.

SPRAY ROOM. See Section 1502.1.

SPRAYING SPACE. See Section 1502.1.

[B] STAIR. See Section 1002.1.

[B] STAIRWAY. See Section 1002.1.

[B] STAIRWAY, EXTERIOR. See Section 1002.1.

[B] STAIRWAY, INTERIOR. See Section 1002.1.

[B] STAIRWAY, SPIRAL. See Section 1002.1.

STANDPIPE SYSTEM, CLASSES OF. See Section 902.1.

Class I system. See Section 902.1.
Class II system. See Section 902.1.
Class III system. See Section 902.1.

STANDPIPE, TYPES OF. See Section 902.1.

Automatic dry. See Section 902.1
Automatic wet. See Section 902.1
Manual dry. See Section 902.1
Manual wet. See Section 902.1
Semiautomatic dry. See Section 902.1.

[B] STATE-OWNED/LEASED BUILDING. A building or portion of a building that is owned, leased or rented by the state. State-leased buildings shall include all required exits to a public way serving such leased area or space. Portions of state-leased buildings that are not leased or rented by the state shall not be included within the scope of this section unless such portions present an exposure hazard to the state-leased area or space.

STATIC PILES. See Section1902.1.

STEEL. Hot- or cold-rolled as defined by the *California Building Code*.

STORAGE, HAZARDOUS MATERIALS. See Section 2702.1

SUPERVISING STATION. See Section 902.1.

SUPERVISORY SERVICE. See Section 902.1

SUPERVISORY SIGNAL. See Section 902.1

SUPERVISORY SIGNAL-INITIATING DEVICE. See Section 902.1

SYSTEM. See Section 2702.1

TANK. A vessel containing more than 60 gallons (227 L).

TANK, ATMOSPHERIC. See Section 2702.1

TANK, PORTABLE. See Section 2702.1.

TANK, PRIMARY. See Section 3402.1

TANK, PROTECTED ABOVE GROUND. See Section 3402.1.

TANK, STATIONARY. See Section 2702.1.

TANK VEHICLE. See Section 2702.1.

TENT. See Section 2402.1.

[B] TERMINALLY ILL. As termed for an individual, means the individual has a life expectancy of six months or less as stated in writing by his or her attending physician and surgeon.

THEFT RESISTANT. See Section 3302.1.

THERMAL INSECTICIDAL FOGGING. See Section 1702.1

TIMBER and LUMBER PRODUCTION FACILITIES. See Section 1902.1.

TIRES, BULK STORAGE OF. See Section 902.1.

TOOL. See Section 1802.1.

TORCH-APPLIED ROOF SYSTEM. See Section 2602.1.

TOXIC. See Section 3702.1.

TRANSVERSE FLUE SPACE. See Section 2302.1

TRASH. See "Rubbish."

TROUBLE SIGNAL. See Section 902.1

UNAUTHORIZED DISCHARGE. See Section 2702.1.

UNSTABLE (REACTIVE) MATERIAL. See Section 4302.1.

Class 4. See Section 4302.1.
Class 3. See Section 4302.1.
Class 2. See Section 4302.1.
Class 1. See Section 4302.1.

UNWANTED FIRE. A fire not used for cooking, heating or recreational purposes or one not incidental to the normal operations of the property.

USE (MATERIAL). See Section 2702.1.

VAPOR PRESSURE. See Section 2702.1.

VISIBLE ALARM NOTIFICATION APPLIANCE. See Section 902.1

WATER-REACTIVE MATERIAL. See Section 4402.1

Class 3. See Section 4402.1.
Class 2. See Section 4402.1.
Class 1. See Section 4402.1.

WET-CHEMICAL EXTINGUISHING AGENT. See Section 902.1.

[B] WINDER. See Section 1002.1.

[B] WINERY CAVES. A subterranean space for winery facilities in natural or manmade caves shall be in accordance with the California Building Code, Section 436. Winery caves have a floor level used for human occupancy more than 30 feet (9144 mm) below the lowest level of exit discharge.

WIRELESS PROTECTION SYSTEM. See Section 902.1.

WORKSTATION. See Section 1802.1

ZONE. See Section 902.1.

CALIFORNIA FIRE CODE- MATRIX ADOPTION TABLE
CHAPTER 6 – BUILDING SERVICES AND SYSTEMS

Adopting Agency		BSC	SFM	HCD			DSA		OSHPD				CSA	DHS	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	1	2	3	4								
Adopt Entire Chapter			X																	
Adopt Entire Chapter as amended (amended sections listed below)																				
Adopt only those sections that are listed below																				
Chapter / Section	Codes																			

are installed in accordance with the chimney manufacturer's installation instructions.

603.6.4 Factory-built chimneys. Existing factory-built chimneys that are damaged, corroded or improperly supported shall be repaired or replaced

603.6.5 Connectors. Existing chimney and vent connectors that are damaged, corroded or improperly supported shall be repaired or replaced

603.7 Discontinuing operation of unsafe heating appliances. The fire code official is authorized to order that measures be taken to prevent the operation of any existing stove, oven, furnace, incinerator, boiler or any other heat-producing device or appliance found to be defective or in violation of code requirements for existing appliances after giving notice to this effect to any person, owner, firm or agent or operator in charge of the same. The fire code official is authorized to take measures to prevent the operation of any device or appliance without notice when inspection shows the existence of an immediate fire hazard or when imperiling human life. The defective device shall remain withdrawn from service until all necessary repairs or alterations have been made.

603.7.1 Unauthorized operation. It shall be a violation of this code for any person, user, firm or agent to continue the utilization of any device or appliance (the operation of which has been discontinued or ordered discontinued in accordance with Section 603.7), unless written authority to resume operation is given by the fire code official. Removing or breaking the means by which operation of the device is prevented shall be a violation of this code.

603.8 Incinerators. Commercial, industrial and residential-type incinerators and chimneys shall be constructed in accordance with the *California Building Code* and the *California Mechanical Code*.

603.8.1 Residential incinerators. Residential incinerators shall be of an approved type.

603.8.2 Spark arrestor. Incinerators shall be equipped with an effective means for arresting sparks.

603.8.3 Restrictions. Where the fire code official determines that burning in incinerators located within 500 feet (152 m) of mountainous, brush or grass-covered areas will create an undue fire hazard because of atmospheric conditions, such burning shall be prohibited.

603.8.4 Time of burning. Burning shall take place only during approved hours.

603.8.5 Discontinuance. The fire code official is authorized to require incinerator use to be discontinued immediately if the fire code official determines that smoke emissions are offensive to occupants of surrounding property or if the use of incinerators is determined by the fire code official to constitute a hazardous condition.

603.9 Gas meters. Above-ground gas meters, regulators and piping subject to damage shall be protected by a barrier complying with Section 312 or otherwise protected in an approved manner.

SECTION 604
EMERGENCY AND STANDBY POWER SYSTEMS

604.1 Installation. Emergency and standby power systems required by this code or the *California Building Code* shall be installed in accordance with this code, NFPA 110 and NFPA 111. Existing installations shall be maintained in accordance with the original approval.

604.1.1 Stationary generators. Stationary emergency and standby power generators required by this code shall be listed in accordance with UL 2200.

604.2 Where required. Emergency and standby power systems shall be provided where required by Sections 604.2.1 through 604.2.19.4.

604.2.1 Group A occupancies. Emergency power shall be provided for emergency voice/alarm communication systems in Group A occupancies in accordance with Section 907.2.12.2.

604.2.2 Smoke control systems. Standby power shall be provided for smoke control systems in accordance with Section 909.11.

604.2.3 Exit signs. Emergency power shall be provided for exit signs in accordance with Section 1011.5.3.

604.2.4 Means of egress illumination. Emergency power shall be provided for means of egress illumination in accordance with Section 1006.3.

604.2.5 Accessible means of egress elevators. Standby power shall be provided for elevators that are part of an accessible means of egress in accordance with Section 1007.4.

604.2.6 Accessible means of egress platform lifts. Standby power in accordance with this section or ASME A18.1 shall be provided for platform lifts that are part of an accessible means of egress in accordance with Section 1007.5.

604.2.7 Horizontal sliding doors. Standby power shall be provided for horizontal sliding doors in accordance with Section 1008.1.3.3.

604.2.8 Semiconductor fabrication facilities. Emergency power shall be provided for semiconductor fabrication facilities in accordance with Section 1803.15.

604.2.9 Membrane structures. Emergency power shall be provided for exit signs in temporary tents and membrane structures in accordance with Section 2403.12.6.1. Standby power shall be provided for auxiliary inflation systems in permanent membrane structures in accordance with the *California Building Code*.

604.2.10 Hazardous materials. Emergency or standby power shall be provided in occupancies with hazardous materials in accordance with Sections 2704.7 and 2705.1.5.

604.2.11 Highly toxic and toxic materials. Emergency power shall be provided for occupancies with highly toxic or toxic materials in accordance with Sections 3704.2.2.8 and 3704.3.2.6.

604.2.12 Organic peroxides. Standby power shall be provided for occupancies with organic peroxides in accordance with Section 3904.1.11.

604.2.13 Pyrophoric materials. Emergency power shall be provided for occupancies with silane gas in accordance with Sections 4106.2.3 and 4106.4.3.

604.2.14 Covered mall buildings. Covered mall buildings exceeding 50,000 square feet (4645 m^2) shall be provided with standby power systems which are capable of operating the emergency voice/alarm communication.

604.2.15 High-rise buildings *and Group I-2 occupancies having occupied floors located more than 75 feet above the lowest level of fire department vehicle access*. Standby power, light and emergency systems in high-rise buildings *and Group I-2 occupancies having occupied floors located more than 75 feet above the lowest level of fire department vehicle access* shall comply with the requirements of Sections 604.2.15.1 through 604.2.15.3.

604.2.15.1 Standby power. A standby power system shall be provided. Where the standby system is a generator set inside a building, the system shall be located in a separate room enclosed with 2-hour fire barriers or horizontal assemblies constructed in accordance with the *California Building Code,* or both. System supervision with manual start and transfer features shall be provided at the fire command center.

604.2.15.1.1 Fuel supply. An on-premises fuel supply, sufficient for not less than 2-hour full-demand operation of the system, shall be provided.

Exception: When approved, the system shall be allowed to be supplied by natural gas pipelines.

604.2.15.1.2 Capacity. The standby system shall have a capacity and rating that supplies all equipment required to be operational at the same time. The generating capacity is not required to be sized to operate all of the connected electrical equipment simultaneously.

604.2.15.1.3 Connected facilities. Power and lighting facilities for the fire command center and elevators specified in Sections 403.8 and 403.9 of the *California Building Code,* as applicable, and electrically powered fire pumps required to maintain pressure, shall be transferable to the standby source. Standby power shall be provided for at least one elevator to serve all floors and be transferable to any elevator.

604.2.15.2 Separate circuits and luminaires. Separate lighting circuits and luminaires shall be required to provide sufficient light with an intensity of not less than 1 foot-candle (11 lux) measured at floor level in all means of egress corridors, stairways, smokeproof enclosures, elevator cars and lobbies, and other areas that are clearly a part of the escape route.

604.2.15.2.1 Other circuits. Circuits supplying lighting for the fire command center and mechanical equipment rooms shall be transferable to the standby source.

604.2.15.3 Emergency systems. Exit signs, exit illumination as required by Chapter 10, and elevator car lighting are classified as emergency systems and shall operate within 10 seconds of failure of the normal power supply and shall be capable of being transferred to the standby source.

Exception: Exit sign, exit and means of egress illumination are permitted to be powered by a standby source in buildings of Group F and S occupancies.

604.2.16 Underground buildings. Emergency and standby power systems in underground buildings covered in Chapter 4 of the *California Building Code* shall comply with Sections 604.2.16.1 and 604.2.16.2.

604.2.16.1 Standby power. A standby power system complying with the *California Electrical Code* shall be provided for standby power loads as specified in Section 604.2.16.1.1.

[B] 604.2.16.1.1 Standby power loads. The following loads are classified as standby power loads:

1. Smoke control system.
2. Ventilation and automatic fire detection equipment for smokeproof enclosures.
3. Fire pumps.
4. Standby power shall be provided for elevators in accordance with Section 3003 of the *California Building Code*.

[B] 604.2.16.1.2 Pickup time. The standby power system shall pick up its connected loads within 60 seconds of failure of the normal power supply.

604.2.16.2 Emergency power. An emergency power system complying with the *California Electrical Code* shall be provided for emergency power loads as specified in Section 604.2.15.2.1.

604.2.16.2.1 Emergency power loads. The following loads are classified as emergency power loads:

1. Emergency voice/alarm communication systems.
2. Fire alarm systems.
3. Automatic fire detection systems.
4. Elevator car lighting.
5. Means of egress lighting and exit sign illumination as required by Chapter 10.

604.2.17 Group I-3 occupancies. Power-operated sliding doors or power-operated locks for swinging doors in Group I-3 occupancies shall be operable by a manual release mechanism at the door, and either emergency power or a remote mechanical operating release shall be provided.

Exception: Emergency power is not required in facilities where provisions for remote locking and unlocking of occupied rooms in Occupancy Condition 4 are not required as set forth in the *California Building Code*

and labels in accordance with NFPA 704. Hazard signs shall be in accordance with the *California Mechanical Code* for the classification of refrigerants listed therein.

606.8 Refrigerant detector. Machinery rooms shall contain a refrigerant detector with an audible and visual alarm. The detector, or a sampling tube that draws air to the detector, shall be located in an area where refrigerant from a leak will concentrate. The alarm shall be actuated at a value not greater than the corresponding TLV-TWA values shown in the *California Mechanical Code* for the refrigerant classification. Detectors and alarms shall be placed in approved locations

606.9 Remote controls. Remote control of the mechanical equipment and appliances located in the machinery room shall be provided at an approved location immediately outside the machinery room and adjacent to its principal entrance.

606.9.1 Refrigeration system. A clearly identified switch of the break-glass type shall provide off-only control of electrically energized equipment and appliances in the machinery room, other than refrigerant leak detectors and machinery room ventilation

Exception: In machinery rooms where only nonflammable refrigerants are used, electrical equipment and appliances, other than compressors, are not required to be provided with a cut-off switch

606.9.2 Ventilation system. A clearly identified switch of the break-glass type shall provide on-only control of the machinery room ventilation fans

606.10 Emergency pressure control system. Refrigeration systems containing more than 6.6 pounds (3 kg) of flammable, toxic or highly toxic refrigerant or ammonia shall be provided with an emergency pressure control system in accordance with Sections 606.10.1 and 606.10.2

606.10.1 Automatic crossover valves. Each high- and intermediate-pressure zone in a refrigeration system shall be provided with a single automatic valve providing a crossover connection to a lower pressure zone. Automatic crossover valves shall comply with Sections 606.10.1.1 through 606.10.1.3

606.10.1.1 Overpressure limit setpoint. Automatic crossover valves shall be arranged to automatically relieve excess system pressure to a lower pressure zone if the pressure in a high- or intermediate-pressure zone rises to within 15 psi (108.4 kPa) of the set point for emergency pressure-relief devices.

606.10.1.2 Manual operation. When required by the fire code official, automatic crossover valves shall be capable of manual operation

606.10.1.3 System design pressure. Refrigeration system zones that are connected to a higher pressure zone by an automatic crossover valve shall be designed to safely contain the maximum pressure that can be achieved by interconnection of the two zones.

606.10.2 Automatic emergency stop. An automatic emergency stop feature shall be provided in accordance with Sections 606.10.2.1 and 606.10.2.2.

606.10.2.1 Operation of an automatic crossover valve. Operation of an automatic crossover valve shall cause all compressors on the affected system to immediately stop. Dedicated pressure-sensing devices located immediately adjacent to crossover valves shall be permitted as a means for determining operation of a valve. To ensure that the automatic crossover valve system provides a redundant means of stopping compressors in an overpressure condition, high-pressure cutout sensors associated with compressors shall not be used as a basis for determining operation of a crossover valve.

606.10.2.2 Overpressure in low-pressure zone. The lowest pressure zone in a refrigeration system shall be provided with a dedicated means of determining a rise in system pressure to within 15 psi (103.4 kPa) of the setpoint for emergency pressure-relief devices. Activation of the overpressure sensing device shall cause all compressors on the effected system to immediately stop.

606.11 Storage, use and handling. Flammable and combustible materials shall not be stored in machinery rooms for refrigeration systems having a refrigerant circuit containing more than 220 pounds (100 kg) of Group A1 or 30 pounds (14 kg) of any other group refrigerant. Storage, use or handling of extra refrigerant or refrigerant oils shall be as required by Chapters 27, 30, 32 and 34

Exception: This provision shall not apply to spare parts, tools, and incidental materials necessary for the safe and proper operation and maintenance of the system.

606.12 Termination of relief devices. Pressure relief devices, fusible plugs and purge systems for refrigeration systems containing more than 6.6 pounds (3 kg) of flammable, toxic or highly toxic refrigerants shall be provided with an approved discharge system as required by Sections 606.12.1, 606.12.2 and 606.12.3. Discharge piping and devices connected to the discharge side of a fusible plug or rupture member shall have provisions to prevent plugging the pipe in the event of the fusible plug or rupture member functions

606.12.1 Flammable refrigerants. Systems containing flammable refrigerants having a density equal to or greater than the density of air shall discharge vapor to the atmosphere only through an approved treatment system in accordance with Section 606.12.4 or a flaring system in accordance with Section 606.12.5. Systems containing flammable refrigerants having a density less than the density of air shall be permitted to discharge vapor to the atmosphere provided that the point of discharge is located outside of the structure at not less than 15 feet (4572 mm) above the adjoining grade level and not less than 20 feet (6096 mm) from any window, ventilation opening or exit.

606.12.2 Toxic and highly toxic refrigerants. Systems containing toxic or highly toxic refrigerants shall discharge vapor to the atmosphere only through an approved treatment system in accordance with Section 606.12.4 or a flaring system in accordance with Section 606.12.5.

606.12.3 Ammonia refrigerant. Systems containing ammonia refrigerant shall discharge vapor to the atmosphere through an approved treatment system in accordance

with Section 606.12.4, a flaring system in accordance with Section 606.12.5, or through an approved ammonia diffusion system in accordance with Section 606.12.6, or by other approved means.

Exceptions:

1. Ammonia/water absorption systems containing less than 22 pounds (10 kg) of ammonia and for which the ammonia circuit is located entirely outdoors.
2. When the fire code official determines, on review of an engineering analysis prepared in accordance with Appendix Chapter 1, Section 104.7.2, that a fire, health or environmental hazard would not result from discharging ammonia directly to the atmosphere.

606.12.4 Treatment systems. Treatment systems shall be designed to reduce the allowable discharge concentration of the refrigerant gas to not more than 50 percent of the IDLH at the point of exhaust. Treatment systems shall be in accordance with Chapter 37.

606.12.5 Flaring systems. Flaring systems for incineration of flammable refrigerants shall be designed to incinerate the entire discharge. The products of refrigerant incineration shall not pose health or environmental hazards. Incineration shall be automatic upon initiation of discharge, shall be designed to prevent blowback, and shall not expose structures or materials to threat of fire. Standby fuel, such as LP gas, and standby power shall have the capacity to operate for one and one-half the required time for complete incineration of refrigerant in the system.

606.12.6 Ammonia diffusion systems. Ammonia diffusion systems shall include a tank containing 1 gallon of water for each pound of ammonia (4 L of water for each 1 kg of ammonia) that will be released in 1 hour from the largest relief device connected to the discharge pipe. The water shall be prevented from freezing. The discharge pipe from the pressure relief device shall distribute ammonia in the bottom of the tank, but no lower than 33 feet (10 058 mm) below the maximum liquid level. The tank shall contain the volume of water and ammonia without overflowing.

606.13 Discharge location for refrigeration machinery room ventilation. Exhaust from mechanical ventilation systems serving refrigeration machinery rooms capable of exceeding 25 percent of the LFL or 50 percent of the IDLH shall be equipped with approved treatment systems to reduce the discharge concentrations of flammable, toxic or highly toxic refrigerants to those values or lower.

606.14 Notification of refrigerant discharges. The fire code official shall be notified immediately when a discharge becomes reportable under state, federal or local regulations in accordance with Section 2703.3.1.

606.15 Records. A written record shall be kept of refrigerant quantities brought into and removed from the premises. Such records shall be available to the fire code official.

606.16 Electrical equipment. Where refrigerants of Groups A2, A3, B2 and B3, as defined in the *California Mechanical Code,* are used, refrigeration machinery rooms shall conform to the Class I, Division 2 hazardous location classification requirements of the *California Electrical Code.*

Exception: Ammonia machinery rooms that are provided with ventilation in accordance with the *California Mechanical Code.*

SECTION 607
ELEVATOR RECALL AND MAINTENANCE

607.1 Required. Existing elevators with a travel distance of 25 feet (7620 mm) or more above or below the main floor or other level of a building and intended to serve the needs of emergency personnel for fire-fighting or rescue purposes shall be provided with emergency operation in accordance with ASME A17.3. New elevators shall be provided with Phase I emergency recall operation and Phase II emergency in-car operation in accordance with ASME A17.1.

[B] 607.2 Emergency signs. An approved pictorial sign of a standardized design shall be posted adjacent to each elevator call station on all floors instructing occupants to use the exit stairways and not to use the elevators in case of fire. The sign shall read: IN FIRE EMERGENCY, DO NOT USE ELEVATOR. USE EXIT STAIRS. The emergency sign shall not be required for elevators that are part of an accessible means of egress complying with Section 1007.4.

607.3 Elevator keys. Keys for the elevator car doors and fire-fighter service keys shall be kept in an approved location for immediate use by the fire department.

SECTION 608
STATIONARY STORAGE BATTERY SYSTEMS

608.1 Scope. Stationary storage battery systems having an electrolyte capacity of more than 50 gallons (189 L) for flooded lead acid, nickel cadmium (Ni-Cd) and valve-regulated lead acid (VRLA), or 1,000 pounds (454 kg) for lithium-ion, used for facility standby power, emergency power or uninterrupted power supplies, shall comply with this section and Table 608.1.

608.2 Safety caps. Safety caps for stationary storage battery systems shall comply with Sections 608.2.1 and 608.2.2.

608.2.1 Nonrecombinant batteries. Vented lead acid, nickel-cadmium or other types of nonrecombinant batteries shall be provided with safety venting caps.

608.2.2 Recombinant batteries. VRLA batteries shall be equipped with self-resealing flame-arresting safety vents.

608.3 Thermal runaway. VRLA battery systems shall be provided with a listed device or other approved method to preclude, detect and control thermal runaway.

608.4 Room design and construction. Enclosure of stationary battery systems shall comply with the *California Building Code.* Battery systems shall be allowed to be in the same room with the equipment they support.

608.4.1 Separate rooms. When stationary batteries are installed in a separate equipment room accessible only to

TABLE 608.1
BATTERY REQUIREMENTS

REQUIREMENT	NONRECOMBINANT BATTERIES		RECOMBINANT BATTERIES	
	Flooded Lead Acid Batteries	Flooded Nickel-Cadmium (Ni-Cd) Batteries	Valve Regulated Lead Acid (VRLA) Batteries	Lithium-Ion Batteries
Safety caps	Venting caps (608.2.1)	Venting caps (608.2.1)	Self-resealing flame-arresting caps (608.2.2)	No caps
Thermal runaway management	Not required	Not required	Required (608.3)	Not required
Spill control	Required (608.5)	Required (608.5)	Not required	Not required
Neutralization	Required (608.5.1)	Required (608.5.1)	Required (608.5.2)	Not required
Ventilation	Required (608.6.1; 608.6.2)	Required (608.6.1; 608.6.2)	Required (608.6.1; 608.6.2)	Not required
Signage	Required (608.7)	Required (608.7)	Required (608.7)	Required (608.7)
Seismic protection	Required (608.8)	Required (608.8)	Required (608.8)	Required (608.8)
Smoke detection	Required (608.9)	Required (608.9)	Required (608.9)	Required (608.9)

authorized personnel, they shall be permitted to be installed on an open rack for ease of maintenance.

608.4.2 Occupied work centers. When a system of VRLA, lithium-ion, or other type of sealed, nonventing batteries is situated in an occupied work center, it shall be allowed to be housed in a noncombustible cabinet or other enclosure to prevent access by unauthorized personnel.

608.4.3 Cabinets. When stationary batteries are contained in cabinets in occupied work centers, the cabinet enclosures shall be located within 10 feet (3048 mm) of the equipment that they support.

608.5 Spill control and neutralization. An approved method and materials for the control and neutralization of a spill of electrolyte shall be provided in areas containing lead-acid, nickel-cadmium or other types of batteries with free-flowing liquid electrolyte. For purposes of this paragraph, a "spill" is defined as any unintentional release of electrolyte.

Exception: VRLA, lithium-ion or other types of sealed batteries with immobilized electrolyte shall not require spill control.

608.5.1 Nonrecombinant battery neutralization. For battery systems containing lead-acid, nickel-cadmium or other types of batteries with free-flowing electrolyte, the method and materials shall be capable of neutralizing a spill from the largest lead-acid battery to a pH between 7.0 and 9.0.

608.5.2 Recombinant battery neutralization. For VRLA or other types of sealed batteries with immobilized electrolyte, the method and material shall be capable of neutralizing a spill of 3 percent of the capacity of the largest VRLA cell or block in the room to a pH between 7.0 and 9.0.

Exception: Lithium-ion batteries shall not require neutralization.

608.6 Ventilation. Ventilation of stationary storage battery systems shall comply with Sections 608.6.1 and 608.6.2.

608.6.1 Room ventilation. Ventilation shall be provided in accordance with the *California Mechanical Code* and the following:

1. For flooded lead acid, flooded nickel-cadmium, and VRLA batteries, the ventilation system shall be designed to limit the maximum concentration of hydrogen to 1 percent of the total volume of the room; or
2. Continuous ventilation shall be provided at a rate of not less than 1 cubic foot per minute per square foot [1 $ft^3/min/ft^2$ or 0.0051 $m^3/(s \cdot m^2)$] of floor area of the room.

Exception: Lithium-ion batteries shall not require ventilation.

608.6.2 Cabinet ventilation. When VRLA batteries are installed inside a cabinet, the cabinet shall be approved for use in occupied spaces and shall be mechanically or naturally vented by one of the following methods:

1. The cabinet ventilation shall limit the maximum concentration of hydrogen to 1 percent of the total volume of the cabinet during the worst-case event of simultaneous "boost" charging of all the batteries in the cabinet; or
2. When calculations are not available to substantiate the ventilation rate, continuous ventilation shall be provided at a rate of not less than 1 cubic foot per minute per square foot [1 $ft^3/min/ft^2$ or 0.0051 $m^3/(s \cdot m^2)$] of floor area covered by the cabinet. The room in which the cabinet is installed shall also be ventilated as required in Section 608.6.1.

608.7 Signage. Signs shall comply with Sections 608.7.1 and 608.7.2.

608.7.1 Equipment room and building signage. Doors into electrical equipment rooms or buildings containing stationary battery systems shall be provided with approved signs. The signs shall state that:

1. The room contains energized battery systems.
2. The room contains energized electrical circuits.
3. The battery electrolyte solutions, where present, are corrosive liquids.

608.7.2 Cabinet signage. Cabinets shall have exterior labels that identify the manufacturer and model number of the system and electrical rating (voltage and current) of the contained battery system. There shall be signs within the cabinet that indicate the relevant electrical, chemical and fire hazards.

608.8 Seismic protection. The battery systems shall be seismically braced in accordance with the *California Building Code*.

608.9 Smoke detection. An approved automatic smoke detection system shall be installed in accordance with Section 907.2 in rooms containing stationary battery systems.

SECTION 609
COMMERCIAL KITCHEN HOODS

[M] 609.1 General. Commercial kitchen exhaust hoods shall comply with the requirements of the *California Mechanical Code*.

[M] 609.2 Where required. A Type I hood shall be installed at or above all commercial cooking appliances and domestic cooking appliances used for commercial purposes that produce grease vapors.

CALIFORNIA FIRE CODE- MATRIX ADOPTION TABLE
CHAPTER 9 – FIRE PROTECTION SYSTEMS

Adopting Agency		BSC	SFM	HCD			DSA		OSHPD				CSA	DHS	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	1	2	3	4								
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Adopt Entire Chapter as amended (amended sections listed below)			X																	
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Table 901.6.1	CA		X																	
902.1	CA		X																	
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903.2.2.1.3	CA		X																	
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Table 903.2.13	CA		X																	
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903.6	CA		X																	
904.2.1	CA		X																	
904.3.1	CA		X																	
904.5	CA		X																	

CHAPTER 9 – FIRE PROTECTION SYSTEMS - (Continued)

Adopting Agency		BSC	SFM	HCD			DSA		OSHPD				CSA	DHS	AGR	DWR	CEC	CA	SL	SLC
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CHAPTER 9 – FIRE PROTECTION SYSTEMS - (Continued)

Adopting Agency		BSC	SFM	HCD			DSA		OSHPD				CSA	DHS	AGR	DWR	CEC	CA	SL	SLC
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907.2.26.4	CA		X																	
907.2.26.4.1	CA		X																	
907.2.26.4.2	CA		X																	

CHAPTER 9 – FIRE PROTECTION SYSTEMS - (Continued)

Adopting Agency		BSC	SFM	HCD			DSA		OSHPD				CSA	DHS	AGR	DWR	CEC	CA	SL	SLC
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907.9.4	CA		X																	
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907.10.1.2	IFC						X													
907.10.1.3	IFC						X													
Table 907.10.1.3 with Note	CA		X				X													
907.10.1.4	CA		X				X													

CHAPTER 9 – FIRE PROTECTION SYSTEMS – (Continued)

Adopting Agency		BSC	SFM	HCD			DSA		OSHPD				CSA	DHS	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	1	2	3	4								
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Adopt Entire Chapter as amended (amended sections listed below)			X																	
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Chapter / Section	Codes																			
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907.11	CA		X																	
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sium-acetate-based chemical or a combination thereof, forming an extinguishing agent.

WIRELESS PROTECTION SYSTEM. A system or a part of a system that can transmit and receive signals without the aid of wire

ZONE. A defined area within the protected premises. A zone can define an area from which a signal can be received, an area to which a signal can be sent, or an area in which a form of control can be executed.

SECTION 903
AUTOMATIC SPRINKLER SYSTEMS

903.1 General. Automatic sprinkler systems shall comply with this section

903.1.1 Alternative protection. Alternative automatic fire-extinguishing systems complying with Section 904 shall be permitted in lieu of automatic sprinkler protection where recognized by the applicable standard and approved by the fire code official

903.2 Where required. Approved automatic sprinkler systems in new buildings and structures shall be provided in the locations described in this section.

Exceptions:

1 Spaces or areas in telecommunications buildings used exclusively for telecommunications equipment, associated electrical power distribution equipment, batteries and standby engines, provided those spaces or areas are equipped throughout with an automatic fire alarm system and are separated from the remainder of the building by fire barriers consisting of not less than 1-hour fire-resistance-rated walls and 2-hour fire-resistance-rated floor/ceiling assemblies.

2 *Automatic fire sprinkler protection for fixed guideway transit systems shall be as per Section 903.2.17.*

903.2.1 Group A. An automatic sprinkler system shall be provided throughout buildings and portions thereof used as Group A occupancies as provided in this section. For Group A-1, A-2, A-3, and A-4 occupancies, the automatic sprinkler system shall be provided throughout the floor area where the Group A-1, A-2, A-3 or A-4 occupancy is located, and in all floors between the Group A occupancy and the level of exit discharge. For Group A-5 occupancies, the automatic sprinkler system shall be provided in the spaces indicated in Section 903.2.1.5.

903.2.1.1 Group A-1. An automatic sprinkler system shall be provided for Group A-1 occupancies where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m^2);
2. The fire area has an occupant load of 300 or more;
3. The fire area is located on a floor other than the level of exit discharge; or
4. The fire area contains a multitheater complex.

903.2.1.2 Group A-2. An automatic sprinkler system shall be provided for Group A-2 occupancies where one of the following conditions exists:

1. The fire area exceeds 5,000 square feet (465 m^2);
2. The fire area has an occupant load of 100 or more; or
3. The fire area is located on a floor other than the level of exit discharge.

903.2.1.3 Group A-3. An automatic sprinkler system shall be provided for Group A-3 occupancies where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m^2);
2. The fire area has an occupant load of 300 or more; or
3. The fire area is located on a floor other than the level of exit discharge.

Exception: Areas used exclusively as participant sports areas where the main floor area is located at the same level as the level of exit discharge of the main entrance and exit.

903.2.1.4 Group A-4. An automatic sprinkler system shall be provided for Group A-4 occupancies where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m^2);
2. The fire area has an occupant load of 300 or more; or
3. The fire area is located on a floor other than the level of exit discharge.

Exception: Areas used exclusively as participant sports areas where the main floor area is located at the same level as the level of exit discharge of the main entrance and exit.

903.2.1.5 Group A-5. An automatic sprinkler system shall be provided for Group A-5 occupancies in the following areas: concession stands, retail areas, press boxes, and other accessory use areas in excess of 1,000 square feet (93 m^2).

903.2.2 Group E. *Except as provided for in Sections 903.2.2.1 for a new public school campus and 907.2.3.6.1 (fire alarm and detection) for modernization of an existing public school campus building(s),* an automatic sprinkler system shall be provided for Group E occupancies as follows:

1 Throughout all Group E fire areas greater than 20,000 square feet (1858 m^2) in area.

2. Throughout every portion of educational buildings below the level of exit discharge.

Exception: An automatic sprinkler system is not required in any fire area or area below the level of exit discharge where every classroom throughout

the building has at least one exterior exit door at ground level

3. *In rooms or areas with special hazards such as laboratories, vocational shops and other such areas where hazardous materials in exempt amounts are used or stored.*

903.2.2.1 Public schools—automatic sprinkler system requirements.

903.2.2.1.1 New public school campus. *A State Fire Marshal approved automatic sprinkler system shall be provided on all new public school campus as defined in section 202 and maintained in accordance with this code and Chapter 45. See Section 907.2.3.6 for automatic detection requirements and "ceiling-plenum" spaces.*

903.2.2.1.2 Permanent portable buildings. *A portable building that is used to serve or house students and is certified, as a permanent building on a new public school campus by the public school administration shall comply with the requirements of Section 903.2.2.1.1.*

903.2.2.1.3 Fire-resistive substitution for new campus. *A new public school campus as defined in Section 202 shall be entitled to include in the design and construction documents all of the applicable fire-resistive construction substitutions as permitted by the California Building Code.*

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

1. Where a Group F-1 fire area exceeds 12,000 square feet (1115 m^2);
2. Where a Group F-1 fire area is located more than three stories above grade plane; or
3. Where the combined area of all Group F-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m^2).

903.2.3.1 Woodworking operations. An automatic sprinkler system shall be provided throughout all Group F-1 occupancy fire areas that contain woodworking operations in excess of 2,500 square feet in area (232 m^2) which generate finely divided combustible waste or which use finely divided combustible materials

903.2.4 Group H. Automatic sprinkler systems shall be provided in high-hazard occupancies as required in Sections 903.2.4.1 through 903.2.4.3.

903.2.4.1 General. An automatic sprinkler system shall be installed in Group H occupancies.

903.2.4.2 Group H-5 occupancies. An automatic sprinkler system shall be installed throughout buildings containing Group H-5 occupancies. The design of the sprinkler system shall not be less than that required under the *California Building Code* for the occupancy hazard classifications in accordance with Table 903.2.4.2

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

TABLE 903.2.4.2
GROUP H-5 SPRINKLER DESIGN CRITERIA

LOCATION	OCCUPANCY HAZARD CLASSIFICATION
Fabrication areas	Ordinary Hazard Group 2
Service corridors	Ordinary Hazard Group 2
Storage rooms without dispensing	Ordinary Hazard Group 2
Storage rooms with dispensing	Extra Hazard Group 2
Corridors	Ordinary Hazard Group 2

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

903.2.5 Group I. An automatic sprinkler system shall be provided throughout buildings with a Group I fire area.

Exceptions:

1. *Those areas exempted by Section 407.5 of the California Building Code.*
2. *When not used in accordance with Section 504.2 or 506.3 of the California Building Code, an automatic sprinkler system installed in accordance with Section 903.3.1.2 shall be allowed in Group I-1 occupancies.*
3. *Pursuant to Health and Safety Code Section 13113, Group I-1 occupancies housing ambulatory children only, none of whom are mentally ill or mentally retarded, and the buildings or portions thereof in which such children are housed are not more than two stories in height, and buildings or portions thereof housing such children shall have an automatic fire alarm system activated by approved smoke detectors.*
4. *Pursuant to Health and Safety Code Section 13113 (d), Group I-1 occupancies, or any alterations thereto, located in Type IA construction in existence on March 4, 1972.*

An automatic sprinkler system designed in accordance with Section 903.3.1.3 shall not be utilized in Group I-1

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

Exception: *Sprinklers are not required in cells housing two or fewer inmates and the building shall be*

considered sprinklered throughout when all the following criteria are met:

1. *Automatic fire sprinklers shall be mounted outside the cell a minimum of 6 feet (1829 mm) on center and 12 inches (305 mm) from the wall with quick response sprinkler heads. Where spacing permits, the head shall be centered over the cell door opening.*
2. *The maximum amount of combustibles, excluding linen and clothing, shall be maintained at three pounds per inmate.*
3. *For local detention facilities, each individual housing cell shall be provided with a two-way inmate or sound-actuated audio monitoring system for communication directly to the control station serving the cell(s).*
4. *The provisions of the exception in Section 804.4.2 of the California Building Code shall not apply.*

903.2.6 Group M. An automatic sprinkler system shall be provided throughout buildings containing a Group M occupancy where one of the following conditions exists:

1. Where a Group M fire area exceeds 12,000 square feet (1115 m^2);
2. Where a Group M fire area is located more than three stories above grade plane; or
3. Where the combined area of all Group M fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m^2).

903.2.6.1 High-piled storage. An automatic sprinkler system shall be provided as required in Chapter 23 in all buildings of Group M where storage of merchandise is in high-piled or rack storage arrays.

903.2.7 Group R. An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R fire area.

Exceptions:

1. *Detached one- and two-family dwellings and multiple single-family dwellings (town houses) not more than three stories above grade plane in height with a separate means of egress, unless specifically required by other sections of this code or classified as Group R-4.*
2. *Group U private garages accessory to a Group R-3 occupancy.*
3. *Group R-3.1 occupancies not housing bedridden clients, not housing nonambulatory clients above the first floor, and not housing clients above the second floor.*
4. *Group R-3.1 occupancies housing only one bedridden client and complying with Section 425.8.3.3.*
5. *Pursuant to Health and Safety Code Section 13113, occupancies housing ambulatory children only, none of whom are mentally ill or mentally retarded, and the buildings or portions thereof in which such children are housed are not more than two stories in height, and buildings or portions thereof housing such children have an automatic fire alarm system activated by approved smoke detectors.*
6. *Pursuant to Health and Safety Code Section 13143.6, occupancies licensed for protective social care which house ambulatory clients only, none of whom is a child (under the age of 18 years), or who is elderly (65 years of age or over).*

An automatic sprinkler system designed in accordance with Section 903.3.1.3 shall not be utilized in Group R-4.

903.2.8 Group S-1. An automatic sprinkler system shall be provided throughout all buildings containing a Group S-1 occupancy where one of the following conditions exists:

1. A Group S-1 fire area exceeds 12,000 square feet (1115 m^2);
2. A Group S-1 fire area is located more than three stories above grade plane; or
3. The combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m^2).

903.2.8.1 Repair garages. An automatic sprinkler system shall be provided throughout all buildings used as repair garages in accordance with the *California Building Code*, as follows:

1. Buildings two or more stories in height, including basements, with a fire area containing a repair garage exceeding 10,000 square feet (929 m^2).
2. One-story buildings with a fire area containing a repair garage exceeding 12,000 square feet (1115 m^2).
3. Buildings with a repair garage servicing vehicles parked in the basement.

903.2.8.2 Bulk storage of tires. Buildings and structures where the area for the storage of tires exceeds 20,000 cubic feet (566 m^3) shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

903.2.9 Group S-2. An automatic sprinkler system shall be provided throughout buildings classified as enclosed parking garages in accordance with Section 406.4 of the *California Building Code* or where located beneath other groups.

Exception: Enclosed parking garages located beneath Group R-3 occupancies.

903.2.9.1 Commercial parking garages. An automatic sprinkler system shall be provided throughout buildings used for storage of commercial trucks or buses where the fire area exceeds 5,000 square feet (464 m^2).

903.2.10 Windowless stories in all occupancies. An automatic sprinkler system shall be installed in the locations set forth in Sections 903.2.10.1 through 903.2.10.1.3.

Exception: Group R-3 and Group U.

903.2.10.1 Stories and basements without openings. An automatic sprinkler system shall be installed in every story or basement of all buildings where the floor area

exceeds 1,500 square feet (139.4 m²) and where there is not provided at least one of the following types of exterior wall openings:

1. Openings below grade that lead directly to ground level by an exterior stairway complying with Section 1009 or an outside ramp complying with Section 1010. Openings shall be located in each 50 linear feet (15 240 mm), or fraction thereof, of exterior wall in the story on at least one side.
2. Openings entirely above the adjoining ground level totaling at least 20 square feet (1.86 m²) in each 50 linear feet (15 240 mm), or fraction thereof, of exterior wall in the story on at least one side.

903.2.10.1.1 Opening dimensions and access. Openings shall have a minimum dimension of not less than 30 inches (762 mm). Such openings shall be accessible to the fire department from the exterior and shall not be obstructed in a manner that fire fighting or rescue cannot be accomplished from the exterior.

903.2.10.1.2 Openings on one side only. Where openings in a story are provided on only one side and the opposite wall of such story is more than 75 feet (22 860 mm) from such openings, the story shall be equipped throughout with an approved automatic sprinkler system or openings as specified above shall be provided on at least two sides of the story.

903.2.10.1.3 Basements. Where any portion of a basement is located more than 75 feet (22 860 mm) from openings required by Section 903.2.10.1, the basement shall be equipped throughout with an approved automatic sprinkler system.

903.2.10.2 Rubbish and linen chutes. An automatic sprinkler system shall be installed at the top of rubbish and linen chutes and in their terminal rooms. Chutes extending through three or more floors shall have additional sprinkler heads installed within such chutes at alternate floors. Chute sprinklers shall be accessible for servicing.

903.2.10.3 Buildings 55 feet or more in height. An automatic sprinkler system shall be installed throughout buildings with a floor level having an occupant load of 30 or more that is located 55 feet (16 764 mm) or more above the lowest level of fire department vehicle access.

Exceptions:

1. Airport control towers.
2. Open parking structures.
3. Occupancies in Group F-2.

903.2.11 During construction. Automatic sprinkler systems required during construction, alteration and demolition operations shall be provided in accordance with Section 1413.

903.2.12 Other hazards. Automatic sprinkler protection shall be provided for the hazards indicated in Sections 903.2.12.1 and 903.2.12.2.

903.2.12.1 Ducts conveying hazardous exhausts. Where required by the *California Mechanical Code*, automatic sprinklers shall be provided in ducts conveying hazardous exhaust, flammable or combustible materials.

Exception: Ducts where the largest cross-sectional diameter of the duct is less than 10 inches (254 mm).

903.2.12.2 Commercial cooking operations. An automatic sprinkler system shall be installed in a commercial kitchen exhaust hood and duct system where an automatic sprinkler system is used to comply with Section 904.

903.2.13 Other required suppression systems. In addition to the requirements of Section 903.2, the provisions indicated in Table 903.2.13 also require the installation of a suppression system for certain buildings and areas.

903.2.14 Motion picture and television production studio sound stages, approved production facilities and production locations.

903.2.14.1 Existing sound stages and approved production facilities. *All existing sound stages and approved production facilities equipped with an automatic fire sprinkler system shall be maintained in accordance with the provisions of California Fire Code Chapter 9.*

903.2.14.2 New sound stages. *All new sound stages shall be equipped with an approved automatic fire sprinkler system. The system shall be installed in accordance with the provisions of the California Fire Code Chapter 9 and shall meet the minimum design requirements of an Extra Hazard, Group 2 system.*

903.2.15 Automatic sprinkler system—Existing high-rise buildings. *Regardless of any other provisions of these regulations, every existing high-rise building of Type II-B, Type III-B or Type V-B construction shall be provided with an approved automatic sprinkler system conforming to NFPA 13.*

903.2.15.1 Existing R-1 and R-2 high-rise buildings fire-extinguishing systems. *Automatic fire-extinguishing systems installed in any existing high-rise structure in which a Group R-1 or a Group R-2 occupancy is, located shall have an approved flow indicator electrically interconnected to the required fire alarm system.*

903.2.16 Group L occupancies. *An automatic fire protection system shall be installed throughout buildings housing Group L occupancies. Sprinkler system design for research laboratories and similar areas of a Group L occupancy shall not be less than that required for Ordinary Hazard Group 2 with a design area of not less than 3,000 square feet (279 m²).*

In mixed occupancies, portions of floors or buildings not classified as Group L occupancies shall be provided with sprinkler protection designed of not less than that required for Ordinary Hazard Group 1 with a design area of not less than 3,000 square feet (279 m²).

standards referenced in Section 903.3.1. The potable water supply shall be protected against backflow in accordance with *Health and Safety Code 13114.7*

903.3.5.1 Domestic services. Where the domestic service provides the water supply for the automatic sprinkler system, the supply shall be in accordance with this section.

903.3.5.1.1 Limited area sprinkler systems. Limited area sprinkler systems serving fewer than 20 sprinklers on any single connection are permitted to be connected to the domestic service where a wet automatic standpipe is not available. Limited area sprinkler systems connected to domestic water supplies shall comply with each of the following requirements:

1. Valves shall not be installed between the domestic water riser control valve and the sprinklers.

   Exception: An approved indicating control valve supervised in the open position in accordance with Section 903.4.

2. The domestic service shall be capable of supplying the simultaneous domestic demand and the sprinkler demand required to be hydraulically calculated by NFPA 13, NFPA 13R or NFPA 13D.

903.3.5.1.2 Residential combination services. A single combination water supply shall be allowed provided that the domestic demand is added to the sprinkler demand as required by NFPA 13R.

903.3.5.2 Secondary water supply. A secondary on-site water supply equal to the hydraulically calculated sprinkler demand, including the hose stream requirement, shall be provided for high-rise buildings *and Group I-2 occupancies having occupied floors located more than 75 feet above the lowest level of fire department vehicle access* in Seismic Design Category C, D, E or F as determined by the *California Building Code*. The secondary water supply shall have a duration of not less than 30 minutes as determined by the occupancy hazard classification in accordance with NFPA 13.

Exception: Existing buildings.

903.3.6 Hose threads. Fire hose threads and fittings used in connection with automatic sprinkler systems shall be as prescribed by the fire code official.

903.3.7 Fire department connections. The location of fire department connections shall be approved by the fire code official.

903.4 Sprinkler system monitoring and alarms. All valves controlling the water supply for automatic sprinkler systems, pumps, tanks, water levels and temperatures, critical air pressures, and water-flow switches on all sprinkler systems shall be electrically supervised.

Exceptions:

1. Automatic sprinkler systems protecting one- and two-family dwellings.
2. Limited area systems serving fewer than 20 sprinklers.
3. Automatic sprinkler systems installed in accordance with NFPA 13R where a common supply main is used to supply both domestic water and the automatic sprinkler system, and a separate shutoff valve for the automatic sprinkler system is not provided.
4. Jockey pump control valves that are sealed or locked in the open position.
5. Control valves to commercial kitchen hoods, paint spray booths or dip tanks that are sealed or locked in the open position.
6. Valves controlling the fuel supply to fire pump engines that are sealed or locked in the open position.
7. Trim valves to pressure switches in dry, preaction and deluge sprinkler systems that are sealed or locked in the open position.

903.4.1 Signals. Alarm, supervisory and trouble signals shall be distinctly different and shall be automatically transmitted to an approved central station, remote supervising station or proprietary supervising station as defined in NFPA 72 or, when approved by the fire code official, shall sound an audible signal at a constantly attended location.

Exceptions:

1. Underground key or hub valves in roadway boxes provided by the municipality or public utility are not required to be monitored.
2. Backflow prevention device test valves located in limited area sprinkler system supply piping shall be locked in the open position. In occupancies required to be equipped with a fire alarm system, the backflow preventer valves shall be electrically supervised by a tamper switch installed in accordance with NFPA 72 and separately annunciated.

903.4.2 Alarms. Approved audible devices shall be connected to every automatic sprinkler system. Such sprinkler water-flow alarm devices shall be activated by water flow equivalent to the flow of a single sprinkler of the smallest orifice size installed in the system. Alarm devices shall be provided on the exterior of the building in an approved location. Where a fire alarm system is installed, actuation of the automatic sprinkler system shall actuate the building fire alarm system.

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

903.5 Testing and maintenance. Sprinkler systems shall be tested and maintained in accordance with Section 901.

903.6 Existing buildings. The provisions of this section are intended to provide a reasonable degree of safety in existing structures not complying with the minimum requirements of the *California Building Code* by requiring installation of an automatic fire-extinguishing system.

903.6.1 Pyroxylin plastics. All structures occupied for the manufacture or storage of articles of cellulose nitrate (pyroxylin) plastic shall be equipped with an approved automatic fire-extinguishing system. Vaults located within buildings for the storage of raw pyroxylin shall be protected with an approved automatic sprinkler system capable of discharging 1.66 gallons per minute per square foot (68 L/min/m^2) over the area of the vault.

SECTION 904
ALTERNATIVE AUTOMATIC FIRE-EXTINGUISHING SYSTEMS

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

904.2 Where required. Automatic fire-extinguishing systems installed as an alternative to the required automatic sprinkler systems of Section 903 shall be approved by the fire code official. Automatic fire-extinguishing systems shall not be considered alternatives for the purposes of exceptions or reductions allowed by other requirements of this code.

904.2.1 Commercial hood and duct systems. Each required commercial kitchen exhaust hood and duct system required by Section 609 to have a Type I hood shall be protected with an approved automatic fire-extinguishing system installed in accordance with this code.

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

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

904.3.2 Actuation. Automatic fire-extinguishing systems shall be automatically actuated and provided with a manual means of actuation in accordance with Section 904.11.1.

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

904.3.4 Alarms and warning signs. Where alarms are required to indicate the operation of automatic fire-extinguishing systems, distinctive audible, visible alarms and warning signs shall be provided to warn of pending agent discharge. Where exposure to automatic-extinguishing agents poses a hazard to persons and a delay is required to ensure the evacuation of occupants before agent discharge, a separate warning signal shall be provided to alert occupants once agent discharge has begun. Audible signals shall be in accordance with Section 907.10.2.

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

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

904.4.1 Inspection. Prior to conducting final acceptance tests, the following items shall be inspected:

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

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

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

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

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

904.5.1 System test. Systems shall be inspected and tested for proper operation at 6-month intervals. Tests shall include a check of the detection system, alarms and releasing devices, including manual stations and other associated equipment. Extinguishing system units shall be weighed and the required amount of agent verified. Stored pressure-type units shall be checked for the required pressure. The cartridge of cartridge-operated units shall be weighed and replaced at intervals indicated by the manufacturer.

904.5.2 Fusible link maintenance. Fixed temperature-sensing elements shall be maintained to ensure proper operation of the system.

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

904.6.1 System test. Systems shall be inspected and tested for proper operation at 6-month intervals. Tests shall include a check of the detection system, alarms and releasing devices, including manual stations and other associated equipment. Extinguishing system units shall be weighed, and the required amount of agent verified. Stored pressure-type units shall be checked for the required pressure. The cartridge of cartridge-operated units shall be weighed and replaced at intervals indicated by the manufacturer.

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.

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 also be transmitted to the control unit.

Exceptions:

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

905.10 During construction. Standpipe systems required during construction and demolition operations shall be provided in accordance with Section 1413.

905.11 Existing buildings. Existing structures with occupied floors located more than 50 feet (15 240 mm) above or below the lowest level of fire department access shall be equipped with standpipes installed in accordance with Section 905. The standpipes shall have an approved fire department connection with hose connections at each floor level above or below the lowest level of fire department access. The fire code official is authorized to approve the installation of manual standpipe systems to achieve compliance with this section where the responding fire department is capable of providing the required hose flow at the highest standpipe outlet.

SECTION 906
PORTABLE FIRE EXTINGUISHERS

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

1. In new and existing Group A, B, E, F, H, I, M, R-1, R-2, R-4 and S occupancies
2. Within 30 feet (9144 mm) of commercial cooking equipment.
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 1415.1.
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 2A:10-B:C rating.*

906.2 General requirements. Portable fire extinguishers shall be selected, installed and maintained in accordance with this section and *Chapter 3, Title 19 California Code of Regulations*.

Exceptions:

1. The travel distance to reach an extinguisher shall not apply to the spectator seating portions of Group A-5 occupancies.
2. Thirty-day inspections shall not be required for portable fire extinguishers that are supervised by a listed and approved electronic monitoring device, provided that all of the following conditions are met:
   2.1. Electronic monitoring shall confirm that extinguishers are properly positioned, properly charged and unobstructed.
   2.2. Loss of power or circuit continuity to the electronic monitoring device shall initiate a trouble signal.
   2.3. The extinguishers shall be installed inside of a building or cabinet in a noncorrosive environment.
   2.4. Electronic monitoring devices and supervisory circuits shall be tested when extinguisher maintenance is performed
   2.5. A written log of required hydrostatic test dates for extinguishers shall be maintained by the owner to ensure that hydrostatic tests are conducted at the frequency required by *Chapter 3, Title 19 California Code of Regulations*.

906.3 Size and distribution. For occupancies that involve primarily Class A fire hazards, the minimum sizes and distribution shall comply with Table 906.3(1). Fire extinguishers for occupancies involving flammable or combustible liquids with depths of less than or equal to 0.25-inch (6.35 mm) shall be selected and placed in accordance with Table 906.3(2). Fire extinguishers for occupancies involving flammable or combustible liquids with a depth of greater than 0.25-inch (6.35 mm) or involving combustible metals shall be selected and placed in accordance with NFPA 10. Extinguishers for Class C fire hazards shall be selected and placed on the basis of the anticipated Class A or Class B hazard.

906.4 Cooking grease fires. Fire extinguishers provided for the protection of cooking grease fires shall be of an approved type compatible with the automatic fire-extinguishing system agent and in accordance with Section 904.11.5

906.5 Conspicuous location. Portable fire extinguishers shall be located in conspicuous locations where they will be readily accessible and immediately available for use. These locations shall be along normal paths of travel, unless the fire code official determines that the hazard posed indicates the need for placement away from normal paths of travel.

TABLE 906.1
ADDITIONAL REQUIRED PORTABLE FIRE EXTINGUISHERS

SECTION	SUBJECT
303.5	Asphalt kettles
307.5	Open burning
308.4	Open flames-torches
309.4	Powered industrial trucks
1105.2	Aircraft towing vehicles
1105.3	Aircraft welding apparatus
1105.4	Aircraft fuel-servicing tank vehicles
1105.5	Aircraft hydrant fuel-servicing vehicles
1105.6	Aircraft fuel-dispensing stations
1107.7	Heliports and helistops
1208.4	Dry cleaning plants
1415.1	Buildings under construction or demolition
1417.3	Roofing operations
1504.4.1	Spray-finishing operations
1505.4.2	Dip-tank operations
1506.4.2	Powder-coating areas
1904.2	Lumberyards/woodworking facilities
1908.8	Recycling facilities
1909.5	Exterior lumber storage
2003.5	Organic-coating areas
2106.3	Industrial ovens
2205.5	Motor fuel-dispensing facilities
2210.6.4	Marine motor fuel-dispensing facilities
2211.6	Repair garages
2306.10	Rack storage
2404.12	Tents, canopies and membrane structures
2508.2	Tire rebuilding/storage
2604.2.6	Welding and other hot work
2903.6	Combustible fibers
3308.11	Fireworks
3403.2.1	Flammable and combustible liquids, general
3404.3.3.1	Indoor storage of flammable and combustible liquids
3404.3.7.5.2	Liquid storage rooms for flammable and combustible liquids
3405.4.9	Solvent distillation units
3406.2.7	Farms and construction sites-flammable and combustible liquids storage
3406.4.10.1	Bulk plants and terminals for flammable and combustible liquids
3406.5.4.5	Commercial, industrial, governmental or manufacturing establishments-fuel dispensing
3406.6.4	Tank vehicles for flammable and combustible liquids
3606.5.7	Flammable solids
3808.2	LP-gas

906.6 Unobstructed and unobscured. Portable fire extinguishers shall not be obstructed or obscured from view. In rooms or areas in which visual obstruction cannot be completely avoided, means shall be provided to indicate the locations of extinguishers.

TABLE 906.3(1)
FIRE EXTINGUISHERS FOR CLASS A FIRE HAZARDS

	LIGHT (Low) HAZARD OCCUPANCY	ORDINARY (Moderate) HAZARD OCCUPANCY	EXTRA (High) HAZARD OCCUPANCY
Minimum Rated Single Extinguisher	2-A[c]	2-A	4-A[a]
Maximum Floor Area Per Unit of A	3,000 square feet	1,500 square feet	1,000 square feet
Maximum Floor Area For Extinguisher[b]	11,250 square feet	11,250 square feet	11,250 square feet
Maximum Travel Distance to Extinguisher	75 feet	75 feet	75 feet

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m^2, 1 gallon = 3.785 L.

a. Two 2.5-gallon water-type extinguishers shall be deemed the equivalent of one 4-A rated extinguisher.

b. Annex E.3.3 of NFPA 10 provides more details concerning application of the maximum floor area criteria.

c. Two water-type extinguishers each with a 1-A rating shall be deemed the equivalent of one 2-A rated extinguisher for Light (Low) Hazard Occupancies.

TABLE 906.3(2)
FLAMMABLE OR COMBUSTIBLE LIQUIDS
WITH DEPTHS OF LESS THAN OR EQUAL TO 0.25-INCH

TYPE OF HAZARD	BASIC MINIMUM EXTINGUISHER RATING	MAXIMUM TRAVEL DISTANCE TO EXTINGUISHERS (feet)
Light (Low)	5-B	30
	10-B	50
Ordinary (Moderate)	10-B	30
	20-B	50
Extra (High)	40-B	30
	80-B	50

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

NOTE. For requirements on water-soluble flammable liquids and alternative sizing criteria, see Section 4.3 of NFPA 10.

906.7 Hangers and brackets. Hand-held portable fire extinguishers, not housed in cabinets, shall be installed on the hangers or brackets supplied. Hangers or brackets shall be securely anchored to the mounting surface in accordance with the manufacturer's installation instructions.

906.8 Cabinets. Cabinets used to house portable fire extinguishers shall not be locked.

Exceptions:

1. Where portable fire extinguishers subject to malicious use or damage are provided with a means of ready access.

of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge. The initiation of a signal from a manual fire alarm box shall initiate alarm notification appliances as required by Section 907.10.

Exceptions:

1. A manual fire alarm system is required in covered mall buildings complying with Section 402 of the *California Building Code*
2. Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system and the alarm notification appliances will automatically activate upon sprinkler water flow

907.2.7.1 Occupant notification. During times that the building is occupied, the initiation of a signal from a manual fire alarm box or from a water flow switch shall not be required to activate the alarm notification appliances when an alarm signal is activated at a constantly attended location from which evacuation instructions shall be initiated over an emergency voice/alarm communication system installed in accordance with Section 907.2.12.2.

The emergency voice/alarm communication system shall be allowed to be used for other announcements, provided the manual fire alarm use takes precedence over any other use.

907.2.8 Group R-1 ***and Group R-4.*** Fire alarm systems shall be installed in Group R-1 and *Group R-4* occupancies as required in Sections 907.2.8.1 through 907.2.8.4.

907.2.8.1 Manual fire alarm system. A manual fire alarm system shall be installed in Group R-1 occupancies.

Exceptions:

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

907.2.8.2 Automatic fire alarm system. An automatic fire alarm system shall be installed throughout all interior corridors serving sleeping units.

Exception: An automatic fire detection system is not required in buildings that do not have interior corridors serving sleeping units and where each sleeping unit has a means of egress door opening directly to an exterior exit access that leads directly to an exit

907.2.8.3 Smoke alarms. Smoke alarms shall be installed as required by Section 907.2.10. In buildings that are not equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the smoke alarms in sleeping units shall be connected to an emergency electrical system and shall be annunciated by sleeping unit at a constantly attended location from which the fire alarm system is capable of being manually activated.

907.2.8.4 Fire alarm systems in Group R-4 occupancies. *An approved manual and automatic fire alarm system shall be installed in accordance with Section 907.2.8.*

Exceptions:

1. *Protective social care occupancies housing persons none of whom are physically or mentally handicapped or nonambulatory and which provide supervisory services such as alcoholism or drug abuse recovery or treatment facilities, halfway houses operated by the California Department of Corrections, and similar facilities and are provided with a manual fire alarm box which will actuate a distinctive fire alarm signal that can be heard throughout the facility.*
2. *Protective social care facilities provided with an automatic sprinkler system which complies with Chapter 9 and are provided with a manual fire alarm box which will actuate a distinctive fire alarm signal that can be heard throughout the facility.*

907.2.9 Group R-2. A manual fire alarm system shall be installed in Group R-2 occupancies where:

1. Any dwelling unit or sleeping unit is located three or more stories above the lowest level of exit discharge;
2. Any dwelling unit or sleeping unit is located more than one story below the highest level of exit discharge of exits serving the dwelling unit or sleeping unit; or
3. The building contains more than 16 dwelling units or sleeping units.

Exceptions:

1. A fire alarm system is not required in buildings not more than two stories in height where all dwelling units or sleeping units and contiguous attic and crawl spaces are separated from each other and public or common areas by at least 1-hour fire partitions and each dwelling unit or sleeping unit has an exit directly to a public way, exit court or yard.

2 Manual fire alarm boxes are not required throughout the building when the following conditions are met:

2.1. The building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2; and

2.2. The notification appliances will activate upon sprinkler flow.

3 A fire alarm system is not required in buildings that do not have interior corridors serving dwelling units and are protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, provided that dwelling units either have a means of egress door opening directly to an exterior exit access that leads directly to the exits or are served by open-ended corridors designed in accordance with Section 1023.6, Exception 4.

907.2.10 Single- and multiple-station smoke alarms. Listed single- and multiple-station smoke alarms complying with UL 217 shall be installed in accordance with the provisions of this code and the household fire-warning equipment provisions of NFPA 72

Exception: *For Group R occupancies. A fire alarm system with smoke detectors located in accordance with this section may be installed in lieu of smoke alarms. Upon actuation of the detector, only those notification appliances in the dwelling unit or guestroom where the detector is actuated shall activate*

907.2.10.1 Where required. Single- or multiple-station smoke alarms shall be installed in the locations described in Sections 907.2.10.1.1 through 907.2.10.1.3.

907.2.10.1.1 Group R-1. Single- or multiple-station smoke alarms shall be installed in all of the following locations in Group R-1:

1. In sleeping areas.
2. In every room in the path of the means of egress from the sleeping area to the door leading from the sleeping unit.
3. In each story within the sleeping unit, including basements. For sleeping units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.
4. *In enclosed common stairwells of multiple-dwelling complexes.*

907.2.10.1.2 Groups R-2, R-3, *R-3.1*, R-4 and I-1. Single- or multiple-station smoke alarms shall be installed and maintained in Groups R-2, R-3, *R-3.1*, R-4 and I-1 regardless of occupant load at all of the following locations:

1. On the ceiling or wall outside of each separate sleeping area in the immediate vicinity of bedrooms.
2. In each room used for sleeping purposes.
3. In each story within a dwelling unit, including basements but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.
4. *In enclosed common stairwells of apartment complexes and other multiple-dwelling complexes.*
5. *In Group R-3.1 occupancies, in addition to the above, smoke alarms shall be provided throughout the habitable areas of the dwelling unit except kitchens*

907.2.10.1.3 Group I-1. Single- or multiple-station smoke alarms shall be installed and maintained in sleeping areas in Group I-1 occupancies.

Exception: Single- or multiple-station smoke alarms shall not be required where the building is equipped throughout with an automatic fire detection system in accordance with Section 907.2.6.

907.2.10.1.4 Group I-4 occupancies. *Large-family day-care homes shall be equipped with State Fire Marshal approved and listed single-station residential-type smoke alarms.*

907.2.10.1.5 Group R-3.1. *In all facilities housing a bedridden client, smoke alarms shall receive their primary power from the building wiring when such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms shall be electrically interconnected so as to cause all smoke alarms to sound a distinctive alarm signal upon actuation of any single smoke alarm. Such alarm signal shall be audible throughout the facility at a minimal level of 15 db above ambient noise level. These devices need not be interconnected to any other fire alarm device, have a control panel, or be electrically supervised or provided with emergency power.*

907.2.10.2 Power source. In new construction *and in newly classified Group R-3.1 occupancies,* required smoke alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

Exception: Smoke alarms are not required to be equipped with battery backup in Group R-1 where they are connected to an emergency electrical system.

ness and Professions Code, where the licensee participates in the making of the disclosure required to be made pursuant to this section with actual knowledge of the falsity of the disclosure.

(g) Except as otherwise provided in this section, this section shall not be deemed to create or imply a duty upon a licensee, as defined in Section 10011 of the Business and Professions Code, or upon any agent of any party to a transfer of title, including any person or entity acting in the capacity of an escrow, to monitor or ensure compliance with this section.

(h) Local ordinances requiring smoke detectors in single-family dwellings may be enacted or amended. However, the ordinances shall satisfy the minimum requirements of this section.

(i) For the purposes of this section, "single-family dwelling" does not include a manufactured home as defined in Section 18007, a mobile home as defined in Section 18008, or a commercial coach as defined in Section 18001.8

(j) This section shall not apply to the installation of smoke detectors in dwellings intended for human occupancy, as defined in and regulated by Section 13113.7 of the Health and Safety Code, as added by Senate Bill No. 1448 in the 1983-84 Regular Session.

907.2.11 Special amusement buildings. An approved automatic smoke detection system shall be provided in special amusement buildings in accordance with this section.

Exception: In areas where ambient conditions will cause a smoke detection system to alarm, an approved alternative type of automatic detector shall be installed.

907.2.11.1 Alarm. Activation of any single smoke detector, the automatic sprinkler system or any other automatic fire detection device shall immediately sound an alarm at the building at a constantly attended location from which emergency action can be initiated, including the capability of manual initiation of requirements in Section 907.2.11.2.

907.2.11.2 System response. The activation of two or more smoke detectors, a single smoke detector with alarm verification, the automatic sprinkler system or other approved fire detection device shall automatically:

1. Cause illumination of the means of egress with light of not less than 1 foot-candle (11 lux) at the walking surface level;
2. Stop any conflicting or confusing sounds and visual distractions; and
3. Activate an approved directional exit marking that will become apparent in an emergency.

Such system response shall also include activation of a prerecorded message, clearly audible throughout the special amusement building, instructing patrons to proceed to the nearest exit. Alarm signals used in conjunction with the prerecorded message shall produce a sound which is distinctive from other sounds used during normal operation.

The wiring to the auxiliary devices and equipment used to accomplish the above fire safety functions shall be monitored for integrity in accordance with NFPA 72.

907.2.11.3 Emergency voice/alarm communication system. An emergency voice/alarm communication system, which is also allowed to serve as a public address system, shall be installed in accordance with NFPA 72 and be audible throughout the entire special amusement building.

907.2.12 High-rise buildings. *High-rise* buildings *and Group I-2 occupancies having occupied floors located more than 75 feet above the lowest level of fire department vehicle access* shall be provided with an automatic fire alarm system and an emergency voice/alarm communication system in accordance with Section 907.2.12.2.

Exceptions:

1. Airport traffic control towers in accordance with Section 907.2.22 and Section 412 of the *California Building Code*.
2. Open parking garages in accordance with Section 406.3 of the *California Building Code*.
3. Buildings with an occupancy in Group A-5 in accordance with Section 303.1 of the *California Building Code*
4. Low-hazard special occupancies in accordance with Section 503.1.1 of the *California Building Code*.
5. Buildings with an occupancy in Group H-1, H-2 or H-3 in accordance with Section 415 of the *California Building Code*

907.2.12.1 Automatic fire detection. Smoke detectors shall be provided in accordance with this section. Smoke detectors shall be connected to an automatic fire alarm system. The activation of any detector required by this section shall operate the emergency voice/alarm communication system. Smoke detectors shall be located as follows:

1. In each mechanical equipment, electrical, transformer, telephone equipment or similar room which is not provided with sprinkler protection, elevator machine rooms, and in elevator lobbies.
2. In the main return air and exhaust air plenum of each air-conditioning system having a capacity greater than 2,000 cubic feet per minute (cfm) (0.94 m^3/s). Such detectors shall be located in a serviceable area downstream of the last duct inlet.
3. At each connection to a vertical duct or riser serving two or more stories from a return air duct or plenum of an air-conditioning system. In Group R-1 and R-2 occupancies, a listed smoke detector is allowed to be used in each return-air riser carrying not more than 5,000 cfm (2.4 m^3/s) and serving not more than 10 air-inlet openings.

907.2.12.2 Emergency voice/alarm communication system. The operation of any automatic fire detector, sprinkler water-flow device or manual fire alarm box shall automatically sound an alert tone followed by voice instructions giving approved information and directions for a general or staged evacuation on a minimum of the alarming floor, the floor above and the floor below in accordance with the building's fire safety and evacuation plans required by Section 404. Speakers shall be provided throughout the building by paging zones. As a minimum, paging zones shall be provided as follows:

1. Elevator groups.
2. Exit stairways.
3. Each floor.
4. Areas of refuge as defined in Section 1002.1

Exception: In Group I-1 and I-2 occupancies, the alarm shall sound in a constantly attended area and a general occupant notification shall be broadcast over the overhead page.

907.2.12.2.1 Manual override. A manual override for emergency voice communication shall be provided on a selective and all-call basis for all paging zones

907.2.12.2.2 Live voice messages. The emergency voice/alarm communication system shall also have the capability to broadcast live voice messages through paging zones on a selective and all-call basis

907.2.12.2.3 Standard. The emergency voice/alarm communication system shall be designed and installed in accordance with NFPA 72.

907.2.12.3 Fire department communication system. An approved two-way, fire department communication system designed and installed in accordance with NFPA 72 shall be provided for fire department use. It shall operate between a fire command center complying with Section 509 and elevators, elevator lobbies, emergency and standby power rooms, fire pump rooms, areas of refuge and inside enclosed exit stairways. The fire department communication device shall be provided at each floor level within the enclosed exit stairway.

Exception: Fire department radio systems where approved by the fire department

907.2.13 Atriums connecting more than two stories. A fire alarm system shall be installed in occupancies with an atrium that connects more than two stories. The system shall be activated in accordance with Section 907.7. Such occupancies in Group A, E or M shall be provided with an emergency voice/alarm communication system complying with the requirements of Section 907.2.12.2.

907.2.14 High-piled combustible storage areas. An automatic fire detection system shall be installed throughout high-piled combustible storage areas where required by Section 2306.5.

907.2.15 Delayed egress locks. Where delayed egress locks *or devices* are installed on means of egress doors in accordance with Section 1008.1.8.6, an automatic smoke detection system shall be installed as required by that section.

907.2.15.1 In other than Group I occupancies and Group R-4 occupancies for single-story buildings, smoke detectors shall be installed at ceilings throughout all occupied areas and mechanical/electrical spaces. For multiple-story buildings, smoke detectors shall be installed throughout all occupied areas and mechanical/electrical spaces for the story where delayed egress devices are installed. Additional detectors are required on adjacent stories where occupants of those stories utilize the same means of egress.

907.2.15.2 For Group I. *Smoke detectors shall be installed at ceilings throughout all occupied areas, restrooms, closets, storage rooms and mechanical/electrical spaces of smoke compartments where delayed egress locks are installed. Heat detectors may be used in kitchens, laundry rooms and rooms of similar use. Additional detectors are required in adjacent smoke compartments where occupants of those compartments utilize the same means of egress*

907.2.15.3 For Group R-4. *Occupancies licensed as residential care facilities for the elderly, and housing clients with Alzheimer's disease or dementia residential facilities, smoke detectors shall be installed at ceilings throughout all occupied areas, restrooms, closets, storage rooms and mechanical/electrical spaces Heat detectors may be used in kitchens, laundry rooms and rooms of similar use.*

907.2.16 Aerosol storage uses. Aerosol storage rooms and general-purpose warehouses containing aerosols shall be provided with an approved manual fire alarm system where required by this code.

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

907.2.18 Underground buildings with smoke exhaust systems. Where a smoke exhaust system is installed in an underground building in accordance with the *California Building Code*, automatic fire detectors shall be provided in accordance with this section.

907.2.18.1 Smoke detectors. A minimum of one smoke detector listed for the intended purpose shall be installed in the following areas:

1. Mechanical equipment, electrical, transformer, telephone equipment, elevator machine or similar rooms.
2. Elevator lobbies
3. The main return and exhaust air plenum of each air-conditioning system serving more than one story and located in a serviceable area downstream of the last duct inlet.
4. Each connection to a vertical duct or riser serving two or more floors from return air ducts or plenums of heating, ventilating and air-conditioning systems, except that in Group R occupancies, a

listed smoke detector is allowed to be used in each return-air riser carrying not more than 5,000 cfm (2.4 m^3/s) and serving not more than 10 air inlet openings.

907.2.18.2 Alarm required. Activation of the smoke exhaust system shall activate an audible alarm at a constantly attended location.

907.2.19 Underground buildings. Where the lowest level of a structure is more than 60 feet (18 288 mm) below the lowest level of exit discharge, the structure shall be equipped throughout with a manual fire alarm system, including an emergency voice/alarm communication system installed in accordance with Section 907.2.12.2.

907.2.19.1 Public address system. Where a fire alarm system is not required by Section 907.2, a public address system shall be provided which shall be capable of transmitting voice communications to the highest level of exit discharge serving the underground portions of the structure and all levels below.

907.2.20 Covered mall buildings. Covered mall buildings exceeding 50,000 square feet (4645 m^2) in total floor area shall be provided with an emergency voice/alarm communication system. An emergency voice/alarm communication system serving a mall, required or otherwise, shall be accessible to the fire department. The system shall be provided in accordance with Section 907.2.12.2.

907.2.21 Residential aircraft hangars. A minimum of one listed smoke alarm shall be installed within a residential aircraft hangar as defined in the *California Building Code* and shall be interconnected into the residential smoke alarm or other sounding device to provide an alarm which will be audible in all sleeping areas of the dwelling.

907.2.22 Airport traffic control towers. An automatic fire detection system shall be provided in airport traffic control towers.

907.2.23 Battery rooms. An approved automatic smoke detection system shall be installed in areas containing stationary storage battery systems having a liquid capacity of more than 50 gallons (189 L). The detection system shall be supervised by an approved central, proprietary, or remote station service or a local alarm which will sound an audible signal at a constantly attended location.

907.2.24 Motion picture and television production studio sound stages and approved production facilities.

907.2.24.1 Sound stages—solid-ceiling sets and platforms. *All interior solid-ceiling sets over 600 square feet (55.7 m^2) in area, and platforms (when provided) over 600 square feet (55.7 m^2) in area and which exceed 3 feet (914 mm) in height shall be protected by one of the following:*

1. *An approved and listed heat detector system. Heat detectors shall be spaced 30 feet (9144 mm) on center or as required by the manufacturer's installation instructions. Detectors shall be connected to an approved and listed central, proprietary or remote station service or a local alarm which will give an audible signal at a constantly attended location. Such system shall be installed in accordance with this chapter.*
2. *The ceiling shall be positioned to allow for the operation of the building's automatic fire sprinkler system after rehearsal, videotaping, filming, or broadcasting of programs has been completed for the day.*
3. *An approved fire watch.*
4. *Special hazards shall be reviewed by the fire code official (see Additional Fire Protection Systems, Section 901.4.3).*

907.2.24.2 Production locations—solid-ceiling sets and platforms. *In buildings with existing fire protection systems and where production intends to construct solid-ceiling sets over 600 square feet (55.7 m^2) in area, and platforms over 600 square feet (55.7 m^2) in area and which exceed 3 feet (914 mm) in height shall be protected by one of the following:*

1. *An approved and listed heat detector system. Heat detectors shall be spaced 30 feet (9144 mm) on center or as required by the manufacturer's installation instructions. Detectors shall be connected to an approved and listed central, proprietary or remote station service or a local alarm which will give an audible signal at a constantly attended location. Such system shall be installed in accordance with this chapter.*
2. *The ceiling shall be positioned to allow for the operation of the building's automatic fire sprinkler system after rehearsal, videotaping, filming, or broadcasting of programs has been completed for the day.*
3. *An approved fire watch.*
4. *Special hazards shall be reviewed by the enforcing agency (see additional fire protection systems, Section 901.4.3).*

907.2.24.3 Fire alarm control units. *Fire alarm control units shall be California State Fire Marshal listed and shall be utilized in accordance with their listing. Control units may be temporarily supported by sets, platforms or pedestals.*

907.2.24.4 Heat detectors. *Heat detection required by this section shall be defined as a portable system as it is intended to be reinstalled when platforms or sets are changed.*

Heat detectors shall be secured to standard outlet boxes which may be temporarily supported by sets, platforms or pedestals.

Heat detectors shall be provided for solid-ceiling sets and platforms where required by Section 4605.3 and 4611.14.

907.2.25 Group C occupancies (Organized Camps).

907.2.25.1 General. Every building and structure used or intended for sleeping purposes shall be provided with an automatic smoke-detection system.

Exceptions:

1. *Buildings and structures in existence and in operation prior to January 1, 1985.*
2. *Tents, tent structures and buildings and structures that do not exceed 25 ft (7620 mm) in any lateral dimensions and where such building or structure is not more than one story.*

907.2.25.2 Camp fire alarm. Every organized camp shall provide and maintain a device or devices suitable for sounding a fire alarm. Such device or devices may be of any type acceptable to the enforcing agency provided they are distinctive in tone from all other signaling devices or systems and shall be audible throughout the camp premises. When an automatic fire alarm system is provided, as required by Section 440.6.6 of the California Building Code, all signaling devices required by this section shall be of the same type as that used in the automatic system.

907.2.26 Fixed guideway transits systems fire alarm and communication systems.

907.2.26.1 General. Every fixed guideway transit station shall be provided with an approved fire alarm system. The alarm and communication systems shall be proprietary, designed and installed so that damage to any one speaker will not render any paging zone of the system inoperative.

Exception: Open stations.

The voice alarm and public address system may be a combined system. When approved by the fire department, a communications system may be combined with the voice alarm system and the public address system. Such combined systems shall meet the requirements of the California Electrical Code.

907.2.26.2 System components. Each station fire alarm system shall consist of:

1. *Fire alarm control unit at a location as permitted by the enforcing agency.*
2. *An alarm annunciator(s). The annunciator(s) shall be located at a point acceptable to the enforcing agency. The annunciator(s) shall indicate the type of device and general location of alarm. All alarm, supervisory and trouble signals shall be transmitted to the local annunciator(s) and the OCC.*
3. *Manual fire alarm boxes shall be provided throughout passenger platforms and stations.*

Exception: Voice alarm reporting devices (emergency telephones) may be used in lieu of manual fire alarm boxes as permitted by the enforcing agency.

Such devices shall provide two-way communication between the OCC and each device. Such devices shall be located as required for manual fire alarm boxes, and shall be distinctly identified by signs, coloring, or other means acceptable to the enforcing agency.

4. *Automatic smoke detectors in all ancillary spaces.*

Exceptions:

1. *Ancillary spaces protected by an approved fixed automatic extinguishing system; or*
2. *Ancillary spaces protected by quick-response sprinklers.*

5. *Automatic control of exiting components.*

907.2.26.3 Combined voice alarm/public address system. Each station shall be provided with a one-way paging system(s) capable of transmitting voice, tape or electronically generated messages to all areas of the station. The system(s) shall be configured such that the messages can be initiated from either the Emergency Management Panel (EMP) or the OCC.

907.2.26.4 Emergency telephones. A dedicated emergency phone system shall be provided in all underground stations to facilitate direct communications for emergency response between remote locations and the EMP.

907.2.26.4.1 The remote phones shall be located at ends of station platforms, each hose outlet connection and station valve rooms.

907.2.26.4.2 Provisions shall be made in the design of this system for extensions of the system to the next passenger station or guideway portal.

907.2.27 Winery caves. An approved manual fire alarm system conforming to the provisions of Section 907.2.1 shall be provided in all Type 3 winery caves.

907.3 Where required—retroactive in existing buildings and structures. An approved manual, automatic or manual and automatic fire alarm system shall be installed in existing buildings and structures in accordance with Sections 907.3.1 through 907.3.1.8. Where automatic sprinkler protection is provided in accordance with Section 903.3.1.1 or 903.3.1.2 and connected to the building fire alarm system, automatic heat detection required by this section shall not be required.

An approved automatic fire detection system shall be installed in accordance with the provisions of this code and NFPA 72. Devices, combinations of devices, appliances and equipment shall be approved. The automatic fire detectors shall be smoke detectors, except an approved alternative type of detector shall be installed in spaces such as boiler rooms where, during normal operation, products of combustion are present in sufficient quantity to actuate a smoke detector.

907.3.1 Occupancy requirements. A fire alarm system shall be installed in accordance with Sections 907.3.1.1 through 907.3.1.8.

Exception: Occupancies with an existing, previously approved fire alarm system

TABLE 907.10.1.3
VISIBLE AND AUDIBLE ALARMS

NUMBER OF SLEEPING UNITS	SLEEPING ACCOMMODATIONS WITH VISIBLE AND AUDIBLE ALARMS
6 to 25	2
26 to 50	4
51 to 75	7
76 to 100	9
101 to 150	12
151 to 200	14
201 to 300	17
301 to 400	20
401 to 500	22
501 to 1,000	5% of total
1,001 and over	50 plus 3 for each 100 over 1,000

Also, see Chapter 11B, Section 1111B.4.5 Table 11B-3 and Table 11B-4 of the California Building Code.

907.10.1.4 Group R-2. In Group R-2 occupancies required by Section 907 to have a fire alarm system, all dwelling units and sleeping units shall be provided with the capability to support visible alarm notification appliances in accordance with *NFPA 72*.

907.10.1.5 Groups I-1, R-3.1 and R-4. *Protective social care facilities which house persons who are hearing impaired, shall be provided with notification appliances for the hearing impaired installed in accordance with NFPA 72 and which shall activate upon initiation of the fire alarm system or the smoke alarms.*

907.10.2 Audible alarms. Audible alarm notification appliances shall be provided and shall sound a distinctive sound that is not to be used for any purpose other than that of a fire alarm. The audible alarm notification appliances shall provide a sound pressure level of 15 decibels (dBA) above the average ambient sound level or 5 dBA above the maximum sound level having duration of at least 60 seconds, which is greater, in every occupied space within the building. The minimum sound pressure levels shall be: 75 dBA in occupancies in Group R and I-1; 90 dBA in mechanical equipment rooms and 60 dBA in other occupancies. The maximum sound pressure level for audible alarm notification appliances shall be *110* dBA at the minimum hearing distance from the audible appliance. Where the average ambient noise is greater than *95* dBA, visible alarm notification appliances shall be provided in accordance with NFPA 72 and audible alarm notification appliances shall not be required.

In Group I-2 occupancies, audible appliances placed in patient areas shall be only chimes or similar sounding devices for alerting staff.

Exception: Visible alarm notification appliances shall be allowed in lieu of audible alarm notification appliances in *patient* areas of Group I-2 occupancies.

907.10.2.1 Audible alarm signal. *The audible signal shall be the standard fire alarm evacuation signal, ANSI S34.1 Audible Emergency Evacuation Signal, "three pulse temporal pattern," as described in NFPA 72.*

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

907.11 Fire safety functions. Automatic fire detectors utilized for the purpose of performing fire safety functions shall be connected to the building's fire alarm control *unit* where a fire alarm system is *installed*. Detectors shall, upon actuation, perform the intended function and activate the alarm notification appliances or activate a visible and audible supervisory signal at a constantly attended location. In buildings not required to be equipped with a fire alarm system, the automatic fire detector shall be powered by normal electrical service and, upon actuation, perform the intended function. The detectors shall be located in accordance with Chapter 5 of NFPA 72.

907.12 Duct smoke detectors. Duct smoke detectors shall be connected to the building's fire alarm control *unit* when a fire alarm system is provided. Activation of a duct smoke detector shall initiate a visible and audible supervisory signal at a constantly attended location. Duct smoke detectors shall not be used as a substitute for required open area detection.

Exceptions:

1. The supervisory signal at a constantly attended location is not required where duct smoke detectors activate the building's alarm notification appliances.
2. In occupancies not required to be equipped with a fire alarm system, actuation of a smoke detector shall activate a visible and an audible signal in an approved location. Smoke detector trouble conditions shall activate a visible or audible signal in an approved location and shall be identified as air duct detector trouble.

907.13 Access. Access shall be provided to each detector for periodic inspection, maintenance and testing.

907.14 Fire-extinguishing systems. Automatic fire-extinguishing systems shall be connected to the building fire alarm system where a fire alarm system is required by another section of this code or is otherwise installed.

907.15 Monitoring. Fire alarm systems required by this chapter or by the *California Building Code* shall be monitored by an approved supervising station in accordance with NFPA 72.

Exception: Supervisory service is not required for:

1. Single- and multiple-station smoke alarms required by Section 907.2.10.
2. Group I-3 occupancies *shall be monitored in accordance with Section 907.2.6.3.4.*
3. Automatic sprinkler systems in one- and two-family dwellings.

907.16 Automatic telephone-dialing devices. Automatic telephone-dialing devices used to transmit an emergency alarm shall not be connected to any fire department telephone number unless approved by the fire chief.

907.17 Acceptance tests. Upon completion of the installation of the fire alarm system, alarm notification appliances and circuits, alarm-initiating devices and circuits, supervisory-signal initiating devices and circuits, signaling line circuits, primary and secondary power supplies *fire safety function control devices and interfaces, and off-site monitoring equipment* shall be tested in accordance with NFPA 72.

907.18 Record of completion. A record of completion in accordance with NFPA 72 verifying that the system has been installed in accordance with the approved plans and specifications shall be provided.

907.19 Instructions. Operating, testing and maintenance instructions and record drawings ("as builts") and equipment specifications shall be provided at an approved location.

907.20 Inspection, testing and maintenance. The maintenance and testing schedules and procedures for fire alarm and fire detection systems shall be in accordance with this section and Chapter 10 of NFPA 72.

907.20.1 Maintenance required. Whenever or wherever any device, equipment, system, condition, arrangement, level of protection or any other feature is required for compliance with the provisions of this code, such device, equipment, system, condition, arrangement, level of protection or other feature shall thereafter be continuously maintained in accordance with applicable NFPA requirements or as directed by the fire code official.

907.20.2 Testing. Testing shall be performed in accordance with the schedules in Chapter 10 of NFPA 72 or more frequently where required by the fire code official. Where automatic testing is performed at least weekly by a remotely monitored fire alarm control unit specifically listed for the application, the manual testing frequency shall be permitted to be extended to annual.

Exception: devices or equipment that are inaccessible for safety considerations shall be tested during scheduled shutdowns where approved by the fire code official, but not less than every 18 months.

907.20.3 Detector sensitivity. *Smoke* detector sensitivity shall be checked within one year after installation and every alternate year thereafter. After the second calibration test, where sensitivity tests indicate that the detector has remained within its listed and marked sensitivity range (or 4-percent obscuration light grey smoke, if not marked), the length of time between calibration tests shall be permitted to be extended to a maximum of five years. Where the frequency is extended, records of detector-caused nuisance alarms and subsequent trends of these alarms shall be maintained. In zones or areas where nuisance alarms show any increase over the previous year, calibration tests shall be performed.

907.20.4 Method. To ensure that each smoke detector is within its listed and marked sensitivity range, it shall be tested using either a calibrated test method, the manufacturer's calibrated sensitivity test instrument, listed control equipment arranged for the purpose, a smoke detector/control unit arrangement whereby the detector causes a signal at the control unit where its sensitivity is outside its acceptable sensitivity range or other calibrated sensitivity test method acceptable to the fire code official. Detectors found to have a sensitivity outside the listed and marked sensitivity range shall be cleaned and recalibrated or replaced.

Exceptions:

1. Detectors listed as field adjustable shall be permitted to be either adjusted within the listed and marked sensitivity range and cleaned and recalibrated or they shall be replaced.
2. This requirement shall not apply to single-station smoke alarms.

907.20.4.1 Testing device. Detector sensitivity shall not be tested or measured using a device that administers an unmeasured concentration of smoke or other aerosol into the detector.

907.20.5 Maintenance, inspection and testing. The building owner shall be responsible for ensuring that the fire and life safety systems are maintained in an operable condition at all times. Service personnel shall meet the qualification requirements of NFPA 72 for maintaining, inspecting and testing such systems. A written record shall be maintained and shall be made available to the fire code official.

SECTION 908
EMERGENCY ALARM SYSTEMS

908.1 Group H occupancies. Emergency alarms for the detection and notification of an emergency condition in Group H occupancies shall be provided as required in Chapter 27.

908.2 Group H-5 occupancy. Emergency alarms for notification of an emergency condition in an HPM facility shall be provided as required in Section 1803.12. A continuous gas detection system shall be provided for HPM gases in accordance with Section 1803.13.

908.3 Highly toxic and toxic materials. Where required by Section 3704.2.2.10, a gas detection system shall be provided for indoor storage and use of highly toxic and toxic compressed gases.

908.4 Ozone gas-generator rooms. A gas detection system shall be provided in ozone gas-generator rooms in accordance with Section 3705.3.2.

908.5 Repair garages. A flammable-gas detection system shall be provided in repair garages for vehicles fueled by nonodorized gases in accordance with Section 2211.7.2.

908.6 Refrigeration systems. Refrigeration system machinery rooms shall be provided with a refrigerant detector in accordance with Section 606.8.

SECTION 909
SMOKE CONTROL SYSTEMS

909.1 Scope and purpose. This section applies to mechanical or passive smoke control systems when they are required for new buildings or portions thereof by provisions of the *California Building Code* or this code. The purpose of this section is to establish minimum requirements for the design, installation

2. OPEN-AUTO-CLOSE control over individual dampers relating to smoke control and that are also controlled from other sources within the building.
3. ON-OFF or OPEN-CLOSE control over smoke control and other critical equipment associated with a fire or smoke emergency and that can only be controlled from the fire-fighter's control panel

Exceptions:

1. Complex systems, where approved, where the controls and indicators are combined to control and indicate all elements of a single smoke zone as a unit.
2. Complex systems, where approved, where the control is accomplished by computer interface using approved, plain English commands.

909.16.3 Control action and priorities. The fire-fighter's control panel actions shall be as follows:

1. ON-OFF and OPEN-CLOSE control actions shall have the highest priority of any control point within the building. Once issued from the fire-fighter's control panel, no automatic or manual control from any other control point within the building shall contradict the control action. Where automatic means are provided to interrupt normal, nonemergency equipment operation or produce a specific result to safeguard the building or equipment (i.e., duct freezestats, duct smoke detectors, high-temperature cutouts, temperature-actuated linkage and similar devices), such means shall be capable of being overridden by the fire-fighter's control panel. The last control action as indicated by each fire-fighter's control panel switch position shall prevail. In no case shall control actions require the smoke control system to assume more than one configuration at any one time.

   Exception: Power disconnects required by the *California Electrical Code*.

2. Only the AUTO position of each three-position fire-fighter's control panel switch shall allow automatic or manual control action from other control points within the building. The AUTO position shall be the NORMAL, nonemergency, building control position. Where a fire-fighter's control panel is in the AUTO position, the actual status of the device (on, off, open, closed) shall continue to be indicated by the status indicator described above. When directed by an automatic signal to assume an emergency condition, the NORMAL position shall become the emergency condition for that device or group of devices within the zone. In no case shall control actions require the smoke control system to assume more than one configuration at any one time.

909.17 System response time. Smoke-control system activation shall be initiated immediately after receipt of an appropriate automatic or manual activation command. Smoke control systems shall activate individual components (such as dampers and fans) in the sequence necessary to prevent physical damage to the fans, dampers, ducts and other equipment. For purposes of smoke control, the fire-fighter's control panel response time shall be the same for automatic or manual smoke control action initiated from any other building control point. The total response time, including that necessary for detection, shutdown of operating equipment and smoke control system startup, shall allow for full operational mode to be achieved before the conditions in the space exceed the design smoke condition. The system response time for each component and their sequential relationships shall be detailed in the required rational analysis and verification of their installed condition reported in the required final report.

909.18 Acceptance testing. Devices, equipment, components and sequences shall be individually tested. These tests, in addition to those required by other provisions of this code, shall consist of determination of function, sequence and, where applicable, capacity of their installed condition.

909.18.1 Detection devices. Smoke or fire detectors that are a part of a smoke control system shall be tested in accordance with Chapter 9 in their installed condition. When applicable, this testing shall include verification of airflow in both minimum and maximum conditions.

909.18.2 Ducts. Ducts that are part of a smoke control system shall be traversed using generally accepted practices to determine actual air quantities.

909.18.3 Dampers. Dampers shall be tested for function in their installed condition.

909.18.4 Inlets and outlets. Inlets and outlets shall be read using generally accepted practices to determine air quantities.

909.18.5 Fans. Fans shall be examined for correct rotation. Measurements of voltage, amperage, revolutions per minute and belt tension shall be made.

909.18.6 Smoke barriers. Measurements using inclined manometers or other approved calibrated measuring devices shall be made of the pressure differences across smoke barriers. Such measurements shall be conducted for each possible smoke control condition.

909.18.7 Controls. Each smoke zone, equipped with an automatic-initiation device, shall be put into operation by the actuation of one such device. Each additional device within the zone shall be verified to cause the same sequence without requiring the operation of fan motors in order to prevent damage. Control sequences shall be verified throughout the system, including verification of override from the fire-fighter's control panel and simulation of standby power conditions.

909.18.8 Special inspections for smoke control. Smoke control systems shall be tested by a special inspector.

909.18.8.1 Scope of testing. Special inspections shall be conducted in accordance with the following:

1. During erection of ductwork and prior to concealment for the purposes of leakage testing and recording of device location.
2. Prior to occupancy and after sufficient completion for the purposes of pressure-difference testing,

flow measurements, and detection and control verification.

909.18.8.2 Qualifications. Special inspection agencies for smoke control shall have expertise in fire protection engineering, mechanical engineering and certification as air balancers.

909.18.8.3 Reports. A complete report of testing shall be prepared by the special inspector or special inspection agency. The report shall include identification of all devices by manufacturer, nameplate data, design values, measured values and identification tag or mark. The report shall be reviewed by the responsible registered design professional and, when satisfied that the design intent has been achieved, the responsible registered design professional shall seal, sign and date the report.

909.18.8.3.1 Report filing. A copy of the final report shall be filed with the fire code official and an identical copy shall be maintained in an approved location at the building.

909.18.9 Identification and documentation. Charts, drawings and other documents identifying and locating each component of the smoke control system, and describing their proper function and maintenance requirements, shall be maintained on file at the building as an attachment to the report required by Section 909.18.8.3. Devices shall have an approved identifying tag or mark on them consistent with the other required documentation and shall be dated indicating the last time they were successfully tested and by whom.

909.19 System acceptance. Buildings, or portions thereof, required by this code to comply with this section shall not be issued a certificate of occupancy until such time that the fire code official determines that the provisions of this section have been fully complied with and that the fire department has received satisfactory instruction on the operation, both automatic and manual, of the system.

Exception: In buildings of phased construction, a temporary certificate of occupancy, as approved by the fire code official, shall be allowed, provided that those portions of the building to be occupied meet the requirements of this section and that the remainder does not pose a significant hazard to the safety of the proposed occupants or adjacent buildings.

909.20 Maintenance. Smoke control systems shall be maintained to ensure to a reasonable degree that the system is capable of controlling smoke for the duration required. The system shall be maintained in accordance with the manufacturer's instructions and Sections 909.20.1 through 909.20.5.

909.20.1 Schedule. A routine maintenance and operational testing program shall be initiated immediately after the smoke control system has passed the acceptance tests. A written schedule for routine maintenance and operational testing shall be established.

909.20.2 Written record. A written record of smoke control system testing and maintenance shall be maintained on the premises. The written record shall include the date of the maintenance, identification of the servicing personnel and notification of any unsatisfactory condition and the corrective action taken, including parts replaced.

909.20.3 Testing. Operational testing of the smoke control system shall include all equipment such as initiating devices, fans, dampers, controls, doors and windows.

909.20.4 Dedicated smoke control systems. Dedicated smoke control systems shall be operated for each control sequence semiannually. The system shall also be tested under standby power conditions.

909.20.5 Nondedicated smoke control systems. Nondedicated smoke control systems shall be operated for each control sequence annually. The system shall also be tested under standby power conditions.

SECTION 910
SMOKE AND HEAT VENTS

910.1 General. Where required by this code or otherwise installed, smoke and heat vents or mechanical smoke exhaust systems and draft curtains shall conform to the requirements of this section.

Exceptions:

1. Frozen food warehouses used solely for storage of Class I and II commodities where protected by an approved automatic sprinkler system.
2. Where areas of buildings are equipped with early suppression fast-response (ESFR) sprinklers, automatic smoke and heat vents shall not be required within these areas.

910.2 Where required. Smoke and heat vents shall be installed in the roofs of one-story buildings or portions thereof occupied for the uses set forth in Sections 910.2.1 through 910.2.3.

910.2.1 Group F-1 or S-1. Buildings and portions thereof used as a Group F-1 or S-1 occupancy having more than 50,000 square feet (4645 m^2) of undivided area.

Exception: Group S-1 aircraft repair hangars.

910.2.2 High-piled combustible storage. Buildings and portions thereof containing high-piled combustible stock or rack storage in any occupancy group when required by Section 2306.7.

910.2.3 Exit access travel distance increase. Buildings and portions thereof used as a Group F-1 or S-1 occupancy where the maximum exit access travel distance is increased in accordance with Section 1016.2.

910.3 Design and installation. The design and installation of smoke and heat vents and draft curtains shall be as specified in Sections 910.3.1 through 910.3.5.2 and Table 910.3.

910.3.1 Design. Smoke and heat vents shall be listed and labeled to indicate compliance with UL 793.

910.3.2 Vent operation. Smoke and heat vents shall be capable of being operated by approved automatic and manual means. Automatic operation of smoke and heat vents shall conform to the provisions of Sections 910.3.2.1 through 910.3.2.3.

CALIFORNIA FIRE CODE- MATRIX ADOPTION TABLE
CHAPTER 10 – MEANS OF EGRESS

Adopting Agency		BSC	SFM	HCD			DSA		OSHPD				CSA	DHS	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	1	2	3	4								
Adopt Entire Chapter																				
Adopt Entire Chapter as amended (amended sections listed below)			X																	
Adopt only those sections that are listed below							X													
Chapter / Section	Codes																			
1001.1	CA		X																	
1002	CA		X																	
Accessible Means of Egress	IFC						X													
Area of Refuge	IFC						X													
Exit	IFC						X													
Guard or Guardrail	CA						X													
Handrail	IFC						X													
Photoluminescent	CA		X																	
Public Way	IFC						X													
Self-Luminous	CA		X																	
Stair	IFC						X													
Stairway	IFC						X													
1003.1	CA		X				X													
1003.2	CA		X																	
1003.3	CA		X																	
1003.3.3.1	CA		X																	
1003.5	CA		X																	
Table 1005.1	CA		X																	
1006.1	CA		X																	
1007.1	CA		X				X													
1007.2	CA		X				X													
1007.3	CA						X													
1007.4	CA		X				X													
1007.5	CA		X				X													
1007.5.1	IFC						X													
1007.6	CA						X													
1007.6.1	CA		X				X													
1007.6.2	CA		X				X													
1007.6.3	IFC						X													
1007.6.3.1	CA						X													
1007.6.4	CA						X													
1007.6.5	CA						X													
1007.7	CA						X													
1007.8	CA		X				X													
1007.8.1	CA						X													
1007.8.2	CA						X													
1007.8.3	IFC						X													
1007.9	CA		X				X													
1008-Only	CA						X													
1008.1.1	CA		X																	
1008.1.1.1	CA		X																	
1008.1.2	CA		X																	

CHAPTER 10 – MEANS OF EGRESS - (Continued)

Adopting Agency		BSC	SFM	HCD			DSA		OSHPD				CSA	DHS	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	1	2	3	4								
Adopt Entire Chapter																				
Adopt Entire Chapter as amended (amended sections listed below)			X																	
Adopt only those sections that are listed below							X													
Chapter / Section	Codes																			
1008.1.3.4	CA		X																	
1008.1.3.6	CA		X																	
1008.1.8.1	CA		X																	
1008.1.8.6	CA		X																	
1008.1.8.6 No.5.1-Only	CA						X													
1008.1.9	CA		X																	
1009-Only	CA						X													
1009.1	CA		X																	
1009.4	CA		X																	
1009.10	CA		X																	
1010-Only	CA						X													
1011.1	CA		X																	
1011.3	CA		X				X													
1011.6	CA		X																	
1011.7	CA		X																	
1012-Only	CA						X													
1012.7	CA		X																	
1013.1	CA		X				X													
1013.2	IFC						X													
1013.3	CA		X				X													
1014.2	CA		X																	
1014.2.2	CA		X																	
1014.2.2.1	CA		X																	
1014 4 last paragraph-Only	CA						X													
1015.7	CA		X																	
Table 1016.1	CA		X																	
Table 1017.1	CA		X																	
1017.2	CA		X																	
1017.4	CA		X																	
1017.5	CA		X																	
Table 1019.2	CA		X																	
1020.1	CA		X																	
1020.1.6.1	CA		X																	
1020.1.4	CA		X																	
1020.1.6.1	CA		X																	
1020.1.6.1.1	CA		X																	
1020.1.6.1.2	CA		X																	
1020.1.6.1.3	CA		X																	
1020.1.6.1.4	CA		X																	
1020.1.6.1.5	CA		X																	
1020.1.6.2	CA		X				X													

CHAPTER 10 – MEANS OF EGRESS - (Continued)

Adopting Agency		BSC	SFM	HCD			DSA		OSHPD				CSA	DHS	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	1	2	3	4								
Adopt Entire Chapter																				
Adopt Entire Chapter as amended (amended sections listed below)			X																	
Adopt only those sections that are listed below							X													
Chapter / Section	Codes																			
1020.1.7	CA		X																	
1020.1.7.1	CA		X																	
1020.1.7.2	CA		X																	
1021.2	CA		X																	
1022.5	CA		X																	
1023.2	CA		X																	
1024.6	CA		X																	
1025.1	CA		X																	
1025.2	CA		X																	
1025.3	CA		X																	
1025.3.1	CA		X																	
1025.6.1	CA		X																	
1025.6.4	CA		X																	
1025.9.1	CA		X																	
1025.10	CA		X																	
1026.1	CA		X																	
1026.4	CA		X																	
Table 1027.17.2	CA		X																	

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

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

1003.3.1 Headroom. Protruding objects are permitted to extend below the minimum ceiling height required by Section 1003.2 provided a minimum headroom of 80 inches (2032 mm) shall be provided for any walking surface, including walks, corridors, aisles and passageways. Not more than 50 percent of the ceiling area of a means of egress shall be reduced in height by protruding objects.

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

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

1003.3.2 Free-standing objects. A free-standing object mounted on a post or pylon shall not overhang that post or pylon more than 4 inches (102 mm) where the lowest point of the leading edge is more than 27 inches (686 mm) and less than 80 inches (2032 mm) above the walking surface. Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches (305 mm), the lowest edge of such sign or obstruction shall be 27 inches (685 mm) maximum or 80 inches (2030 mm) minimum above the finished floor or ground.

Exception: This requirement shall not apply to sloping portions of handrails serving stairs and ramps.

1003.3.3 Horizontal projections. Structural elements, fixtures or furnishings shall not project horizontally from either side more than 4 inches (102 mm) over any walking surface between the heights of 27 inches (686 mm) and 80 inches (2032 mm) above the walking surface.

Exception: Handrails serving stairs and ramps are permitted to protrude 4.5 inches (114 mm) from the wall.

1003.3.3.1 Horizontal projections for Group I-2 occupancies. *Structural elements, fixtures or furnishings shall not project horizontally from either side more than $1^1/_2$ inches (38 mm) into the required width of an exit access corridor serving any area caring for one or more nonambulatory or bedridden persons.*

Exceptions:

1. *Handrails are permitted to protrude 3.5 inches (89 mm) from the wall.*
2. *Alcohol-based hand-rub dispensers are permitted to protrude 4 inches.*

1003.3.4 Clear width. Protruding objects shall not reduce the minimum clear width of accessible routes as required *in Chapter 11B, Section 1133B.8.6 of the California Building Code.*

1003.4 Floor surface. Walking surfaces of the means of egress shall have a slip-resistant surface and be securely attached.

1003.5 Elevation change. Where changes in elevation of less than 12 inches (305 mm) exist in the means of egress, sloped surfaces shall be used. Where the slope is greater than one unit vertical in 20 units horizontal (5-percent slope), ramps complying with Section 1010 shall be used. Where the difference in elevation is 6 inches (152 mm) or less, the ramp shall be equipped with either handrails or floor finish materials that contrast with adjacent floor finish materials.

Exceptions:

1. A single step with a maximum riser height of 7 inches (178 mm) is permitted for buildings with occupancies in Groups F, H, R-2, R-3, S and U at exterior doors not required to be accessible by *Chapter 11A or 11B* of the *California Building Code*.
2. A stair with a single riser or with two risers and a tread is permitted at locations not required to be accessible by *Chapter 11A or 11B* of the *California Building Code*, provided that the risers and treads comply with Section 1009.3, the minimum depth of the tread is 13 inches (330 mm) and at least one handrail complying with Section 1012 is provided within 30 inches (762 mm) of the centerline of the normal path of egress travel on the stair.
3. A step is permitted in aisles serving seating that has a difference in elevation less than 12 inches (305 mm) at locations not required to be accessible by *Chapter 11A or 11B* of the *California Building Code*, provided that the risers and treads comply with Section 1025.11 and the aisle is provided with a handrail complying with Section 1025.13.

Any change in elevation in a corridor *or exit passageway* serving nonambulatory persons in Group I-2 *and Group I-2.1* occupancies shall be by means of a ramp or sloped walkway.

1003.6 Means of egress continuity. The path of egress travel along a means of egress shall not be interrupted by any building element other than a means of egress component as specified in this chapter. Obstructions shall not be placed in the required width of a means of egress except projections permitted by this chapter. The required capacity of a means of egress system shall not be diminished along the path of egress travel.

1003.7 Elevators, escalators and moving walks. Elevators, escalators and moving walks shall not be used as a component of a required means of egress from any other part of the building.

Exception: Elevators used as an accessible means of egress in accordance with Section 1007.4.

[B] SECTION 1004 OCCUPANT LOAD

1004.1 Design occupant load. In determining means of egress requirements, the number of occupants for whom means of egress facilities shall be provided shall be determined in accordance with this section. Where occupants from accessory areas egress through a primary space, the calculated occupant load

for the primary space shall include the total occupant load of the primary space plus the number of occupants egressing through it from the accessory area.

1004.1.1 Areas without fixed seating. The number of occupants shall be computed at the rate of one occupant per unit of area as prescribed in Table 1004.1.1. For areas without fixed seating, the occupant load shall not be less than that number determined by dividing the floor area under consideration by the occupant per unit of area factor assigned to the occupancy as set forth in Table 1004.1.1. Where an intended use is not listed in Table 1004.1.1, the building official shall establish a use based on a listed use that most nearly resembles the intended use.

Exception: Where approved by the building official, the actual number of occupants for whom each occupied space, floor or building is designed, although less than those determined by calculation, shall be permitted to be used in the determination of the design occupant load.

1004.2 Increased occupant load. The occupant load permitted in any building, or portion thereof, is permitted to be increased from that number established for the occupancies in Table 1004.1.1, provided that all other requirements of the code are also met based on such modified number and the occupant load does not exceed one occupant per 7 square feet (0.65 m^2) of occupiable floor space. Where required by the fire code official, an approved aisle, seating or fixed equipment diagram substantiating any increase in occupant load shall be submitted. Where required by the fire code official, such diagram shall be posted.

1004.3 Posting of occupant load. Every room or space that is an assembly occupancy shall have the occupant load of the room or space posted in a conspicuous place, near the main exit or exit access doorway from the room or space. Posted signs shall be of an approved legible permanent design and shall be maintained by the owner or authorized agent.

1004.4 Exiting from multiple levels. Where exits serve more than one floor, only the occupant load of each floor considered individually shall be used in computing the required capacity of the exits at that floor, provided that the exit capacity shall not decrease in the direction of egress travel.

1004.5 Egress convergence. Where means of egress from floors above and below converge at an intermediate level, the capacity of the means of egress from the point of convergence shall not be less than the sum of the two floors.

1004.6 Mezzanine levels. The occupant load of a mezzanine level with egress onto a room or area below shall be added to that room or area's occupant load, and the capacity of the exits shall be designed for the total occupant load thus established.

1004.7 Fixed seating. For areas having fixed seats and aisles, the occupant load shall be determined by the number of fixed seats installed therein. The occupant load for areas in which fixed seating is not installed, such as waiting spaces and wheelchair spaces, shall be determined in accordance with Section 1004.1.1 and added to the number of fixed seats.

For areas having fixed seating without dividing arms, the occupant load shall not be less than the number of seats based on one person for each 18 inches (457 mm) of seating length.

TABLE 1004.1.1
MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT

FUNCTION OF SPACE	FLOOR AREA IN SQ. FT. PER OCCUPANT
Agricultural building	300 gross
Aircraft hangars	500 gross
Airport terminal	
Baggage claim	20 gross
Baggage handling	300 gross
Concourse	100 gross
Waiting areas	15 gross
Assembly	
Gaming floors (keno, slots, etc.)	11 gross
Assembly with fixed seats	See Section 1004.7
Assembly without fixed seats	
Concentrated (chairs only—not fixed)	7 net
Standing space	5 net
Unconcentrated (tables and chairs)	15 net
Bowling centers, allow 5 persons for each lane including 15 feet of runway, and for additional areas	7 net
Business areas	100 gross
Courtrooms—other than fixed seating areas	40 net
Day care	35 net
Dormitories	50 gross
Educational	
Classroom area	20 net
Shops and other vocational room areas	50 net
Exercise rooms	50 gross
H-5 Fabrication and manufacturing areas	200 gross
Industrial areas	100 gross
Institutional areas	
Inpatient treatment areas	240 gross
Outpatient areas	100 gross
Sleeping areas	120 gross
Kitchens, commercial	200 gross
Library	
Reading rooms	50 net
Stack area	100 gross
Locker rooms	50 gross
Mercantile	
Areas on other floors	60 gross
Basement and grade floor areas	30 gross
Storage, stock, shipping areas	300 gross
Parking garages	200 gross
Residential	200 gross
Skating rinks, swimming pools	
Rink and pool	50 gross
Decks	15 gross
Stages and platforms	15 net
Accessory storage areas, mechanical equipment room	300 gross
Warehouses	500 gross

For SI: 1 square foot = 0.0929 m^2.

mm) and 80 inches (2032 mm) above the floor or ground shall not exceed 4 inches (102 mm).

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

1008.1.2 Door swing. Egress doors shall be side-hinged swinging.

Exceptions:

1. Private garages, office areas, factory and storage areas with an occupant load of 10 or less.
2. Group I-3 occupancies used as a place of detention.
3. Critical or intensive care patient rooms within suites of health care facilities.
4. Doors within or serving a single dwelling unit in Groups R-2 and R-3.
5. In other than Group H occupancies, revolving doors complying with Section 1008.1.3.1.
6. In other than Group H occupancies, horizontal sliding doors complying with Section 1008.1.3.3 are permitted in a means of egress.
7. Power-operated doors in accordance with Section 1008.1.3.2.
8. Doors serving a bathroom within an individual sleeping unit in Group R-1.
9. *In a Group I-2 occupancy, all required exterior egress doors shall open in the direction of egress regardless of the occupant load served.*
10. *In Group I-2 and I-2.1 occupancies, exit doors serving an occupant load of 10 or more may be of the pivoted or balanced type.*

Doors shall swing in the direction of egress travel where serving an occupant load of 50 or more persons or a Group H occupancy.

The opening force for interior side-swinging doors without closers shall not exceed a 5-pound (22 N) force. For other side-swinging, sliding and folding doors, the door latch shall release when subjected to a 15-pound (67 N) force. The door shall be set in motion when subjected to a 30-pound (133 N) force. The door shall swing to a full-open position when subjected to a 15-pound (67 N) force. Forces shall be applied to the latch side.

1008.1.3 Special doors. Special doors and security grilles shall comply with the requirements of Sections 1008.1.3.1 through 1008.1.3.5.

1008.1.3.1 Revolving doors. Revolving doors shall comply with the following:

1. Each revolving door shall be capable of collapsing into a bookfold position with parallel egress paths providing an aggregate width of 36 inches (914 mm).
2. A revolving door shall not be located within 10 feet (3048 mm) of the foot of or top of stairs or escalators. A dispersal area shall be provided between the stairs or escalators and the revolving doors.
3. The revolutions per minute (rpm) for a revolving door shall not exceed those shown in Table 1008.1.3.1.
4. Each revolving door shall have a side-hinged swinging door which complies with Section 1008.1 in the same wall and within 10 feet (3048 mm) of the revolving door.

TABLE 1008.1.3.1
REVOLVING DOOR SPEEDS

INSIDE DIAMETER (feet-inches)	POWER-DRIVEN-TYPE SPEED CONTROL (rpm)	MANUAL-TYPE SPEED CONTROL (rpm)
6-6	11	12
7-0	10	11
7-6	9	11
8-0	9	10
8-6	8	9
9-0	8	9
9-6	7	8
10-0	7	8

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

1008.1.3.1.1 Egress component. A revolving door used as a component of a means of egress shall comply with Section 1008.1.3.1 and the following three conditions:

1. Revolving doors shall not be given credit for more than 50 percent of the required egress capacity.
2. Each revolving door shall be credited with no more than a 50-person capacity.
3. Each revolving door shall be capable of being collapsed when a force of not more than 130 pounds (578 N) is applied within 3 inches (76 mm) of the outer edge of a wing.

1008.1.3.1.2 Other than egress component. A revolving door used as other than a component of a means of egress shall comply with Section 1008.1.3.1. The collapsing force of a revolving door not used as a component of a means of egress shall not be more than 180 pounds (801 N).

Exception: A collapsing force in excess of 180 pounds (801 N) is permitted if the collapsing force is reduced to not more than 130 pounds (578 N) when at least one of the following conditions is satisfied:

1. There is a power failure or power is removed to the device holding the door wings in position.
2. There is an actuation of the automatic sprinkler system where such system is provided.
3. There is an actuation of a smoke detection system which is installed in accordance with

Section 907 to provide coverage in areas within the building which are within 75 feet (22 860 mm) of the revolving doors.

4. There is an actuation of a manual control switch, in an approved location and clearly defined, which reduces the holding force to below the 130-pound (578 N) force level.

1008.1.3.2 Power-operated doors. Where means of egress doors are operated by power, such as doors with a photoelectric-actuated mechanism to open the door upon the approach of a person, or doors with power-assisted manual operation, the design shall be such that in the event of power failure, the door is capable of being opened manually to permit means of egress travel or closed where necessary to safeguard means of egress. The forces required to open these doors manually shall not exceed those specified in Section 1008.1.2, except that the force to set the door in motion shall not exceed 50 pounds (220 N). The door shall be capable of swinging from any position to the full width of the opening in which such door is installed when a force is applied to the door on the side from which egress is made. Full-power-operated doors shall comply with BHMA A156.10. Power-assisted and low-energy doors shall comply with BHMA A156.19.

Exceptions:

1. Occupancies in Group I-3
2. Horizontal sliding doors complying with Section 1008.1.3.3.
3. For a biparting door in the emergency breakout mode, a door leaf located within a multiple-leaf opening shall be exempt from the minimum 32-inch (813 mm) single-leaf requirement of Section 1008.1.1, provided a minimum 32-inch (813 mm) clear opening is provided when the two biparting leaves meeting in the center are broken out.

1008.1.3.3 Horizontal sliding doors. In other than Group H occupancies, horizontal sliding doors permitted to be a component of a means of egress in accordance with Exception 5 to Section 1008.1.2 shall comply with all of the following criteria:

1. The doors shall be power operated and shall be capable of being operated manually in the event of power failure.
2. The doors shall be openable by a simple method from both sides without special knowledge or effort.
3. The force required to operate the door shall not exceed 30 pounds (133 N) to set the door in motion and 15 pounds (67 N) to close the door or open it to the minimum required width.
4. The door shall be openable with a force not to exceed 15 pounds (67 N) when a force of 250 pounds (1100 N) is applied perpendicular to the door adjacent to the operating device.
5. The door assembly shall comply with the applicable fire protection rating and, where rated, shall be self-closing or automatic closing by smoke detection in accordance with Section 715.4.7.3 of the *California Building Code,* shall be installed in accordance with NFPA 80 and shall comply with Section 715.
6. The door assembly shall have an integrated standby power supply.
7. The door assembly power supply shall be electrically supervised.
8. The door shall open to the minimum required width within 10 seconds after activation of the operating device.

1008.1.3.4 Access-controlled egress doors. The entrance doors in a means of egress in buildings with an occupancy in Group A, B, M, R-1 or R-2 and entrance doors to tenant spaces in occupancies in Groups A, B, M, R-1 and R-2 are permitted to be equipped with an approved entrance and egress access control system which shall be installed in accordance with all of the following criteria:

1. A sensor shall be provided on the egress side arranged to detect an occupant approaching the doors. The doors shall be arranged to unlock by a signal from or loss of power to the sensor.
2. Loss of power to that part of the access control system which locks the doors shall automatically unlock the doors.
3. The doors shall be arranged to unlock from a manual unlocking device located 40 inches to 48 inches (1016 mm to 1219 mm) vertically above the floor and within 5 feet (1524 mm) of the secured doors. Ready access shall be provided to the manual unlocking device and the device shall be clearly identified by a sign that reads "PUSH TO EXIT." When operated, the manual unlocking device shall result in direct interruption of power to the lock-independent of the access control system electronics-and the doors shall remain unlocked for a minimum of 30 seconds.
4. Activation of the building fire alarm system, if provided, shall automatically unlock the doors, and the doors shall remain unlocked until the fire alarm system has been reset.
5. Activation of the building automatic sprinkler or fire detection system, if provided, shall automatically unlock the doors. The doors shall remain unlocked until the fire alarm system has been reset.
6. Entrance doors in buildings with an occupancy in Group A, B or M shall not be secured from the egress side during periods that the building is open to the general public.

1008.1.3.5 Security grilles. In Groups B, F, M and S, horizontal sliding or vertical security grilles are permitted at the main exit and shall be openable from the inside

without the use of a key or special knowledge or effort during periods that the space is occupied. The grilles shall remain secured in the full-open position during the period of occupancy by the general public. Where two or more means of egress are required, not more than one-half of the exits or exit access doorways shall be equipped with horizontal sliding or vertical security grilles.

1008.1.3.6 Special provisions. *School classrooms constructed after January 1, 1990, not equipped with automatic sprinkler systems, which have metal grilles or bars on all their windows and do not have at least two exit doors within 3 feet (914 mm) of each end of the classroom opening to the exterior of the building or to a common hallway used for evacuation purposes, shall have an inside release for the grilles or bars on at least one window farthest from the exit doors. The window or windows with the inside release shall be clearly marked as emergency exits.*

1008.1.4 Floor elevation. There shall be a floor or landing on each side of a door. Such floor or landing shall be at the same elevation on each side of the door. Landings shall be level except for exterior landings, which are permitted to have a slope not to exceed 0.25 unit vertical in 12 units horizontal (2-percent slope).

Exceptions:

1. Doors serving individual dwelling units in Groups R-2 and R-3 where the following apply:
   1.1. A door is permitted to open at the top step of an interior flight of stairs, provided the door does not swing over the top step.
   1.2. Screen doors and storm doors are permitted to swing over stairs or landings.
2. Exterior doors as provided for in Section 1003.5, Exception 1, and Section 1018.2, which are not on an accessible route.
3. In Group R-3 occupancies not required to be Accessible units, Type A units or Type B units, the landing at an exterior doorway shall not be more than 7.75 inches (197 mm) below the top of the threshold, provided the door, other than an exterior storm or screen door, does not swing over the landing.
4. Variations in elevation due to differences in finish materials, but not more than 0.5 inch (12.7 mm).
5. Exterior decks, patios or balconies that are part of Type B dwelling units, have impervious surfaces and that are not more than 4 inches (102 mm) below the finished floor level of the adjacent interior space of the dwelling unit.

1008.1.5 Landings at doors. Landings shall have a width not less than the width of the stairway or the door, whichever is greater. Doors in the fully open position shall not reduce a required dimension by more than 7 inches (178 mm). When a landing serves an occupant load of 50 or more, doors in any position shall not reduce the landing to less than one-half its required width. Landings shall have a length measured in the direction of travel of not less than 44 inches (1118 mm).

Exception: Landing length in the direction of travel in Groups R-3 and U and within individual units of Group R-2 need not exceed 36 inches (914 mm).

1008.1.6 Thresholds. Thresholds at doorways shall not exceed 0.75 inch (19.1 mm) in height for sliding doors serving dwelling units or 0.5 inch (12.7 mm) for other doors. Raised thresholds and floor level changes greater than 0.25 inch (6.4 mm) at doorways shall be beveled with a slope not greater than one unit vertical in two units horizontal (50-percent slope).

Exception: The threshold height shall be limited to 7.75 inches (197 mm) where the occupancy is Group R-2 or R-3; the door is an exterior door that is not a component of the required means of egress; the door, other than an exterior storm or screen door does not swing over the landing or step; and the doorway is not on an accessible route as required by *Chapter 11A or 11B* of the *California Building Code* and is not part of an *adaptable or accessible dwelling unit*.

1008.1.7 Door arrangement. Space between two doors in a series shall be 48 inches (1219 mm) minimum plus the width of a door swinging into the space. Doors in a series shall swing either in the same direction or away from the space between the doors.

Exceptions:

1. The minimum distance between horizontal sliding power-operated doors in a series shall be 48 inches (1219 mm).
2. Storm and screen doors serving individual dwelling units in Groups R-2 and R-3 need not be spaced 48 inches (1219 mm) from the other door.
3. Doors within individual dwelling units in Groups R-2 and R-3 other than within Type A dwelling units.

1008.1.8 Door operations. Except as specifically permitted by this section egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort.

1008.1.8.1 Hardware. Door handles, pulls, latches, locks and other operating devices on doors required to be accessible by Chapter 11*A, Section 1126A.6, or Chapter 11B, Section 1133B.2.5,* of the *California Building Code* shall not require tight grasping, tight pinching or twisting of the wrist to operate.

1008.1.8.2 Hardware height. Door handles, pulls, latches, locks and other operating devices shall be installed 34 inches (864 mm) minimum and 48 inches (1219 mm) maximum above the finished floor. Locks used only for security purposes and not used for normal operation are permitted at any height.

Exception: Access doors or gates in barrier walls and fences protecting pools, spas and hot tubs shall be per-

mitted to have operable parts of the release of latch on self-latching devices at 54 inches (1370 mm) maximum above the finished floor or ground, provided the self-latching devices are not also self-locking devices operated by means of a key, electronic opener or integral combination lock

1008.1.8.3 Locks and latches. Locks and latches shall be permitted to prevent operation of doors where any of the following exists:

1. Places of detention or restraint.
2. In buildings in occupancy Group A having an occupant load of 300 or less, Groups B, F, M and S, and in places of religious worship, the main exterior door or doors are permitted to be equipped with key-operated locking devices from the egress side provided:
   2.1 The locking device is readily distinguishable as locked,
   2.2 A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED. The sign shall be in letters 1 inch (25 mm) high on a contrasting background,
   2.3 The use of the key-operated locking device is revokable by the fire code official for due cause.
3. Where egress doors are used in pairs, approved automatic flush bolts shall be permitted to be used, provided that the door leaf having the automatic flush bolts has no doorknob or surface-mounted hardware.
4. Doors from individual dwelling or sleeping units of Group R occupancies having an occupant load of 10 or less are permitted to be equipped with a night latch, dead bolt or security chain, provided such devices are openable from the inside without the use of a key or tool.

1008.1.8.4 Bolt locks. Manually operated flush bolts or surface bolts are not permitted.

Exceptions:

1. On doors not required for egress in individual dwelling units or sleeping units.
2. Where a pair of doors serves a storage or equipment room, manually operated edge- or surface-mounted bolts are permitted on the inactive leaf

1008.1.8.5 Unlatching. The unlatching of any door or leaf shall not require more than one operation

Exceptions:

1. Places of detention or restraint.
2. Where manually operated bolt locks are permitted by Section 1008.1.8.4.
3. Doors with automatic flush bolts as permitted by Section 1008.1.8.3, Exception 3.
4. Doors from individual dwelling units and sleeping units of Group R occupancies as permitted by Section 1008.1.8.3, Exception 4.

1008.1.8.6 Delayed egress locks. Approved, listed, delayed egress locks shall be permitted to be installed on doors serving any occupancy except Group A, E and H occupancies in buildings that are equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 *and* an approved automatic smoke detection system installed in accordance with Section 907, provided that the doors unlock in accordance with Items 1 through *9* below. A building occupant shall not be required to pass through more than one door equipped with a delayed egress lock before entering an exit. *Delayed egress devices shall conform to all of the following:*

1. The doors unlock upon actuation of the automatic sprinkler system or automatic *smoke* detection system.
2. The doors unlock upon loss of *electrical* power *to any one of the following:*
   2.1. The egress-control device itself.
   2.2. The smoke detection system.
   2.3. Means of egress illumination as required by Section 1006.
3. The door locks shall have the capability of being unlocked by a signal from *a switch located in an approved location.*
4. The initiation of an irreversible process which will release the latch in not more than 15 seconds when a force of not more than 15 pounds (67 N) is applied for 1 second to the release device. Initiation of the irreversible process shall activate an audible signal in the vicinity of the door. Once the door lock has been released by the application of force to the releasing device, relocking shall be by manual means only. *The time delay established for each egress-control device shall not be field adjustable. For applications listed in Section 109.1 regulated by the Division of the State Architect-Access Compliance, see Chapter 11B, Section 1133B.2.5 of the California Building Code.*

   Exception: *In facilities housing Alzheimer's or dementia clients,* a delay of not more than 30 seconds is permitted.
5. A sign shall be provided on the door located above and within 12 inches (305 mm) of the release device reading: "KEEP PUSHING. THIS DOOR WILL OPEN IN 15 [30] SECONDS. ALARM WILL SOUND." *Sign lettering shall be at least 1 inch (25 mm) in height and shall have a stroke of not less than $^1/_8$ inch (3.2 mm).*

5.1. A tactile sign shall also be provided in Braille and raised characters, which complies with Section 1117B.5.1 Item 1, of the California Building Code.

6. Emergency lighting shall be provided at the door.

7. *Actuation of the panic bar or other door-latching hardware shall activate an audible signal at the door.*

8 *The unlatching shall not require more than one operation.*

9 *Regardless of the means of deactivation, relocking of the egress-control device shall be by manual means only at the door.*

1008.1.8.7 Stairway doors. Interior stairway means of egress doors shall be openable from both sides without the use of a key or special knowledge or effort.

Exceptions:

1 Stairway discharge doors shall be openable from the egress side and shall only be locked from the opposite side.

2 This section shall not apply to doors arranged in accordance with Section 403.12 of the *California Building Code*.

3. In stairways serving not more than four stories, doors are permitted to be locked from the side opposite the egress side, provided they are openable from the egress side and capable of being unlocked simultaneously without unlatching upon a signal from the fire command center, if present, or a signal by emergency personnel from a single location inside the main entrance to the building.

1008.1.9 Panic and fire exit hardware. Where panic and fire exit hardware is installed, it shall comply with the following:

1 The actuating portion of the releasing device shall extend at least one-half of the door leaf width.

2. The maximum unlatching force shall not exceed 15 pounds (67 N).

Each door in a means of egress from a Group A or *assembly area not classified as an assembly occupancy*, E, *I-2 or I-2.1* occupancies having an occupant load of 50 or more and any Group H occupancy shall not be provided with a latch or lock unless it is panic hardware or fire exit hardware.

Exception: A main exit of a Group A occupancy in compliance with Section 1008.1.8.3, Item 2.

Electrical rooms with equipment rated 1,200 amperes or more and over 6 feet (1829 mm) wide that contain overcurrent devices, switching devices or control devices with exit access doors must be equipped with panic hardware and doors must swing in the direction of egress.

If balanced doors are used and panic hardware is required, the panic hardware shall be the push-pad type and the pad shall not extend more then one-half the width of the door measured from the latch side.

1008.2 Gates. Gates serving the means of egress system shall comply with the requirements of this section. Gates used as a component in a means of egress shall conform to the applicable requirements for doors.

Exception: Horizontal sliding or swinging gates exceeding the 4-foot (1219 mm) maximum leaf width limitation are permitted in fences and walls surrounding a stadium.

1008.2.1 Stadiums. Panic hardware is not required on gates surrounding stadiums where such gates are under constant immediate supervision while the public is present, and where safe dispersal areas based on 3 square feet (0.28 m^2) per occupant are located between the fence and enclosed space. Such required safe dispersal areas shall not be located less than 50 feet (15 240 mm) from the enclosed space. See Section 1024.6 for means of egress from safe dispersal areas.

1008.3 Turnstiles. Turnstiles or similar devices that restrict travel to one direction shall not be placed so as to obstruct any required means of egress.

Exception: Each turnstile or similar device shall be credited with no more than a 50-person capacity where all of the following provisions are met:

1. Each device shall turn free in the direction of egress travel when primary power is lost, and upon the manual release by an employee in the area.

2. Such devices are not given credit for more than 50 percent of the required egress capacity.

3. Each device is not more than 39 inches (991 mm) high.

4. Each device has at least 16.5 inches (419 mm) clear width at and below a height of 39 inches (991 mm) and at least 22 inches (559 mm) clear width at heights above 39 inches (991 mm).

Where located as part of an accessible route, turnstiles shall have at least 36 inches (914 mm) clear at and below a height of 34 inches (864 mm), at least 32 inches (813 mm) clear width between 34 inches (864 mm) and 80 inches (2032 mm) and shall consist of a mechanism other than a revolving device.

1008.3.1 High turnstile. Turnstiles more than 39 inches (991 mm) high shall meet the requirements for revolving doors.

1008.3.2 Additional door. Where serving an occupant load greater than 300, each turnstile that is not portable shall have a side-hinged swinging door which conforms to Section 1008.1 within 50 feet (15 240 mm).

[B] SECTION 1009 STAIRWAYS

[DSA-AC] In addition to the requirements of this section, means of egress, which provide access to, or egress from, buildings or facilities where accessibility is required for applications listed in Title 24, Part 2, Section 109.1 regulated by the Division of the State Architect-Access Compliance shall also

comply with Chapter 11A or Chapter 11B, Section 1133B.4 of the California Building Code, as applicable

1009.1 Stairway width. The width of stairways shall be determined as specified in Section 1005.1, but such width shall not be less than 44 inches (1118 mm). See Section 1007.3 for accessible means of egress stairways.

Exceptions:

1. Stairways serving an occupant load of less than 50 shall have a width of not less than 36 inches (914 mm).
2. Spiral stairways as provided for in Section 1009.8.
3. Aisle stairs complying with Section 1025.
4. Where an incline platform lift or stairway chairlift is installed on stairways serving occupancies in Group R-3, or within dwelling units in occupancies in Group R-2, a clear passage width not less than 20 inches (508 mm) shall be provided. If the seat and platform can be folded when not in use, the distance shall be measured from the folded position.

Means of egress stairs in a Group I-2 occupancy used for the movement of beds and litter patients shall provide a clear width not less than 44 inches (1118 mm).

1009.2 Headroom. Stairways shall have a minimum headroom clearance of 80 inches (2032 mm) measured vertically from a line connecting the edge of the nosings. Such headroom shall be continuous above the stairway to the point where the line intersects the landing below, one tread depth beyond the bottom riser. The minimum clearance shall be maintained the full width of the stairway and landing.

Exception: Spiral stairways complying with Section 1009.8 are permitted a 78-inch (1981 mm) headroom clearance.

1009.3 Stair treads and risers. Stair riser heights shall be 7 inches (178 mm) maximum and 4 inches (102 mm) minimum. Stair tread depths shall be 11 inches (279 mm) minimum. The riser height shall be measured vertically between the leading edges of adjacent treads. The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. Winder treads shall have a minimum tread depth of 11 inches (279 mm) measured at a right angle to the tread's leading edge at a point 12 inches (305 mm) from the side where the treads are narrower and a minimum tread depth of 10 inches (254 mm).

Exceptions:

1. Alternating tread devices in accordance with Section 1009.9.
2. Spiral stairways in accordance with Section 1009.8.
3. Aisle stairs in assembly seating areas where the stair pitch or slope is set, for sightline reasons, by the slope of the adjacent seating area in accordance with Section 1025.11.2.
4. 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; the maximum riser height shall be 7.75 inches (197 mm); the minimum tread depth shall be 10 inches (254 mm); the minimum winder tread depth at the walk line shall be 10 inches (254 mm); and the minimum winder tread depth shall be 6 inches (152 mm). A nosing not less than 0.75 inch (19.1 mm) but not more than 1.25 inches (32 mm) shall be provided on stairways with solid risers where the tread depth is less than 11 inches (279 mm).
5. See Section 1027.10 for the replacement of existing stairways. *For applications listed in Section 109.1 regulated by the Division of the State Architect-Access Compliance, see Chapter 11B, Section 1134B of the California Building Code.*

1009.3.1 Winder treads. Winder treads are not permitted in means of egress stairways except within a dwelling unit.

Exceptions:

1. Curved stairways in accordance with Section 1009.7.
2. Spiral stairways in accordance with Section 1009.8.

1009.3.2 Dimensional uniformity. Stair treads and risers shall be of uniform size and shape. The tolerance between the largest and smallest riser height or between the largest and smallest tread depth shall not exceed 0.375 inch (9.5 mm) in any flight of stairs. The greatest winder tread depth at the 12-inch (305 mm) walk line within any flight of stairs shall not exceed the smallest by more than 0.375 inch (9.5 mm) measured at a right angle to the tread's leading edge.

Exceptions:

1. Nonuniform riser dimensions of aisle stairs complying with Section 1025.11.2.
2. Consistently shaped winders, complying with Section 1009.3, differing from rectangular treads in the same stairway flight.

Where the bottom or top riser adjoins a sloping public way, walkway or driveway having an established grade and serving as a landing, the bottom or top riser is permitted to be reduced along the slope to less than 4 inches (102 mm) in height, with the variation in height of the bottom or top riser not to exceed one unit vertical in 12 units horizontal (8-percent slope) of stairway width. The nosings or leading edges of treads at such nonuniform height risers shall have a distinctive marking stripe, different from any other nosing marking provided on the stair flight. The distinctive marking stripe shall be visible in descent of the stair and shall have a slip-resistant surface. Marking stripes shall have a width of at least 1 inch (25 mm) but not more than 2 inches (51 mm).

1009.3.3 Profile. The radius of curvature at the leading edge of the tread shall be not greater than 0.5 inch (12.7 mm). Beveling of nosings shall not exceed 0.5 inch (12.7 mm). Risers shall be solid and vertical or sloped from the underside of the leading edge of the tread above at an angle not more than 30 degrees (0.52 rad) from the vertical. The lead-

space, dwelling unit and sleeping unit shall be provided with access to the required exits without passing through adjacent tenant spaces, dwelling units and sleeping units.

Exception: Means of egress shall not be prohibited through adjoining tenant space where such rooms or spaces occupy less than 10 percent of the area of the tenant space through which they pass; are the same or similar occupancy group; a discernable path of egress travel to an exit is provided; and the means of egress into the adjoining space is not subject to locking from the egress side. A required means of egress serving the larger tenant space shall not pass through the smaller tenant space or spaces.

1014.2.2 Group I-2. Habitable rooms or suites in Group I-2 occupancies shall have an exit access door leading directly to a corridor.

Exceptions:

1. Rooms with exit doors opening directly to the outside at ground level
2. Patient sleeping rooms are permitted to have one intervening room if the intervening room is not used as an exit access for more than eight patient beds.
3. Special nursing suites are permitted to have one intervening room where the arrangement allows for direct and constant visual supervision by nursing personnel
4. For rooms other than patient sleeping rooms located within a suite, exit access travel from within the suite shall be permitted through one intervening room where the travel distance to the exit access door is not greater than 100 feet (30 480 mm).
5. For rooms other than patient sleeping rooms located within a suite, exit access travel from within the suite shall be permitted through two intervening rooms where the travel distance to the exit access door is not greater than 50 feet (15 240 mm).

Suites of sleeping rooms shall not exceed 5,000 square feet (465 m^2). Suites of rooms other than patient sleeping rooms shall not exceed 10,000 square feet (929 m^2). Any patient sleeping room, or any suite that includes patient sleeping rooms, of more than 1,000 square feet (93 m^2) shall have at least two exit access doors remotely located from each other. Any room or suite of rooms other than patient sleeping rooms of more than 2,500 square feet (232 m^2) shall have at least two access doors remotely located from each other. The travel distance between any point in a Group I-2 occupancy and an exit access door in the room shall not exceed 50 feet (15 240 mm). The travel distance between any point in a suite of sleeping rooms and an exit access door of that suite shall not exceed 100 feet (30 480 mm).

Each suite of rooms shall be separated from the remainder of the building by not less than a 1-hour fire barrier.

Egress for portions of the building outside the suite shall not require passage through the suite

1014.2.2.1 ***Basement exits.*** *All rooms below grade shall have not less than one exit access that leads directly to an exterior exit door opening directly to an exit discharge at grade plane or the public way.*

1014.3 Common path of egress travel. In occupancies other than Groups H-1, H-2 and H-3, the common path of egress travel shall not exceed 75 feet (22 860 mm). In Group H-1, H-2 and H-3 occupancies, the common path of egress travel shall not exceed 25 feet (7620 mm). For common path of egress travel in Group A occupancies having fixed seating, see Section 1025.8.

Exceptions:

1. The length of a common path of egress travel in Group B, F and S occupancies shall not be more than 100 feet (30 480 mm), provided that the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.
2. Where a tenant space in Group B, S and U occupancies has an occupant load of not more than 30, the length of a common path of egress travel shall not be more than 100 feet (30 480 mm).
3. The length of a common path of egress travel in a Group I-3 occupancy shall not be more than 100 feet (30 480 mm).
4. The length of a common path of egress travel in a Group R-2 occupancy shall not be more than 125 feet (38 100 mm), provided that the building is protected throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1.

1014.4 Aisles. Aisles serving as a portion of the exit access in the means of egress system shall comply with the requirements of this section. Aisles shall be provided from all occupied portions of the exit access which contain seats, tables, furnishings, displays and similar fixtures or equipment. Aisles serving assembly areas, other than seating at tables, shall comply with Section 1025. Aisles serving reviewing stands, grandstands and bleachers shall also comply with Section 1025.

The required width of aisles shall be unobstructed.

Exception: Doors, when fully opened, and handrails shall not reduce the required width by more than 7 inches (178 mm). Doors in any position shall not reduce the required width by more than one-half. Other nonstructural projections such as trim and similar decorative features are permitted to project into the required width 1.5 inches (38 mm) for each side.

[DSA-AC] In addition to the requirements of this section, means of egress, which provide access to, or egress from, buildings or facilities where accessibility is required for applications listed in Title 24, Part 2, Section 109.1, regulated by the Division of the State Architect-Access Compliance shall also comply with Chapter 11A or Chapter 11B, Section 1133B.6, of the California Building Code, as applicable.

1014.4.1 Aisles in Groups B and M. In Group B and M occupancies, the minimum clear aisle width shall be deter-

mined by Section 1005.1 for the occupant load served, but shall not be less than 36 inches (914 mm)

Exception: Nonpublic aisles serving less than 50 people and not required to be accessible by *Chapter 11B (see Sections 1103B.1 Exception 2 and 1123B.2 Exception)* of the *California Building Code* need not exceed 28 inches (711 mm) in width.

1014.4.2 Aisle accessways in Group M. An aisle accessway shall be provided on at least one side of each element within the merchandise pad. The minimum clear width for an aisle accessway not required to be accessible shall be 30 inches (762 mm). The required clear width of the aisle accessway shall be measured perpendicular to the elements and merchandise within the merchandise pad. The 30-inch (762 mm) minimum clear width shall be maintained to provide a path to an adjacent aisle or aisle accessway. The common path of travel shall not exceed 30 feet (9144 mm) from any point in the merchandise pad.

Exception: For areas serving not more than 50 occupants, the common path of travel shall not exceed 75 feet (22 880 mm)

1014.4.3 Seating at tables. Where seating is located at a table or counter and is adjacent to an aisle or aisle accessway, the measurement of required clear width of the aisle or aisle accessway shall be made to a line 19 inches (483 mm) away from and parallel to the edge of the table or counter. The 19-inch (483 mm) distance shall be measured perpendicular to the side of the table or counter. In the case of other side boundaries for aisle or aisle accessways, the clear width shall be measured to walls, edges of seating and tread edges, except that handrail projections are permitted

Exception: Where tables or counters are served by fixed seats, the width of the aisle accessway shall be measured from the back of the seat.

1014.4.3.1 Aisle accessway for tables and seating. Aisle accessways serving arrangements of seating at tables or counters shall have sufficient clear width to conform to the capacity requirements of Section 1005.1 but shall not have less than the appropriate minimum clear width specified in Section 1014.4.3.2

1014.4.3.2 Table and seating accessway width. Aisle accessways shall provide a minimum of 12 inches (305 mm) of width plus 0.5 inch (12.7 mm) of width for each additional 1 foot (305 mm), or fraction thereof, beyond 12 feet (3658 mm) of aisle accessway length measured from the center of the seat farthest from an aisle.

Exception: Portions of an aisle accessway having a length not exceeding 6 feet (1829 mm) and used by a total of not more than four persons.

1014.4.3.3 Table and seating aisle accessway length. The length of travel along the aisle accessway shall not exceed 30 feet (9144 mm) from any seat to the point where a person has a choice of two or more paths of egress travel to separate exits.

1014.5 Egress balconies. Balconies used for egress purposes shall conform to the same requirements as corridors for width, headroom, dead ends and projections.

1014.5.1 Wall separation. Exterior egress balconies shall be separated from the interior of the building by walls and opening protectives as required for corridors.

Exception: Separation is not required where the exterior egress balcony is served by at least two stairs and a dead-end travel condition does not require travel past an unprotected opening to reach a stair.

1014.5.2 Openness. The long side of an egress balcony shall be at least 50 percent open, and the open area above the guards shall be so distributed as to minimize the accumulation of smoke or toxic gases.

[B] SECTION 1015
EXIT AND EXIT ACCESS DOORWAYS

1015.1 Exit or exit access doorways required. Two exits or exit access doorways from any space shall be provided where one of the following conditions exists:

1. The occupant load of the space exceeds the values in Table 1015.1.
2. The common path of egress travel exceeds the limitations of Section 1014.3.
3. Where required by Sections 1015.3, 1015.4 and 1015.5.

Exception: Group I-2 occupancies shall comply with Section 1014.2.2.

TABLE 1015.1
SPACES WITH ONE MEANS OF EGRESS

OCCUPANCY	MAXIMUM OCCUPANT LOAD
A, B, E[a], F, M, U	49
H-1, H-2, H-3	3
H-4, H-5, I-1, I-3, I-4, R	10
S	29

a. Day care maximum occupant load is 10

1015.1.1 Three or more exits. Access to three or more exits shall be provided from a floor area where required by Section 1019.1.

1015.2 Exit or exit access doorway arrangement. Required exits shall be located in a manner that makes their availability obvious. Exits shall be unobstructed at all times. Exit and exit access doorways shall be arranged in accordance with Sections 1015.2.1 and 1015.2.2.

1015.2.1 Two exits or exit access doorways. Where two exits or exit access doorways are required from any portion of the exit access, the exit doors or exit access doorways shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between exit doors or exit access doorways.

Interlocking or scissor stairs shall be counted as one exit stairway.

Exceptions:

1. Where exit enclosures are provided as a portion of the required exit and are interconnected by a 1-hour fire-resistance-rated corridor conforming to the requirements of Section 1017, the required exit separation shall be measured along the shortest direct line of travel within the corridor.
2. Where a building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2, the separation distance of the exit doors or exit access doorways shall not be less than one-third of the length of the maximum overall diagonal dimension of the area served.

1015.2.2 Three or more exits or exit access doorways. Where access to three or more exits is required, at least two exit doors or exit access doorways shall be arranged in accordance with the provisions of Section 1015.2.1.

1015.3 Boiler, incinerator and furnace rooms. Two exit access doorways are required in boiler, incinerator and furnace rooms where the area is over 500 square feet (46 m^2) and any fuel-fired equipment exceeds 400,000 British thermal units (Btu) (422 000 KJ) input capacity. Where two exit access doorways are required, one is permitted to be a fixed ladder or an alternating tread device. Exit access doorways shall be separated by a horizontal distance equal to one-half the length of the maximum overall diagonal dimension of the room.

1015.4 Refrigeration machinery rooms. Machinery rooms larger than 1,000 square feet (93 m^2) shall have not less than two exits or exit access doors. Where two exit access doorways are required, one such doorway is permitted to be served by a fixed ladder or an alternating tread device. Exit access doorways shall be separated by a horizontal distance equal to one-half the maximum horizontal dimension of room.

All portions of machinery rooms shall be within 150 feet (45 720 mm) of an exit or exit access doorway. An increase in travel distance is permitted in accordance with Section 1016.1.

Doors shall swing in the direction of egress travel, regardless of the occupant load served. Doors shall be tight fitting and self-closing.

1015.5 Refrigerated rooms or spaces. Rooms or spaces having a floor area of 1,000 square feet (93 m^2) or more, containing a refrigerant evaporator and maintained at a temperature below 68°F (20°C), shall have access to not less than two exits or exit access doors.

Travel distance shall be determined as specified in Section 1016.1, but all portions of a refrigerated room or space shall be within 150 feet (45 720 mm) of an exit or exit access door where such rooms are not protected by an approved automatic sprinkler system. Egress is allowed through adjoining refrigerated rooms or spaces.

Exception: Where using refrigerants in quantities limited to the amounts based on the volume set forth in the *California Mechanical Code*.

1015.6 Stage means of egress. Where two means of egress are required, based on the stage size or occupant load, one means of egress shall be provided on each side of the stage.

1015.6.1 Gallery, gridiron and catwalk means of egress. The means of egress from lighting and access catwalks, galleries and gridirons shall meet the requirements for occupancies in Group F-2.

Exceptions:

1. A minimum width of 22 inches (559 mm) is permitted for lighting and access catwalks.
2. Spiral stairs are permitted in the means of egress.
3. Stairways required by this subsection need not be enclosed.
4. Stairways with a minimum width of 22 inches (559 mm), ladders, or spiral stairs are permitted in the means of egress.
5. A second means of egress is not required from these areas where a means of escape to a floor or to a roof is provided. Ladders, alternating tread devices or spiral stairs are permitted in the means of escape.
6. Ladders are permitted in the means of egress.

[B] 1015.7 General. Every story or basement of a large-family day-care home shall be provided with two exits which are remotely located from each other. Every required exit shall be of a size to permit the installation of a door not less than 32 inches (813 mm) in clear width and not less than 6 feet 8 inches (2,032 mm) in height. A manually operated horizontal sliding door may be used as one of the two required exits.

Where basements are used for day-care purposes, one of the two required exits shall provide access directly to the exterior without entering the first story. The second exit from the basement may either pass through the story above or exit directly to the exterior.

Rooms used for day-care purposes shall not be located above the first story.

***Exception:** Buildings equipped with an automatic sprinkler system throughout and which have at least one of the required exits providing access directly to the exterior. NFPA 13R may be used in large-family day-care homes. The sprinkler omissions of NFPA 13R shall not apply unless approved by the enforcing agency.*

Exit doors, including manually operated horizontal sliding doors, shall be openable from the inside without use of a key or any special knowledge or effort.

Tables 1019.1 and 1019.2 are not applicable to this occupancy classification.

[B] SECTION 1016
EXIT ACCESS TRAVEL DISTANCE

1016.1 Travel distance limitations. Exits shall be so located on each story such that the maximum length of exit access travel, measured from the most remote point within a story to the entrance to an exit along the natural and unobstructed path

of egress travel, shall not exceed the distances given in Table 1016.1

Where the path of exit access includes unenclosed stairways or ramps within the exit access or includes unenclosed exit ramps or stairways as permitted in Section 1020.1, the distance of travel on such means of egress components shall also be included in the travel distance measurement. The measurement along stairways shall be made on a plane parallel and tangent to the stair tread nosings in the center of the stairway.

Exceptions:

1. Travel distance in open parking garages is permitted to be measured to the closest riser of open stairs.
2. In outdoor facilities with open exit access components and open exterior stairs or ramps, travel distance is permitted to be measured to the closest riser of a stair or the closest slope of the ramp.
3. Where an exit stair is permitted to be unenclosed in accordance with Exception 8 or 9 of Section 1020.1, the travel distance shall be measured from the most remote point within a building to an exit discharge.

1016.2 Roof vent increase. In buildings that are one story in height, equipped with automatic heat and smoke roof vents complying with Section 910 and equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, the maximum exit access travel distance shall be 400 feet (122 m) for occupancies in Group F-1 or S-1.

1016.3 Exterior egress balcony increase. Travel distances specified in Section 1016.1 shall be increased up to an additional 100 feet (30 480 mm) provided the last portion of the exit access leading to the exit occurs on an exterior egress balcony constructed in accordance with Section 1014.5. The length of such balcony shall not be less than the amount of the increase taken.

TABLE 1016.1
EXIT ACCESS TRAVEL DISTANCE[a]

OCCUPANCY	WITHOUT SPRINKLER SYSTEM (feet)	WITH SPRINKLER SYSTEM (feet)
A, E, F-1, I-1, M, R, S-1	200	250[b]
B	200	300[c]
F-2, S-2, U	300	400[c]
H-1	Not Permitted	75[c]
H-2	Not Permitted	100[c]
H-3	Not Permitted	150[c]
H-4	Not Permitted	175[c]
H-5	Not Permitted	200[c]
I-2, I-3[d], I-4	150	200[c]

For SI: 1 foot = 304.8 mm

a. See the following sections for modifications to exit access travel distance requirements:
Section 402: For the distance limitation in malls
Section 404: For the distance limitation through an atrium space
Section 1016.2 For increased limitations in Groups F-1 and S-1
Section 1025.7: For increased limitation in assembly seating
Section 1025.7: For increased limitation for assembly open-air seating
Section 1019.2: For buildings with one exit.
Chapter 31:For the limitation in temporary structures

b. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where automatic sprinkler systems in accordance with Section 903.3.1.2 are permitted.

c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1

d. Not permitted in nonsprinklered Group I-2 and Group I-3 occupancies.

[B] SECTION 1017 CORRIDORS

1017.1 Construction. Corridors shall be fire-resistance rated in accordance with Table 1017.1 The corridor walls required to be fire-resistance rated shall comply with Section 708 of the *California Building Code* for fire partitions.

Exceptions:

1. A fire-resistance rating is not required for corridors in an occupancy in Group E where each room that is used for instruction has at least one door directly to the exterior and rooms for assembly purposes have at

[B] TABLE 1017.1
CORRIDOR FIRE-RESISTANCE RATING

OCCUPANCY	OCCUPANT LOAD SERVED BY CORRIDOR	REQUIRED FIRE-RESISTANCE RATING (hours)	
		Without sprinkler system	With sprinkler system[c]
H-1, H-2, H-3, *L*	All	Not Permitted	1
H-4, H-5	Greater than 30	Not Permitted	1
A[d], B, F, M, S, U	Greater than 30	1	0
R	Greater than 10	Not Permitted	*1*
I-2[a], I-2.1, I-4	*Greater than 6*	Not Permitted	*1*
I-1, I-3	*Greater than 6*	Not Permitted	1[b]
E	*Greater than 10*	*1*	*1*

a. For requirements for occupancies in Group I-2 see Section 407.3 of the *California Building Code*.

b. For a reduction in the fire-resistance rating for occupancies in Group I-3, see Section 408.7 of the *California Building Code*.

c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 where allowed

d. See Section 1025.

least one-half of the required means of egress doors opening directly to the exterior. Exterior doors specified in this exception are required to be at ground level.

2. A fire-resistance rating is not required for corridors contained within a dwelling or sleeping unit in an occupancy in Group R.
3. A fire-resistance rating is not required for corridors in open parking garages.
4. A fire-resistance rating is not required for corridors in an occupancy in Group B which is a space requiring only a single means of egress complying with Section 1015.1.

1017.2 Corridor width. The minimum corridor width shall be as determined in Section 1005.1, but not less than 44 inches (1118 mm).

Exceptions:

1. Twenty-four inches (610 mm)–For access to and utilization of electrical, mechanical or plumbing systems or equipment.
2. Thirty-six inches (914 mm)–With a required occupant capacity of less than 50.
3. Thirty-six inches (914 mm)–Within a dwelling unit.
4. Seventy-two inches (1829 mm)–In Group E with a corridor having a required capacity of 100 or more.
5. Seventy-two inches (1829 mm)–In corridors serving surgical Group I, health care centers for ambulatory patients receiving outpatient medical care, which causes the patient to be not capable of self-preservation.
6. Ninety-six inches (2438 mm)–In Group I-2 in areas where required for bed movement.
7. *Corridors serving any area caring for one or more nonambulatory persons shall not be less than 8 feet (2438 mm) in width.*

1017.3 Dead ends. Where more than one exit or exit access doorway is required, the exit access shall be arranged such that there are no dead ends in corridors more than 20 feet (6096 mm) in length.

Exceptions:

1. In occupancies in Group I-3 of Occupancy Condition 2, 3 or 4 (see Section 202), the dead end in a corridor shall not exceed 50 feet (15 240 mm).
2. In occupancies in Groups B and F where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, the length of dead-end corridors shall not exceed 50 feet (15 240 mm).
3. A dead-end corridor shall not be limited in length where the length of the dead-end corridor is less than 2.5 times the least width of the dead-end corridor.

1017.4 Air movement in corridors. Corridors shall not serve as supply, return, exhaust, relief or ventilation air ducts *when required to be fire-resistive rated in accordance with Table 1017.1*

Exceptions:

1. Use of a corridor as a source of makeup air for exhaust systems in *small* rooms *of 30 square feet or less* that open directly onto such corridors, including toilet rooms, bathrooms, dressing rooms, and janitor closets, shall be permitted, provided that each such corridor is directly supplied with outdoor air at a rate greater than the rate of makeup air taken from the corridor.
2. Where located within a dwelling unit, the use of corridors for conveying return air shall not be prohibited.
3. Where located within tenant spaces of 1,000 square feet (93 m^2) or less in area, utilization of corridors for conveying return air is permitted.
4. *For health care facilities under the jurisdiction of the Office of Statewide Health Planning and Development (OSHPD), see the California Mechanical Code.*

1017.4.1 Corridor ceiling. Use of the space between the corridor ceiling and the floor or roof structure above as a return air plenum is permitted for one or more of the following conditions:

1. The corridor is not required to be of fire-resistance-rated construction;
2. The corridor is separated from the plenum by fire-resistance-rated construction;
3. The air-handling system serving the corridor is shut down upon activation of the air-handling unit smoke detectors required by the *California Mechanical Code*.
4. The air-handling system serving the corridor is shut down upon detection of sprinkler waterflow where the building is equipped throughout with an automatic sprinkler system; or
5. The space between the corridor ceiling and the floor or roof structure above the corridor is used as a component of an approved engineered smoke control system.

1017.5 Corridor continuity. Fire-resistance-rated corridors shall be continuous from the point of entry to an exit, and shall not be interrupted by intervening rooms.

Exception:

1. Foyers, lobbies or reception rooms constructed as required for corridors shall not be construed as intervening rooms.
2. *In fully sprinklered office buildings, corridors may lead through enclosed elevator lobbies if all areas of the building have access to at least one required exit without passing through the elevator lobby.*

[B] SECTION 1018
EXITS

1018.1 General. Exits shall comply with Sections1018 through 1023 and the applicable requirements of Section 1003 through 1013. An exit shall not be used for any purpose that interferes with its function as a means of egress. Once a given level of exit protection is achieved, such level of protection shall not be reduced until arrival at the exit discharge

1018.2 Exterior exit doors. Buildings or structures used for human occupancy shall have at least one exterior door that meets the requirements of Section 1008.1.1

1018.2.1 Detailed requirements. Exterior exit doors shall comply with the applicable requirements of Section 1008.1

1018.2.2 Arrangement. Exterior exit doors shall lead directly to the exit discharge or the public way.

[B] SECTION 1019
NUMBER OF EXITS AND CONTINUITY

1019.1 Minimum number of exits. All rooms and spaces within each story shall be provided with and have access to the minimum number of approved independent exits required by Table 1019.1 based on the occupant load of the story, except as modified in Section 1015.1 or 1019.2. For the purposes of this chapter, occupied roofs shall be provided with exits as required for stories. The required number of exits from any story, basement or individual space shall be maintained until arrival at grade or the public way.

TABLE 1019.1
MINIMUM NUMBER OF EXITS FOR OCCUPANT LOAD

OCCUPANT LOAD (persons per story)	MINIMUM NUMBER OF EXITS (per story)
1-500	2
501-1,000	3
More than 1,000	4

1019.1.1 Parking structures. Parking structures shall not have less than two exits from each parking tier, except that only one exit is required where vehicles are mechanically parked. Vehicle ramps shall not be considered as required exits unless pedestrian facilities are provided

1019.1.2 Helistops. The means of egress from helistops shall comply with the provisions of this chapter, provided that landing areas located on buildings or structures shall have two or more exits. For landing platforms or roof areas less than 60 feet (18 288 mm) long, or less than 2,000 square feet (186 m^2) in area, the second means of egress is permitted to be a fire escape or ladder leading to the floor below.

1019.2 Buildings with one exit. Only one exit shall be required in buildings as described below:

1. Buildings described in Table 1019.2, provided that the building has not more than one level below the first story above grade plane
2. Buildings of Group R-3 occupancy.
3. Single-level buildings with the occupied space at the level of exit discharge provided that the story or space complies with Section 1015.1 as a space with one means of egress.

TABLE 1019.2
BUILDINGS WITH ONE EXIT

OCCUPANCY	MAXIMUM HEIGHT OF BUILDING ABOVE GRADE PLANE	MAXIMUM OCCUPANTS (OR DWELLING UNITS) PER FLOOR AND TRAVEL DISTANCE
A, B[d], E[e], F, M, U	1 Story	49 occupants and 75 feet travel distance
H-2, H-3	1 Story	3 occupants and 25 feet travel distance
H-4, H-5, I, R	1 Story	10 occupants and 75 feet travel distance
I-2	*1 Story*	*8 occupants and 50 feet travel distance*
S[a]	1 Story	29 occupants and 100 feet travel distance
B[b], F, M, S[a]	2 Stories	30 occupants and 75 feet travel distance
R-2	2 Stories[c]	4 dwelling units and 50 feet travel distance

For SI: 1 foot = 304.8 mm.

a. For the required number of exits for parking structures, see Section 1019.1.1.

b. For the required number of exits for air traffic control towers, see Section 412.1 of the *California Building Code*.

c. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1026 shall have a maximum height of three stories above grade plane.

d. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 with an occupancy in Group B shall have a maximum travel distance of 100 feet

e. Day care maximum occupant load is 10

1019.3 Exit continuity. Exits shall be continuous from the point of entry into the exit to the exit discharge

1019.4 Exit door arrangement. Exit door arrangement shall meet the requirements of Sections 1015.2 through 1015.2.2.

[B] SECTION 1020
VERTICAL EXIT ENCLOSURES

1020.1 Enclosures required. Interior exit stairways and interior exit ramps shall be enclosed with fire barriers constructed in accordance with Section 706 of the *California Building Code* or horizontal assemblies constructed in accordance with Section 711 of the *California Building Code,* or both. Exit enclosures shall have a fire-resistance rating of not less than 2 hours where connecting four stories or more and not less than 1 hour where connecting less than four stories. The number of stories connected by the exit enclosure shall include any basements but not any mezzanines. An exit enclosure shall not be used for any purpose other than means of egress.

Exceptions:

1. In all occupancies, other than Group H and I occupancies, a stairway is not required to be enclosed when

2.2. The depth from the exterior of the building is not greater than 10 feet (3048 mm) and the length is not greater than 30 feet (9144 mm).

2.3. The area is separated from the remainder of the level of exit discharge by construction providing protection at least the equivalent of approved wired glass in steel frames.

2.4. The area is used only for means of egress and exits directly to the outside.

3. Stairways in open parking garages complying with Section 1020.1, Exception 5, are permitted to egress through the open parking garage at the level of exit discharge.

1024.2 Exit discharge capacity. The capacity of the exit discharge shall be not less than the required discharge capacity of the exits being served

1024.3 Exit discharge location. Exterior balconies, stairways and ramps shall be located at least 10 feet (3048 mm) from adjacent lot lines and from other buildings on the same lot unless the adjacent building exterior walls and openings are protected in accordance with Section 704 of the *California Building Code* based on fire separation distance.

1024.4 Exit discharge components. Exit discharge components shall be sufficiently open to the exterior so as to minimize the accumulation of smoke and toxic gases.

1024.5 Egress courts. Egress courts serving as a portion of the exit discharge in the means of egress system shall comply with the requirements of Section 1024.

1024.5.1 Width. The width of egress courts shall be determined as specified in Section 1005.1, but such width shall not be less than 44 inches (1118 mm), except as specified herein. Egress courts serving Group R-3 and U occupancies shall not be less than 36 inches (914 mm) in width.

The required width of egress courts shall be unobstructed to a height of 7 feet (2134 mm).

Exception: Doors, when fully opened, and handrails shall not reduce the required width by more than 7 inches (178 mm). Doors in any position shall not reduce the required width by more than one-half. Other nonstructural projections such as trim and similar decorative features are permitted to project into the required width 1.5 inches (38 mm) from each side

Where an egress court exceeds the minimum required width and the width of such egress court is then reduced along the path of exit travel, the reduction in width shall be gradual. The transition in width shall be affected by a guard not less than 36 inches (914 mm) in height and shall not create an angle of more than 30 degrees (0.52 rad) with respect to the axis of the egress court along the path of egress travel. In no case shall the width of the egress court be less than the required minimum

1024.5.2 Construction and openings. Where an egress court serving a building or portion thereof is less than 10 feet (3048 mm) in width, the egress court walls shall have not less than 1-hour fire-resistance-rated construction for a distance of 10 feet (3048 mm) above the floor of the court. Openings within such walls shall be protected by opening protectives having a fire protection rating of not less than $^3/_4$ hour.

Exceptions:

1. Egress courts serving an occupant load of less than 10.
2. Egress courts serving Group R-3.

1024.6 Access to a public way. The exit discharge shall provide a direct and unobstructed access to a public way.

Exception: Where access to a public way cannot be provided, a safe dispersal area shall be provided where all of the following are met:

1. The area shall be of a size to accommodate at least 5 square feet (0.28 m^2) for each person.
2. *For other than Group E buildings,* the area shall be located on the same lot at least 50 feet (15 240 mm) away from the building requiring egress. *For Group E buildings, the area shall be located on the same lot at least 50 feet (15 240 mm) away from any building.*
3. The area shall be permanently maintained and identified as a safe dispersal area.
4. The area shall be provided with a safe and unobstructed path of travel from the building.

[B] SECTION 1025 ASSEMBLY

1025.1 General. *All* occupancies in Group A *including those* which contain seats, tables, displays, equipment or other material shall comply with this section.

1025.1.1 Bleachers. Bleachers, grandstands, and folding and telescopic seating shall comply with ICC 300.

1025.2 Assembly main exit. Group A occupancies that have an occupant load of greater than 300 shall be provided with a main exit. The main exit shall be of sufficient width to accommodate not less than one-half of the occupant load, but such width shall not be less than the total required width of all means of egress leading to the exit. Where the building is classified as a Group A occupancy, the main exit shall front on at least one street or an unoccupied space of not less than *20 feet (6096 mm)* in width that adjoins a street or public way.

Exception: In assembly occupancies where there is no well-defined main exit or where multiple main exits are provided, exits shall be permitted to be distributed around the perimeter of the building provided that the total width of egress is not less than 100 percent of the required width. *At least one exit shall discharge on a street or an unoccupied space of not less than 20 feet (6096 mm) in width that adjoins a street or public way.*

Group A occupancies that have an occupant load greater than 300 shall be provided with at least 0.20 inch (5.1 mm) total exit width for each occupant served.

Exception: *Smoke-protected seating complying with Section 1025.6.2.*

1025.3 Assembly other exits. In addition to having access to a main exit, each level in a Group A occupancy having an occupant load greater than 300 shall be provided with additional means of egress that shall provide an egress capacity for at least one-half of the total occupant load served by that level and comply with Section 1015.2. *At least $^1/_2$ of the additional means of egress required by this section shall be directly to an exit, or through a lobby, that is not used to access the main exit, to an exit, or to a 1-hour rated corridor to an exit.*

Exception: In assembly occupancies where there is no well-defined main exit or where multiple main exits are provided, exits shall be permitted to be distributed around the perimeter of the building, provided that the total width of egress is not less than 100 percent of the required width. *At least one exit shall discharge on a street or an unoccupied space of not less than 20 feet (6096 mm) in width that adjoins a street or public way.*

Group A occupancies that have an occupant load greater than 300 shall be provided with at least 0.20 inch (5.1 mm) total exit width for each occupant served.

***Exception:** Smoke-protected seating complying with Section 1025.6.2*

1025.3.1 ***Occupant loads less than 300.*** *For Group A occupancies, at least one exit shall discharge on a street or an unoccupied space of not less than 20 feet (6096 mm) in width that adjoins a street or public way. Group A occupancies that have an occupant load of 100 or more and less than 300, shall have at least one of the required means of egress directly to an exit, or through a lobby, that is not used to access the main exit, to an exit, or to a 1-hour rated corridor to an exit or continuous through a 1-hour rated lobby to an exit.*

1025.4 Foyers and lobbies. In Group A-1 occupancies, where persons are admitted to the building at times when seats are not available and are allowed to wait in a lobby or similar space, such use of lobby or similar space shall not encroach upon the required clear width of the means of egress. Such waiting areas shall be separated from the required means of egress by substantial permanent partitions or by fixed rigid railings not less than 42 inches (1067 mm) high. Such foyer, if not directly connected to a public street by all the main entrances or exits, shall have a straight and unobstructed corridor or path of travel to every such main entrance or exit.

1025.5 Interior balcony and gallery means of egress. For balconies or galleries having a seating capacity of 50 or more located in Group A occupancies, at least two means of egress shall be provided, with one from each side of every balcony or gallery and at least one leading directly to an exit.

1025.5.1 Enclosure of balcony openings. Interior stairways and other vertical openings shall be enclosed in an exit enclosure as provided in Section 1020.1, except that stairways are permitted to be open between the balcony and the main assembly floor in occupancies such as theaters, places of religious worship and auditoriums. At least one accessible means of egress is required from a balcony or gallery level containing accessible seating locations in accordance with Section 1007.3 or 1007.4.

1025.6 Width of means of egress for assembly. The clear width of aisles and other means of egress shall comply with Section 1025.6.1 where smoke-protected seating is not provided and with Section 1025.6.2 or 1025.6.3 where smoke-protected seating is provided. The clear width shall be measured to walls, edges of seating and tread edges except for permitted projections.

1025.6.1 Without smoke protection. The clear width of the means of egress shall provide sufficient capacity in accordance with all of the following, as applicable:

1. At least 0.3 inch (7.6 mm) of width for each occupant served shall be provided on stairs having riser heights 7 inches (178 mm) or less and tread depths 11 inches (279 mm) or greater, measured horizontally between tread nosings.
2. At least 0.005 inch (0.127 mm) of additional stair width for each occupant shall be provided for each 0.10 inch (2.5 mm) of riser height above 7 inches (178 mm).
3. Where egress requires stair descent, at least 0.075 inch (1.9 mm) of additional width for each occupant shall be provided on those portions of stair width having no handrail within a horizontal distance of 30 inches (762 mm).
4. Ramped means of egress, where slopes are steeper than one unit vertical in 12 units horizontal (8-percent slope), shall have at least 0.22 inch (5.6 mm) of clear width for each occupant served. Level or ramped means of egress, where slopes are not steeper than one unit vertical in 12 units horizontal (8-percent slope), shall have at least 0.20 inch (5.1 mm) of clear width for each occupant served.
5. *Group A occupancies that have an occupant load greater than 300 shall be provided with at least 0.20 inch (5.1 mm) total exit width for each occupant served.*

1025.6.2 Smoke-protected seating. The clear width of the means of egress for smoke-protected assembly seating shall not be less than the occupant load served by the egress element multiplied by the appropriate factor in Table 1025.6.2. The total number of seats specified shall be those within the space exposed to the same smoke-protected environment. Interpolation is permitted between the specific values shown. A life safety evaluation, complying with NFPA 101, shall be done for a facility utilizing the reduced width requirements of Table 1025.6.2 for smoke-protected assembly seating.

Exception: For an outdoor smoke-protected assembly with an occupant load not greater than 18,000, the clear width shall be determined using the factors in Section 1025.6.3.

1025.6.2.1 Smoke control. Means of egress serving a smoke-protected assembly seating area shall be provided with a smoke control system complying with Section 909 or natural ventilation designed to maintain the smoke level at least 6 feet (1829 mm) above the floor of the means of egress.

1025.6.2.2 Roof height. A smoke-protected assembly seating area with a roof shall have the lowest portion of

CALIFORNIA FIRE CODE- MATRIX ADOPTION TABLE
CHAPTER 22 – MOTOR FUEL-DISPENSING FACILITIES AND REPAIR GARAGES

Adopting Agency		BSC	SFM	HCD			DSA		OSHPD				CSA	DHS	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	1	2	3	4								
Adopt Entire Chapter																				
Adopt Entire Chapter as amended (amended sections listed below)			X																	
Adopt only those sections that are listed below							X													
Chapter / Section	Codes																			
2203.1.1	CA		X																	
2206.7.3	IFC						X													

2206.2.5 Portable tanks. Where approved by the fire code official, portable tanks are allowed to be temporarily used in conjunction with the dispensing of Class I, II or IIIA liquids into the fuel tanks of motor vehicles or motorized equipment on premises not normally accessible to the public. The approval shall include a definite time limit.

2206.2.6 Special enclosures. Where installation of tanks in accordance with Section 3404.2.11 is impractical, or because of property or building limitations, tanks for liquid motor fuels are allowed to be installed in buildings in special enclosures in accordance with all of the following:

1. The special enclosure shall be liquid tight and vapor tight.
2. The special enclosure shall not contain backfill.
3. Sides, top and bottom of the special enclosure shall be of reinforced concrete at least 6 inches (152 mm) thick, with openings for inspection through the top only.
4. Tank connections shall be piped or closed such that neither vapors nor liquid can escape into the enclosed space between the special enclosure and any tanks inside the special enclosure.
5. Means shall be provided whereby portable equipment can be employed to discharge to the outside any vapors which might accumulate inside the special enclosure should leakage occur.
6. Tanks containing Class I, II or IIIA liquids inside a special enclosure shall not exceed 6,000 gallons (22 710 L) in individual capacity or 18,000 gallons (68 130 L) in aggregate capacity.
7. Each tank within special enclosures shall be surrounded by a clear space of not less than 3 feet (910 mm) to allow for maintenance and inspection.

2206.3 Security. Above-ground tanks for the storage of liquid motor fuels shall be safeguarded from public access or unauthorized entry in an approved manner.

2206.4 Physical protection. Guard posts complying with Section 312 or other approved means shall be provided to protect above-ground tanks against impact by a motor vehicle unless the tank is listed as a protected above-ground tank with vehicle impact protection.

2206.5 Secondary containment. Above-ground tanks shall be provided with drainage control or diking in accordance with Chapter 34. Drainage control and diking is not required for listed secondary containment tanks. Secondary containment systems shall be monitored either visually or automatically. Enclosed secondary containment systems shall be provided with emergency venting in accordance with Section 2206.6.2.5.

2206.6 Piping, valves, fittings and ancillary equipment for use with flammable or combustible liquids. The design, fabrication, assembly, testing and inspection of piping, valves, fittings and ancillary equipment for use with flammable or combustible liquids shall be in accordance with Chapter 34 and Sections 2206.6.1 through 2206.6.3.

2206.6.1 Protection from damage. Piping shall be located such that it is protected from physical damage.

2206.6.2 Piping, valves, fittings and ancillary equipment for above-ground tanks for Class I, II and IIIA liquids. Piping, valves, fittings and ancillary equipment for above-ground tanks shall comply with Sections 2206.6.2.1 through 2206.6.2.6.

2206.6.2.1 Tank openings. Tank openings for above-ground tanks shall be through the top only.

2206.6.2.2 Fill-pipe connections. The fill pipe for above-ground tanks shall be provided with a means for making a direct connection to the tank vehicle's fuel-delivery hose so that the delivery of fuel is not exposed to the open air during the filling operation. Where any portion of the fill pipe exterior to the tank extends below the level of the top of the tank, a check valve shall be installed in the fill pipe not more than 12 inches (305 mm) from the fill-hose connection.

2206.6.2.3 Overfill protection. Overfill protection shall be provided for above-ground flammable and combustible liquid storage tanks in accordance with Sections 3404.2.7.5.8 and 3404.2.9.6.6.

2206.6.2.4 Siphon prevention. An approved antisiphon method shall be provided in the piping system to prevent flow of liquid by siphon action.

2206.6.2.5 Emergency relief venting. Above-ground storage tanks, tank compartments and enclosed secondary containment spaces shall be provided with emergency relief venting in accordance with Chapter 34.

2206.6.2.6 Spill containers. A spill container having a capacity of not less than 5 gallons (19 L) shall be provided for each fill connection. For tanks with a top fill connection, spill containers shall be noncombustible and shall be fixed to the tank and equipped with a manual drain valve that drains into the primary tank. For tanks with a remote fill connection, a portable spill container is allowed.

2206.6.3 Piping, valves, fittings and ancillary equipment for underground tanks. Piping, valves, fittings and ancillary equipment for underground tanks shall comply with Chapter 34 and NFPA 30A.

2206.7 Fuel-dispensing systems for flammable or combustible liquids. The design, fabrication and installation of fuel-dispensing systems for flammable or combustible liquid fuels shall be in accordance with Sections 2206.7.1 through 2206.7.9.2.4.

2206.7.1 Listed equipment. Electrical equipment, dispensers, hose, nozzles and submersible or subsurface pumps used in fuel-dispensing systems shall be listed.

2206.7.2 Fixed pumps required. Class I and II liquids shall be transferred from tanks by means of fixed pumps designed and equipped to allow control of the flow and prevent leakage or accidental discharge.

2206.7.3 Mounting of dispensers. Dispensing devices except those installed on top of a protected above-ground

tank that qualifies as vehicle-impact resistant, shall be protected against physical damage by mounting on a concrete island 6 inches (152 mm) or more in height, or shall be protected in accordance with Section 312. Dispensing devices shall be installed and securely fastened to their mounting surface in accordance with the dispenser manufacturer's instructions. Dispensing devices installed indoors shall be located in an approved position where they cannot be struck by an out-of-control vehicle descending a ramp or other slope.

2206.7.4 Dispenser emergency valve. An approved automatic emergency shutoff valve designed to close in the event of a fire or impact shall be properly installed in the liquid supply line at the base of each dispenser supplied by a remote pump. The valve shall be installed so that the shear groove is flush with or within $^1/_2$ inch (12.7 mm) of the top of the concrete dispenser island and there is clearance provided for maintenance purposes around the valve body and operating parts. The valve shall be installed at the liquid supply line inlet of each overhead-type dispenser. Where installed, a vapor return line located inside the dispenser housing shall have a shear section or approved flexible connector for the liquid supply line emergency shutoff valve to function. Emergency shutoff valves shall be installed and maintained in accordance with the manufacturer's instructions, tested at the time of initial installation and at least yearly thereafter in accordance with Section 2205.2.2.

2206.7.5 Dispenser hose. Dispenser hoses shall be a maximum of 18 feet (5486 mm) in length unless otherwise approved. Dispenser hoses shall be listed and approved. When not in use, hoses shall be reeled, racked or otherwise protected from damage.

2206.7.5.1 Breakaway devices. Dispenser hoses for Class I and II liquids shall be equipped with a listed emergency breakaway device designed to retain liquid on both sides of a breakaway point. Such devices shall be installed and maintained in accordance with the manufacturer's instructions. Where hoses are attached to hose-retrieving mechanisms, the emergency breakaway device shall be located between the hose nozzle and the point of attachment of the hose-retrieval mechanism to the hose.

2206.7.6 Fuel delivery nozzles. A listed automatic-closing-type hose nozzle valve with or without a latch-open device shall be provided on island-type dispensers used for dispensing Class I, II or IIIA liquids.

Overhead-type dispensing units shall be provided with a listed automatic-closing-type hose nozzle valve without a latch-open device.

Exception: A listed automatic-closing-type hose nozzle valve with latch-open device is allowed to be used on overhead-type dispensing units where the design of the system is such that the hose nozzle valve will close automatically in the event the valve is released from a fill opening or upon impact with a driveway.

2206.7.6.1 Special requirements for nozzles. Where dispensing of Class I, II or IIIA liquids is performed, a listed automatic-closing-type hose nozzle valve shall be used incorporating all of the following features:

1. The hose nozzle valve shall be equipped with an integral latch-open device.
2. When the flow of product is normally controlled by devices or equipment other than the hose nozzle valve, the hose nozzle valve shall not be capable of being opened unless the delivery hose is pressurized. If pressure to the hose is lost, the nozzle shall close automatically.

   Exception: Vapor recovery nozzles incorporating insertion interlock devices designed to achieve shutoff on disconnect from the vehicle fill pipe.
3. The hose nozzle shall be designed such that the nozzle is retained in the fill pipe during the filling operation.
4. The system shall include listed equipment with a feature that causes or requires the closing of the hose nozzle valve before the product flow can be resumed or before the hose nozzle valve can be replaced in its normal position in the dispenser.

2206.7.7 Remote pumping systems. Remote pumping systems for liquid fuels shall comply with Sections 2206.7.7.1 and 2206.7.7.2.

2206.7.7.1 Leak detection. Where remote pumps are used to supply fuel dispensers, each pump shall have installed on the discharge side a listed leak detection device that will detect a leak in the piping and dispensers and provide an indication. A leak detection device is not required if the piping from the pump discharge to under the dispenser is above ground and visible.

2206.7.7.2 Location. Remote pumps installed above grade, outside of buildings, shall be located not less than 10 feet (3048 mm) from lines of adjoining property that can be built upon and not less than 5 feet (1524 mm) from any building opening. Where an outside pump location is impractical, pumps are permitted to be installed inside buildings as provided for dispensers in Section 2201.4 and Chapter 34. Pumps shall be substantially anchored and protected against physical damage.

2206.7.8 Gravity and pressure dispensing. Flammable liquids shall not be dispensed by gravity from tanks, drums, barrels or similar containers. Flammable or combustible liquids shall not be dispensed by a device operating through pressure within a storage tank, drum or container.

2206.7.9 Vapor-recovery and vapor-processing systems. Vapor-recovery and vapor-processing systems shall be in accordance with Sections 2206.7.9.1 through 2206.7.9.2.4.

2206.7.9.1 Vapor-balance systems. Vapor-balance systems shall comply with Sections 2206.7.9.1.1 through 2206.7.9.1.5.

2206.7.9.1.1 Dispensing devices. Dispensing devices incorporating provisions for vapor recovery shall be listed and labeled. When existing listed or

CALIFORNIA FIRE CODE- MATRIX ADOPTION TABLE
CHAPTER 23 – HIGH-PILED COMBUSTIBLE STORAGE

Adopting Agency		BSC	SFM	HCD			DSA		OSHPD				CSA	DHS	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	1	2	3	4								
Adopt Entire Chapter			X																	
Adopt Entire Chapter as amended (amended sections listed below)																				
Adopt only those sections that are listed below																				
Chapter / Section	Codes																			

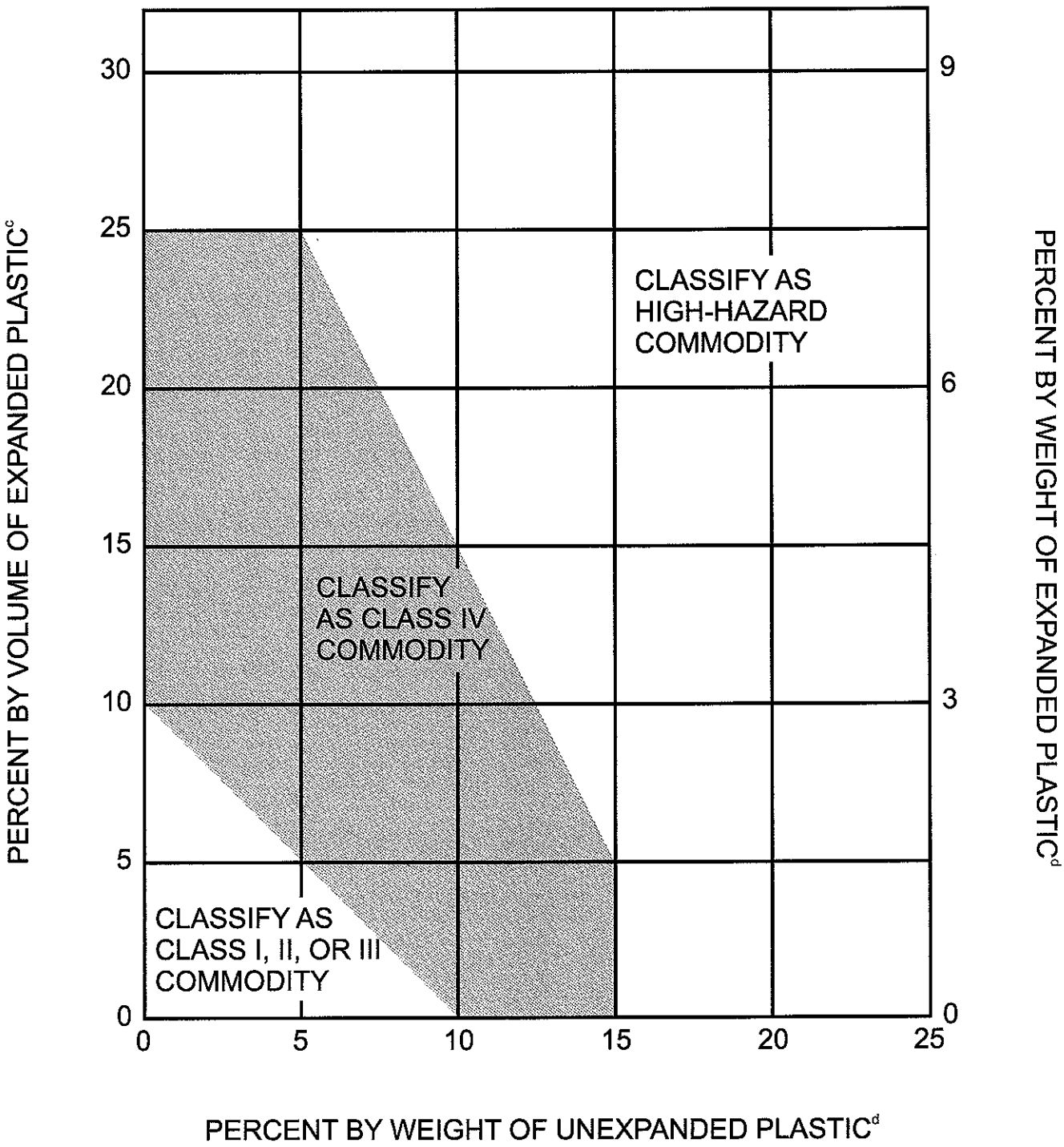

FIGURE 2303.7.4
MIXED COMMODITIES[a, b]

a. This figure is intended to determine the commodity classification of a mixed commodity in a package, carton or on a pallet where plastics are involved

b. The following is an example of how to apply the figure: A package containing a Class III commodity has 12-percent Group A expanded plastic by volume. The weight of the unexpanded Group A plastic is 10 percent. This commodity is classified as a Class IV commodity. If the weight of the unexpanded plastic is increased to 14 percent, the classification changes to a high-hazard commodity.

c. $\text{Percent by volume} = \dfrac{\text{Volume of plastic in pallet load}}{\text{Total volume of pallet load, including pallet}}$

d. $\text{Percent by weight} = \dfrac{\text{Weight of plastic in pallet load}}{\text{Total weight of pallet load, including pallet}}$

TABLE 2306.2
GENERAL FIRE PROTECTION AND LIFE SAFETY REQUIREMENTS

COMMODITY CLASS	SIZE OF HIGH-PILED STORAGE AREA[a] (square feet) (see Sections 2306.2 and 2306.4)	ALL STORAGE AREAS (See Sections 2306, 2307 and 2308)[b]					SOLID-PILED STORAGE, SHELF STORAGE AND PALLETIZED STORAGE (see Section 2307.3)		
		Automatic fire-extinguishing system (see Section 2306.4)	Fire detection system (see Section 2306.5)	Building access (see Section 2306.6)	Smoke and heat removal (see Section 2306.7)	Draft curtains (see Section 2306.7)	Maximum pile dimension[c] (feet)	Maximum permissible storage height[d] (feet)	Maximum pile volume (cubic feet)
I-IV	0-500	Not Required[a]	Not Required	Not Required[e]	Not Required	Not Required	Not Required	Not Required	Not Required
	501-2,500	Not Required[a]	Yes[i]	Not Required[e]	Not Required	Not Required	100	40	100,000
	2,501-12,000 Public accessible	Yes	Not Required	Not Required[e]	Not Required	Not Required	100	40	400,000
	2,501-12,000 Nonpublic accessible (Option 1)	Yes	Not Required	Not Required[e]	Not Required	Not Required	100	40	400,000
	2,501-12,000 Nonpublic accessible (Option 2)	Not Required[a]	Yes	Yes	Yes[j]	Yes[j]	100	30[f]	200,000
	12,001-20,000	Yes	Not Required	Yes	Yes[j]	Not Required	100	40	400,000
	20,001-500,000	Yes	Not Required	Yes	Yes[j]	Not Required	100	40	400,000
	Greater than 500,000[g]	Yes	Not Required	Yes	Yes[j]	Not Required	100	40	400,000
High hazard	0-500	Not Required[a]	Not Required	Not Required[e]	Not Required	Not Required	50	Not Required	Not Required
	501-2,500 Public accessible	Yes	Not Required	Not Required[e]	Not Required	Not Required	50	30	75,000
	501-2,500 Nonpublic accessible (Option 1)	Yes	Not Required	Not Required[e]	Not Required	Not Required	50	30	75,000
	501-2,500 Nonpublic accessible (Option 2)	Not Required[a]	Yes	Yes	Yes[j]	Yes[j]	50	20	50,000
	2,501-300,000	Yes	Not Required	Yes	Yes[j]	Not Required	50	30	75,000
	300,001-500,000[g h]	Yes	Not Required	Yes	Yes[j]	Not Required	50	30	75,000

For SI: 1 foot = 304 8 mm, 1 cubic foot = 0 02832 m^3, 1 square foot = 0.0929 m^2.

a. When automatic sprinklers are required for reasons other than those in Chapter 23, the portion of the sprinkler system protecting the high-piled storage area shall be designed and installed in accordance with Sections 2307 and 2308.

b. For aisles, see Section 2306 9.

c. Piles shall be separated by aisles complying with Section 2306 9

d. For storage in excess of the height indicated, special fire protection shall be provided in accordance with Note g when required by the fire code official. See also Chapters 28 and 34 for special limitations for aerosols and flammable and combustible liquids, respectively.

e. Section 503 shall apply for fire apparatus access

f. For storage exceeding 30 feet in height, Option 1 shall be used.

g. Special fire protection provisions including, but not limited to, fire protection of exposed steel columns; increased sprinkler density; additional in-rack sprinklers, without associated reductions in ceiling sprinkler density; or additional fire department hose connections shall be provided when required by the fire code official

h. High-piled storage areas shall not exceed 500,000 square feet. A 2-hour fire wall constructed in accordance with the *California Building Code* shall be used to divide high-piled storage exceeding 500,000 square feet in area.

i. Not required when an automatic fire-extinguishing system is designed and installed to protect the high-piled storage area in accordance with Sections 2307 and 2308.

j. Not required when storage areas are protected by early suppression fast response (ESFR) sprinkler systems installed in accordance with NFPA 13.

CALIFORNIA FIRE CODE- MATRIX ADOPTION TABLE
CHAPTER 27 – HAZARDOUS MATERIALS—GENERAL PROVISIONS

Adopting Agency		BSC	SFM	HCD			DSA		OSHPD				CSA	DHS	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	1	2	3	4								
Adopt Entire Chapter																				
Adopt Entire Chapter as amended (amended sections listed below)			X																	
Adopt only those sections that are listed below																				
Chapter / Section	Codes																			
2701.5.1	CA		X																	
2701.5.2	CA		X																	
2704.3.1	CA		X																	

TABLE 2703.1.1(1)—(continued)

MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING A PHYSICAL HAZARD[a, j, m, n, p]

MATERIAL	CLASS	GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED	STORAGE[b]			USE-CLOSED SYSTEMS[b]			USE-OPEN SYSTEMS[b]	
			Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas cubic feet at NTP	Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas cubic feet at NTP	Solid pounds (cubic feet)	Liquid gallons (pounds)
Oxidizer	4	H-1	1[g]	(1)[e, g]	Not Applicable	0.25[g]	(0.25)[g]	Not Applicable	0.25[g]	(0.25)[g]
	3[k]	H-2 or H-3	10[d, e]	(10)[d, e]		2[d]	(2)[d]		2[d]	(2)[d]
	2	H-3	250[d, e]	(250)[d, e]		250[d]	(250)[d]		50[d]	(50)[d]
	1	Not Applicable	4,000[e,f]	(4,000)[e,f]		4,000[f]	(4,000)[f]		1,000[f]	(1,000)[f]
Oxidizing gas	Gaseous Liquefied	H-3	Not Applicable	Not Applicable 15[d, e]	1;500[d, e] Not Applicable	Not Applicable	Not Applicable 15[d, e]	1,500[d, e] Not Applicable	Not Applicable	Not Applicable
Pyrophoric	Not Applicable	H-2	4[e, g]	(4)[e, g]	50[e, g]	1[g]	(1)[g]	10[e, g]	0	0
Unstable (reactive)	4	H-1	1[e, g]	(1)[e, g]	10[e, g]	0.25[g]	(0.25)[g]	2[e, g]	0.25[g]	(0.25)[g]
	3	H-1 or H-2	5[d, e]	(5)[d, e]	50[d, e]	1[d]	(1)[d]	10[d, e]	1[d]	(1)[d]
	2	H-3	50[d, e]	(50)[d, e]	250[d, e]	50[d]	(50)[d]	250[d, e]	10[d]	(10)[d]
	1	Not Applicable	Not Limited	Not Limited	Not Limited	Not Limited	Not Limited	Not Limited	Not Limited	Not Limited
Water reactive	3	H-2	5[d,e]	(5)[d, e]	Not Applicable	5[d]	(5)[d]	Not Applicable	1[d]	(1)[d]
	2	H-3	50[d, e]	(50)[d, e]		50[d]	(50)[d]		10[d]	(10)[d]
	1	Not Applicable	Not Limited	Not Limited		Not Limited	Not Limited		Not Limited	Not Limited

For SI: 1 cubic foot = 0.02832 m^3, 1 pound = 0.454 kg, 1 gallon = 3.785 L.

a. For use of control areas, see Section 2703.8.3.

b. The aggregate quantity in use and storage shall not exceed the quantity listed for storage.

c. The quantities of alcoholic beverages in retail and wholesale sales occupancies shall not be limited providing the liquids are packaged in individual containers not exceeding 1.3 gallons. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs, consumer or industrial products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids with the remainder of the solutions not being flammable shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.

d. Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1. Where Note e also applies, the increase for both notes shall be applied accumulatively.

e. Maximum allowable quantities shall be increased 100 percent when stored in approved storage cabinets, day boxes, gas cabinets, exhausted enclosures or safety cans. Where Note d also applies, the increase for both notes shall be applied accumulatively.

f. Quantities shall not be limited in a building equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1.

g. Allowed only in buildings equipped throughout with an approved automatic sprinkler system.

h. Containing not more than the maximum allowable quantity per control area of Class IA, Class IB or Class IC flammable liquids.

i. Inside a building, the maximum capacity of a combustible liquid storage system that is connected to a fuel-oil piping system shall be 660 gallons provided such system complies with this code.

j. Quantities in parenthesis indicate quantity units in parenthesis at the head of each column.

k. A maximum quantity of 200 pounds of solid or 20 gallons of liquid Class 3 oxidizers is allowed when such materials are necessary for maintenance purposes, operation or sanitation of equipment when the storage containers and the manner of storage are approved.

l. Net weight of pyrotechnic composition of the fireworks. Where the net weight of the pyrotechnic composition of the fireworks is not known, 25 percent of the gross weight of the fireworks including packaging shall be used.

m. For gallons of liquids, divide the amount in pounds by 10 in accordance with Section 2703.1.2.

n. For storage and display quantities in Group M and storage quantities in Group S occupancies complying with Section 2703.11, see Table 2703.11.1.

o. Densely-packed baled cotton that complies with the packing requirements of ISO 8115 shall not be included in this material class.

p. The following shall not be included in determining the maximum allowable quantities:

1. Liquid or gaseous fuel in fuel tanks on vehicles.
2. Liquid or gaseous fuel in fuel tanks on motorized equipment operated in accordance with this code.
3. Gaseous fuels in piping systems and fixed appliances regulated by the *California Mechanical Code*.
4. Liquid fuels in piping systems and fixed appliances, regulated by the *California Mechanical Code*.

TABLE 2703.1.1(2)
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIAL POSING A HEALTH HAZARD[a,b,c,j]

MATERIAL	STORAGE[d]			USE-CLOSED SYSTEMS[d]			USE-OPEN SYSTEMS[d]	
	Solid pounds[e, f]	Liquid gallons (pounds)[e, f]	Gas cubic feet at NTP[e]	Solid pounds[e]	Liquid gallons (pounds)[e]	Gas cubic feet at NTP[e]	Solid pounds[e]	Liquid gallons (pounds)[e]
Corrosive	5,000	500	810[f, g]	5,000	500	810[f, g]	1,000	100
Highly toxic	10	(10)[i]	20[h]	10	(10)[i]	20[h]	3	(3)[i]
Toxic	500	(500)[i]	810[f]	500	(500)[i]	810[f]	125	(125)[i]

For SI: 1 cubic foot = 0.02832 m^3, 1 pound = 0.454 kg, 1 gallon = 3.785 L.

a. For use of control areas, see Section 2703.8.3.

b. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs consumer or industrial products, and cosmetics, containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solutions not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.

c. For storage and display quantities in Group M and storage quantities in Group S occupancies complying with Section 2703.11, see Table 2703.11.1.

d. The aggregate quantity in use and storage shall not exceed the quantity listed for storage.

e. Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1. Where Note f also applies, the increase for both notes shall be applied accumulatively.

f. Maximum allowable quantities shall be increased 100 percent when stored in approved storage cabinets, gas cabinets, or exhausted enclosures. Where Note e also applies, the increase for both notes shall be applied accumulatively.

g. A single cylinder containing 150 pounds or less of anhydrous ammonia in a single control area in a nonsprinklered building shall be considered a maximum allowable quantity. Two cylinders, each containing 150 pounds or less in a single control area shall be considered a maximum allowable quantity provided the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

h. Allowed only when stored in approved exhausted gas cabinets or exhausted enclosures.

i. Quantities in parenthesis indicate quantity units in parenthesis at the head of each column.

j. For gallons of liquids, divide the amount in pounds by 10 in accordance with Section 2703.1.2.

CALIFORNIA FIRE CODE- MATRIX ADOPTION TABLE
CHAPTER 34 – FLAMMABLE AND COMBUSTIBLE LIQUIDS

Adopting Agency		BSC	SFM	HCD			DSA		OSHPD				CSA	DHS	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	1	2	3	4								
Adopt Entire Chapter																				
Adopt Entire Chapter as amended (amended sections listed below)			X																	
Adopt only those sections that are listed below																				
Chapter / Section	Codes																			
3404.2.1	CA		X																	
3404.2.9.1.2	CA		X																	
3406.5.1.11	CA		X																	

TABLE 3403.1.1
CLASS I ELECTRICAL EQUIPMENT LOCATIONS[a]

LOCATION	GROUP D DIVISION	EXTENT OF CLASSIFIED AREA
Underground tank fill opening	1	Pits, boxes or spaces below grade level, any part of which is within the Division 1 or 2 classified area.
	2	Up to 18 inches above grade level within a horizontal radius of 10 feet from a loose-fill connection and within a horizontal radius of 5 feet from a tight-fill connection.
Vent-Discharging upward	1	Within 3 feet of open end of vent, extending in all directions.
	2	Area between 3 feet and 5 feet of open end of vent, extending in all directions.
Drum and container filling		
Outdoor or indoor with adequate ventilation	1	Within 3 feet of vent and fill opening, extending in all directions.
	2	Area between 3 feet and 5 feet from vent of fill opening, extending in all directions. Also up to 18 inches above floor or grade level within a horizontal radius of 10 feet from vent or fill opening.
Pumps, bleeders, withdrawal fittings, meters and similar devices		
Indoor	2	Within 5 feet of any edge of such devices, extending in all directions. Also up to 3 feet above floor or grade level within 25 feet horizontally from any edge of such devices.
Outdoor	2	Within 3 feet of any edge of such devices, extending in all directions. Also up to 18 inches horizontally from an edge of such devices.
Pits		
Without mechanical ventilation	1	Entire area within pit if any part is within a Division 1 or 2 classified area.
With mechanical ventilation	2	Entire area within pit if any part is within a Division 1 or 2 classified area.
Containing valves, fittings or piping, and not within a Division 1 or 2 classified area	2	Entire pit.

(continued)

TABLE 3403.1.1-continued
CLASS I ELECTRICAL EQUIPMENT LOCATIONS[a]

LOCATION	GROUP D DIVISION	EXTENT OF CLASSIFIED AREA
Tank vehicle and tank car[b]-continued		
Loading through closed dome with atmospheric venting	1	Within 3 feet of open end of vent, extending in all directions.
	2	Area between 3 feet and 15 feet from open end of vent, extending in all directions. Also within 3 feet of edge of dome, extending in all directions.
Loading through closed dome with vapor control	2	Within 3 feet of point of connection of both fill and vapor lines, extending in all directions.
Bottom loading with vapor control or any bottom unloading	2	Within 3 feet of point of connection, extending in all directions. Also up to 18 inches above grade within a horizontal radius of 10 feet from point of connection.
Storage and repair garage for tank vehicles	1	Pits or spaces below floor level.
	2	Area up to 18 inches above floor or grade level for entire storage or repair garage.
Garages for other than tank vehicles	Ordinary	Where there is an opening to these rooms within the extent of an outdoor classified area, the entire room shall be classified the same as the area classification at the point of the opening.
Outdoor drum storage	Ordinary	
Indoor warehousing where there is no flammable liquid transfer	Ordinary	Where there is an opening to these rooms within the extent of an indoor classified area, the room shall be classified the same as if the wall, curb or partition did not exist.

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

a. Locations as classified in the *California Electrical Code*.

b. When classifying extent of area, consideration shall be given to the fact that tank cars or tank vehicles can be spotted at varying points. Therefore, the extremities of the loading or unloading positions shall be used.

c. The release of Class I liquids can generate vapors to the extent that the entire building, and possibly a zone surrounding it, are considered a Class I, Division 2 location.

shall be in accordance with this section and Section 6.2 of NFPA 30.

3404.3.1.1 Approved containers. Only approved containers and portable tanks shall be used.

3404.3.2 Liquid storage cabinets. Where other sections of this code require that liquid containers be stored in storage cabinets, such cabinets and storage shall be in accordance with Sections 3404.3.2.1 through 3404.3.2.2.

3404.3.2.1 Design and construction of storage cabinets. Design and construction of liquid storage cabinets shall be in accordance with this section.

3404.3.2.1.1 Materials. Cabinets shall be listed in accordance with UL 1275, or constructed of approved wood or metal in accordance with the following:

1. Unlisted metal cabinets shall be constructed of steel having a thickness of not less than 0.044 inch (1.12 mm) (18 gage). The cabinet, including the door, shall be double walled with $1^1/_2$-inch (38 mm) airspace between the walls. Joints shall be riveted or welded and shall be tight fitting.
2. Unlisted wooden cabinets, including doors, shall be constructed of not less than 1-inch (25 mm) exterior grade plywood. Joints shall be rabbeted and shall be fastened in two directions with wood screws. Door hinges shall be of steel or brass. Cabinets shall be painted with an intumescent-type paint.

3404.3.2.1.2 Labeling. Cabinets shall be provided with a conspicuous label in red letters on contrasting background which reads: FLAMMABLE—KEEP FIRE AWAY.

3404.3.2.1.3 Doors. Doors shall be well fitted, self-closing and equipped with a three-point latch.

3404.3.2.1.4 Bottom. The bottom of the cabinet shall be liquid tight to a height of at least 2 inches (51 mm).

3404.3.2.2 Capacity. The combined total quantity of liquids in a cabinet shall not exceed 120 gallons (454 L).

3404.3.3 Indoor storage. Storage of flammable and combustible liquids inside buildings in containers and portable tanks shall be in accordance with this section.

Exceptions:

1. Liquids in the fuel tanks of motor vehicles, aircraft, boats or portable or stationary engines.
2. The storage of distilled spirits and wines in wooden barrels or casks.

3404.3.3.1 Portable fire extinguishers. Approved portable fire extinguishers shall be provided in accordance with specific sections of this chapter and Section 906.

3404.3.3.2 Incompatible materials. Materials that will react with water or other liquids to produce a hazard shall not be stored in the same room with flammable and combustible liquids in accordance with Section 2703.9.8.

3404.3.3.3 Clear means of egress. Storage of any liquids, including stock for sale, shall not be stored near or be allowed to obstruct physically the route of egress.

3404.3.3.4 Empty containers or portable tank storage. The storage of empty tanks and containers previously used for the storage of flammable or combustible liquids, unless free from explosive vapors, shall be stored as required for filled containers and portable tanks. Portable tanks and containers, when emptied, shall have the covers or plugs immediately replaced in openings.

3404.3.3.5 Shelf storage. Shelving shall be of approved construction, adequately braced and anchored. Seismic requirements shall be in accordance with the *California Building Code*.

3404.3.3.5.1 Use of wood. Wood of at least 1 inch (25 mm) nominal thickness is allowed to be used as shelving, racks, dunnage, scuffboards, floor overlay and similar installations.

3404.3.3.5.2 Displacement protection. Shelves shall be of sufficient depth and provided with a lip or guard to prevent individual containers from being displaced.

Exception: Shelves in storage cabinets or on laboratory furniture specifically designed for such use.

3404.3.3.5.3 Orderly storage. Shelf storage of flammable and combustible liquids shall be maintained in an orderly manner.

3404.3.3.6 Rack storage. Where storage on racks is allowed elsewhere in this code, a minimum 4-foot-wide (1219 mm) aisle shall be provided between adjacent rack sections and any adjacent storage of liquids. Main aisles shall be a minimum of 8 feet (2438 mm) wide.

3404.3.3.7 Pile or palletized storage. Solid pile and palletized storage in liquid warehouses shall be arranged so that piles are separated from each other by at least 4 feet (1219 mm). Aisles shall be provided and arranged so that no container or portable tank is more than 20 feet (6096 mm) from an aisle. Main aisles shall be a minimum of 8 feet (2438 mm) wide.

3404.3.3.8 Limited combustible storage. Limited quantities of combustible commodities are allowed to be stored in liquid storage areas where the ordinary combustibles, other than those used for packaging the liquids, are separated from the liquids in storage by a minimum of 8 feet (2438 mm) horizontally, either by open aisles or by open racks, and where protection is provided in accordance with Chapter 9.

3404.3.3.9 Idle combustible pallets. Storage of empty or idle combustible pallets inside an unprotected liquid storage area shall be limited to a maximum pile size of 2,500 square feet (232 m^2) and to a maximum storage height of 6 feet (1829 mm). Storage of empty or idle combustible pallets inside a protected liquid storage area shall comply with NFPA 13 and NFPA 230. Pallet storage shall be separated from liquid storage by aisles that are at least 8 feet (2438 mm) wide.

3404.3.3.10 Containers in piles. Containers in piles shall be stacked in such a manner as to provide stability and to prevent excessive stress on container walls. Portable tanks stored more than one tier high shall be designed to nest securely, without dunnage. Material-handling equipment shall be suitable to handle containers and tanks safely at the upper tier level.

3404.3.4 Quantity limits for storage. Liquid storage quantity limitations shall comply with Sections 3404.3.4.1 through 3404.3.4.4.

3404.3.4.1 Maximum allowable quantity per control area. For occupancies other than Group M wholesale and retail sales uses, indoor storage of flammable and combustible liquids shall not exceed the maximum allowable quantities per control area indicated in Table 2703.1.1(1) and shall not exceed the additional limitations set forth in this section.

For Group M occupancy wholesale and retail sales uses, indoor storage of flammable and combustible liquids shall not exceed the maximum allowable quantities per control area indicated in Table 3404.3.4.1.

Storage of hazardous production material flammable and combustible liquids in Group H-5 occupancies shall be in accordance with Chapter 18.

3404.3.4.2 Occupancy quantity limits. The following limits for quantities of stored flammable or combustible liquids shall not be exceeded:

1. Group A occupancies: Quantities in Group A occupancies shall not exceed that necessary for demonstration, treatment, laboratory work, maintenance purposes and operation of equipment, and shall not exceed quantities set forth in Table 2703.1.1(1).
2. Group B occupancies: Quantities in drinking, dining, office and school uses within Group B occupancies shall not exceed that necessary for demonstration, treatment, laboratory work, maintenance purposes and operation of equipment, and shall not exceed quantities set forth in Table 2703.1.1(1).
3. Group E occupancies: Quantities in Group E occupancies shall not exceed that necessary for demonstration, treatment, laboratory work, maintenance purposes and operation of equipment, and shall not exceed quantities set forth in Table 2703.1.1(1).
4. Group F occupancies: Quantities in dining, office, and school uses within Group F occupancies shall not exceed that necessary for demonstration, laboratory work, maintenance purposes and operation of equipment, and shall not exceed quantities set forth in Table 2703.1.1(1).
5. Group I occupancies: Quantities in Group I occupancies shall not exceed that necessary for demonstration, laboratory work, maintenance purposes and operation of equipment, and shall not exceed quantities set forth in Table 2703.1.1(1).
6. Group M occupancies: Quantities in dining, office, and school uses within Group M occupancies shall not exceed that necessary for demonstration, laboratory work, maintenance purposes and operation of equipment, and shall not exceed quantities set forth in Table 2703.1.1(1). The maximum allowable quantities for storage in wholesale and retail sales areas shall be in accordance with Section 3404.3.4.1.
7. Group R occupancies: Quantities in Group R occupancies shall not exceed that necessary for maintenance purposes and operation of equipment, and shall not exceed quantities set forth in Table 2703.1.1(1).
8. Group S occupancies: Quantities in dining and office uses within Group S occupancies shall not exceed that necessary for demonstration, laboratory work, maintenance purposes and operation of

TABLE 3404.3.4.1
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF FLAMMABLE AND COMBUSTIBLE LIQUIDS IN WHOLESALE AND RETAIL SALES OCCUPANCIES[a]

TYPE OF LIQUID	MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA (gallons)		
	Sprinklered[b] per footnote densities and arrangements	Sprinklered per Tables 3404.3.6.3(4) through 3404.3.6.3(8) and Table 3404.3.7.5.1	Nonsprinklered
Class IA	60	60	30
Class IB, IC, II and IIIA	7,500[c]	15,000[c]	1,600
Class IIIB	Unlimited	Unlimited	13,200

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m^2, 1 gallon = 3.785 L, 1 gallon per minute per square foot = 40.75 L/min/m^2

a. Control areas shall be separated from each other by not less than a 1-hour fire barrier wall.

b. To be considered as sprinklered, a building shall be equipped throughout with an approved automatic sprinkler system with a design providing minimum densities as follows:

1. For uncartoned commodities on shelves 6 feet or less in height where the ceiling height does not exceed 18 feet, quantities are those allowed with a minimum sprinkler design density of Ordinary Hazard Group 2.
2. For cartoned, palletized or racked commodities where storage is 4 feet 6 inches or less in height and where the ceiling height does not exceed 18 feet, quantities are those allowed with a minimum sprinkler design density of 0.21 gallon per minute per square foot over the most remote 1,500-square-foot area.

c. Where wholesale and retail sales or storage areas exceed 50,000 square feet in area, the maximum allowable quantities are allowed to be increased by 2 percent for each 1,000 square feet of area in excess of 50,000 square feet, up to a maximum of 100 percent of the table amounts. A control area separation is not required. The cumulative amounts, including amounts attained by having an additional control area, shall not exceed 30,000 gallons.

CHAPTER 45
REFERENCED STANDARDS

SECTION 4501
Referenced Standards

This chapter lists the standards that are referenced in various sections of this document The standards are listed herein by the promulgating agency of the standard, the standard identification, the effective date and title, and the section or sections of this document that reference the standard. The application of the referenced standards shall be as specified in Sections *101.5 and 101.7*

AASHTO

American Association of State Highway and Transportation Officials
444 North Capitol Street Northwest, #249
Washington, DC 20001

Standard reference number	Title	Referenced in code section number
HB-17—2002	Specification for Highway Bridges, 17th Edition 2002	503.2.6

AFSI

Architectural Fabric Structures Institute
c/o Industrial Fabric Association International
1801 County Road B West
Roseville, MN 55113

Standard reference number	Title	Referenced in code section number
ASI—77	Design and Standard Manual	2403.10.2

API

American Petroleum Institute
1220 L Street, Northwest
Washington, DC 20005

Standard reference number	Title	Referenced in code section number
Spec 12P—(1995) (Reaffirmed 2000)	Specification for Fiberglass Reinforced Plastic Tanks	3404.2.13.1.5
RP 651—(1997)	Cathodic Protection of Aboveground Petroleum Storage Tanks	3406.7, 3406.7.1
Std 653—(2001)	Tank Inspection Repair, Alteration and Reconstruction	3406.7
RP 752—(2003)	Management of Hazards Associated with Location of Process Plant Buildings, CMA Managers Guide	3406.7
RP 1604—(1996)	Closure of Underground Petroleum Storage Tanks	3404.2.13
RP 1615—(1996)	Installation of Underground Petroleum Storage Systems	3404.2.13.1.5, 3406.7
Std 2000—(1998)	Venting Atmosphere and Low Pressure Storage Tanks: Nonrefrigerated and Refrigerated	3404.2.7.3.6
RP 2001—(2005)	Fire Protection in Refineries, 8th Edition	3406.7
RP 2003—(1998)	Protection Against Ignitions Arising out of Static, Lightening, and Stray Currents	3406.7
Publ 2009—(2002)	Safe Welding and Cutting Practices in Refineries, Gas Plantsand Petrochemical Plants	3406.7
Std 2015—(2001)	Safe Entry and Clearing of Petroleum Storage Tanks	3406.7, 3406.7.2
RP 2023—(2001)	Guide for Safe Storage and Handling of Heated Petroleum-derived Asphalt Products and Crude-oil Residue	3406.7, 3406.7.3
Publ 2028—(2002)	Flame Arrestors in Piping Systems	3404.2.7.3.2
Publ 2201—(2003)	Procedures for Welding or Hot Tapping on Equipment in Service	3406.7
RP 2350—(2005)	Overfill Protection for Storage Tanks in Petroleum Facilities, 3rd Edition	3404.2.7.5.8, 3406.4.6, 3406.7

ASME

The American Society of Mechanical Engineers
Three Park Avenue
New York, NY 10016-5990

Standard reference umber	Title	Referenced in code section number
A13.1-96 (Reaffirmed 2002)	Scheme for the Identification of Piping Systems	2609.3, 2703.2.2.1, 3003.4.2, 3203.4.5, 3403.5.2
A17.1-2004	Safety Code for Elevators and Escalators-with A17.1a-2004 Addenda and A17.1S Supplement	607.1, 1007.4
A17.3-2002	Safety Code for Existing Elevators and Escalators-with A17.3a-2000 Addenda	607.1
A18.1-2003	Safety Standard for Platform Lifts and Stairway Chair Lifts	604.2.6
B16.18-2001	Cast Copper Alloy Solder Joint Pressure Fittings	909.13.1
B16.22-2001	Wrought Copper and Copper Alloy Solder-joint Pressure Fittings-with B16.22a-1998 Addenda	909.13.1
B31.3-2002	Process Piping	2209.5.4.3.1, 2703.2.2.2
B31.9-96	Building Services Piping Code for Pressure Piping	3403.6.2.1, 3403.6.3, 3403.6.11
BPVC-2001	ASME Boiler and Pressure Vessel Code, 2001 Edition of (Sections I, II, IV, V & VI, VIII)	2209.5.4.2, 3003.2, 3003.3.2, 3203.4.3, 3203.8, 3204.4.1, 3204.5, 3404.2.13.1.5

ASTM

ASTM International
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959

Standard reference number	Title	Referenced in code section number
B 42-02e01	Specification for Seamless Copper Pipe, Standard Sizes	909.13.1
B 43-04	Specification for Seamless Red Brass Pipe, Standard Sizes	909.13.1
B 68-02	Specification for Seamless Copper Tube, Bright Annealed	909.13.1
B 88-03	Specification for Seamless Copper Water Tube	909.13.1
B 251-02e01	Specification for General Requirements for Wrought Seamless Copper and Copper-alloy Tube	909.13.1
B 280-03	Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service	909.13.1
D 56-02a	Test Method for Flash Point by Tag Closed Tester	3402.1
D 86-04b	Test Method for Distillation of Petroleum Products at Atmospheric Pressure	2702.1
D 92-02b	Test Method for Flash and Fire Points by Cleveland Open Cup	3401.2, 3402.1
D 93-02a	Test Method for Flash Point by Pensky-Martens Closed Up Tester	3402.1
D 323-99a	Test Method for Vapor Pressure of Petroleum Products (Reid Method)	2702.1
D 2898-94 (1999)	*Test Methods for Accelerated Weathering of Fire-Retardent-Treated Wood for Fire Testing*	
D 3201-94 (2003)	*Test Method of Hygroscopic Properties of Fire-Retardent Treated Wood and Wood-based Products*	
D 3278-96e01	Test Methods for Flash Point of Liquids by Small Scale Closed-cup Apparatus	3402.1
E 84-04	Test Method for Surface Burning Characteristics of Building Materials	803.1, 803.1.1, 803.1.2, 803.5.1, 803.7.3, 804.1, 804.2.4
E 648-04	*Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source*	
E 681-04	Test Method for Concentration Limits of Flammability of Chemicals (Vapors and Gases)	3502.1
E 1354-04a	Standard Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter	808.1
E 1529-00	Test Method for Determining Effects of Large Hydrocarbon Pool Fires on Structural Members and Assemblies	3404.2.9.1.3
E 1537-02a	Test Method for Fire Testing of Upholstered Furniture	805.1.1.2, 805.2.1.2, 805.3.1.2
E 1590-02	Test Method for Fire Testing of Mattresses	805.1.2.2, 805.2.2.2, 805.3.2.2
E 2010—01	*Fire Resistive Rating for Exterior Glazing*	
E 2074—00	*Fire Resistive Rating for Exterior Door Assemblies*	

BHMA

Builders Hardware Manufacturers' Association
355 Lexington Avenue, 17th Floor
New York, NY 10017-6603

Standard reference number	Title	Referenced in code section number
A156.10-99	American National Standard for Power Operated Pedestrian Doors	1008.1.3.2
A156.19-02	American National Standard for Power Assist and Low Energy Power Operated Doors	1008.1.3.2

CA

State of California
Department of Consumer Affairs
Bureau of Home Furnishings and Thermal Insulation
3485 Orange Grove Avenue
North Highlands, CA 95660-5595

Standard reference number	Title	Referenced in code section number
California Technical Bulletin 129—1992	Flammability Test Procedure for Mattresses for Use In Public Buildings	805.1.1.2, 805.2.2.2, 805.3.2.2
California Technical Bulletin 133—1991	Flammability Test Procedure for Seating Furniture for Use in Public Occupancies	805.1.1.2, 805.2.1.2

CGA

Compressed Gas Association
1725 Jefferson Davis Highway
5th Floor
Arlington, VA 22202-4102

Standard reference number	Title	Referenced in code section number
C-7—(2000)	Guide to the Preparation of Precautionary Labeling and Marking of Compressed Gas Containers	3003.4.2, 3203.4.2
P-1—(2000)	Safe Handling of Compressed Gases in Containers	3005.7
P-18—(1992)	Standard for Bulk Inert Gas Systems at Consumer Sites	3201.1
S-1.1—(2002)	Relief Device Standards—Part 1—Cylinders for Compressed Gases	2209.5.4.2, 3003.3.2, 3203.2
S-1.2—(1995)	Pressure Relief Device Standards—Part 2—Cargo and Portable Tanks for Compressed Gases	2209.5.4.2, 3003.3.2, 3203.2
S-1.3—(1995)	Pressure Relief Device Standards—Part 3—Stationary Storage Containers for Compressed Gases	2209.5.4.2, 2209.5.4.3.5, 3003.3.2, 3203.2
V-1—(2002)	Gas Cylinder Valve Outlet and Inlet Connections	4106.1.3

CGR

Coast Guard Regulations
c/o Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402-9325

Standard reference number	Title	Referenced in code section number
46 CFR Parts 30, 32, 35 & 39—1999	Shipping	3406.8

CPSC

Consumer Product Safety Commission
4330 East West Highway
Bethesda, MD 20814

Standard reference number	Title	Referenced in code section number
16 CFR Part 1500.41—1984	Method for Testing Primary Irritant Substances	202
16 CFR Part 1500.42—1984	Test for Eye Irritants	202
16 CFR Part 1500.44—2001	Method for Testing Extremely Flammable and Flammable Solids	3602.1
16 CFR Part 1500—1984	Hazardous Substances and Articles; Administration and Enforcement Regulations	3301.1.3, 3302.1
16 CFR Part 1507—2001	Fireworks Devices	3301.1.3, 3302.1

DOC

U.S. Department of Commerce
100 Bureau Drive, Stop 3460
Gaithersburg, MD 20899

Standard reference number	Title	Referenced in code section number
16 CFR Part 1632—1999	Standard for the Flammability of Mattress and Mattress Pads (FF 4—72, Amended)	805.1.2.1, 805.2.2.1, 805.3.2.1

DOL

U.S. Department of Labor
c/o Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402-9325

Standard reference number	Title	Referenced in code section number
29 CFR Part 1910 1000—1974	Air Contaminants	1204.2.1, 2702.1
29 CFR Part 1910.1200—1999	Hazard Communication	2702.1, 3303.6

DOTn

U.S. Department of Transportation
Office of Hazardous Material Standards
400 7th Street, Southwest
Washington, DC 20590

Standard reference number	Title	Referenced in code section number
33 CFR Part 154—1998	Facilities Transferring Oil or Hazardous Material in Bulk	3406.8
33 CFR Part 155—1998	Oil or Hazardous Material Pollution Prevention Regulations for Vessels	3406.8
33 CFR Part 156—1998	Oil and Hazardous Material Transfer Operations	3406.8
49 CFR—1998	Transportation	2605.4, 3302.1
49 CFR Part 1—1999	Transportation	3203.4.3, 3203.8
49 CFR Part 172—1999	Hazardous Materials Tables, Special Provisions, Hazardous Materials Communications, Emergency Response Information and Training Requirements	3304.6.5.2
49 CFR Part 173—1999	Shippers — General Requirements for Shipments and Packagings	3306.3
49 CFR Part 173.137—1990	Shippers — General Requirements for Shipments and Packagings: Class 8 — Assignment of Packing Group	3102.1
49 CFR Parts 100-178—1994	Hazardous Materials Regulations	3003.2, 3301.1, 3301.1.3, 3301.3, 3406.5.1.15

DOTy

U.S. Department of Treasury
c/o Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402-9325

Standard reference number	Title	Referenced in code section number
27 CFR Part 55—1998	Commerce in Explosives, as amended through April 1, 1998	3302.1, 3304.6.5.2

FM

Factory Manual
Standards Laboratories Department
1151 Boston-Providence Turnpike
Norwood, MA 02062

Standard reference number	Title	Referenced in code section number
3260—00	*Radiant Energy—Sensing Fire Detectors For Automatic Fire Alarm Signaling*	
3011—99	*Approval Standard for Central Station for Fire Alarm and Protective Equipment Supervision*	

ICC

International Code Council, Inc
500 New Jersey Ave, NW
6th Floor
Washington, D.C. 20001

Standard reference number	Title	Referenced in code section number
ICC 300—02	Standard on Bleachers, Folding and Telescopic Seating and Grandstands	1025.1.1
IWUIC—06	International Wildland-Urban Interface Code™	304.1.2

ISO

International Organization for Standardization (ISO)
ISO Central Secretariat
1, rue de Varembee, Case postale 56
CH-1211 Geneva 20, Switzerland

Standard reference number	Title	Referenced in code section number
ISO 8115—86	Cotton Bales—Dimensions and Density	Table 1804.2.2.1, Table 2703.1(1)

NEMA

National Electrical Manufacturer's Association
1300 N. 17th Street
Suite 1847
Rosslyn, VA 22209

Standard reference number	Title	Referenced in code section number
250—2003	Enclosures for Electrical Equipment (1,000 Volt Maximum)	3705.2

NFPA

National Fire Protection Association
Batterymarch Park
Quincy, MA 02269

Standard reference number	Title	Referenced in code section number
10—05	Portable Fire Extinguishers	Table 901.6.1, 906.2, 906.3, Table 906.3(1), Table 906.3(2), 2106.3
11—05	Low-, Medium-, High-expansion Foam	904.7, 3404.2.9.1.2
12—05	Carbon Dioxide Extinguishing Systems	Table 901.6.1, 904.8, 904.11
12A—04	Halon 1301 Fire Extinguishing Systems	Table 901.6.1, 904.9
13—02	Installation of Sprinkler Systems *as amended**	Table 704.1, 903.3.1.1, 903.3.2, 903.3.5.1.1, 903.3.5.2, 904.11, 905.3.4, 907.9, 2301.1, 2304.2, Table 2306.2, 2306.9, 2307.2, 2307.2.1, 2308.2.2, 2308.2.2.1, 2310.1, 2501.1, 2804.1, 2806.5.7, 3404.3.3.9, Table 3404.3.6.3(7), 3404.3.7.5.1, 3404.3.8.4
	NFPA 13, Amended Sections as follows:	
	****Add a sentence to the beginning of Section 9.3.5.8.9 as follows:***	
	Where pipe is used for sway bracing, it shall have a wall thickness of not less than Schedule 40.	
	****Replace Section 9.3.5.9.4 as follows:***	
	Lag screws or powder-driven fasteners shall not be used to attach braces to the building structure.	
13D—02	Installation of Sprinkler Systems in One- and Two-family Dwellings and Manufactured Homes	903.3.1.3, 903.3.5.1.1
13R—02	Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height	903.3.1.2, 903.3.5.1.1, 903.3.5.1.2, 903.4
14—03	Installation of Standpipe and Hose Systems	905.2, 905.3.4, 905.4.2, 905.8
15—01	Water Spray Fixed Systems for Fire Protection	3404.2.9.1.3
16—03	Installation of Foam-water Sprinkler and Foam-water Spray Systems	904.7, 904.11
17—02	Dry Chemical Extinguishing Systems	Table 901.6.1, 904.6, 904.11
17A—02	Wet Chemical Extinguishing Systems	Table 901.6.1, 904.5, 904.11
20—03	Installation of Stationary Pumps for Fire Protection	913.1, 913.2, 913.5.1
22—03	Water Tanks for Private Fire Protection	508.2.2
24—02	Installation of Private Fire Service Mains and their Appurtenances	508.2.1, 1909.5
25—02	Inspection, Testing and Maintenance of Water-based Fire Protection Systems	508.5.3, Table 901.6.1, 904.7.1, 912.6, 913.5
30—03	Flammable and Combustible Liquids Code	3403.6.2, 3403.6.2.1, 3404.2.7, 3404.2.7.1, 3404.2.7.2, 3404.2.7.3.6, 3404.2.7.4, 3404.2.7.6, 3404.2.7.7, 3404.2.7.8, 3404.2.7.9, 3404.2.9.2, 3404.2.9.3, 3404.2.9.5.1.1, 3404.2.9.5.1.2, 3404.2.9.5.1.3, 3404.2.9.5.1.4, 3404.2.9.5.1.5, 3404.2.9.5.2, 3404.2.9.6.4, 3404.2.10.2, 3404.2.11.4, 3404.2.11.5.2, 3404.2.12.1, 3404.3.1, 3404.3.6, 3404.3.7.2.3, 3404.3.7.5.1, 3404.3.8.4, 3406.8.3
30A—03	Code for Motor Fuel-dispensing Facilities and Repair Garages	2201.4, 2201.5, 2201.6, 2206.6.3, 2210.1
30B—02	Manufacture and Storage of Aerosol Products	2801.1, 2803.1, 2804.1, Table 2804.3.1, Table 2804.3.2, Table 2804.3.2.2, 2804.4.1, 2804.5.2, 2804.6, Table 2806.2, 2806.2.3, 2806.3.2, Table 2806.4, 2806.5.1, 2806.5.6, 2807.1
31—01	Installation of Oil-burning Equipment	603.1.7, 603.3.1, 603.3.3
32—04	Dry Cleaning Plants	1207.1, 1207.3
33—03	Spray Application Using Flammable or Combustible Materials	1504.3.2
34—03	Dipping and Coating Processes Using Flammable or Combustible Liquids	1505.3, 1505.4.1.1

NFPA—continued

35—*05*	Manufacture of Organic Coatings	2001 3, 2005 4
37—02	*Installation and Use of Stationary Combustion Engines and Gas Turbines*	
40—01	Storage and Handling of Cellulose Nitrate Film	306 2
51—02	Design and Installation of Oxygen-fuel Gas Systems for Welding, Cutting and Allied Processes	2601 5, 2607 1, 2609 1
51A—01	Acetylene Cylinder Charging Plants	2608 1
52—*06*	Compressed Natural Gas (CNG) Vehicular Fuel System Code	3001 1
55—05	Standard for the Storage, Use and Handling of Compressed Gases and Cryogenic Fluids in Portable and Stationery Containers Cylinders and Tanks	2209 2 1, 3201 1 3501 1 4001 1
57—02	Liquefied Natural Gas (LNG) Vehicular Fuel System Code	3001 1
58—04	Liquefied Petroleum Gas Code	3801 1, 3803 1, 3803 2 1, 3803 2 1 2, 3803 2 1 7, 3803 2 2, 3804 1, 3804 3 1 3804 4 3806 2, 3806 3, 3807 2 3808 1, 3808 2, 3809 11 2, 3811 3
59A—*06*	Production, Storage and Handling of Liquefied Natural Gas (LNG)	3001 1, 3201 1
61—02	Prevention of Fires and Dust Explosions in Agricultural and Food Products Facilities	Table 1304 1
69—02	Explosion Prevention Systems	911 1, 911 3, Table 1304 1
72—02	National Fire Alarm Code, *as amended**	509.1, Table 901.6.1, 903.4.1, 904 3.5, 907 2, 907.2.1.1, 907.2 10 907.2 10 4, 907.2 11.2, 907.2.11.3, 907.2 12.2 3, 907.2.12.3, 907 3 907 5 907 6, 907 10 2, 907 11 907 15, 907 17, 907 18, 907 20 907 20 2, 907 20 5

NFPA 72, Amended Sections as follows:

4.4.4.4. Wiring. The installation of all wiring, cable and equipment shall be in accordance with *California* Electrical Code, and specifically with Article 760, 770 and 800, where applicable Optical fiber cables shall be protected against mechanical injury in accordance with Article 760.

5.12.4. The operable part of each manual fire alarm box shall be not less than 1 1 m (3 ½ feet) and not more than *1 22 m (4 feet)* above floor level

5.12.8. Additional fire alarm boxes shall be provided so that the travel distance to the nearest fire alarm box shall not be in excess of 61m (200 feet) measured horizontally on the same floor.

Exception: When individual dwelling units are served by a single exit stairway, additional boxes at other than the ground floor may be omitted.

6.4.2.2.2. Exception: (4) Where the vertically run conductors are contained in a 2-hour rated cable assembly, or enclosed (installed) in a 2-hour rated enclosure or a listed circuit integrity (C.I.) cable which meets or exceeds a 2-hour fire-resistive rating.

6.8.5.4.1 (2) A smoke detector that is continuously subjected to a smoke concentration above alarm threshold does not delay the system within functions of 4.4 3, 6 8.1 1, or 6 15 2.1 by more than *30 seconds*

6.8.5.4.1 (5) Operation of a patient room smoke detector in Group I-1 and I-2 occupancies shall not include an alarm verification feature

7.4.1.2. The total sound pressure level produced by combining the ambient sound pressure level with all audible notification appliances operation shall not exceed 110 dBA anywhere in the occupied area

7.4.3.1. Audible notification appliances intended for operation in the private mode shall have a sound level of not less than 45dBA at 10 feet (3 m) or more than 110 dBA at the minimum hearing distance from the audible appliance.

11.7.2.1 The alarm verification feature shall not be used for household fire warning equipment

11.7 5.7.1 The alarm verification feature shall not be used for household fire warning equipment.

80—99	Fire Doors and Fire Windows	703 2, 1008 1 3 3
85—04	Boiler and Combustion System Hazards Code	Table 1304.1
86—03	Ovens and Furnaces	2101 1
92A—00	*Recommended Practice for Smoke-Control Systems*	
92B—05	Smoke Management Systems in Malls, Atria and Large Spaces	909 8
99—*05*	Health Care Facilities	3006 4
101—*06*	Life Safety Code	1025 6.2
110—05	Emergency and Standby Power Systems	604 1 604 3, 604 4, 913 5 2, 913 5 3
111—05	Stored Electrical Energy Emergency and Standby Power Systems	604 1, 604 3, 604 4
120—*04*	Coal Preparation Plants	Table 1304.1
160—*06*	Flame Effects Before an Audience	308 3 6
211—03	Chimneys, Fireplaces, Vents and Solid Fuel-Burning Appliances	603.2
230—03	Fire Protection of Storage	2301.1, 2308 4, 2310.1, 2501.1 3404 3.3 9
241—*04*	Safeguarding Construction, Alteration and Demolition Operations	1401 1
260—03	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
261—03	Method of Test for Determining Resistance of Mock-Up Upholstered Furniture Material Assemblies to Ignition by Smoldering Cigarettes	805 2 1 1, 805 3 1 1
265—02	Method of Fire Tests for Evaluating Room Fire Growth Contribution of Textile Wall Coverings in Full Height Panels and Walls	803 5.1, 803 5.1 1, 803 5 1.2
286—*06*	Standard Method of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth	803.1, 803 1 2, 803 1 2 1, 803.5 1

NFPA—continued

303—*06*	Fire Protection Standard for Marinas and Boatyards	905.3.7
385—00	Tank Vehicles for Flammable and Combustible Liquids	3406.5.4.5, 3406.6, 3406.6.1
407—01	Aircraft Fuel Servicing	1106.2, 1106.3
409—*04*	Aircraft Hangars	914.8.2, 914.8.5
430—*04*	Storage of Liquid and Solid Oxidizers	4004.1.4
484—*06*	Combustible Metals, Metal Powders, and Metal Dusts	Table 1304.1
490—02	Storage of Ammonium Nitrate	3301.1.5
495—*06*	Explosive Materials Code	911.1, 911.4, 3301.1.1, 3301.1.5, 3302.1, 3304.2, 3304.6.2, 3304.6.3, 3304.7.1, 3305.1, 3306.1, 3306.5.2.1, 3306.5.2.3, 3307.1, 3307.9, 3307.11, 3307.15
498—*06*	Safe Havens and Interchange Lots for Vehicles Transporting Explosives	3301.1.2
505—*06*	Powered Industrial Trucks, Including Type Designations, Areas of Use, Maintenance, and Operation	2703.7.3
654—*06*	Prevention of Fire and Dust Explosions from the Manufacturing, Processing and Handling of Combustible Particulate Solids	Table 1304.1
655—01	Prevention of Sulfur Fires and Explosions	Table 1304.1
664—02	Prevention of Fires and Explosions in Wood Processing and Woodworking Facilities	Table 1304.1, 1905.3
701—*04*	Methods of Fire Tests for Flame-propagation of Textiles and Films	806.2, 807.1, 807.1.2, 807.2, 807.4.2.2, 1703.5
703—*06*	Fire Retardant Impregnated Wood and Fire Retardant Coatings for Building Materials	803.4
704—01	Identification of the Hazards of Materials for Emergency Response	606.7, 1802.1, 2404.2, 2703.2.2.1, 2703.2.2.2, 2703.5, 2703.10.2, 2705.1.10, 2705.2.1.1, 2705.4.4, 3203.4.1, 3404.2.3.2
750—03	Water Mist Fire Protection Systems	Table 901.6.1
1122—02	Model Rocketry	3301.1.4
1123—*06*	Fireworks Display	3302.1, 3304.2, 3308.1, 3308.2.2, 3308.5, 3308.6
1124—*06*	Manufacture, Transportation, Storage and Retail Sales of Fireworks and Pyrotechnic Articles	3302.1, 3304.2, 3305.1, 3305.3, 3305.4, 3305.5
1125—01	Manufacture of Model Rocket and High Power Rocket Motors	3301.1.4
1126—*06*	Use of Pyrotechnics Before a Proximate Audience	3304.2, 3305.1, 3308.1, 3308.2.2, 3308.4, 3308.5
1127—02	High Power Rocketry	3301.1.4
2001—04	Clean Agent Fire Extinguishing Systems	Table 901.6.1, 904.10

SFM

State of California
Department of Forestry and Fire Protection
Office of the State Fire Marshal
P.O. Box 944246
Sacramento, CA 944246-2460

Standard reference number	Title	Referenced in code section number
SFM 12-3	*Releasing Systems for Security Bars in Dwellings*	
SFM 12-7-3	*Fire-testing Furnaces*	
SFM 12-7A-1	*Exterior Wall Siding and Sheathing*	
SFM 12-7A-2	*Exterior Window*	
SFM 12-7A-3	*Under Eave*	
SFM 12-7A-4	*Decking*	
SFM 12-8-100	*Room Fire Tests for Wall and Ceiling Materials*	
SFM 12-10-1	*Power Operated Exit Doors*	
SFM 12-10-2	*Single Point Latching or Locking Devices*	
SFM 12-10-3	*Emergency Exit and Panic Hardware*	

(The Office of the State Fire Marshal standards referred to above are found in the California Code of Regulations, Title 24, Part 12.)

UL

Underwriters Laboratories, Inc
333 Pfingsten Road
Northbrook, IL 60062

Standard reference number	Title	Referenced in code section number
13—96	*Power-limited Circuit Cables*	
30—04	Metal Safety Cans	2705.1.10, 3405.2.4

UL—continued

38—99	Manually Actuated Signaling Boxes, with revisions through February 2, 2005 as amended	
	***Amend Section 14.1.5 as follows:**	
	14.1.5 A signaling box having a glass panel, disc, rod, or similar part that must be broken to operate it for a signal or for access to its actuating means shall satisfactorily complete five part-breaking operations using the means provided with the box, without jamming of the mechanism or other interference by broken particles. It shall be practicable to remove and replace the broken parts. A signaling box shall not have a glass panel, disc, rod, or similar part requiring a striking action by grasping a tool to operate it for a signal. The force required to activate controls shall be no greater than 5 pounds (22 N) of force	
	***Add Appendix B Chapter to UL 38 (1999) as follows:**	
	Appendix B, Section 4.1.5	
	***4.1.5 Operation.** Controls and operating mechanisms shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist*	
58—96	*Steel Underground Tanks for Flammable and Combustible Liquids with Revisions through July 1998*	*3404.2.13.1.5*
193—04	*Alarm Valves for Fire-Protection Service*	
199—95	*Automatic Sprinklers for Fire Protection Service, with revisions through August 19, 2005*	
199E—04	*Outline of Investigation for Fire Testing of Sprinklers and Water Spray Nozzles for Protection of Deep Fat Fryers*	*904.11.4.1*
217—97	*Single and Multiple Station Smoke Alarm, with Revisions through August 15, 2005*	*907.2.10*
	Amend Section 34.2.1 as follows:	
	Each single and multiple station smoke alarm may be provided with an automatically resettable alarm silencing means that has a fixed or variable time setting which silences the smoke alarm for a maximum of 15 minutes. Alarm silencing shall not disable the smoke alarm. It may reduce the sensitivity to no more than 4 percent obscuration (0.0177 O.D. per foot). Each device shall operate a distinctive audible trouble signal while in the silence mode. This may be done with a short beep similar to the low-battery signal or by visible indication. Following the silenced period, the alarm shall restore automatically to its intended operation. Silencing of one alarm of a multiple station system shall not prevent an alarm operation from the other alarms in the system. See 34.2.1 and 34.2.2	
228—97	*Door Closers/Holders, with or without Integral Smoke Detectors, with revisions through January 26, 2006*	
260—04	*Dry Pipe and Deluge Valves for Fire Protection Service*	
262—04	*Gate Valves for Fire Protection Service*	
268—96	*Smoke Detectors for Fire Alarm Signaling Systems, with revisions through October 22, 2003*	907.2.6.2
268A—98	*Smoke Detectors for Duct Application, with revisions through October 22, 2003*	
300—96	Fire Testing of Fire Extinguishing Systems for Protection of Restaurant Cooking Areas-with Revisions through December 1998	904.11
312—04	*Check Valves for Fire-Protection Service*	
346—05	*Waterflow Indicators for Fire Protective Signaling Systems*	
464—03	*Audible Signal Appliances with revisions through October 10, 2003*	
497B—04	*Protectors for Data Communication and Fire Alarm Circuits*	
521—99	*Heat Detectors for Fire Protective Signaling Systems, with revisions through July 20, 2005*	
539—00	*Single- and Multiple-Station Heat Detectors, with revisions through August 15, 2005*	
632—00	*Electrically Actuated Transmitters*	
710B—04	Recirculating Systems	904.11
753—04	*Alarm Accessories for Automatic Water Supply Valves for Fire Protection Service*	
793—03	Standard for Automatically Operated Roof Vents for Smoke and Heat	910.3.1
813—96	*Commercial Audio Equipment, with revisions through December 7, 1999*	
864—03	*Control Units for Fire Protective Signaling Systems, as amended* with revisions through July 14, 2005*	909.12
	Amend No. 55.1 as follows:	
	***RETARD-RESET-RESTART PERIOD – MAXIMUM 30 SECONDS**–No alarm obtained from control unit. Maximum permissible time is 30 seconds*	
	Amend Section 55.2.2 as follows:	
	Where an alarm verification feature is provided, the maximum retard-reset-restart period before an alarm signal can be confirmed and indicated at the control unit, including any control unit reset time and the power-up time for the detector to become operational for alarm, shall not exceed 30 seconds. (The balance of the section text is *to* remain unchanged).	
	Add a Section 55.2.9 as follows:	
	Smoke detectors connected to an alarm verification feature shall not be used as releasing devices.	
	***Exception:** Smoke detectors which operate their releasing function immediately upon alarm actuation independent of alarm verification feature.*	
	Amend Section 89.1.10 as follows:	
	The existing text of this section is to remain as printed with one editorial amendment as follows:	
	THE TOTAL DELAY (CONTROL UNIT PLUS SMOKE DETECTORS) SHALL NOT EXCEED 30 SECONDS	
	(The balance of the section text is *to* remain unchanged).	
884—05	*Underfloor Raceways and Fittings*	
900—94	Air Filter Units-with Revisions through October 1999	1504.7.8

UL—continued

913—02	*Intrinsically Safe Apparatus for Use in Class I, II, and III, Division 1, Hazardous Locations, with revisions through August 9, 2004*	
916—98	*Energy Management Equipment, with revisions through February 10, 2004*	
924—95	*Emergency Lighting and Power Equipment with revisions through and including July 11, 2001*	
985—00	*Household Fire Warning System Units with revisions through April 29, 2004*	
1091—04	*Butterfly Valves for Fire Protection Service with revisions through August 5, 2005*	
1275—94	Flammable Liquid Storage Cabinets—with Revisions through March 1997	2703.8.7.1, 3404.3.2.1.1
1315—95	Standard for Safety for Metal Waste Paper Containers—with Revisions through December 2003	808.1
1316—94	Glass Fiber Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol-gasoline Mixtures—with Revisions through April 1996	3404.2.13.1.5
1363—96	Standard for Relocatable Power Taps—with Revisions through July 2004	605.4.1
1424—05	*Cables for Power-limited Fire Protective Signaling Circuits*	
1480—03	*Speakers for Fire Protective Signaling Systems with revisions through April 8, 2005*	
1481—99	*Power Supplies for Fire Protective Signaling Systems*	
1484—00	*Residential Gas Detectors*	
1626—01	*Residential Sprinklers for Fire Protection Service, with revisions through December 8, 2003*	
1711—99	*Amplifiers for Fire Protective Signaling Systems*	
1730—98	*Smoke Detector Monitors and Accessories (annunciators) for Individual Living Units of Multifamily Residences and Hotel/Motel Rooms, with revisions through May 17, 1999*	
1971—02	*Signaling Devices for the Hearing Impaired, with revisions through July 20, 2004*	
1975—96	Fire Tests for Foamed Plastics Used for Decorative Purpose	807.4.2.1, 808.2
1994—04	*Low Level Path Marking and Lighting Systems, with revisions through February 14, 2005*	
2034—96	*Single and Multiple Station Carbon Monoxide Alarms, with revisions through March 8, 2005*	
2079—04	*Tests for Fire Resistance of Building Joint Systems*	
2085—97	Protected Aboveground Tanks for Flammable and Combustible Liquids—with Revisions through December 1999	3402.1, 3404.2.9.1.3, 3404.2.9.6.5, 3405.3.8.2
2200—98	Standard for Stationary Engine Generator Assemblies—with Revisions through July 2004	604.1.1
2208—96	Solvent Distillation Units-with Revisions through August 2001	3405.4.1
2245—99	Below-Grade Vaults for Flammable Liquid Storage Tanks	3404.2.8.1
2335—01	Fire Tests of Storage Pallets-with Revisions through May 2002	2308.2.1

USC

United States Code
c/o Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402-9325

Standard reference number	Title	Referenced in code section number
18 USC Part 1, Chapter 40	Importation, Manufacture, Distribution and Storage of Explosive Materials	3302.1

CALIFORNIA FIRE CODE- MATRIX ADOPTION TABLE
APPENDIX CHAPTER 1 - ADMINISTRATION

Adopting Agency		BSC	SFM	HCD			DSA		OSHPD				CSA	DHS	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	1	2	3	4								
Adopt Entire Appendix																				
Adopt Entire Appendix as amended (amended sections listed below)																				
Adopt only those sections that are listed below			X																	
Chapter / Section	Codes																			
Table 105.6.8	CA		X																	
Table 105.6.20	CA		X																	
105.6.47	CA		X																	
106 – 106.4	IFC		X																	

[B] APPENDIX CHAPTER 4

SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY

[B] SECTION 425 SPECIAL PROVISIONS FOR LICENSED 24-HOUR CARE FACILITIES IN GROUPS I-1, R-3.1 AND R-4

[B] 425.1 Scope. The provisions of this chapter shall apply to 24-hour care facilities in a Group I-1, R-3.1, or R-4 occupancy licensed by a governmental agency.

[B] 425.2 General. The provisions in this chapter shall apply in addition to general requirements in this code and the California Building Code.

[B] 425.2.1 Restraint shall not be practiced in Group I-1, R-3.1, or R-4 occupancies.

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

[B] 425.2.2 Pursuant to Health and Safety Code Section 13133, regulations of the State Fire Marshal pertaining to occupancies classified as Residential Facilities (RF) and Residential Care Facilities for the Elderly (RCFE) shall apply uniformly throughout the state and no city, county, city and county, including a charter city or charter county, or fire protection district shall adopt or enforce any ordinance or local rule or regulation relating to fire and panic safety which is inconsistent with these regulations. A city, county, city and county, including a charter city or charter county may pursuant to Health and Safety Code Section 13143.5, or a fire protection district may pursuant to Health and Safety Code Section 13869.7, adopt standards more stringent than those adopted by the State Fire Marshal that are reasonably necessary to accommodate local climate, geological, or topographical conditions relating to roof coverings for Residential Care Facilities for the Elderly.

***Exception:** Local regulations relating to roof coverings in facilities licensed as a Residential Care Facility for the Elderly (RCFE) per Health and Safety Code Section 13133.*

*[B] 425.2.3 **Temporarily bedridden clients.** Clients who become temporarily bedridden as defined in Health and Safety Code Section 1569.72, as enforced by the Department of Social Services, may continue to be housed on any story in Group I-1, R-3.1, or R-4 occupancies classified as Residential Care Facilities for the Elderly (RCFE). Every Residential Care Facility for the Elderly (RCFE) admitting or retaining a bedridden resident shall, within 48 hours of the resident's admission or retention in the facility, notify the local fire authority with jurisdiction of the estimated length of time the resident will retain his or her bedridden status in the facility.*

*[B] 425.3 **Building height and area provisions.***

*[B] 425.3.1 **One or two stories.** Group I-1 occupancies licensed as a Residential Care Facility for the Elderly (RCFE) one or two stories in height where more than six nonambulatory clients are housed shall be constructed of a minimum 1-hour fire-resistance-rated construction throughout.*

*[B] 425.3.2 **Three to five stories.** Group I-1 occupancies licensed as a Residential Care Facility for the Elderly (RCFE) three to five stories in height where more than six nonambulatory clients are housed above the first floor shall be constructed of a minimum Type IB construction.*

*[B] 425.3.3 **Six or more stories.** Group I-1 occupancies licensed as a Residential Care Facility for the Elderly (RCFE) exceeding five stories in height where more than six nonambulatory clients are housed above the fifth floor shall be constructed of a minimum Type IA construction.*

*[B] 425.3.4 **Limitations six or less clients.** Group R-3.1 occupancies where clients are housed above the first story, having more than two stories in height or having more than 3,000 square feet (279 m²) of floor area above the first story shall not be of less than 1-hour fire-resistance-rated construction throughout.*

In Group R-3.1 occupancies housing a bedridden client, the client sleeping room shall not be located above or below the first story.

***Exception:** Clients who become bedridden as a result of a temporary illness as defined in Health and Safety Code Sections 1566.45, 1568.0832, and 1569.72. A temporary illness is an illness that persists for 14 days or less. A bedridden client may be retained in excess of the 14 days upon approval by the Department of Social Services and may continue to be housed on any story in a Group R, Division 2, 3 or 1 occupancy classified as a licensed residential facility.*

Every licensee admitting or retaining a bedridden resident shall, within 48 hours of the resident's admission or retention in the facility, notify the local fire authority with jurisdiction of the estimated length of time the resident will retain his or her bedridden status in the facility.

*[B] 425.3.5 **Limitations seven or more clients.** Group R-4 occupancies where nonambulatory clients are housed above the first story and there is more than 3,000 square feet (279 m²) of floor area above the first story or housing more than 16 clients above the first story shall be constructed of not less than 1-hour fire-resistance-rated construction throughout.*

*[B] 425.3.6 **Nonambulatory elderly clients.** Group R-4 occupancies housing nonambulatory elderly clients shall be of not less than 1-hour fire-resistance-rated construction throughout.*

*[B] 425.4 **Type of construction provisions.***

[B] 425.4.1 Group I-1 occupancies are not permitted in nonfire-resistance-rated construction, see Health and Safety Code Section 13131.5.

[B] 425.5 Fire-resistance-rated construction provisions.

[B] 425.5.1 Smoke barriers required. *Group I-1 and R-4 occupancies licensed as a Residential Care Facility (RCF) with individual floor areas over 6000 square feet (557 m^2) per floor, shall be provided with smoke barriers, constructed in accordance with Section 709.*

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

[B] 425.5.2 Smoke partitions. *In Group I-1 and R-4 occupancies where smoke partitions are required, framing shall be covered with noncombustible materials having an approved thermal barrier with an index of not less than 15 in accordance with FM 4880, UL 1040, NFPA 286 or UL 1715.*

[B] 425.6 Interior finish provisions.

[B] 425.6.1 Interior wall and ceiling finish. *Group R-3.1 occupancies housing a bedridden client shall comply with interior wall and ceiling finish requirements specified for Group I-2 occupancies in Table 803.5*

[B] 425.7 Fire protection system provisions.

[B] 425.7.1 Automatic sprinkler systems in Group I-1, R-3.1 and R-4 occupancies. *An automatic sprinkler system shall be installed where required in Section 903.*

[B] 425.7.2 Fire alarm systems in Group I-1 and R-4 occupancies. *An approved fire alarm system shall be installed where required in Section 907*

[B] 425.7.3 Smoke alarms in Group I-1, R-3.1, and R-4 occupancies. *Smoke alarms shall be installed where required in Section 907.2.10*

[B] 425.7.4 Hearing impaired. *See Section 907.9.1.*

[B] 425.8 Means of egress provisions.

[B] 425.8.1 General. *In addition to the general means of egress requirements of Chapter 10, this section shall apply to Group I-1, R-3.1, and R-4 occupancies.*

[B] 425.8.2 Number of exits.

[B] 425.8.2.1 *Group I-1, R-3.1, and R-4 occupancies shall have a minimum of two exits.*

Exception: *Ancillary use areas or occupancies shall have egress as required by Section 1019.*

[B] 425.8.3 Egress arrangements.

[B] 425.8.3.1 *Egress through adjoining dwelling units shall not be permitted.*

[B] 425.8.3.2 Group R-3.1 occupancies housing nonambulatory clients. *In a Group R-3.1 occupancy, bedrooms used by nonambulatory clients shall have access to at least one of the required exits which shall conform to one of the following:*

1. *Egress through a hallway or area into a bedroom in the immediate area which has an exit directly to the exterior and the corridor/hallway is constructed consistent with the dwelling unit interior walls. The hallway shall be separated from common areas by a solid wood door not less than $1^3/_8$ inch (35 mm) in thickness, maintained self-closing or shall be automatic-closing by actuation of a smoke detector installed in accordance with Section 715.4.7.*
2. *Egress through a hallway which has an exit directly to the exterior. The hallway shall be separated from the rest of the house by a wall constructed consistent with the dwelling unit interior walls and opening protected by a solid wood door not less than $1^3/_8$ inch (35 mm) in thickness, maintained self-closing or shall be automatic-closing by actuation of a smoke detector installed in accordance with Section 715.4.7.*
3. *Direct exit from the bedroom to the exterior.*
4. *Egress through an adjoining bedroom which exits to the exterior.*

[B] 425.8.3.3 Group R-3.1 occupancies housing bedridden clients. *In Group R-3.1 occupancies housing a bedridden client, all of the following shall apply:*

1. *In Group R-3.1 occupancies housing a bedridden client, a direct exit to the exterior of the residence shall be provided from the client sleeping room.*
2. *Doors to a bedridden client's sleeping room shall be of a self-closing, positive latching $1^3/_8$-inch solid wood door. Such doors shall be provided with a gasket so installed as to provide a seal where the door meets the jam on both sides and across the top. Doors shall be maintained self-closing or shall be automatic-closing by actuation of a smoke alarm in accordance with California Building Code Section 715.4.7.*
3. *Group R-3.1 occupancies housing a bedridden client, shall not have a night latch, dead bolt, security chain or any similar locking device installed on any interior door leading from a bedridden client's sleeping room to any interior area such as a corridor, hallway and or general use areas of the residence in accordance with Chapter 10.*
4. *The exterior exit door to a bedridden client's sleeping room shall be operable from both the interior and exterior of the residence.*
5. *Every required exit doorway from a bedridden client sleeping room shall be of a size as to permit the installation of a door not less than 3 feet (914 mm) in width and not less than 6 feet 8 inches (2032 mm) in height. When installed in exit doorways, exit doors shall be capable of opening at least 90*

degrees and shall be so mounted that the clear width of the exit way is not less than 32 inches (813 mm)

[B] 425.8.3.4 Intervening rooms. *A means of exit shall not pass through more than one intervening room. A means of egress shall not pass through kitchens, storerooms, closets, garages or spaces used for similar purposes*

Exception: *Kitchens which do not form separate rooms by construction*

[B] 425.8.4 Corridors.

[B] 425.8.4.1 *Unless specified by Section 425.8.4, corridors serving Group I-1 and Group R-4 occupancies shall comply with Section 1017.1.*

[B] 425.8.4.2 *The minimum clear width of a corridor shall be as follows:*

1. *Group I-1 occupancies shall have 60 inches (1524 mm) on floors housing nonambulatory clients and 44 inches (1118 mm) on floors housing only ambulatory clients.*
2. *Group R-4 occupancies shall have 44 inches (1118 mm) on floors housing clients*

Exceptions:

1. *Corridors serving an occupant load of 10 or less shall not be less than 36 inches (914 mm) in width.*
2. *Corridors serving ambulatory persons only and having an occupant load of 49 or less shall not be less than 36 inches (914 mm) in width.*
3. *Group R-3.1 occupancies shall have 36 inches (914 mm) on floors housing clients*

In Group I-1 occupancies provided with fire sprinklers throughout and which are required to have rated corridors, door closers need not be installed on doors to client sleeping rooms.

[B] 425.8.4.3 *In Group I-1 and Group R-3.1 occupancies having smoke barriers, cross-corridor doors in corridors 6 feet (1829 mm) or less in width shall have, as a minimum, a door 36 inches (914 mm) in width.*

[B] 425.8.5 Changes in level. *In Group R-3.1 occupancies housing nonambulatory clients, changes in level up to 0.25 inch (6 mm) may be vertical and without edge treatment. Changes in level between 0.25 inch (6 mm) and 0.5 inch (12.7 mm) shall be beveled with a slope no greater than 1 unit vertical in 2 units horizontal (50-percent slope). Changes in level greater than 0.5 inch (12.7 mm) shall be accomplished by means of a ramp.*

[B] 425.8.6 Stairways.

[B] 425.8.6.1 *Group I-1 and Group R-4 occupancies housing more than six nonambulatory clients above the first floor shall be provided with two vertical exit enclosures. Stairway enclosures shall be in compliance with Section 1020. Exceptions to Section 1020 shall not apply in facilities licensed as a 24-hour care facility.*

[B] 425.8.6.2 *Group R-3.1 occupancies may continue to use existing stairways (except for winding and spiral stairways which are not permitted as a required means of egress) provided the stairs have a maximum rise of 8 inches (203 mm) with a minimum run of 9 inches (229 mm). The minimum stairway width may be 30 inches (762 mm).*

[B] 425.8.7 Floor separation. *Group R-3.1 occupancies shall be provided with a nonfire-resistance-constructed floor separation at stairs which will prevent smoke migration between floors. Such floor separation shall have equivalent construction of 0.5 inch (12.7 mm) gypsum wallboard on one side of wall framing.*

Exceptions:

1. *Occupancies with at least one exterior exit from floors occupied by clients*
2. *Occupancies provided with automatic fire sprinkler systems complying with Chapter 9.*

[B] 425.8.7.1 Doors within floor separations. *Doors within such floor separations shall be tight-fitting solid wood at least $1^3/_8$ inches (35 mm) in thickness. Door glazing shall not exceed 1296 inches (32 918 mm) with no dimension greater than 54 inches (1372 mm). Such doors shall be positive latching, smoke gasketed and shall be automatic-closing by smoke detection.*

[B] 425.8.8 Fences and gates. *Grounds of a Residential Care for the Elderly facility serving Alzheimer clients may be fenced and gates therein equipped with locks, provided safe dispersal areas are located not less than 50 feet (15 240 mm) from the buildings. Dispersal areas shall be sized to provide an area of not less than 3 square feet (0.28 m^2) per occupant. Gates shall not be installed across corridors or passageways leading to such dispersal areas unless they comply with egress requirements.*

[B] 425.8.9 Basement exits. *One exit is required to grade level when the basement is accessible to clients.*

[B] 425.8.10 Delayed egress locks. *See Section 1008.1.8.6.*

[B] 425.9 Request for alternate means of protection for facilities housing bedridden clients. *Request for alternate means of protection shall apply to Sections 425 through 425.9. Request for approval to use an alternative material, assembly or materials, equipment, method of construction, method of installation of equipment, or means of protection shall be made in writing to the local fire enforcing agency by the facility, client or the client's authorized representative. Sufficient evidence shall be submitted to substantiate the need for an alternate means of protection.*

The facility, client or the client's representative or the local fire enforcing agency may request a written opinion from the State Fire Marshal concerning the interpretation of the regulations promulgated by the State Fire Marshal for a particular factual dispute. The State Fire Marshal shall issue the written opinion within 45 days following the request.

Approval of a request for use of an alternative material, assembly or materials, equipment, method of construction, method of installation of equipment, or means of protection made pursuant to this section shall be limited to Group R, 3 1 occupancies housing a bedridden client.

Approvals made by the local fire enforcing agency and the written opinion by the State Fire Marshal shall be applicable only to the requesting facility and shall not be construed as establishing any precedent for any future request by that facility or any other facility.

HISTORY NOTE APPENDIX
CALIFORNIA FIRE CODE

Title 24, Part 9, California Code of Regulations (CCR)

For prior history, see the History Note Appendix to the California Fire Code 2001 Triennial Edition Published in April 2002 – December 2005, and effective November 1, 2002.

1. SFM 04/06 – Adoption of the 2006 edition of the *International Fire Code* published by the International Code Council, for incorporation into the *California Fire Code*, CCR, Title 24, Part 9 with amendments for State Fire Marshal regulated occupancies.

   This item approved by the Building Standards Commission on January 30, 2007, and effective on January 1, 2008.

2. DSA-AC 07/06 – Adoption of the 2006 edition of the *International Fire Code* published by the International Code Council, for incorporation into the *California Fire Code*, CCR, Title 24, Part 9 with amendments for the Division of the State Architect-Access Compliance regulated occupancies.

   This item approved by the Building Standards Commission on January 30, 2007, and effective on January 1, 2008.

3. (SFM EF 02-08) Amend Title 24, Part 9,Chapter 5, Chapter 6, Chapter 9. Approved as an emergency by the California Building Standards Commission on May 21, 2008. Filed with the Secretary of State on May 23, 2008.

4. (SFM 01-08) Change without regulatory effect to Section 903. Filed with the Secretary of State on July 14, 2008.