**FINAL EXPRESS TERMS  
FOR PROPOSED BUILDING STANDARDS  
OF THE STATE FIRE MARSHAL  
REGARDING THE 2019 CALIFORNIA BUILDING CODE,**

**CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2**

**(SFM 01/19)**

The State agency shall draft the regulations in plain, straightforward language, avoiding technical terms as much as possible and using a coherent and easily readable style. The agency shall draft the regulation in plain English. A notation shall follow the express terms of each regulation listing the specific statutes authorizing the adoption and listing specific statutes being implemented, interpreted, or made specific (Government Code Section 11346.2(a)(1)).

If using assistive technology, please adjust your settings to recognize underline, strikeout, italic and ellipsis.

## LEGEND for EXPRESS TERMS (Based on model codes - Parts 2, 2.5, 3, 4, 5, 9, 10)

* Model Code language appears upright
* Existing California amendments appear in *italic*
* Amended model code or new California amendments appear *underlined & italic*
* Repealed model code language appears ~~upright and in strikeout~~
* Repealed California amendments appear in *~~italic and strikeout~~*
* Ellipsis (...) indicate existing text remains unchanged

**FINAL EXPRESS TERMS**

**CHAPTER 1**

**DIVISION II**

**SCOPE AND ADMINISTRATION**

**SECTION 110**

**INSPECTIONS**

**Item: [SFM 01/19-1-1]**

**Chapter:** [1, DIVISION II, SCOPE AND ADMINISTRATION]

**Section:** [110, INSPECTIONS]

**Express Terms:**

## [Section: 110.3.12 (New)]

***110.3.12 Type IV-A. IV-B. and IV-C connection protection Inspection.*** *In buildings of Type IV-A, IV-B and IV-C Construction, where connection fire resistance ratings are provided by wood cover calculated to meet the requirements of Section 2304.10.1 inspection of the wood cover shall be made after the cover is installed, but before any other coverings or finishes are installed.*

**[TALL WOOD AND HEAVY TIMBER 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

202, 403.3.2, TABLE 504.3, TABLE 504.4, TABLE 506.2, 508.4.4.1, 509.4.1.1 (New), TABLE 601, TABLE 602, 602.4, 602.4.1 (New), 602.4.1.1 (New), 602.4.1.2 (New), 602.4.1.2.1 (New), 602.4.1.3 (New), 602.4.1.4 (New), 602.4.1.5 (New), 602.4.1.6 (New), 602.4.2, 602.4.2.1 (New), 602.4.2.2 (New), 602.4.2.2.1 (New), 602.4.2.2.2 (New), 602.4.2.2.3 (New), 602.4.2.2.4 (New), 602.4.2.3 (New), 602.4.2.4 (New), 602.4.2.5 (New), 602.4.2.6 (New), 602.4.3, 602.4.3.1 (New), 602.4.3.2 (New), 602.4.3.3 (New), 602.4.3.4 (New), 602.4.3.5 (New), 602.4.3.6 (New), 602.4.4 (New), 602.4.4.1, 602.4.4.2, 602.4.4.3, 602.4.4 (New), 703.8 (New), 703.9 (New), 718.2.1, 722.7 (New), 722.7.1 (New), TABLE 722.7.1 (1) (New), TABLE 722.7.1 (2) (New), 722.7.2 (New), 722.7.2.1 (New), 722.7.2.2 (New), 1705.5.3 (New), TABLE 1705.5.3 (New),1705.11.1, 1705.11.2, 1705.12.2, 1705.12.3, 1705.20 (New), 2304.10.1.2 (New), 2304.11.3, 2304.11.4, 3102.3, 3102.6.1.1, (Chapter 35) ANSI/APA PRG 320-18, ASTM D3498-03 (2011) (New), D102.2.5

**Notation:**

Authority: Health and Safety Code Sections 1250, 1569.72, 1569.78, 1568.02, 1502, 1597.44, 1597.45, 1597.46, 1597.54, 1597.65, 13108, 13108.5, 13113, 13113.5, 13114, 13143,13132, 13132.7, 13132, 13133, 13135, 13143.2, 13143.6, 13146, 13210, 13211, 17921, 18928, 18949.2, 25500-25545, Government Code Section 51189, Education Code 17074.50

Reference(s): Health and Safety Code Sections 13143, 13143.1, 13143.9, 13211, 18949.2, 25500 through 25545, Government Code Sections 51176, 51177, 51178, 51179, Public Resources Code Sections 4201-4204

**CHAPTER 2**

**DEFINITIONS**

**SECTION 202**

**DEFINITIONS**

# Item: [SFM 01/19-2-1]

**Chapter:** [2, DEFINITIONS]

**Section:** [202, DEFINITIONS]

**Express Terms:**

## [Definition: Mass Timber (New)]

*MASS TIMBER. Structural elements of Type IV construction primarily of solid, built-up, panelized or engineered wood products that meet minimum cross section dimensions of Type IV construction.*

**[TALL WOOD AND HEAVY TIMBER 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

202, 403.3.2, TABLE 504.3, TABLE 504.4, TABLE 506.2, 508.4.4.1, 509.4.1.1 (New), TABLE 601, TABLE 602, 602.4, 602.4.1 (New), 602.4.1.1 (New), 602.4.1.2 (New), 602.4.1.2.1 (New), 602.4.1.3 (New), 602.4.1.4 (New), 602.4.1.5 (New), 602.4.1.6 (New), 602.4.2, 602.4.2.1 (New), 602.4.2.2 (New), 602.4.2.2.1 (New), 602.4.2.2.2 (New), 602.4.2.2.3 (New), 602.4.2.2.4 (New), 602.4.2.3 (New), 602.4.2.4 (New), 602.4.2.5 (New), 602.4.2.6 (New), 602.4.3, 602.4.3.1 (New), 602.4.3.2 (New), 602.4.3.3 (New), 602.4.3.4 (New), 602.4.3.5 (New), 602.4.3.6 (New), 602.4.4 (New), 602.4.4.1, 602.4.4.2, 602.4.4.3, 602.4.4 (New), 703.8 (New), 703.9 (New), 718.2.1, 722.7 (New), 722.7.1 (New), TABLE 722.7.1 (1) (New), TABLE 722.7.1 (2) (New), 722.7.2 (New), 722.7.2.1 (New), 722.7.2.2 (New), 1705.5.3 (New), TABLE 1705.5.3 (New),1705.11.1, 1705.11.2, 1705.12.2, 1705.12.3, 1705.20 (New), 2304.10.1.2 (New), 2304.11.3, 2304.11.4, 3102.3, 3102.6.1.1, (Chapter 35) ANSI/APA PRG 320-18, ASTM D3498-03 (2011) (New), D102.2.5

# Item: [SFM 01/19-2-2]

**Chapter:** [2, DEFINITIONS]

**Section:** [202, DEFINITIONS]

**Express Terms:**

## [Definition: Mechanical-Access Enclosed Parking Garage (New)]

***MECHANICAL-ACCESS ENCLOSED PARKING GARAGE*** *An enclosed parking garage which employs parking machines, lifts, elevators or other mechanical devices for vehicle moving from and to street level and in which public occupancy in the garage is prohibited in all areas except the vehicle access bay.*

**[AUTOMATIC PARKING GARAGE 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

202 (New), 406.6.4 (New), 406.6.4.1 (New), 406.6.4.2 (New), 406.6.4.3 (New), 406.6.4.3.1 (New), 406.6.4.4 (New), TABLE 508.4, Table 903.2.11.6

# Item: [SFM 01/19-2-3]

**Chapter:** [2, DEFINITIONS]

**Section:** [202, DEFINITIONS]

**Express Terms:**

## [Definition: Noncombustible Protection (For Mass Timber) (New)]

***NONCOMBUSTIBLE PROTECTION (FOR MASS TIMBER).*** *Noncombustible material, in accordance with Section 703.5, designed to increase the fire resistance rating and delay the combustion of mass timber.*

**[TALL WOOD AND HEAVY TIMBER 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

202, 403.3.2, TABLE 504.3, TABLE 504.4, TABLE 506.2, 508.4.4.1, 509.4.1.1 (New), TABLE 601, TABLE 602, 602.4, 602.4.1 (New), 602.4.1.1 (New), 602.4.1.2 (New), 602.4.1.2.1 (New), 602.4.1.3 (New), 602.4.1.4 (New), 602.4.1.5 (New), 602.4.1.6 (New), 602.4.2, 602.4.2.1 (New), 602.4.2.2 (New), 602.4.2.2.1 (New), 602.4.2.2.2 (New), 602.4.2.2.3 (New), 602.4.2.2.4 (New), 602.4.2.3 (New), 602.4.2.4 (New), 602.4.2.5 (New), 602.4.2.6 (New), 602.4.3, 602.4.3.1 (New), 602.4.3.2 (New), 602.4.3.3 (New), 602.4.3.4 (New), 602.4.3.5 (New), 602.4.3.6 (New), 602.4.4 (New), 602.4.4.1, 602.4.4.2, 602.4.4.3, 602.4.4 (New), 703.8 (New), 703.9 (New), 718.2.1, 722.7 (New), 722.7.1 (New), TABLE 722.7.1 (1) (New), TABLE 722.7.1 (2) (New), 722.7.2 (New), 722.7.2.1 (New), 722.7.2.2 (New), 1705.5.3 (New), TABLE 1705.5.3 (New),1705.11.1, 1705.11.2, 1705.12.2, 1705.12.3, 1705.20 (New), 2304.10.1.2 (New), 2304.11.3, 2304.11.4, 3102.3, 3102.6.1.1, (Chapter 35) ANSI/APA PRG 320-18, ASTM D3498-03 (2011) (New), D102.2.5

# Item: [SFM 01/19-2-4]

**Chapter:** [2, DEFINITIONS]

**Section:** [202, DEFINITIONS]

**Express Terms:**

## [Definition: Puzzle Room (New)]

***PUZZLE ROOM*** *A puzzle room is a type of special amusement area in which occupants are encouraged to solve a challenge to escape from a room or series of rooms.*

**[PUZZLE ROOM 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

Table of Contents, 202, Title 411, 411.1, 411.2, 411.3, 411.4, 411.5, 411.6, 411.6.1, 411.7, TABLE 903.2.11.6, 907.2.11, 907.2.11.2, 907.2.11.3, TABLE 1017.2, INDEX

# Item: [SFM 01/19-2-5]

**Chapter:** [2, DEFINITIONS]

**Section:** [202, DEFINITIONS]

**Express Terms:**

## [Definition: Special Amusement Area]

**~~[BG]~~ SPECIAL AMUSEMENT ~~BUILDING~~ *AREA*.** A special amusement ~~building~~ *area* is any temporary or permanent building or portion thereof that is occupied for amusement, entertainment or educational purposes and ~~that contains a~~ ~~device or system that conveys passengers or provides a walkway along, around or over a course in any direction so~~ ~~arranged that the means of egress~~~~path is not readily apparent due to visual or audio distractions or is intentionally~~ ~~confounded or is not readily available because of the nature of the attraction or mode of conveyance through the~~ ~~building or structure~~ *is arranged in a manner that:*

1. *Makes the means of egress path that is not readily apparent due to visual and audio distractions, or*
2. *Intentionally confounds identification of the means of egress path, or*
3. *Otherwise makes the means of egress path not readily available because of the nature of the attraction or mode of conveyance through the special amusement area, building, structure or portion thereof.*

**[PUZZLE ROOM 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

Table of Contents, 202, Title 411, 411.1, 411.2, 411.3, 411.4, 411.5, 411.6, 411.6.1, 411.7, TABLE 903.2.11.6, 907.2.11, 907.2.11.2, 907.2.11.3, TABLE 1017.2, INDEX

# Item: [SFM 01/19-2-6]

**Chapter:** [2, DEFINITIONS]

**Section:** [202, DEFINITIONS]

**Express Terms:**

## [Definition: Wall, Load-Bearing]

WALL, LOAD-BEARING. Any wall meeting either of the following classifications:

1. Any metal or wood stud wall that supports more than 100 pounds per linear foot (1459 N/m) of vertical load in addition to its own weight.
2. Any masonry or concrete *or mass timber* wall that supports more than 200 pounds per linear foot (2919 N/m) of vertical load in addition to its own weight.

**[TALL WOOD AND HEAVY TIMBER 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

202, 403.3.2, TABLE 504.3, TABLE 504.4, TABLE 506.2, 508.4.4.1, 509.4.1.1 (New), TABLE 601, TABLE 602, 602.4, 602.4.1 (New), 602.4.1.1 (New), 602.4.1.2 (New), 602.4.1.2.1 (New), 602.4.1.3 (New), 602.4.1.4 (New), 602.4.1.5 (New), 602.4.1.6 (New), 602.4.2, 602.4.2.1 (New), 602.4.2.2 (New), 602.4.2.2.1 (New), 602.4.2.2.2 (New), 602.4.2.2.3 (New), 602.4.2.2.4 (New), 602.4.2.3 (New), 602.4.2.4 (New), 602.4.2.5 (New), 602.4.2.6 (New), 602.4.3, 602.4.3.1 (New), 602.4.3.2 (New), 602.4.3.3 (New), 602.4.3.4 (New), 602.4.3.5 (New), 602.4.3.6 (New), 602.4.4 (New), 602.4.4.1, 602.4.4.2, 602.4.4.3, 602.4.4 (New), 703.8 (New), 703.9 (New), 718.2.1, 722.7 (New), 722.7.1 (New), TABLE 722.7.1 (1) (New), TABLE 722.7.1 (2) (New), 722.7.2 (New), 722.7.2.1 (New), 722.7.2.2 (New), 1705.5.3 (New), TABLE 1705.5.3 (New),1705.11.1, 1705.11.2, 1705.12.2, 1705.12.3, 1705.20 (New), 2304.10.1.2 (New), 2304.11.3, 2304.11.4, 3102.3, 3102.6.1.1, (Chapter 35) ANSI/APA PRG 320-18, ASTM D3498-03 (2011) (New), D102.2.5

**Notation:**

Authority: Health and Safety Code Sections 1250, 1569.72, 1569.78, 1568.02, 1502, 1597.44, 1597.45, 1597.46, 1597.54, 1597.65, 13108, 13108.5, 13113, 13113.5, 13114, 13143,13132, 13132.7, 13132, 13133, 13135, 13143.2, 13143.6, 13146, 13210, 13211, 17921, 18928, 18949.2, 25500-25545, Government Code Section 51189, Education Code 17074.50

Reference(s): Health and Safety Code Sections 13143, 13143.1, 13143.9, 13211, 18949.2, 25500 through 25545, Government Code Sections 51176, 51177, 51178, 51179, Public Resources Code Sections 4201-4204

**CHAPTER 3**

**OCCUPANCY CLASSIFICATION AND USE**

**SECTION 306**

**FACTORY GROUP F**

# Item: [SFM 01/19-3-1]

**Chapter:** [3, OCCUPANCY CLASSIFICATION AND USE]

**Section:** [306, FACTORY GROUP F]

**Express Terms:**

## [Section: 306.2]

[Add an additional example to Group F-1 in alphabetical order, after Electronics and before Engines]

**306.2 Moderate-hazard factory industrial, Group F-1.**

(other examples remain unchanged)

*Energy storage systems (ESS) in dedicated use buildings*

**[ENERGY STORAGE SYSTEMS 2019 INTERVEING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

306.2, TABLE 414.5.1, TABLE 509, 707.4, TABLE 716.1(2), T ABLE 716.1(3), 716.2.5.4.1 (New), 716.3.2.1.1.1 (New), TABLE 903.2.11.6, [Chapter 35] NFPA 68 (New)

**SECTION 310**

**RESIDENTIAL GROUP R**

# Item: [SFM 01/19-3-2]

**Chapter:** [3, OCCUPANCY CLASSIFICATION AND USE]

**Section:** [310, RESIDENTIAL GROUP R]

**Express Terms:**

## [Section: 310.3.1]

***310.3.1 Residential Group R-2.1.*** *Residential Group R-2.1 occupancies shall include buildings, structures or parts thereof housing clients, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment that provides personal care services.*

*This occupancy may contain more than six non-ambulatory and/or bedridden clients. (See Section 435 Special Provisions for Licensed 24-Hour Care Facilities in a Group R-2.1, R-3.1 or R-4 Occupancy). This group shall include, but not be limited to, the following:*

*Assisted living facilities such as:*

*(example remain unchanged for assisted living facilities)*

*Social rehabilitation facilities such as:*

*Halfway houses,*

*Community correctional centers,*

*~~Community correction reentry centers,~~*

*Community treatment programs,*

*Work furlough programs,*

*Alcoholism or drug abuse recovery or treatment facilities.*

**[I-3 OCCUPANCY WORKGROUP 2019 INTERVENING PROPOSALS]**

**[Related Sections in Part 2, California Building Code]:**

310.3.1, 408.1.2.2, 408.3.6, TABLE 408.3.13 (New), 408.13, TABLE 504.3, TABLE 504.4, TABLE 506.2, TABLE 508.4. 435.16 (Renumbered from 510.10), 1004.5, TABLE 1004.5, TABLE 1020.2, 1227.5, 1227.5.2, 1227.6-1227.6.3, 1227.7.4, 1227.8.1, 1227.9.1, 1227.9.1.1, 1227.9.2.2, 1227.10-1227.10.7, 1227.12.1, 1227.22.1.1, 1227.23.1, 1230.1.2, 1230.1.4-1230.10, 1230.1.12, 1230.1.16, 1230.1.23, 1230.1.26, 1230.2.7, 1230.2.8, 1230.2.10, 1231.2.2, 1231.2.3, 1231.2.5131.2.6, 1231.2.7, 1231.2.8, 1231.2.9, 1231.2.10, 1231.2.2, 1231.2.3, 1231.2.5131.2.6, 1231.2.7, 1231.2.8, 1231.2.9, 1231.2.10, 1231.2.24, 1231.3.8, 1231.3.10, 1231.5, 1231.6-1231.6.7

# Item: [SFM 01/19-3-3]

**Chapter:** [3, OCCUPANCY CLASSIFICATION AND USE]

**Section:** [310, RESIDENTIAL GROUP R]

**Express Terms:**

## [Section: 310.5]

**310.5 Residential Group R-4.** Residential Group R-4 occupancy shall include buildings, structures or portions thereof for more than *six ambulatory clients,* but not more than 16 persons, excluding staff, who reside on a 24-hour basis in a supervised residential environment and receive custodial care. *~~Buildings of Group R-4 shall be classified as one of the occupancy conditions indicated below~~. The persons receiving care are capable of self-preservation.* Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code. *This occupancy classification may* *include a maximum six non-ambulatory or bedridden clients* *(see Section 435, Special Provisions for Licensed 24-Hour* *Care Facilities in a Group R-2.1, R-3.1 or R-4). Group R-4* *occupancies shall meet the requirements in Section 420.* This group shall include, but not be limited to, the following:

*Assisted living facilities such as:*

*Residential care facilities,*

*Residential care facilities for the elderly (RCFE),*

*Adult residential facilities,*

*Congregate living health facilities,*

*Group homes.*

*Social rehabilitation facilities such as:*

*Halfway houses,*

*Community treatment programs,*

*Work furlough programs,*

*Alcoholism or drug abuse recovery or treatment facilities.*

**Notation:**

Authority: Health and Safety Code Sections 1250, 1569.72, 1569.78, 1568.02, 1502, 1597.44, 1597.45, 1597.46, 1597.54, 1597.65, 13108, 13108.5, 13113, 13113.5, 13114, 13143,13132, 13132.7, 13132, 13133, 13135, 13143.2, 13143.6, 13146, 13210, 13211, 17921, 18928, 18949.2, 25500-25545, Government Code Section 51189, Education Code 17074.50

Reference(s): Health and Safety Code Sections 13143, 13143.1, 13143.9, 13211, 18949.2, 25500 through 25545, Government Code Sections 51176, 51177, 51178, 51179, Public Resources Code Sections 4201-4204

**CHAPTER 4**

**SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE**

# Item: [SFM 01/19-4-1]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

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

**Express Terms:**

## [Section: 403 Title, 403.1]

**SECTION 403**

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

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

# Item: [SFM 01/19-4-2]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

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

**Express Terms:**

## [Section: 403.3.2]

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

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

**[TALL WOOD AND HEAVY TIMBER 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

110.3.12 (New), 202, 403.3.2, TABLE 504.3, TABLE 504.4, TABLE 506.2, 508.4.4.1, 509.4.1.1 (New), TABLE 601, TABLE 602, 602.4, 602.4.1 (New), 602.4.1.1 (New), 602.4.1.2 (New), 602.4.1.2.1 (New), 602.4.1.3 (New), 602.4.1.4 (New), 602.4.1.5 (New), 602.4.1.6 (New), 602.4.2, 602.4.2.1 (New), 602.4.2.2 (New), 602.4.2.2.1 (New), 602.4.2.2.2 (New), 602.4.2.2.3 (New), 602.4.2.2.4 (New), 602.4.2.3 (New), 602.4.2.4 (New), 602.4.2.5 (New), 602.4.2.6 (New), 602.4.3, 602.4.3.1 (New), 602.4.3.2 (New), 602.4.3.3 (New), 602.4.3.4 (New), 602.4.3.5 (New), 602.4.3.6 (New), 602.4.4 (New), 602.4.4.1, 602.4.4.2, 602.4.4.3, 602.4.4 (New), 703.8 (New), 703.9 (New), 718.2.1, 722.7 (New), 722.7.1 (New), TABLE 722.7.1 (1) (New), TABLE 722.7.1 (2) (New), 722.7.2 (New), 722.7.2.1 (New), 722.7.2.2 (New), 1705.5.3 (New), TABLE 1705.5.3 (New),1705.11.1, 1705.11.2, 1705.12.2, 1705.12.3, 1705.20 (New), 2304.10.1.2 (New), 2304.11.3, 2304.11.4, 3102.3, 3102.6.1.1, (Chapter 35) ANSI/APA PRG 320-18, ASTM D3498-03 (2011) (New), D102.2.5

**SECTION 404**

**ATRIUMS**

# Item: [SFM 01/19-4-3]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [404, ATRIUMS]

**Express Terms:**

## [Section: 404.6]

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

**Exceptions:** (exceptions 1, 2 and 3 remain unchanged)

4. *In other than Group I and R-2.1 occupancies,* ~~A~~ *a* fire barrier is not required between the atrium and the adjoining spaces where the atrium is not required to be provided with a smoke control system.

**[Office of Statewide Health Planning Department (OSHPD) 2019 INTERVENING PROPOSALS]**

**[Related Sections in Part 2, California Building Code]**

404.6, 407, 407.1.1, 407.4.4.3, 407.4.4.5, 407.9, 407.11, 407.12 (New), 508.3.1.2 (Delete), 709.5, 903.3.1.1.1, 904.13, 907.2.6.2.2, 907.3.2, 907.3.2.1, 907.3.2.2, 907.3.2.3, 907.3.2.4, 907.3.2.5 (New), 909.5.3, 1010.1.9.7, 1010.1.9.8, 1026.4.1

**SECTION 406**

**MOTOR-VEHICLE-RELATED OCCUPANCIES**

# Item: [SFM 01/19-4-4]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [406, MOTOR-VEHICLE-RELATED OCCUPANCIES]

**Express Terms:**

## [Section: 406.2.1]

**406.2.1 Automatic garage door openers and vehicular gates.** Automatic garage door openers shall be listed and labeled in accordance with UL 325. Where provided, automatic vehicular gates shall comply with Section 3110. *See Health and Safety Code Sections 19890 ~~and~~, 19891, and 19892 for additional provisions for residential garage door openers.*

# Item: [SFM 01/19-4-5]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [406, MOTOR-VEHICLE-RELATED OCCUPANCIES]

**Express Terms:**

## [Section: 406.6.4 (New)]

***406.6.4 Mechanical-access garages.*** *Mechanical-access enclosed parking garages shall be in accordance with Sections 406.6.4.1 through 406.6.4.5.*

# Item: [SFM 01/19-4-6]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [406, MOTOR-VEHICLE-RELATED OCCUPANCIES]

**Express Terms:**

## [Section: 406.6.4.1 (New)]

***406.6.4.1 Separation.*** *Mechanical-access enclosed parking garages shall be separated from other occupancies and accessory uses by not less than 2-hour fire barriers constructed in accordance with Section 707 or by not less than 2- hour horizontal assemblies constructed in accordance with Section 711, or both. Refer to Table 508.4 for additional requirements.*

# Item: [SFM 01/19-4-7]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [406, MOTOR-VEHICLE-RELATED OCCUPANCIES]

**Express Terms:**

## [Section: 406.6.4.2 (New)]

***406.6.4.2 Smoke removal.*** *A mechanical smoke removal system, in accordance with Section 910.4, shall be provided for all areas containing an mechanical-access enclosed parking garage.*

# Item: [SFM 01/19-4-8]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [406, MOTOR-VEHICLE-RELATED OCCUPANCIES]

**Express Terms:**

## [Section: 406.6.4.3 (New)]

***406.6.4.3 Fire control equipment room.*** *The fire control equipment, consisting of the fire alarm control unit, mechanical ventilation controls and emergency shut down switch shall be provided in a room located where the equipment is able to be accessed by the fire service from a secured exterior door of a building. The room shall be a minimum of 50 square feet in size and shall be in a location that is approved by the fire code official.*

***Exception:*** *Shall not be required when there is a fire command center provided in compliance with Section 911 of this code.*

# Item: [SFM 01/19-4-9]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [406, MOTOR-VEHICLE-RELATED OCCUPANCIES]

**Express Terms:**

## [Section: 406.6.4.3.1 (New)]

***406.6.4.3.1 Emergency shut down disconnect.*** *The mechanical parking system shall be provided with a manually activated emergency shutdown disconnect for use by emergency personnel. The disconnect shall be clearly identified and shall be in a location approved by the fire code official.*

# Item: [SFM 01/19-4-10]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [406, MOTOR-VEHICLE-RELATED OCCUPANCIES]

**Express Terms:**

## [Section: 406.6.4.4 (New)]

***406.6.4.4 Fire department access doors.*** *Access doors shall be provided in accordance with Section 320~~3~~6.7 of the California Fire Code.*

**[AUTOMATIC PARKING GARAGE 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

202 (New), 406.6.4 (New), 406.6.4.1 (New), 406.6.4.2 (New), 406.6.4.3 (New), 406.6.4.3.1 (New), 406.6.4.4 (New), TABLE 508.4, Table 903.2.11.6

# Item: [SFM 01/19-4-11]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [407, GROUP I-2]

**Express Terms:**

## [Section: 407 Title]

**SECTION 407**

***GROUP I-2 AND GROUP I-2.1***

# Item: [SFM 01/19-4-12]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [407, GROUP I-2]

**Express Terms:**

## [Section: 407.1.1]

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

***Exception:***

*Occupancies in Group I-2 wherein mental health patients are restrained are permitted to be housed in one-story buildings of ~~Type IA,~~ Type IIA, Type IIIA or Type VA construction provided the floor area does not exceed 5,200 square feet (483 m2) between fire walls of two-hour fire-resistive construction with openings protected by fire assemblies having a 1 1/2-hour fire protection rating.*

# Item: [SFM 01/19-4-13]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [407, GROUP I-2]

**Express Terms:**

## [Section: 407.4.4.3]

**407.4.4.3 Access to corridor.** *Movement from habitable rooms shall be in accordance with Sections 407.4.4.3.1, 407.4.4.3.2 and 407.4.4.5.3.*

**~~Exception:~~** ~~The distance of travel shall be permitted to be increased to 125 feet (38 100 mm) where an automatic smoke detection system is provided throughout the care suite and installed in accordance with NFPA 72.~~

# Item: [SFM 01/19-4-14]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [407, GROUP I-2]

**Express Terms:**

## [Section: 407.4.4.5]

**407.4.4.5 Care suites containing sleeping room areas.** Sleeping rooms shall be permitted to be groupedinto care suites where one of the following criteria ismet:

~~1. The care suite is not used as an exit access for more than eight care recipient beds.~~

~~2~~*1*. The arrangement of the care suite allows for direct and constant visual supervision into the sleeping rooms by care providers.

~~3~~*2*. An automatic smoke detection system is provided in the sleeping rooms and installed in accordance with *Section 907.2.6.2.2, Item 1,* NFPA 72 *and section 903.2.6*.

# Item: [SFM 01/19-4-14.1]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [407, GROUP I-2]

**Express Terms:**

## [Section: 407.4.4.5.1]

**407.4.4.5.1 Area.** Care suites containing sleeping rooms shall be not greater than ~~7,500~~ *5,000* square feet (~~696~~ *465* m2) in area.

(existing text remains unchanged)

# Item: [SFM 01/19-4-15]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [407, GROUP I-2]

**Express Terms:**

## [Section: 407.9]

**407.9 Automatic ~~fire~~ *smoke* detection.**~~Corridors in Group I-2, Condition 1 occupancies and spaces permitted to be open to the corridors by Section 407.2 shall be equipped with an a~~*A*utomatic ~~fire~~ *smoke* detection ~~system. Group I-2, Condition 2~~ ~~occupancies~~ shall be *provided in accordance with equipped* ~~with smoke detection as required in~~ Section ~~407.2~~ *907.2.6.2.2*.

**~~Exceptions:~~**

1. ~~Corridor smoke detection is not required where sleeping rooms are provided with smoke detectors that comply with UL 268. Such detectors shall provide a visual display on the corridor side of each sleeping room and an audible and visual alarm at the care provider’s station attending each unit.~~
2. ~~Corridor smoke detection is not required where sleeping room doors are equipped with automatic door-closing devices with integral smoke detectors on the unit sides installed in accordance with their listing, provided that the integral detectors perform the required alerting function.~~

# Item: [SFM 01/19-4-16]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [407, GROUP I-2]

**Express Terms:**

## [Section: 407.11]

**407.11 Electrical systems.** In Group, I-2 *or I-2.1* occupancies, ~~the essential electrical system for electrical components, equipment and systems shall be designed and constructed~~ *electrical construction and installation shall be* in accordance with the provisions of Chapter 27 and ~~NFPA 99~~ *Article 517 of the California Electrical Code.*

# Item: [SFM 01/19-4-17]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [407, GROUP I-2]

**Express Terms:**

## [Section: 407.12 (New)]

***407.12. Technology equipment center****. A technology equipment center serving a Group I-2 occupancy shall be separated from other portions of the building by not less than a one-hour fire barrier constructed in accordance with Section 707 and a one-hour horizontal assembly constructed in accordance with Section 711 or both.*

**[Office of Statewide Health Planning Department (OSHPD) 2019 INTERVENING PROPOSLS]**

**[Related Sections in Part 2, California Building Code]**

404.6, 407, 407.1.1, 407.4.4.3, 407.4.4.5, 407.9, 407.11, 407.12 (New), 508.3.1.2 (Delete), 709.5, 903.3.1.1.1, 904.13, 907.2.6.2.2, 907.3.2, 907.3.2.1, 907.3.2.2, 907.3.2.3, 907.3.2.4, 907.3.2.5 (New), 909.5.3, 1010.1.9.7, 1010.1.9.8, 1026.4.1

**SECTION 408**

**GROUP I-3**

# Item: [SFM 01/19-4-18]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [408, GROUP I-3]

**Express Terms:**

## [Section: 408.1.2.2]

***408.1.2.2 Intervening spaces.*** *Common rooms and spaces within Group I-3 occupancies of Type I construction ~~can~~ shall be considered an intervening space in accordance with Section 1016.2 when the area is contained within housing units ~~and~~ or suites, and not considered a corridor, when they meet any of the following:*

1. *Within prisons and local detention facilities of Type I Construction, the exitaccess within a housing unit may be ~~a~~ non-rated ~~corridor~~ provided the required exit occupant load from any dayroom does not exceed 64 persons.*
2. *Within prison, jails, and courthouses: Circulation within any temporary holding suite of Type I construction and an occupant load less than 100.*
3. *Within prisons and local detention facilities, ~~A~~areas within secure mental health treatment facilities, correctional medical or mental health housing suites, of Type I construction and an occupant load less than 100.*

*4. Within prisons and local detention facilities of Type I Construction, detention program housing units or suites having an occupant load less than 100.*

# Item: [SFM 01/19-4-19]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [408, GROUP I-3]

**Express Terms:**

## [Section: 408.3.6]

**408.3.6 Exit discharge.** Exits are permitted to discharge into a fenced or walled courtyard. Enclosed yards or courts shall be of a size to accommodate all occupants, be located not less than 50 feet (15 240 mm) from the building and have an area of not less than *~~3~~* *7* (~~1.4~~ *0.65* m2) square feet per person. *A gate shall be provided from the safe dispersal area to allow for necessary relocation of occupants.*

# Item: [SFM 01/19-4-20]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [408, GROUP I-3]

**Express Terms:**

## [Section: TABLE 408.3.13 (New)]

***Table 408.3.13***

***MAXIMUM FLOOR AREA ALLOWANCES FOR I-3 FACILITIES c***

*![Maximin Floor Area Allowances for I-3 Facilities

Table 408.3.13 is proposed to clarify the occupancy load factor to be used during the
review of I-3 facilities, which include housing pods, refuge areas, safe dispersal areas as well as holding cells, and bench seating. Chapter 10, Table 1004.5 does not clearly list any occupant load factor for these functions of space that are unique to the I-3 facilities regulated by Chapter 4. This code change proposal is to address the need for a concise location for evaluating the exiting requirements based on occupant load factor for I-3 functions of space, which are scattered throughout the regulations in Chapter 4. The table format is a tool to bring all the different section requirements in one place for code user ease. By using a standard occupant load factor, the code user can then easily and consistently determine which condition is required to be met. The intent of the proposal is to give the code user a tool for calculating the number of required exits within a detention facility that may not otherwise be clear. A footnote reference is added to Table 1004.5 to point to Table 408.3.13 for these special functions of space.
]()*

1. *Temporary holding cells, rooms or areas shall be calculated based on policies and procedures approved by the authority having jurisdiction. See 408.3.11 for number of exits required.*
2. *Program rooms, day rooms and recreational yards which are dedicated to a housing pod or unit are not factored into the total occupant load of the building. Exiting from individual rooms shall meet the egress requirements of Chapter 10.*
3. *Refer to Chapter 10, Section 1004 or elsewhere in the code for specific requirements based on type of detention facility.*

# Item: [SFM 01/19-4-21]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [408, GROUP I-3]

**Express Terms:**

## [Section: 408.13]

***408.13 Windows.*** *In security areas within cell complexes sprinklered throughout, the area of glazing in one-hour corridor walls and smoke barrier walls shall not be restricted, provided:*

1. *All openings are protected by fixed glazing listed and labeled for a fire protection of at least 3/4 hour; or*
2. *Fixed security glazing set in noncombustible frames. Shall comply with the minimum requirements of one of the following test standards: ASTM F1233-98, Class III glass, or; California Department of Corrections and Rehabilitation, CDCR ~~860-94d~~ Appendix H, or H.P. White Laboratory, Inc., HPW-TP- 0500.02, Forced Entry Level III.*
3. *In lieu of the sizes set forth in CBC, the size and area of glazed assemblies shall conform to the following: Windows required to have a three-fourths-hour fire-resistive rating or windows protected by fixed security glazing, as delineated in Items 1 and 2 above, may have an area not greater than 84 square feet (7.8 m2) with neither width nor height exceeding 12 feet (3658 mm).*

**[I-3 OCCUPANCY 2019 INTERVENING PROPOSALS]**

**[Related Sections in Part 2, California Building Code]:**

310.3.1, 408.1.2.2, 408.3.6, TABLE 408.3.13 (New), 408.13, TABLE 504.3, TABLE 504.4, TABLE 506.2, TABLE 508.4. 435.16 (Renumbered from 510.10), 1004.5, TABLE 1004.5, TABLE 1020.2, 1227.5, 1227.5.2, 1227.6-1227.6.3, 1227.7.4, 1227.8.1, 1227.9.1, 1227.9.1.1, 1227.9.2.2, 1227.10-1227.10.7, 1227.12.1, 1227.22.1.1, 1227.23.1, 1230.1.2, 1230.1.4-1230.10, 1230.1.12, 1230.1.16, 1230.1.23, 1230.1.26, 1230.2.7, 1230.2.8, 1230.2.10, 1231.2.2, 1231.2.3, 1231.2.5131.2.6, 1231.2.7, 1231.2.8, 1231.2.9, 1231.2.10, 1231.2.2, 1231.2.3, 1231.2.5131.2.6, 1231.2.7, 1231.2.8, 1231.2.9, 1231.2.10, 1231.2.24, 1231.3.8, 1231.3.10, 1231.5, 1231.6-1231.6.7

# Item: [SFM 01/19-4-22]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [411, SPECIAL AMUSEMENT BUILDINGS]

**Express Terms:**

## [Section: 411 Title, 411.1]

**SECTION 411**

**SPECIAL AMUSEMENT ~~BUILDINGS~~ *AREAS***

**411.1 General.** Special amusement ~~buildings~~ *areas* having an occupant load of 50 or more shall comply with the requirements for the appropriate Group A occupancy and Sections 411.1 through 411.7. *~~411.8~~*~~.~~ Special amusement ~~buildings~~ *areas* having an occupant load of less than 50 shall comply with the requirements for a Group B occupancy and Sections 411.1 through 411.7 *~~411.8~~*~~.~~

**Exception:** Special amusement ~~buildings~~ *areas* or portions thereof that are without walls or a roof and constructed to prevent the accumulation of smoke need not comply with this section.

~~For flammable decorative materials, see the~~ *~~California Fire Code~~*~~.~~

# Item: [SFM 01/19-4-23]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [411, SPECIAL AMUSEMENT BUILDINGS]

**Express Terms:**

## [Section: 411.2]

**411.2 ~~Automatic fire detection~~ *Automatic sprinkler system*~~.~~** ~~Special amusement buildings shall be equipped with an automatic fire detection system in accordance with Section 907.~~ *Buildings containing special amusement areas shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. Where the special amusement area is temporary; less than 180 days; the sprinkler water supply shall be of an approved temporary means determined by the authority having jurisdiction.*

***Exception:*** *Automatic sprinklers are not required where the total floor area of a temporary; less than 180 days; special amusement area is less than 1,000 square feet (93 m2) and the exit access travel distance from any point in the special amusement area to an exit is less than 50 feet (15 240 mm).*

# Item: [SFM 01/19-4-24]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [411, SPECIAL AMUSEMENT BUILDINGS]

**Express Terms:**

## [Section: 411.3 (New)]

***411.3 Fire alarm system.*** *Buildings containing special amusement areas shall be equipped with an automatic smoke detection system in accordance with 907.2.11.*

# Item: [SFM 01/19-4-25]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [411, SPECIAL AMUSEMENT BUILDINGS]

**Express Terms:**

## [Section: 411.4 (Delete)]

**~~[F] 411.4 Alarm.~~** ~~Actuation of a single smoke detector, the automatic sprinkler system or 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.~~

# Item: [SFM 01/19-4-26]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [411, SPECIAL AMUSEMENT BUILDINGS]

**Express Terms:**

## [Section: 411.5 (Renumber)]

**~~[F]~~ ~~411.5~~ 411.4 Emergency voice/alarm communications system.** An emergency voice/alarm communications system shall be provided in accordance with Sections 907.2.11 and 907.5.2.2, is permitted to serve as a public-address system and shall be audible throughout the entire special amusement ~~building~~ *area*.

# Item: [SFM 01/19-4-27]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [411, SPECIAL AMUSEMENT BUILDINGS]

**Express Terms:**

## [Section: 411.5 (Replace)]

***411.5 Puzzle room exiting.*** *Puzzle room exiting shall comply with one of the following:*

1. *Exiting in accordance with Chapter 10,*
2. *An alternative design approved by authority having jurisdiction.*

# Item: [SFM 01/19-4-28]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [411, SPECIAL AMUSEMENT BUILDINGS]

**Express Terms:**

## [Section: 411.6]

**411.6 Exit marking.** Exit signs shall be installed at the required exit or exit access doorways ~~of~~ *serving special* amusement ~~buildings~~ *areas* in accordance with this section and Section 1013. Approved directional exit markings shall be provided. Where mirrors, mazes or other designs are utilized that disguise the path of egress travel such that they are not apparent, approved and listed low-level exit signs that comply with Section 1013.5, and directional path markings listed in accordance with UL 1994, shall be provided and located not more than 8 inches (203 mm) above the walking surface and on or near the path of egress travel. Such markings shall become visible in an emergency. The directional exit marking shall be activated by the automatic ~~fire~~ *smoke* detection system and the automatic sprinkler system in accordance with Section 907.2.11.

# Item: [SFM 01/19-4-29]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [411, SPECIAL AMUSEMENT BUILDINGS]

**Express Terms:**

## [Section: 411.7]

**411.7 Interior finish.** The interior finish in *special amusement areas* shall be Class A in accordance with Section

803.1.

**[PUZZLE ROOM 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

Table of Contents, 202, Title 411, 411.1, 411.2, 411.3, 411.4, 411.5, 411.6, 411.6.1, 411.7, TABLE 903.2.11.6, 907.2.11, 907.2.11.2, 907.2.11.3, TABLE 1017.2, INDEX

**SECTION 414**

**HAZARDOUS MATERIALS**

# Item: [SFM 01/19-4-30]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [414, HAZARDOUS MATERIALS]

**Express Terms:**

## [Section: TABLE 414.5.1]

**[F] TABLE 414.5.1**

**EXPLOSION CONTROL REQUIREMENTS a, h**

**Explosion Control Requirements

The addition of energy storage system (ESS) requirements into the 2018 code was an initial effort to address safety hazards associated with the increased use of lithium-ion batteries, capacitors and other modern energy storage system (ESS) technologies for an expanded number of grid related energy storage applications. The new requirements
were a huge step toward addressing modern ESS technologies and grid based applications. However as written the requirements made it difficult to apply appropriate safety requirements for different installations, each with their own risks and exposures. Case in point, a lead acid battery ESS installation in an unmanned rural telecommunications repeater doesn’t present the same risks and exposures as a lithium ion battery ESS installation in a mixed occupancy high rise in an urban area.

Since the 2018 ESS requirements were developed there has been a lot of work done by private and government stakeholders to enhance ESS installation requirements, including the initial drafting of the NFPA 855 Energy Storage System standard. The ICC Fire Code Action Committee’s ESS work group, which includes 45+ code officials, manufacturers,
users and industry experts identified several areas in the 2018 code that needed to be addressed to provide requirements that better address the hazards and exposures associated with various types of ESS installations, technologies and operations.

The footnote added to Table 414.5.1 gives the building code user a reference pointer to the appropriate section in the California Fire Code.
**

*i. Where explosion control is required in Section 1206 of the California Fire Code.*

**[ENERGY STORAGE SYSTEMS 2019 INTERVEING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

306.2, TABLE 414.5.1, TABLE 509, 707.4, TABLE 716.1(2), T ABLE 716.1(3), 716.2.5.4.1 (New), 716.3.2.1.1.1 (New), TABLE 903.2.11.6, [Chapter 35] NFPA 68 (New)

**SECTION 435**

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

# Item: [SFM 01/19-4-31]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

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

**Express Terms:**

## [Section: 435.16]

[Relocated and renumbered from section 510.10.]

***435.16 ~~510.10~~ Group R-2.1, R-3.1, R-4*** *[SFM] Buildings housing protective social* *care ~~homes or in occupancies housing inmates who are not~~**~~restrained~~ need not be of one-hour fire-resistive construction* *when not more than two stories in height. In no case, shall* *individual floor areas exceed 3,000 square feet* (279 *m2). The* *fire-resistive protection of the exterior walls shall not be less* *than one hour where such walls are located within* 5 *feet (1524mm) of the property line. Openings within such walls are not permitted. Openings in exterior nonrated walls need not be protected.*

**[I-3 OCCUPANCY 2019 INTERVENING PROPOSALS]**

**[Related Sections in Part 2, California Building Code]:**

310.3.1, 408.1.2.2, 408.3.6, TABLE 408.3.13 (New), 408.13, TABLE 504.3, TABLE 504.4, TABLE 506.2, TABLE 508.4. 435.16 (Renumbered from 510.10), 1004.5, TABLE 1004.5, TABLE 1020.2, 1227.5, 1227.5.2, 1227.6-1227.6.3, 1227.7.4, 1227.8.1, 1227.9.1, 1227.9.1.1, 1227.9.2.2, 1227.10-1227.10.7, 1227.12.1, 1227.22.1.1, 1227.23.1, 1230.1.2, 1230.1.4-1230.10, 1230.1.12, 1230.1.16, 1230.1.23, 1230.1.26, 1230.2.7, 1230.2.8, 1230.2.10, 1231.2.2, 1231.2.3, 1231.2.5131.2.6, 1231.2.7, 1231.2.8, 1231.2.9, 1231.2.10, 1231.2.2, 1231.2.3, 1231.2.5131.2.6, 1231.2.7, 1231.2.8, 1231.2.9, 1231.2.10, 1231.2.24, 1231.3.8, 1231.3.10, 1231.5, 1231.6-1231.6.7

**SECTION 453**

***GROUP L [SFM]***

# Item: [SFM 01/19-4-32]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [453, GROUP L [SFM]]

**Express Terms:**

## [Section: 453.4.4]

***453.4.4 Emergency response equipment area.*** *When required by the fire code official, an area for emergency response equipment shall be provided on each floor in an approved location. The area shall be a minimum of 50 square feet (4.6 m2), for spill mitigation supplies per California Fire Code 5001.3.3.4 in a location approved by the fire code official, and identified with signage.*

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

# Item: [SFM 01/19-4-33]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [453, GROUP L [SFM]]

**Express Terms:**

## [Section: 453.4.7.2]

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

# Item: [SFM 01/19-4-34]

**Chapter:** [4,

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE]

**Section:** [453, GROUP L [SFM]]

**Express Terms:**

## [Section: 453.9]

***453.9 Existing Group L ~~or~~ and Group H-8 occupancies, additions, alterations, or repairs.*** *See California Fire Code Chapter 11, Section**1116 and California Existing Building Code ~~Section 316~~.*

**[L OCCUPANCY WORK GROUP 2019 INTERVENING PROPOSALS]**

**[Related Sections in Part 2, California Building Code]:**

453.4.4, 453.4.7.2, 1020.5, 3001.6

**Notation:**

Authority: Health and Safety Code Sections 1250, 1569.72, 1569.78, 1568.02, 1502, 1597.44, 1597.45, 1597.46, 1597.54, 1597.65, 13108, 13108.5, 13113, 13113.5, 13114, 13143,13132, 13132.7, 13132, 13133, 13135, 13143.2, 13143.6, 13146, 13210, 13211, 17921, 18928, 18949.2, 25500-25545, Government Code Section 51189, Education Code 17074.50

Reference(s): Health and Safety Code Sections 13143, 13143.1, 13143.9, 13211, 18949.2, 25500 through 25545, Government Code Sections 51176, 51177, 51178, 51179, Public Resources Code Sections 4201-4204

**CHAPTER 5**

**GENERAL BUILDING HEIGHTS AND AREAS**

**SECTION 504**

**BUILDING HEIGHT AND NUMBER OF STORIES**

# Item: [SFM 01/19-5-1]

**Chapter:** [5, GENERAL BUILDING HEIGHTS AND AREA]

**Section:** [504, BUILDING HEIGHT AND NUMBER OF STORIES]

**Express Terms:**

## [Section: TABLE 504.3 (I-3 Workgroup)]

**TABLE 504.3**

**ALLOWABLE BUILDING HEIGHT IN FEET ABOVE GRADE PLANE a*, i***

***![Alowable Building Height in Feet Above Grade Plane

The new R-2.2 occupancy classification was introduced in the 2019 Triennial code cycle and the NS value row needs to be added to Table 504.3. The NS values for the R-2.2 occupancy was missed in the 2018 Triennial rulemaking package. The NS value is needed in the table for consistency. The benefit of the NS value is for code consistency.]()***

For SI: 1 foot = 304.8 mm.

UL = Unlimited; *NP = Not Permitted;* NS = Buildings not equipped throughout with an automatic sprinkler system; S = Buildings equipped throughout with an

automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed in

accordance with Section 903.3.1.2; S13D = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.3.

(footnotes remain unchanged)

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

**[I-3 OCCUPANCY 2019 INTERVENING PROPOSALS]**

**[Related Sections in Part 2, California Building Code]:**

310.3.1, 408.1.2.2, 408.3.6, TABLE 408.3.13 (New), 408.13, TABLE 504.3, TABLE 504.4, TABLE 506.2, TABLE 508.4. 435.16 (Renumbered from 510.10), 1004.5, TABLE 1004.5, TABLE 1020.2, 1227.5, 1227.5.2, 1227.6-1227.6.3, 1227.7.4, 1227.8.1, 1227.9.1, 1227.9.1.1, 1227.9.2.2, 1227.10-1227.10.7, 1227.12.1, 1227.22.1.1, 1227.23.1, 1230.1.2, 1230.1.4-1230.10, 1230.1.12, 1230.1.16, 1230.1.23, 1230.1.26, 1230.2.7, 1230.2.8, 1230.2.10, 1231.2.2, 1231.2.3, 1231.2.5131.2.6, 1231.2.7, 1231.2.8, 1231.2.9, 1231.2.10, 1231.2.2, 1231.2.3, 1231.2.5131.2.6, 1231.2.7, 1231.2.8, 1231.2.9, 1231.2.10, 1231.2.24, 1231.3.8, 1231.3.10, 1231.5, 1231.6-1231.6.7

# Item: [SFM 01/19-5-2]

**Chapter:** [5, GENERAL BUILDING HEIGHTS AND AREA]

**Section:** [504, BUILDING HEIGHT AND NUMBER OF STORIES]

**Express Terms:**

## [Section: TABLE 504.3 (Tall Wood Workgroup)]

**TABLE 504.3**

**ALLOWABLE BUILDING HEIGHT IN FEET ABOVE GRADE PLANE a*, i***

***![Allowable Building Height in Feet Above Grade Plane

This proposal addresses the allowable building height, in terms of feet, for the three new construction types proposed by the TWB. As set forth in the proposal to Section 602.4, the three new types of construction are Types IV-A, IV-B, and IV-C. The TWB examined each proposed type of construction for its safety and efficacy with regard to each occupancy type.

The following approach was used to develop proposed allowable heights of the new construction types, based on the conclusions of the Committee:

1. Based upon TWB review of fire safety and structural integrity performance, Type IV-B is equated to Type I-B for height (in feet). A noteworthy item to remember is that, per Section 403.2.1.1 of the IBC, Type IB construction is permitted to be reduced to 1-hour Fire Resistance rating; however, the TWB does not propose to allow the same reduction for Type IV-B. As a result, the comparison is between 2-hr mass timber construction that is partially exposed, versus 1-hr Type IB construction, and the Committee believes that 2-hr mass timber construction that is partially exposed per the limits of proposed Section 602.4 warrants the same heights as allowed for 1-hr Type I-B construction. It should be noted that the unprotected mass timber also needs to meet the 2 hour FRR, thus the protected area will likely be conservatively higher FRR than actually required;

2. Type IV-A should be somewhat larger than IV-B, as Type IV-A construction is entirely protected (no exposed mass timber permitted) and the required rating of the structure is equivalent to those required of Type I-A construction (3-hr rating for structural frame). However, the Committee did not find it acceptable to allow the unlimited heights of Type I-A to be applied to Type IV-A. Instead, the Committee applied a multiplier of 1.5 to the heights proposed for Type IV-B construction, in order to propose reasonable height allowances for IV-A construction;

3. The Committee viewed Type IV-C as similar to existing HT construction with the exception that IV-C has a 2 hour FRR where HT is acceptably fire resistant based on the large sizes of the members. As such, the height in feet is proposed to be equal to the height in feet of Type IV-HT. In terms of stories, however, the Committee proposed an additional number of stories for IV-C in recognition of its greater FRR.

4. While the base code seems to allow significant heights for buildings without sprinklers (e.g., Table 504.3 currently allows a height of 160 feet for NS Type I-B construction for many occupancy classifications), the Committee believes that no additional heights over what is already permitted for Type IV-HT would be proposed for the NS (non sprinklered) rows. As such, where separate rows are provided for heights for the NS situation, the proposed heights for Types IV-A, IV-B, and IV-C are the same as those heights already permitted for Type IV for the NS condition.

This methodology explains the majority of the recommendations here. Specifically, for occupancy groups A, B, E, F, I-4, M, R, S, U, the methodology described above accurately reflects how the height proposals were developed.
After undergoing this methodology to develop initial height recommendations, the TWB then applied professional judgment (from both a fire safety and a structural perspective), to develop a working draft table, cell by cell, for all occupancy types.

The exercise for establishing the allowable number of stories for the three new types of construction started with setting Type I-B allowances equivalent to Type IV-B. The tabular fire resistance ratings of building elements for these two types of construction is identical (not including the reduction permitted by 403.2.1.1), so the identical number of stories was deemed a reasonable starting point. From this point, the TWB Committee reviewed each occupancy classification to see if the Type I-B story allowance required adjustment.

Following is a summary of how allowable number of stories for sprinklered I-B were adjusted for IV-B:

A-1, A-2, A-3, A-4, A-5, B, E, H-1, H-5, I-1(1), I-1(2), I-2, I-3, I-4, R-1, R-2, R-3, R-4, U: no adjustment, same number of allowable stories as Type I-B.

F-1 and S-1: reduced from 12 to 7 (2 story increase from Type IV-HT)

F-2, M, S-2: reduced from 12 to 8 (2 story increase from Type IV-HT)

H-2: reduced from 3 to 2 (same as Type IV-HT)

H-3: reduced from 6 to 4 (same as IV-Type HT)

H-4: reduced from 8 to 7 (1 story increase from Type IV-HT) 

Similarly, to establish the height in feet for Type IV-B:

A-1, A-2, A-3, A-4, A-5, B, E, F-1, F-2, I-4, M, R-1, R-2, R-3, R-4, S-1, S-2, U: same allowable height as I-B.

H-1, H-2, H-3: reduced from 180’ to 90’

H-4: reduced from 180’ to 100’

H-5: reduced from 160’ to 90’

I-1(1): reduced from 180’ to 120’

I-1(2): reduced from 180’ to 65’

I-2: reduced from 180’ to 65’

I-3: reduced from 180’ to 120’

Adjusting IV-B up to IV-A for allowable number of stories:
A-1, A-2, A-3, A-4, A-5, B, E, F-2, I-4, M, R-1, R-2, R-3, R-4, S-1, S-2, U – 1.5 x IV-

B number of stories

F-1, S-1 increase by 3 stories

H-1, H-3 same as IV-HT

H-2, H-4, H-5 increase by 1 story

I-1(1), I-1(2), I-2, I-3 increase by 2 stories

H-3 reduced from 6 to 4 (same as IV-HT)

H-4 reduced from 8 to 7 (1 story increase from IV-HT)

I-I(1), I-1(2), I-2, I-3, same as IV-HT

Adjusting IV-B to IV-A for building height:

A-1, A-2, A-3, A-4, A-5, B, E, F-1, F-2, H-1, H-5, I-1(1), I-3, I-4, M, R-1, R-2, R-3, 
R-4, S-1, S-2, U: multiply 1.5 x Type IV-B (180 ft.)

H-1, H-2 H-3, H-5: increase by 30 ft.

H-4: increase by 40 ft.

I-1(2), I-2: same as Type IV-HT

For instance, for Groups H-1, H-2, H-3, and H-5, while the table allows 160 feet for Type I-B construction, the TWB Committee proposed a height of 90 feet for Type IV-B construction, and is using a multiplier of 1.33 to propose a height for Type IV-A construction of 120 feet height, intentionally made equal to the existing Heavy Timber heights.

For H-4, corrosives represent a health hazard (but not necessarily a fire hazard) to building occupants and first responders, the Committee believed that reduced heights were warranted. These are slightly greater than discussed above for the H-occupancy groups (140 feet versus 120 feet for IV-A construction, and 100 feet versus 90 feet for IV-B construction), but these still are far below what is permitted for Type I-B construction (180 feet permitted for the sprinklered condition), and is in recognition of the particular type of Hazardous occupancy covered by the H-4 occupancy group.

For Group I occupancies, there are two rows in the table, one being a row that includes I-1 Condition 1 and I-3 occupants (more capable of self-preservation) and the other being a row that includes I-1 Condition 2 and I-2 occupants (less capable of self-preservation). For I-1 Condition 1 and I-3 occupants, the Committee proposed a height of 120 feet for Type IV-B (versus 180 feet from the general methodology summarized above) and a height of 180 feet for Type IV-A (versus 270 feet from the general methodology summarized above). For those I-1 Condition 2 and I-2 occupants, the TWB Committee took a very conservative approach and will only allow the heights that are already permitted by code for traditional Type IV construction.

ICC Committee Modification: In Table 503.4, the value under Type IV A construction is to be 180 instead of 270 and the value under Type IV B construction is to be 120 instead of 180. All other portions of the proposal are not modified. This floor modification DiGiovanni-1 changed the height for one occupancy group, I-4, but the excerpt from the report of the CAH fails to make that distinction clear. The intent of the modification was further confirmed in an email by ICC Technical Services SVP Michael Pfeiffer, P.E. on August 8, 2019. 

ICC Committee Reason for modification: The modification proposed makes this proposal work. The proposal was excessive without it. Otherwise, many of the reasons cited by the committee for proposal G80-18 apply as well.

State Fire Marshal (SFM) Background:
The SFM Tall Wood Buildings workgroup evaluated the existing California amendments to the Table for allowable height, stories and area. In the 2007 Triennial rulemaking code cycle, the SFM took a balanced approach to fire protection based on the historical use of height and area provisions and data demonstrated that California’s minimum requirements for the built environment have safeguarded the public health, safety and general welfare of the occupants and to the property as a whole since the 1920s. 

The additional safety provided by an automatic sprinkler system has been acknowledged as justification for either increasing the allowable height of a building by one (1) story or increasing the allowable area beyond the limits established in Table 506.2, but not both.

The SFM recognizes and supports the benefits of automatic fire sprinkler protection in buildings.  The need for a balanced approach to fire protection is also recognized and is the basis for maintaining the current California amendments which permit the use of automatic sprinkler systems for an increase in height or area but not both.  During the 2007 Triennial rulemaking California code adoption process, building and fire officials reviewed data from various sources to justify the increased building size of the 2006 IBC over the allowable areas and heights in all three legacy codes. At the time there appeared to be little science behind the table values and formulas, SFM and California code officials involved in the process were not comfortable and could not justify the elimination of redundancy from the code and an over reliance on fire sprinkler systems.

During the SFM Tall Wood Building workgroup it was discussed and recognized that the tables for allowable height, stories and area need to be re-evaluated. The SFM plans to address those comments, concerns, and recommendations for the 2022 Triennial rulemaking code package. 

Per California regulations buildings housing Group I-3 occupancies, shall be constructed of Type I-A or Type IB, for this reason, the new Types of mass timber construction are not permitted.

Per Health and Safety Code 13131.5 buildings housing Group R-2.1, shall not be permitted in non-fire resistive construction. For this reason, only Type VI-A is allowed.

During the SFM Tall Wood Building workgroup, representatives from the office of Statewide Health Planning and Development (OSHPD), determined that at this time the proposed Type IV-A, Type IV-B, and Type IV-C as well as HT will not be permitted for Group I-2 and I-2.1 occupancies in California.
]()***

For SI: 1 foot = 304.8 mm.

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

1. (footnotes remain unchanged)

**[TALL WOOD AND HEAVY TIMBER 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

110.3.12 (New), 202, 403.3.2, TABLE 504.3, TABLE 504.4, TABLE 506.2, 508.4.4.1, 509.4.1.1 (New), TABLE 601, TABLE 602, 602.4, 602.4.1 (New), 602.4.1.1 (New), 602.4.1.2 (New), 602.4.1.2.1 (New), 602.4.1.3 (New), 602.4.1.4 (New), 602.4.1.5 (New), 602.4.1.6 (New), 602.4.2, 602.4.2.1 (New), 602.4.2.2 (New), 602.4.2.2.1 (New), 602.4.2.2.2 (New), 602.4.2.2.3 (New), 602.4.2.2.4 (New), 602.4.2.3 (New), 602.4.2.4 (New), 602.4.2.5 (New), 602.4.2.6 (New), 602.4.3, 602.4.3.1 (New), 602.4.3.2 (New), 602.4.3.3 (New), 602.4.3.4 (New), 602.4.3.5 (New), 602.4.3.6 (New), 602.4.4 (New), 602.4.4.1, 602.4.4.2, 602.4.4.3, 602.4.4 (New), 703.8 (New), 703.9 (New), 718.2.1, 722.7 (New), 722.7.1 (New), TABLE 722.7.1 (1) (New), TABLE 722.7.1 (2) (New), 722.7.2 (New), 722.7.2.1 (New), 722.7.2.2 (New), 1705.5.3 (New), TABLE 1705.5.3 (New),1705.11.1, 1705.11.2, 1705.12.2, 1705.12.3, 1705.20 (New), 2304.10.1.2 (New), 2304.11.3, 2304.11.4, 3102.3, 3102.6.1.1, (Chapter 35) ANSI/APA PRG 320-18, ASTM D3498-03 (2011) (New), D102.2.5

# Item: [SFM 01/19-5-3]

**Chapter:** [5, GENERAL BUILDING HEIGHTS AND AREA]

**Section:** [504, BUILDING HEIGHT AND NUMBER OF STORIES]

**Express Terms:**

## [Section: TABLE 504.4 (I-3 Workgroup / OSHPD)]

**TABLE 504.4—continued**

**ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE a, b*, n***

***Allowable Number of Stories Above Grade Plane

The new R-2.2 occupancy classification was introduced in the 2018 Triennial code cycle and the NS value row needs to be added to Table 504.4. The NS values for the R-2.2 occupancy was missed in the 2018 Triennial rulemaking package. The NS value is needed in the table for consistency. The benefit of the NS value is for code consistency. It was also identified that by Health and Safety Code (HSC) Section 13143.7; Type II-B, Type III-B and Type V-B are not permitted for the R-2.2 occupancy classification. This error has been corrected.***

UL = Unlimited; NP = Not Permitted; NS = Buildings not equipped throughout with an automatic sprinkler system; S = Buildings equipped throughout with an

automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed

in accordance with Section 903.3.1.2; S13D = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.3.

(footnotes a through d remain unchanged)

e. ~~New Group I-1 and~~ I-3 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6. ~~For new Group I-1 occupancies, Condition 1, see Exception 1 of Section 903.2.6~~.

(footnotes f through o remain unchanged)

**[I-3 OCCUPANCY / OSHPD 2019 INTERVENING PROPOSALS]**

**[Related Sections in Part 2, California Building Code]:**

310.3.1, 408.1.2.2, 408.3.6, TABLE 408.3.13 (New), 408.13, TABLE 504.3, TABLE 504.4, TABLE 506.2, TABLE 508.4. 435.16 (Renumbered from 510.10), 1004.5, TABLE 1004.5, TABLE 1020.2, 1227.5, 1227.5.2, 1227.6-1227.6.3, 1227.7.4, 1227.8.1, 1227.9.1, 1227.9.1.1, 1227.9.2.2, 1227.10-1227.10.7, 1227.12.1, 1227.22.1.1, 1227.23.1, 1230.1.2, 1230.1.4-1230.10, 1230.1.12, 1230.1.16, 1230.1.23, 1230.1.26, 1230.2.7, 1230.2.8, 1230.2.10, 1231.2.2, 1231.2.3, 1231.2.5131.2.6, 1231.2.7, 1231.2.8, 1231.2.9, 1231.2.10, 1231.2.2, 1231.2.3, 1231.2.5131.2.6, 1231.2.7, 1231.2.8, 1231.2.9, 1231.2.10, 1231.2.24, 1231.3.8, 1231.3.10, 1231.5, 1231.6-1231.6.7

# Item: [SFM 01/19-5-4]

**Chapter:** [5, GENERAL BUILDING HEIGHTS AND AREA]

**Section:** [504, BUILDING HEIGHT AND NUMBER OF STORIES]

**Express Terms:**

## [Section: TABLE 504.4 (Tall Wood Workgroup)]

**TABLE 504.4**

**ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE a, b*, n***

***![Allowable Number of Stories avove Grade Plane

This proposal addresses the building height, in terms of the number of stories, for the three new construction types proposed by the TWB. As set forth in the proposal to Section 602.4, the three new types of construction are Types IVA, IV-B, and IV-C. The TWB Committee examined each proposed type of construction for its safety and efficacy regarding each occupancy.

The following approach was considered appropriate for the heights of the new construction types, based on the conclusions of the TWB Committee:

Based upon TWB review of fire safety and structural integrity performance, Type IV-B is equated to Type I-B for height (in number of stories). A noteworthy item is that, per Section 403.2.1.1 of the IBC, Type I-B construction is permitted to be reduced to 1-hour Fire Resistance Rating (FRR); however, the TWB does not propose to allow the same reduction for Type IV-B. As a result, the comparison is between 2-hr mass timber construction that is permitted to be partially unprotected, versus 1-hr Type IB construction, and the TWB Committee believes that 2-hr mass timber construction that is partially exposed per the limits of proposed Section 602.4 warrants the same heights as allowed for 1-hr Type I-B construction;

Type IV-A should be somewhat larger than IV-B, as Type IV-A construction is entirely protected (no exposed mass timber permitted) and the required rating of the structure is equivalent to those required of Type I-A construction (3-hr rating for structural frame). However, the Committee did not find it acceptable to allow the scale of heights (many of
which are unlimited) of Type I-A to be applied to Type IV-A. Instead, the Committee applied a multiplier of 1.5 to the heights proposed for Type IV-B construction (rounded up or down based on judgment) in order to propose reasonable height allowances for IV-A construction;

The TWB Committee viewed Type IV-C as sufficiently similar to existing HT construction, especially in terms of the percentage of exposed wood (it is permitted to be entirely unprotected), and the resulting contribution to fire. While the height in feet for Type IV-C is proposed to be equal to the height in feet of Type IV-HT, the TWB Committee felt that additional stories was warranted in some cases. Therefore, in terms of stories, the TWB Committee proposes additional number of stories for Type IV-C construction when compared to traditional Type IV heavy timber construction. The TWB Committee feels that some recognition is warranted for the fire resistance rating requirements (Type IV-C has 2-hour rating on structural elements, whereas traditional Type IV Heavy Timber used dimensional wood, which is understood to yield an approximate fire resistance rating equivalent to about 1-hour construction) and provided that flexibility when developing height, in terms of stories, for Type IV-C construction. A multiplier of 1.5 was applied from the Type IV-HT heights to develop reasonable numbers of stories for Type IV-C construction. While the base code seems to allow significant heights for buildings without sprinklers (e.g., Table 504.4 currently allows 11 stories for NS Type I-B construction for many occupancy classifications), the TWB Committee believes that no additional heights over what is already permitted for Type IV should be proposed for the NS (non sprinklered) rows. As such, where separate rows are provided for heights for the NS condition, the proposed heights for Types IV-A, IV-B, and IV-C are the same as those heights already permitted for Type IV for the NS condition. This methodology explains the majority of the recommendations included in this proposal. Specifically, for occupancy groups A, B, E, R, and U, the methodology described above accurately reflects how the height proposals were developed.

The TWB Committee applied professional judgment (from both a fire safety and a structural perspective) to develop a draft table, cell by cell, for all occupancy types. After further examination, reduced heights were proposed for F, H, I, M, and S occupancy classifications.

For F-1 occupancies, the TWB Committee proposed a height of 7 stories for Type IV-B construction (versus the 12 stories currently permitted for I-B construction). A multiplier of 1.5 was used to propose a height of 10 stories for Type IV-A construction (when rounded down). No additional height was proposed for Type IV-C construction (Type IV-C proposed at 5 stories, and 5 stories is already permitted by code for Type IV-HT).

For F-2 occupancies, again the Committee is proposing a reduced number of stories, with 8 stories for Type IV-B construction (versus 12 stories that would be derived from the methodology). Again, a multiplier of 1.5 was used to propose a height of 12 stories for Type IV-A construction. No additional height is proposed for Type IV-C construction (Type IV-C proposed at 6 stories, and 6 stories is already permitted by code for Type IV-HT).

A conservative approach also explains the proposed heights for Group H occupancies. For Group H-1, only 1 story buildings are permitted by Table 504.4 for all construction types, so the proposal was adjusted to also limit all the new Type IV construction types to 1 story as well.

For Groups H-2, H-3, and H-5, heights were intentionally made equal to the existing Heavy Timber heights. In other words, there is no proposal to any increased heights over what is already allowed by code for these use groups.

Group H-4, being corrosives which represents a health hazard (but not necessarily a fire hazard) to occupants and first responders, was also reduced, slightly. The TWB proposes 7 stories for Type IV-B construction (equivalency to Type I-B would have yielded 8 stories). The proposal allows only 8 stories for Type IV-A construction. No additional height is
proposed for Type IV-C construction (Type IV-C proposed at 6 stories, and 6 stories is already permitted by code for Type IV-HT).

Group I, the Committee took a more conservative approach and proposed an equivalent number of stories for Type IV-A construction, as is provided for Type I-B construction (10 stories for both construction types and occupancy types). The allowable heights for Type IV-B construction were selected to fall between the 10 stories for Type IV A and the number of stories for Type IV-C construction. The Committee proposed a height of 7 stories for I-1, and 6 stories for I-2. No additional height was proposed for Type IV-C construction (IV-C construction heights in floors is equal to the number of floors already allowed for Type IV-HT, 5 stories for I-1, 4 stories for I-2).

For Group M occupancies, the Committee again took a conservative approach, and proposed an equivalent number of stories for Type IV-A construction, as is provided for Type I-B construction (12 stories for both construction types). The proposal for Type IV-B construction is 8 stories which is based on the use of the multiplier of 1.5 with respect to the Type IV-A proposal. A modest increase (from 5 to 6 stories) is proposed for Type IV-C construction due to the higher requirement for structural fire-resistance.

For Group S, while the base code does not differentiate between S-1 and S-2 in Type I-B construction (both 12 stories), the Committee recognized that the base code does provide a difference for Group F (10 stories for F-1, 12 stories for F-2). As explained above, this led the Committee to propose lower heights for F-1, than for F-2. The Committee felt
this was appropriate with respect to the hazard differences between F-1 and F-2. Rather than basing our proposal for S occupancies on the same starting point of 12 stories, the Committee decided to simply copy the proposed heights for Group F into the rows for Group S for both IV-A and IV-B construction types. No additional height is proposed for IVC construction (IV-C proposed at 5 stories for both S-1 and S-2, same as existing Type IV-HT heights).

This proposed change corrects the tabular value errors that went undetected in the original code change until after the completion of the 2012 cycle: the tabular story and height
numbers for Type IV Group S-2. The proposal corrects those errors. (G81-18)

State Fire Marshal (SFM) Background:
The SFM Tall Wood Buildings workgroup evaluated the existing California amendments to the Table for allowable height, stories and area. In the 2007 Triennial rulemaking code cycle, the SFM took a balanced approach to fire protection based on the historical use of height and area provisions and data demonstrated that California’s minimum requirements for the built environment have safeguarded the public health, safety and general welfare of the occupants and to the property as a whole since the 1920s. 

The additional safety provided by an automatic sprinkler system has been acknowledged as justification for either increasing the allowable height of a building by one (1) story or increasing the allowable area beyond the limits established in Table 506.2, but not both.

The SFM recognizes and supports the benefits of automatic fire sprinkler protection in buildings.  The need for a balanced approach to fire protection is also recognized and is the basis for maintaining the current California amendments which permit the use of automatic sprinkler systems for an increase in height or area but not both.  During the 2007 Triennial rulemaking California code adoption process, building and fire officials reviewed data from various sources to justify the increased building size of the 2006 IBC over the allowable areas and heights in all three legacy codes. At the time there appeared to be little science behind the table values and formulas, SFM and California code officials involved in the process were not comfortable and could not justify the elimination of redundancy from the code and an over reliance on fire sprinkler systems.

During the SFM Tall Wood Building workgroup it was discussed and recognized that the tables for allowable height, stories and area need to be re-evaluated. The SFM plans to address those comments, concerns, and recommendations for the 2022 Triennial rulemaking code package. 

Per California regulations buildings housing Group I-3 occupancies, shall be constructed of Type I-A or Type IB, for this reason, the new Types of mass timber construction are not permitted.

Per Health and Safety Code 13131.5 buildings housing Group R-2.1, shall not be permitted in non-fire resistive construction. For this reason, only Type VI-A is allowed.

During the SFM Tall Wood Building workgroup, representatives from the office of Statewide Health Planning and Development (OSHPD), determined that at this time the proposed Type IV-A, Type IV-B, and Type IV-C as well as HT will not be permitted for Group I-2 and I-2.1 occupancies in California.
]()***

***![Allowable Number of Stories Above Grade Plane

This proposal addresses the building height, in terms of the number of stories, for the three new construction types proposed by the TWB. As set forth in the proposal to Section 602.4, the three new types of construction are Types IVA, IV-B, and IV-C. The TWB Committee examined each proposed type of construction for its safety and efficacy regarding each occupancy.

The following approach was considered appropriate for the heights of the new construction types, based on the conclusions of the TWB Committee:

Based upon TWB review of fire safety and structural integrity performance, Type IV-B is equated to Type I-B for height (in number of stories). A noteworthy item is that, per Section 403.2.1.1 of the IBC, Type I-B construction is permitted to be reduced to 1-hour Fire Resistance Rating (FRR); however, the TWB does not propose to allow the same reduction for Type IV-B. As a result, the comparison is between 2-hr mass timber construction that is permitted to be partially unprotected, versus 1-hr Type IB construction, and the TWB Committee believes that 2-hr mass timber construction that is partially exposed per the limits of proposed Section 602.4 warrants the same heights as allowed for 1-hr Type I-B construction;

Type IV-A should be somewhat larger than IV-B, as Type IV-A construction is entirely protected (no exposed mass timber permitted) and the required rating of the structure is equivalent to those required of Type I-A construction (3-hr rating for structural frame). However, the Committee did not find it acceptable to allow the scale of heights (many of
which are unlimited) of Type I-A to be applied to Type IV-A. Instead, the Committee applied a multiplier of 1.5 to the heights proposed for Type IV-B construction (rounded up or down based on judgment) in order to propose reasonable height allowances for IV-A construction;

The TWB Committee viewed Type IV-C as sufficiently similar to existing HT construction, especially in terms of the percentage of exposed wood (it is permitted to be entirely unprotected), and the resulting contribution to fire. While the height in feet for Type IV-C is proposed to be equal to the height in feet of Type IV-HT, the TWB Committee felt that additional stories was warranted in some cases. Therefore, in terms of stories, the TWB Committee proposes additional number of stories for Type IV-C construction when compared to traditional Type IV heavy timber construction. The TWB Committee feels that some recognition is warranted for the fire resistance rating requirements (Type IV-C has 2-hour rating on structural elements, whereas traditional Type IV Heavy Timber used dimensional wood, which is understood to yield an approximate fire resistance rating equivalent to about 1-hour construction) and provided that flexibility when developing height, in terms of stories, for Type IV-C construction. A multiplier of 1.5 was applied from the Type IV-HT heights to develop reasonable numbers of stories for Type IV-C construction. While the base code seems to allow significant heights for buildings without sprinklers (e.g., Table 504.4 currently allows 11 stories for NS Type I-B construction for many occupancy classifications), the TWB Committee believes that no additional heights over what is already permitted for Type IV should be proposed for the NS (non sprinklered) rows. As such, where separate rows are provided for heights for the NS condition, the proposed heights for Types IV-A, IV-B, and IV-C are the same as those heights already permitted for Type IV for the NS condition. This methodology explains the majority of the recommendations included in this proposal. Specifically, for occupancy groups A, B, E, R, and U, the methodology described above accurately reflects how the height proposals were developed.

The TWB Committee applied professional judgment (from both a fire safety and a structural perspective) to develop a draft table, cell by cell, for all occupancy types. After further examination, reduced heights were proposed for F, H, I, M, and S occupancy classifications.

For F-1 occupancies, the TWB Committee proposed a height of 7 stories for Type IV-B construction (versus the 12 stories currently permitted for I-B construction). A multiplier of 1.5 was used to propose a height of 10 stories for Type IV-A construction (when rounded down). No additional height was proposed for Type IV-C construction (Type IV-C proposed at 5 stories, and 5 stories is already permitted by code for Type IV-HT).

For F-2 occupancies, again the Committee is proposing a reduced number of stories, with 8 stories for Type IV-B construction (versus 12 stories that would be derived from the methodology). Again, a multiplier of 1.5 was used to propose a height of 12 stories for Type IV-A construction. No additional height is proposed for Type IV-C construction (Type IV-C proposed at 6 stories, and 6 stories is already permitted by code for Type IV-HT).

A conservative approach also explains the proposed heights for Group H occupancies. For Group H-1, only 1 story buildings are permitted by Table 504.4 for all construction types, so the proposal was adjusted to also limit all the new Type IV construction types to 1 story as well.

For Groups H-2, H-3, and H-5, heights were intentionally made equal to the existing Heavy Timber heights. In other words, there is no proposal to any increased heights over what is already allowed by code for these use groups.

Group H-4, being corrosives which represents a health hazard (but not necessarily a fire hazard) to occupants and first responders, was also reduced, slightly. The TWB proposes 7 stories for Type IV-B construction (equivalency to Type I-B would have yielded 8 stories). The proposal allows only 8 stories for Type IV-A construction. No additional height is
proposed for Type IV-C construction (Type IV-C proposed at 6 stories, and 6 stories is already permitted by code for Type IV-HT).

Group I, the Committee took a more conservative approach and proposed an equivalent number of stories for Type IV-A construction, as is provided for Type I-B construction (10 stories for both construction types and occupancy types). The allowable heights for Type IV-B construction were selected to fall between the 10 stories for Type IV A and the number of stories for Type IV-C construction. The Committee proposed a height of 7 stories for I-1, and 6 stories for I-2. No additional height was proposed for Type IV-C construction (IV-C construction heights in floors is equal to the number of floors already allowed for Type IV-HT, 5 stories for I-1, 4 stories for I-2).

For Group M occupancies, the Committee again took a conservative approach, and proposed an equivalent number of stories for Type IV-A construction, as is provided for Type I-B construction (12 stories for both construction types). The proposal for Type IV-B construction is 8 stories which is based on the use of the multiplier of 1.5 with respect to the Type IV-A proposal. A modest increase (from 5 to 6 stories) is proposed for Type IV-C construction due to the higher requirement for structural fire-resistance.

For Group S, while the base code does not differentiate between S-1 and S-2 in Type I-B construction (both 12 stories), the Committee recognized that the base code does provide a difference for Group F (10 stories for F-1, 12 stories for F-2). As explained above, this led the Committee to propose lower heights for F-1, than for F-2. The Committee felt
this was appropriate with respect to the hazard differences between F-1 and F-2. Rather than basing our proposal for S occupancies on the same starting point of 12 stories, the Committee decided to simply copy the proposed heights for Group F into the rows for Group S for both IV-A and IV-B construction types. No additional height is proposed for IVC construction (IV-C proposed at 5 stories for both S-1 and S-2, same as existing Type IV-HT heights).

This proposed change corrects the tabular value errors that went undetected in the original code change until after the completion of the 2012 cycle: the tabular story and height
numbers for Type IV Group S-2. The proposal corrects those errors. (G81-18)

State Fire Marshal (SFM) Background:
The SFM Tall Wood Buildings workgroup evaluated the existing California amendments to the Table for allowable height, stories and area. In the 2007 Triennial rulemaking code cycle, the SFM took a balanced approach to fire protection based on the historical use of height and area provisions and data demonstrated that California’s minimum requirements for the built environment have safeguarded the public health, safety and general welfare of the occupants and to the property as a whole since the 1920s. 

The additional safety provided by an automatic sprinkler system has been acknowledged as justification for either increasing the allowable height of a building by one (1) story or increasing the allowable area beyond the limits established in Table 506.2, but not both.

The SFM recognizes and supports the benefits of automatic fire sprinkler protection in buildings.  The need for a balanced approach to fire protection is also recognized and is the basis for maintaining the current California amendments which permit the use of automatic sprinkler systems for an increase in height or area but not both.  During the 2007 Triennial rulemaking California code adoption process, building and fire officials reviewed data from various sources to justify the increased building size of the 2006 IBC over the allowable areas and heights in all three legacy codes. At the time there appeared to be little science behind the table values and formulas, SFM and California code officials involved in the process were not comfortable and could not justify the elimination of redundancy from the code and an over reliance on fire sprinkler systems.

During the SFM Tall Wood Building workgroup it was discussed and recognized that the tables for allowable height, stories and area need to be re-evaluated. The SFM plans to address those comments, concerns, and recommendations for the 2022 Triennial rulemaking code package. 

Per California regulations buildings housing Group I-3 occupancies, shall be constructed of Type I-A or Type IB, for this reason, the new Types of mass timber construction are not permitted.

Per Health and Safety Code 13131.5 buildings housing Group R-2.1, shall not be permitted in non-fire resistive construction. For this reason, only Type VI-A is allowed.

During the SFM Tall Wood Building workgroup, representatives from the office of Statewide Health Planning and Development (OSHPD), determined that at this time the proposed Type IV-A, Type IV-B, and Type IV-C as well as HT will not be permitted for Group I-2 and I-2.1 occupancies in California.
]()***

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

(footnotes remain unchanged; footnote l. and m. included for reference).

*l. Non-ambulatory persons shall be limited to the first 5 stories.*

*m. Non-ambulatory elderly clients are not permitted in buildings of these types of construction. See Sections 435.3.3 and 435.3.4.*

**[TALL WOOD AND HEAVY TIMBER 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

110.3.12 (New), 202, 403.3.2, TABLE 504.3, TABLE 504.4, TABLE 506.2, 508.4.4.1, 509.4.1.1 (New), TABLE 601, TABLE 602, 602.4, 602.4.1 (New), 602.4.1.1 (New), 602.4.1.2 (New), 602.4.1.2.1 (New), 602.4.1.3 (New), 602.4.1.4 (New), 602.4.1.5 (New), 602.4.1.6 (New), 602.4.2, 602.4.2.1 (New), 602.4.2.2 (New), 602.4.2.2.1 (New), 602.4.2.2.2 (New), 602.4.2.2.3 (New), 602.4.2.2.4 (New), 602.4.2.3 (New), 602.4.2.4 (New), 602.4.2.5 (New), 602.4.2.6 (New), 602.4.3, 602.4.3.1 (New), 602.4.3.2 (New), 602.4.3.3 (New), 602.4.3.4 (New), 602.4.3.5 (New), 602.4.3.6 (New), 602.4.4 (New), 602.4.4.1, 602.4.4.2, 602.4.4.3, 602.4.4 (New), 703.8 (New), 703.9 (New), 718.2.1, 722.7 (New), 722.7.1 (New), TABLE 722.7.1 (1) (New), TABLE 722.7.1 (2) (New), 722.7.2 (New), 722.7.2.1 (New), 722.7.2.2 (New), 1705.5.3 (New), TABLE 1705.5.3 (New),1705.11.1, 1705.11.2, 1705.12.2, 1705.12.3, 1705.20 (New), 2304.10.1.2 (New), 2304.11.3, 2304.11.4, 3102.3, 3102.6.1.1, (Chapter 35) ANSI/APA PRG 320-18, ASTM D3498-03 (2011) (New), D102.2.5

**SECTION 506**

**BUILDING AREA**

# Item: [SFM 01/19-5-5]

**Chapter:** [5, GENERAL BUILDING HEIGHTS AND AREA]

**Section:** [506, BUILDING AREA]

**Express Terms:**

## [Section: TABLE 506.2 (I-3 Workgroup / OSHPD)]

**TABLE 506.2—continued**

**ALLOWABLE AREA FACTOR**

**(*At* = NS, S1, S13R, S13D or SM, as applicable) IN SQUARE FEET a, b*, j***

***![Allowable Area Factor

The new R-2.2 occupancy classification was introduced in the 2018 Triennial code cycle and the NS value row needs to be added to Table 506.2. The NS values for the R-2.2 occupancy was missed in the 2018 Triennial rulemaking package. The NS value is needed in the table for consistency. The benefit of the NS value is for code consistency. The footnote was added to provide the NS allowable area for the frontage calculations. The intent is to allow R-2.2 occupancies to use the frontage increase formula. It was also identified that by Health and Safety Code (HSC) Section 13143.7; Type II-B, Type III-B and Type V-B are not permitted for the R-2.2 occupancy classification. This error has been corrected.]()***

For SI: 1 square foot = 0.0929 m2.

UL = Unlimited; NP = Not Permitted; NS = Buildings not equipped throughout with an automatic sprinkler system; S1 = Buildings a maximum of one story

above grade plane equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; SM = Buildings two or more stories

above grade plane equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped

throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2; S13D = Buildings equipped throughout with an automatic

sprinkler system installed in accordance with Section 903.3.1.3.

(footnotes a through d remain unchanged)

e. ~~New Group I-1 and~~ I-3 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6. ~~For new Group I-1 occupancies, Condition 1, see Exception 1 of Section 903.2.6~~.

(footnotes f through k remain unchanged)

*l. The NS value is only for use in evaluation of single-occupancy, multistory building buildings per the formula in section 506.2.3.*

**[I-3 OCCUPANCY / OSHPD 2019 INTERVENING PROPOSALS]**

**[Related Sections in Part 2, California Building Code]:**

310.3.1, 408.1.2.2, 408.3.6, TABLE 408.3.13 (New), 408.13, TABLE 504.3, TABLE 504.4, TABLE 506.2, TABLE 508.4. 435.16 (Renumbered from 510.10), 1004.5, TABLE 1004.5, TABLE 1020.2, 1227.5, 1227.5.2, 1227.6-1227.6.3, 1227.7.4, 1227.8.1, 1227.9.1, 1227.9.1.1, 1227.9.2.2, 1227.10-1227.10.7, 1227.12.1, 1227.22.1.1, 1227.23.1, 1230.1.2, 1230.1.4-1230.10, 1230.1.12, 1230.1.16, 1230.1.23, 1230.1.26, 1230.2.7, 1230.2.8, 1230.2.10, 1231.2.2, 1231.2.3, 1231.2.5131.2.6, 1231.2.7, 1231.2.8, 1231.2.9, 1231.2.10, 1231.2.2, 1231.2.3, 1231.2.5131.2.6, 1231.2.7, 1231.2.8, 1231.2.9, 1231.2.10, 1231.2.24, 1231.3.8, 1231.3.10, 1231.5, 1231.6-1231.6.7

# Item: [SFM 01/19-5-6]

**Chapter:** [5, GENERAL BUILDING HEIGHTS AND AREA]

**Section:** [506, BUILDING AREA]

**Express Terms:**

## [Section: TABLE 506.2 (Tall Wood Workgroup)]

**TABLE 506.2**

**ALLOWABLE AREA FACTOR**

**(*At* = NS, S1, S13R, S13D or SM, as applicable) IN SQUARE FEET a, b*, j***

***Allowable Area Factor 
In addressing this topic, it was necessary to develop height and area criteria to address each new type of construction being proposed. Relying upon each new type of construction proposed for tall wood buildings (Types IV-A, IV-B and IVC), the TWB committee examined each type of construction for its safety and efficacy with regard to each occupancy type. This proposal on allowable areas should be considered as a companion proposal to the height proposals. The three proposals were developed regarding one another as well as with regard to the new types of construction.

The TWB also determined that fire testing was necessary to validate these concepts. At its first meeting, members discussed the nature and intention of fire testing so as to ensure meaningful results for the TWB and, more specifically, for the fire service. Subsequently a test plan was developed. The fire tests consisted of one-bedroom apartments on
two levels, with both apartments having a corridor leading to a stairway. The purpose of the tests was to address the contribution of mass timber to a fire, the performance of connections, the performance of joints, and to evaluate conditions for responding fire personnel. The Fire Work Group then refined the test plan, which was implemented with a series of five full-scale, multiple-story building tests at the Alcohol, Tobacco and Firearms (ATF) laboratories in Beltsville, MD.

The results of those tests, as well as testing conducted by others, helped the TWB Committee form the basis upon which the Codes Work Group developed its code change proposals. This code change proposal is one of those developed by the
Codes Work Group and adopted by the TWB.
To review a summary of the fire tests, please visit:

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To watch summary videos of the fire tests, which are accelerated to run in 3-1/2 minutes each, please visit:

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Both links were confirmed active on October 11, 2019

Each proposed new type of construction was examined for its fire safety characteristics and compared to the existing, long-standing type of construction known as Heavy Timber. The TWB committee found that it was reasonable to develop a multiplier which could be applied to the traditional HT areas. This was done for each new type of construction. Thus,
the proposed new Type IV-C was 1.25 times the HT allowable area, IV-B was 2.00 times the HT allowable area and IV-A was 3.00 times the HT allowable area.

These multipliers were examined in terms of relative performance compared to traditional HT. They were reexamined on a case-by-case basis based upon relative hazard and occupancy classification. Some hazards were perceived to be greater and, thus, areas were adjusted downward to reflect the hazard. Other situations were similarly considered. For example, Hazardous and Institutional occupancies do not fully follow the multiplier method, as most areas for those occupancies were reduced from what the multiplier method would suggest.

Also, the TWB committee reconsidered this proposal with respect to the companion height proposal. This review was to be sure that allowable areas were commensurate with the risk posed by being allowed on some particular story or at some height above grade plane.

This proposed change corrects the tabular value errors that went undetected in the original code change until after the completion of the 2012 cycle: the tabular story and height
numbers for Type IV Group S-2. The proposal corrects those errors.

State Fire Marshal (SFM) Background:
The SFM Tall Wood Buildings workgroup evaluated the existing California amendments to the Table for allowable height, stories and area. In the 2007 Triennial rulemaking code cycle, the SFM took a balanced approach to fire protection based on the historical use of height and area provisions and data demonstrated that California’s minimum requirements for the built environment have safeguarded the public health, safety and general welfare of the occupants and to the property as a whole since the 1920s. 

The additional safety provided by an automatic sprinkler system has been acknowledged as justification for either increasing the allowable height of a building by one (1) story or increasing the allowable area beyond the limits established in Table 506.2, but not both.

The SFM recognizes and supports the benefits of automatic fire sprinkler protection in buildings.  The need for a balanced approach to fire protection is also recognized and is the basis for maintaining the current California amendments which permit the use of automatic sprinkler systems for an increase in height or area but not both.  During the 2007 Triennial rulemaking California code adoption process, building and fire officials reviewed data from various sources to justify the increased building size of the 2006 IBC over the allowable areas and heights in all three legacy codes. At the time there appeared to be little science behind the table values and formulas, SFM and California code officials involved in the process were not comfortable and could not justify the elimination of redundancy from the code and an over reliance on fire sprinkler systems.

During the SFM Tall Wood Building workgroup it was discussed and recognized that the tables for allowable height, stories and area need to be re-evaluated. The SFM plans to address those comments, concerns, and recommendations for the 2022 Triennial rulemaking code package. 

Per California regulations buildings housing Group I-3 occupancies, shall be constructed of Type I-A or Type IB, for this reason, the new Types of mass timber construction are not permitted.

Per Health and Safety Code 13131.5 buildings housing Group R-2.1, shall not be permitted in non-fire resistive construction. For this reason, only Type VI-A is allowed.

During the SFM Tall Wood Building workgroup, representatives from the office of Statewide Health Planning and Development (OSHPD), determined that at this time the proposed Type IV-A, Type IV-B, and Type IV-C as well as HT will not be permitted for Group I-2 and I-2.1 occupancies in California.
***

![Allowable Area Factor 
In addressing this topic, it was necessary to develop height and area criteria to address each new type of construction being proposed. Relying upon each new type of construction proposed for tall wood buildings (Types IV-A, IV-B and IVC), the TWB committee examined each type of construction for its safety and efficacy with regard to each occupancy type. This proposal on allowable areas should be considered as a companion proposal to the height proposals. The three proposals were developed regarding one another as well as with regard to the new types of construction.

The TWB also determined that fire testing was necessary to validate these concepts. At its first meeting, members discussed the nature and intention of fire testing so as to ensure meaningful results for the TWB and, more specifically, for the fire service. Subsequently a test plan was developed. The fire tests consisted of one-bedroom apartments on
two levels, with both apartments having a corridor leading to a stairway. The purpose of the tests was to address the contribution of mass timber to a fire, the performance of connections, the performance of joints, and to evaluate conditions for responding fire personnel. The Fire Work Group then refined the test plan, which was implemented with a series of five full-scale, multiple-story building tests at the Alcohol, Tobacco and Firearms (ATF) laboratories in Beltsville, MD.

The results of those tests, as well as testing conducted by others, helped the TWB Committee form the basis upon which the Codes Work Group developed its code change proposals. This code change proposal is one of those developed by the
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Each proposed new type of construction was examined for its fire safety characteristics and compared to the existing, long-standing type of construction known as Heavy Timber. The TWB committee found that it was reasonable to develop a multiplier which could be applied to the traditional HT areas. This was done for each new type of construction. Thus,
the proposed new Type IV-C was 1.25 times the HT allowable area, IV-B was 2.00 times the HT allowable area and IV-A was 3.00 times the HT allowable area.

These multipliers were examined in terms of relative performance compared to traditional HT. They were reexamined on a case-by-case basis based upon relative hazard and occupancy classification. Some hazards were perceived to be greater and, thus, areas were adjusted downward to reflect the hazard. Other situations were similarly considered. For example, Hazardous and Institutional occupancies do not fully follow the multiplier method, as most areas for those occupancies were reduced from what the multiplier method would suggest.

Also, the TWB committee reconsidered this proposal with respect to the companion height proposal. This review was to be sure that allowable areas were commensurate with the risk posed by being allowed on some particular story or at some height above grade plane.

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Per California regulations buildings housing Group I-3 occupancies, shall be constructed of Type I-A or Type IB, for this reason, the new Types of mass timber construction are not permitted.

Per Health and Safety Code 13131.5 buildings housing Group R-2.1, shall not be permitted in non-fire resistive construction. For this reason, only Type VI-A is allowed.

During the SFM Tall Wood Building workgroup, representatives from the office of Statewide Health Planning and Development (OSHPD), determined that at this time the proposed Type IV-A, Type IV-B, and Type IV-C as well as HT will not be permitted for Group I-2 and I-2.1 occupancies in California.
]()For SI: 1 square foot = 0.0929 m2.

UL = Unlimited; NP = Not Permitted; NS = Buildings not equipped throughout with an automatic sprinkler system; S1 = Buildings a maximum of one story above grade plane equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; SM = Buildings two or more stories above grade plane equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2; S13D = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.3.

(footnotes a through k remain unchanged)

*l. The NS value is only for use in evaluation of single-occupancy, multistory building buildings per the formula in section 506.2.3.*

**[TALL WOOD AND HEAVY TIMBER 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

110.3.12 (New), 202, 403.3.2, TABLE 504.3, TABLE 504.4, TABLE 506.2, 508.4.4.1, 509.4.1.1 (New), TABLE 601, TABLE 602, 602.4, 602.4.1 (New), 602.4.1.1 (New), 602.4.1.2 (New), 602.4.1.2.1 (New), 602.4.1.3 (New), 602.4.1.4 (New), 602.4.1.5 (New), 602.4.1.6 (New), 602.4.2, 602.4.2.1 (New), 602.4.2.2 (New), 602.4.2.2.1 (New), 602.4.2.2.2 (New), 602.4.2.2.3 (New), 602.4.2.2.4 (New), 602.4.2.3 (New), 602.4.2.4 (New), 602.4.2.5 (New), 602.4.2.6 (New), 602.4.3, 602.4.3.1 (New), 602.4.3.2 (New), 602.4.3.3 (New), 602.4.3.4 (New), 602.4.3.5 (New), 602.4.3.6 (New), 602.4.4 (New), 602.4.4.1, 602.4.4.2, 602.4.4.3, 602.4.4 (New), 703.8 (New), 703.9 (New), 718.2.1, 722.7 (New), 722.7.1 (New), TABLE 722.7.1 (1) (New), TABLE 722.7.1 (2) (New), 722.7.2 (New), 722.7.2.1 (New), 722.7.2.2 (New), 1705.5.3 (New), TABLE 1705.5.3 (New),1705.11.1, 1705.11.2, 1705.12.2, 1705.12.3, 1705.20 (New), 2304.10.1.2 (New), 2304.11.3, 2304.11.4, 3102.3, 3102.6.1.1, (Chapter 35) ANSI/APA PRG 320-18, ASTM D3498-03 (2011) (New), D102.2.5

**SECTION 508**

**MIXED USE AND OCCUPANCY**

# Item: [SFM 01/19-5-7]

**Chapter:** [5, GENERAL BUILDING HEIGHTS AND AREA]

**Section:** [508, MIXED USE AND OCCUPANCY]

**Express Terms:**

## [Section: 508.3.1.2 (Delete)]

**~~508.3.1.2 Group I-2, Condition 2 occupancies.~~** ~~Where one of the nonseparated occupancies is Group I-2, Condition 2, the most restrictive requirements of Sections 407, 509 and 712 shall apply throughout the fire area containing the Group I-2 occupancy. The most restrictive requirements of Chapter 10 shall apply to the path of egress from the Group I-2, Condition 2 occupancy up to and including the exit discharge.~~

**[Office of Statewide Health Planning Department (OSHPD) 2019 INTERVENING PROPOSALS]**

**[Related Sections in Part 2, California Building Code]**

404.6, 407, 407.1.1, 407.4.4.3, 407.4.4.5, 407.9, 407.11, 407.12 (New), 508.3.1.2 (Delete), 709.5, 903.3.1.1.1, 904.13, 907.2.6.2.2, 907.3.2, 907.3.2.1, 907.3.2.2, 907.3.2.3, 907.3.2.4, 907.3.2.5 (New), 909.5.3, 1010.1.9.7, 1010.1.9.8, 1026.4.1

# Item: [SFM 01/19-5-8]

**Chapter:** [5, GENERAL BUILDING HEIGHTS AND AREA]

**Section:** [508, MIXED USE AND OCCUPANCY]

**Express Terms:**

## [Section: TABLE 508.4 (Automatic Parking Garage Workgroup)]

**TABLE 508.4**

**REQUIRED SEPARATION OF OCCUPANCIES (HOURS) f**

(Table remains unchanged. Footnote c. was revised to add a new section number reference.)

c. See Section 406.3.2 *and 406.6.4.*

**[AUTOMATIC PARKING GARAGE 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

202 (New), 406.6.4 (New), 406.6.4.1 (New), 406.6.4.2 (New), 406.6.4.3 (New), 406.6.4.3.1 (New), 406.6.4.4 (New), TABLE 508.4, Table 903.2.11.6

# Item: [SFM 01/19-5-8.1]

**Chapter:** [5, GENERAL BUILDING HEIGHTS AND AREA]

**Section:** [508, MIXED USE AND OCCUPANCY]

**Express Terms:**

## [Section: TABLE 508.4 (I-3 Workgroup)]

**TABLE 508.4**

**REQUIRED SEPARATION OF OCCUPANCIES (HOURS)*h***

*![Required Separation of Occupancies (Hours)

The new R-2.2 occupancy classification was introduced in the 2018 Triennial code cycle and the R-2.2 occupancy needs to be added to Table 508.4. The addition is looked for when designing and enforcing the required separation between the R-2.2 occupancy and others. The addition of the occupancy provides consistency in the code and corrects an error.]()*

S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

NS = Buildings not equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

N = No separation requirement.

NP = Not Permitted.

a. See Section 420.

**[I-3 OCCUPANCY 2019 INTERVENING PROPOSALS]**

**[Related Sections in Part 2, California Building Code]:**

310.3.1, 408.1.2.2, 408.3.6, TABLE 408.3.13 (New), 408.13, TABLE 504.3, TABLE 504.4, TABLE 506.2, TABLE 508.4. 435.16 (Renumbered from 510.10), 1004.5, TABLE 1004.5, TABLE 1020.2, 1227.5, 1227.5.2, 1227.6-1227.6.3, 1227.7.4, 1227.8.1, 1227.9.1, 1227.9.1.1, 1227.9.2.2, 1227.10-1227.10.7, 1227.12.1, 1227.22.1.1, 1227.23.1, 1230.1.2, 1230.1.4-1230.10, 1230.1.12, 1230.1.16, 1230.1.23, 1230.1.26, 1230.2.7, 1230.2.8, 1230.2.10, 1231.2.2, 1231.2.3, 1231.2.5131.2.6, 1231.2.7, 1231.2.8, 1231.2.9, 1231.2.10, 1231.2.2, 1231.2.3, 1231.2.5131.2.6, 1231.2.7, 1231.2.8, 1231.2.9, 1231.2.10, 1231.2.24, 1231.3.8, 1231.3.10, 1231.5, 1231.6-1231.6.7

# Item: [SFM 01/19-5-9]

**Chapter:** [5, GENERAL BUILDING HEIGHTS AND AREA]

**Section:** [508, MIXED USE AND OCCUPANCY]

**Express Terms:**

## [Section: 508.4.4.1]

**508.4.4.1 Construction.** Required separations shall be fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both, ~~so as~~ to completely separate adjacent occupancies. *Mass timber elements serving as fire barriers or horizontal assemblies to separate occupancies in Type IV-B or IV-C construction shall be separated from the interior of the building with an approved thermal barrier consisting of a minimum of 1/2-inch (12.7 mm) gypsum board or a material that is tested in accordance with and meets the acceptance criteria of both the Temperature Transmission Fire Test and the Integrity Fire Test of NFPA 275.*

**[TALL WOOD AND HEAVY TIMBER 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

110.3.12 (New), 202, 403.3.2, TABLE 504.3, TABLE 504.4, TABLE 506.2, 508.4.4.1, 509.4.1.1 (New), TABLE 601, TABLE 602, 602.4, 602.4.1 (New), 602.4.1.1 (New), 602.4.1.2 (New), 602.4.1.2.1 (New), 602.4.1.3 (New), 602.4.1.4 (New), 602.4.1.5 (New), 602.4.1.6 (New), 602.4.2, 602.4.2.1 (New), 602.4.2.2 (New), 602.4.2.2.1 (New), 602.4.2.2.2 (New), 602.4.2.2.3 (New), 602.4.2.2.4 (New), 602.4.2.3 (New), 602.4.2.4 (New), 602.4.2.5 (New), 602.4.2.6 (New), 602.4.3, 602.4.3.1 (New), 602.4.3.2 (New), 602.4.3.3 (New), 602.4.3.4 (New), 602.4.3.5 (New), 602.4.3.6 (New), 602.4.4 (New), 602.4.4.1, 602.4.4.2, 602.4.4.3, 602.4.4 (New), 703.8 (New), 703.9 (New), 718.2.1, 722.7 (New), 722.7.1 (New), TABLE 722.7.1 (1) (New), TABLE 722.7.1 (2) (New), 722.7.2 (New), 722.7.2.1 (New), 722.7.2.2 (New), 1705.5.3 (New), TABLE 1705.5.3 (New),1705.11.1, 1705.11.2, 1705.12.2, 1705.12.3, 1705.20 (New), 2304.10.1.2 (New), 2304.11.3, 2304.11.4, 3102.3, 3102.6.1.1, (Chapter 35) ANSI/APA PRG 320-18, ASTM D3498-03 (2011) (New), D102.2.5

**SECTION 509**

**INCIDENTAL USES**

# Item: [SFM 01/19-5-10]

**Chapter:** [5, GENERAL BUILDING HEIGHTS AND AREA]

**Section:** [509, INCIDENTAL USES]

**Express Terms:**

## [Section: TABLE 509]

**[F] TABLE 509**

**INCIDENTAL USES**

| **ROOM OR AREA** | **SEPARATION AND/OR PROTECTION** |
| --- | --- |
| ~~Stationary storage battery systems having an energy capacity greater than the threshold quantity specified in Table 1206.2 of the~~ *~~California Fire Code~~* | ~~1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies~~ *~~a~~* |

**[ENERGY STORAGE SYSTEMS 2019 INTERVEING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

306.2, TABLE 414.5.1, TABLE 509, 707.4, TABLE 716.1(2), T ABLE 716.1(3), 716.2.5.4.1 (New), 716.3.2.1.1.1 (New), TABLE 903.2.11.6, [Chapter 35] NFPA 68 (New)

# Item: [SFM 01/19-5-11]

**Chapter:** [5, GENERAL BUILDING HEIGHTS AND AREA]

**Section:** [509, INCIDENTAL USES]

**Express Terms:**

## [Section: 509.4.1.1 (New)]

***509.4.1.1 Type IV-B and IV-C construction.*** *Where Table 509 specifies a fire-resistance-rated separation, mass timber elements serving as fire barriers or a horizontal assembly in Type IV-B or IV-C construction shall be separated from the interior of the incidental use with an approved thermal barrier consisting of a minimum of ½ inch (12.7 mm) gypsum board or a material that is tested in accordance with and meets the acceptance criteria of both the Temperature Transmission Fire Test and the Integrity Fire Test of NFPA 275.*

**[TALL WOOD AND HEAVY TIMBER 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

110.3.12 (New), 202, 403.3.2, TABLE 504.3, TABLE 504.4, TABLE 506.2, 508.4.4.1, 509.4.1.1 (New), TABLE 601, TABLE 602, 602.4, 602.4.1 (New), 602.4.1.1 (New), 602.4.1.2 (New), 602.4.1.2.1 (New), 602.4.1.3 (New), 602.4.1.4 (New), 602.4.1.5 (New), 602.4.1.6 (New), 602.4.2, 602.4.2.1 (New), 602.4.2.2 (New), 602.4.2.2.1 (New), 602.4.2.2.2 (New), 602.4.2.2.3 (New), 602.4.2.2.4 (New), 602.4.2.3 (New), 602.4.2.4 (New), 602.4.2.5 (New), 602.4.2.6 (New), 602.4.3, 602.4.3.1 (New), 602.4.3.2 (New), 602.4.3.3 (New), 602.4.3.4 (New), 602.4.3.5 (New), 602.4.3.6 (New), 602.4.4 (New), 602.4.4.1, 602.4.4.2, 602.4.4.3, 602.4.4 (New), 703.8 (New), 703.9 (New), 718.2.1, 722.7 (New), 722.7.1 (New), TABLE 722.7.1 (1) (New), TABLE 722.7.1 (2) (New), 722.7.2 (New), 722.7.2.1 (New), 722.7.2.2 (New), 1705.5.3 (New), TABLE 1705.5.3 (New),1705.11.1, 1705.11.2, 1705.12.2, 1705.12.3, 1705.20 (New), 2304.10.1.2 (New), 2304.11.3, 2304.11.4, 3102.3, 3102.6.1.1, (Chapter 35) ANSI/APA PRG 320-18, ASTM D3498-03 (2011) (New), D102.2.5

**Notation:**

Authority: Health and Safety Code Sections 1250, 1569.72, 1569.78, 1568.02, 1502, 1597.44, 1597.45, 1597.46, 1597.54, 1597.65, 13108, 13108.5, 13113, 13113.5, 13114, 13143,13132, 13132.7, 13132, 13133, 13135, 13143.2, 13143.6, 13146, 13210, 13211, 17921, 18928, 18949.2, 25500-25545, Government Code Section 51189, Education Code 17074.50

Reference(s): Health and Safety Code Sections 13143, 13143.1, 13143.9, 13211, 18949.2, 25500 through 25545, Government Code Sections 51176, 51177, 51178, 51179, Public Resources Code Sections 4201-4204

**CHAPTER 6**

**TYPES OF CONSTRUCTION**

**SECTION 601**

**GENERAL**

# Item: [SFM 01/19-6-1]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [601, GENERAL]

**Express Terms:**

## [Section: TABLE 601]

**TABLE 601**

**FIRE-RESISTANCE RATING REQUIREMENTS**

**FOR BUILDING ELEMENTS (HOURS)**

**Fire Resistance Rating Requirements For Building Elements (Hours)

Tables 601 and 602: Included in the proposal are modification of Tables 601 and 602. This is necessary to set the performance requirement for these new types of construction based upon mass timber. It should be noted that these Fire Resistance Ratings (FRR) are set to have the requirements similar to those of Type I construction. In other words, IV-A has the same FRR as I-A; IV-B has the same FRR as I-B. Because there is no Type I corollary to IV-C, it was set the same as IV-B. The IV-C has to achieve all its fire resistance by the performance of the mass timber itself because no noncombustible protection is required. This is reflected in greatly reduced permitted height, in both feet and stories, in other TWB proposals to Table 504.3, 504.4 and 506.2.

The standards referenced in the code change proposals, DOC PS1, ASTM E1354, ASTM E84 and UL 723, are already referenced in the California Code of Regulations, Title 24.

The referenced standards needed to be incorporated into the code change. The definitions clarify that there are different types of mass timber construction. It is a rational way of addressing protected vs. unprotected construction. This allows the code to keep up with innovations in construction practice that are occurring in the field. This is an opportunity for faster construction with less foundation. All testing was done that should have been done, and more than has ever been done for other construction types.

Table 601 Cross laminated timber was introduced into the 2015 IBC. Section 2304.11.2.2 and table 601 permit 4 inch heavy timber walls that do not have a fire resistance rating to serve as bearing walls in structures that could be as many as 6 stories tall for a group B occupancy building. Generally heavy timber dimensions for vertical elements result in building elements that have a fire resistance rating in the ballpark of 45 minutes to 1 hour or more. CLT walls as thin as 4 inches can support the tributary loads from floors of 5 stories but when a 4-inch-thick CLT wall is fully loaded and exposed without protection, it may an intrinsic structural fire resistance rating of less than 30 minutes. This is not a problem for columns because they tend to grow bigger with a commensurate intrinsic fire resistance as buildings get taller.

This proposal modifies Table 601 to require heavy timber bearing walls supporting more than two floors or a floor and a roof to be of 1-hour fire resistance rating or greater which is appropriate for vertical elements in mid-rise multi-story buildings. If a designer desires to have an exposed CLT bearing wall supporting multiple stories they may need to
increase the thickness of the wall to provide 1 hour fire resistance rating. This may be calculated in accordance with Chapter 16 of the National Design Specification as allowed in Section 722.1 or they may need to utilize a tested wall. (G101-18)

Table 601 The exception in footnote c for using heavy timber in roof construction has in the past been applied to all roof elements, including those that may fit within the definition of Primary Structural Frame, which came into the code later. However, some code officials have not permitted the use of footnote c for roof members that fit the definition of primary structural frame, since there is a separate row for primary structural frame in the table. We believe the correct interpretation is to allow the footnote to apply to all roof construction, including structural members that are part of the primary structural frame.
In the 2018 International Building code cycle, a similar phrase, “including protection of primary structural frame members” and the qualifier “in roof construction” was approved for footnote b, which permits roof construction, including roof members that are part of
the primary structural frame, to be unprotected when every part of the roof construction is more than 20 feet above the floor below. In a similar manner, this code change will clarify that footnote c is intended to permit all roof construction with a required rating of one hour or less to be heavy timber. (G102-18)
**

For SI: 1 foot = 304.8 mm.

(Footnotes a. and b. remain unchanged)

c. In all occupancies, heavy timber complying with Section 2304.11 shall be allowed *for roof construction including primary structural frame members* where a 1-hour or less fire-resistance rating is required.

(Footnotes d., e., and f. remain unchanged)

1. *Heavy timber bearing walls supporting more than two floors or more than a floor and a roof shall have a fire resistance rating of not less than 1 hour.*

**SECTION 602**

**CONSTRUCTION CLASSIFICATION**

# Item: [SFM 01/19-6-2]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: TABLE 602]

**TABLE 602**

**FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE a, d, g**

**![Fire-Resistance Rating Requirements For Exterior Walls Based On Fire Separation Distance

Tables 601 and 602: Included in the proposal are modification of Tables 601 and 602. This is necessary to set the performance requirement for these new types of construction based upon mass timber. It should be noted that these Fire Resistance Ratings (FRR) are set to have the requirements similar to those of Type I construction. In other words, IV-A has the same FRR as I-A; IV-B has the same FRR as I-B. Because there is no Type I corollary to IV-C, it was set the same as IV-B. The IV-C has to achieve all its fire resistance by the performance of the mass timber itself because no noncombustible protection is required. This is reflected in greatly reduced permitted height, in both feet and stories, in other TWB proposals to Table 504.3, 504.4 and 506.2.

The standards referenced in the code change proposals, DOC PS1, ASTM E1354, ASTM E84 and UL 723, are already referenced in the California Code of Regulations, Title 24.

The referenced standards needed to be incorporated into the code change. The definitions clarify that there are different types of mass timber construction. It is a rational way of addressing protected vs. unprotected construction. This allows the code to keep up with innovations in construction practice that are occurring in the field. This is an opportunity for faster construction with less foundation. All testing was done that should have been done, and more than has ever been done for other construction types.

Table 601 Cross laminated timber was introduced into the 2015 IBC. Section 2304.11.2.2 and table 601 permit 4 inch heavy timber walls that do not have a fire resistance rating to serve as bearing walls in structures that could be as many as 6 stories tall for a group B occupancy building. Generally heavy timber dimensions for vertical elements result in building elements that have a fire resistance rating in the ballpark of 45 minutes to 1 hour or more. CLT walls as thin as 4 inches can support the tributary loads from floors of 5 stories but when a 4-inch-thick CLT wall is fully loaded and exposed without protection, it may an intrinsic structural fire resistance rating of less than 30 minutes. This is not a problem for columns because they tend to grow bigger with a commensurate intrinsic fire resistance as buildings get taller.

This proposal modifies Table 601 to require heavy timber bearing walls supporting more than two floors or a floor and a roof to be of 1-hour fire resistance rating or greater which is appropriate for vertical elements in mid-rise multi-story buildings. If a designer desires to have an exposed CLT bearing wall supporting multiple stories they may need to
increase the thickness of the wall to provide 1 hour fire resistance rating. This may be calculated in accordance with Chapter 16 of the National Design Specification as allowed in Section 722.1 or they may need to utilize a tested wall. (G101-18)
]()**

For SI: 1 foot = 304.8 mm.

(Footnotes remain unchanged)

# Item: [SFM 01/19-6-3]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4]

602.4 Type IV. Type IV construction is that type of construction in which ~~the exterior walls are of noncombustible materials and the interior building elements are of solid wood, laminated wood, heavy timber (HT) or structural composite lumber (SCL) without concealed spaces. The minimum dimensions for permitted materials including solid timber, glued-laminated timber, structural composite lumber (SCL), and cross-laminated timber and details of Type IV construction shall comply with the provisions of this section and Section 2304.11. Exterior walls complying with Section 602.4.1 or 602.4.2 shall be permitted. Interior walls and partitions not less than 1-hour fire-resistance rating or heavy timber complying with Section 2304.11.2.2 shall be permitted~~ *the building elements are mass timber or noncombustible materials and have fire resistance ratings in accordance with Table 601. Mass timber elements shall meet the fire resistance rating requirements of this section based on either the fire resistance rating of the noncombustible protection, the mass timber, or a combination of both and shall be determined in accordance with Section 703.2 or 703.3. The minimum dimensions and permitted materials for building elements shall comply with the provisions of this section and Section 2304.11. Mass timber elements of Types IV A, IV B and IV C construction shall be protected with noncombustible protection applied directly to the mass timber in accordance with Sections 602.4.1 through 602.4.3. The time assigned to the noncombustible protection shall be determined in accordance with Section 703.8 and comply with 722.7.*

*Cross-laminated timber shall be labeled as conforming to PRG 320-18 as referenced in Section 2303.1.4.*

*Exterior load-bearing walls and non-load-bearing walls shall be mass timber construction, or shall be of noncombustible construction.*

***Exception:*** *Exterior load-bearing walls and non-load-bearing walls of Type IV-HT Construction in accordance with Section 602.4.4.*

*The interior building elements, including non-load-bearing walls and partitions, shall be of mass timber construction or of noncombustible construction.*

***Exception:*** *Interior building elements and non-load-bearing walls and partitions of Type IV-HT Construction in accordance with Section 602.4.4.*

*Combustible concealed spaces are not permitted except as otherwise indicated in Sections 602.4.1 through 602.4.4.*

*Combustible stud spaces within light frame walls of Type IV-HT construction shall not be considered concealed spaces, but shall comply with Section 718.*

*In buildings of Type IV-A, B, and C, construction with an occupied floor located more than 75 feet above the lowest level of building access, up to and including 12 stories or 180 feet above grade plane, mass timber interior exit and elevator hoist-way enclosures shall be protected in accordance with Section 602.4.1.2. In buildings, greater than 12 stories or 180 feet above grade plane, interior exit and elevator hoist-way enclosures shall be constructed of non-combustible materials.*

# Item: [SFM 01/19-6-4]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.1 (New)]

*602.4.1 Type IV-A. Building elements in Type IV-A construction shall be protected in accordance with Sections 602.4.1.1 through 602.4.1.6. The required fire resistance rating of noncombustible elements and protected mass timber elements shall be determined in accordance with Section 703.2 or Section 703.3.*

# Item: [SFM 01/19-6-5]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.1.1 (New)]

*602.4.1.1 Exterior protection. The outside face of exterior walls of mass timber construction shall be protected with noncombustible protection with a minimum assigned time of 40 minutes as determined in Section 722.7.1. All components of the exterior wall covering, shall be of noncombustible material except water resistive barriers having a peak heat release rate of less than 150kW/m2, a total heat release of less than 20 MJ/m2 and an effective heat of combustion of less than 18MJ/kg as determined in accordance with ASTM E1354 and having a flame spread index of 25 or less and a smoke-developed index of 450 or less as determined in accordance with ASTM E 84 or UL723.The ASTM E 1354 test shall be conducted on specimens at the thickness intended for use, in the horizontal orientation and at an incident radiant heat flux of 50 kW/m2.*

# Item: [SFM 01/19-6-6]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.1.2 (New)]

*602.4.1.2 Interior protection. Interior faces of all mass timber elements, including the inside faces of exterior mass timber walls and mass timber roofs, shall be protected with materials complying with Section 703.5.*

# Item: [SFM 01/19-6-7]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.1.2.1 (New)]

***602.4.1.2.1 Protection time.*** *Noncombustible protection shall contribute a time equal to or greater than times assigned in Table 722.7.1(1), but not less than 80 minutes. The use of materials and their respective protection contributions listed in Table 722.7.1(2) shall be permitted to be used for compliance with Section 722.7.1.*

# Item: [SFM 01/19-6-8]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.1.3 (New)]

***602.4.1.3 Floors.*** *The floor assemblies shall contain a noncombustible material not less than one inch in thickness above the mass timber. Floor finishes in accordance with Section 804 shall be permitted on top of the noncombustible material. The underside of floor assemblies shall be protected in accordance with 602.4.1.2.*

# Item: [SFM 01/19-6-9]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.1.4 (New)]

***602.4.1.4 Roofs.*** *The interior surfaces of roof assemblies shall be protected in accordance with Section 602.4.1.2. Roof coverings in accordance with Chapter 15 shall be permitted on the outside surface of the roof assembly.*

# Item: [SFM 01/19-6-10]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.1.5 (New)]

***602.4.1.5 Concealed spaces.*** *Concealed spaces shall not contain combustibles other than electrical, mechanical, fire protection, or plumbing materials and equipment permitted in plenums in accordance with Section 602 of the California Mechanical Code, and shall comply with all applicable provisions of Section 718. Combustible construction forming concealed spaces shall be protected in accordance with Section 602.4.1.2.*

# Item: [SFM 01/19-6-11]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.1.6 (New)]

***602.4.1.6 Shafts.*** *Shafts shall be permitted in accordance with Sections 713 and Section 718. Both the shaft side and room side of mass timber elements shall be protected in accordance with Section 602.4.1.2.*

# Item: [SFM 01/19-6-12]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.2 (New)]

***602.4.2 Type IV-B****. Building elements in Type IV-B construction shall be protected in accordance with Sections 602.4.2.1 through 602.4.2.6. The required fire resistance rating of noncombustible elements or mass timber elements shall be determined in accordance with Section 703.2 or Section 703.3.*

# Item: [SFM 01/19-6-13]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.2.1 (New)]

***602.4.2.1 Exterior protection.*** *The outside face of exterior walls of mass timber construction shall be protected with non-combustible protection with a minimum assigned time of 40 minutes as determined in Section 722.7.1. All components of the exterior wall covering shall be of noncombustible material except water resistive barriers having a peak heat release rate of less than 150kW/m2,a total heat release of less than 20 MJ/m2 and an effective heat of combustion of less than 18MJ/kg as determined in accordance with ASTM E1354,and having a flame spread index of 25 or less and a smoke-developed index of 450 or less as determined in accordance with ASTM E 84 or UL723.The ASTM E 1354 test shall be conducted on specimens at the thickness intended for use, in the horizontal orientation and at an incident radiant heat flux of 50 kW/m2.*

# Item: [SFM 01/19-6-14]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.2.2 (New)]

***602.4.2.2 Interior protection****. Interior faces of all mass timber elements, including the inside face of exterior mass timber walls and mass timber roofs, shall be protected, as required by this section, with materials complying with Section 703.5.*

# Item: [SFM 01/19-6-15]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.2.2.1 (New)]

***602.4.2.2.1 Protection time.*** *Noncombustible protection shall contribute a time equal to or greater than times assigned in Table 722.7.1(1), but not less than 80 minutes. The use of materials and their respective protection contributions listed in Table 722.7.1(2) shall be permitted to be used for compliance with Section 722.7.1.*

# Item: [SFM 01/19-6-16]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.2.2.2 (New)]

***602.4.2.2.2 Protected area****. All interior faces of all mass timber elements shall be protected in accordance with Section 602.4.2.2.1, including the inside face of exterior mass timber walls and mass timber roofs.*

***Exceptions:*** *Unprotected portions of mass timber ceilings and walls complying with Section 602.4.2.2.4 and the following:*

1. *Unprotected portions of mass timber ceilings, including attached beams, shall be permitted and shall be limited to an area equal to 20% of the floor area in any dwelling unit or fire area; or*
2. *Unprotected portions of mass timber walls, including attached columns, shall be permitted and shall be limited to an area equal to 40% of the floor area in any dwelling unit or fire area; or*
3. *Unprotected portions of both walls and ceilings of mass timber, including attached columns and beams, in any dwelling unit or fire area shall be permitted in accordance with section 602.4.2.2.3.*
4. *Mass timber columns and beams which are not an integral portion of walls or ceilings, respectively, shall be permitted to be unprotected without restriction of either aggregate area or separation from one another.*

# Item: [SFM 01/19-6-17]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.2.2.3 (New)]

***602.4.2.2.3 Mixed unprotected areas****. In each dwelling unit or fire area, where both portions of ceilings and portions of walls are unprotected, the total allowable unprotected area shall be determined in accordance with Equation 6-1.*

*(Utc/Uac) + (Utw/Uaw) :5 1 (Equation 6-1) where:*

*Utc = Total unprotected mass timber ceiling areas*

*Uac = Allowable unprotected mass timber ceiling area conforming to Section 602.4.2.2.2, Exception 1*

*Utw = Total unprotected mass timber wall areas*

*Uaw = Allowable unprotected mass timber wall area conforming to Section 602.4.2.2.2, Exception 2*

# Item: [SFM 01/19-6-18]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.2.2.4 (New)]

***602.4.2.2.4 Separation distance between unprotected mass timber elements****. In each dwelling unit or fire area, unprotected portions of mass timber walls and ceilings shall be not less than15 feet from unprotected portions of other walls and ceilings, measured horizontally along the ceiling and from other unprotected portions of walls measured horizontally along the floor.*

# Item: [SFM 01/19-6-19]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.2.3 (New)]

***602.4.2.3 Floors.*** *The floor assembly shall contain a noncombustible material not less than one inch in thickness above the mass timber. Floor finishes in accordance with Section 804 shall be permitted on top of the noncombustible material. The underside of floor assemblies shall be protected in accordance with Section 602.4.1.2.*

# Item: [SFM 01/19-6-20]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.2.4 (New)]

***602.4.2.4 Roofs.*** *The interior surfaces of roof assemblies shall be protected in accordance with 602.4.2.2 except, in non-occupiable spaces, they shall be treated as a concealed space with no portion left unprotected. Roof coverings in accordance with Chapter 15 shall be permitted on the outside surface of the roof assembly.*

# Item: [SFM 01/19-6-21]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.2.5 (New)]

***602.4.2.5 Concealed spaces.*** *Concealed spaces shall not contain combustibles other than electrical, mechanical, fire protection, or plumbing materials and equipment permitted in plenums in accordance with Section 602 of the California Mechanical Code, and shall comply with all applicable provisions of Section 718. Combustible construction forming concealed spaces shall be protected in accordance with Section 602.4.1.2.*

# Item: [SFM 01/19-6-22]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.2.6 (New)]

***602.4.2.6 Shafts.*** *Shafts shall be permitted in accordance with Section 713 and Section 718. Both the shaft side and room side of mass timber elements shall be protected in accordance with Section 602.4.1.2.*

# Item: [SFM 01/19-6-23]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.3 (New)]

***602.4.3 Type IV-C.*** *Building elements in Type IV-C construction shall be protected in accordance with Sections 602.4.3.1 through 602.4.3.6. The required fire resistance rating of building elements shall be determined in accordance with Section 703.2 or Section 703.3.*

# Item: [SFM 01/19-6-24]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.3.1 (New)]

***602.4.3.1 Exterior protection.*** *The exterior side of walls of combustible construction shall be protected with non-combustible protection with a minimum assigned time of 40 minutes as determined in Section 722.7.1. All components of the exterior wall covering, shall be of noncombustible material except water resistive barriers having a peak heat release rate of less than 150kW/m2,a total heat release of less than 20 MJ/m2 and an effective heat of combustion of less than 18MJ/kg as determined in accordance with ASTM E1354 and having a flame spread index of 25 or less and a smoke-developed index of 450 or less as determined in accordance with ASTM E 84 or UL723.The ASTM E 1354 test shall be conducted on specimens at the thickness intended for use, in the horizontal orientation and at an incident radiant heat flux of 50 kW/m2.*

# Item: [SFM 01/19-6-25]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.3.2 (New)]

***602.4.3.2 Interior protection.*** *Mass timber elements are permitted to be unprotected.*

# Item: [SFM 01/19-6-26]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.3.3 (New)]

***602.4.3.3 Floors.*** *Floor finishes in accordance with Section 804 shall be permitted on top of the floor construction.*

# Item: [SFM 01/19-6-27]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.3.4 (New)]

***602.4.3.4 Roofs.*** *Roof coverings in accordance with Chapter 15 shall be permitted on the outside surface of the roof assembly.*

# Item: [SFM 01/19-6-28]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.3.5 (New)]

***602.4.3.5 Concealed spaces.*** *Concealed spaces shall not contain combustibles other than electrical, mechanical, fire protection, or plumbing materials and equipment permitted in plenums in accordance with Section 602 of the California Mechanical Code, and shall comply with all applicable provisions of Section718. Combustible construction forming concealed spaces shall be protected with noncombustible protection with a minimum assigned time of 40 minutes as determined in Section 722.7.1.*

# Item: [SFM 01/19-6-29]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.3.6 (New)]

***602.4.3.6 Shafts.*** *Shafts shall be permitted in accordance with Section 713 and Section 718.Shafts and elevator hoist-way and interior exit stairway enclosures shall be protected with noncombustible protection with a minimum assigned time of40 minutes as determined in Section 722.7.1, on both the inside of the shaft and the outside of the shaft.*

# Item: [SFM 01/19-6-30]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.4 (New)]

***602.4.4 Type IV-HT.*** *Type IV construction (Heavy Timber, HT) is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of solid wood, laminated heavy timber or structural composite lumber (SCL), without concealed spaces or with concealed spaces complying with Section 602.4.4.4. The minimum dimensions for permitted materials including solid timber, glued-laminated timber, structural composite lumber (SCL) and cross laminated timber (CLT) and details of Type IV construction shall comply with the provisions of this section and Section 2304.11. Exterior walls complying with Section 602.4.4.1 or 602.4.4.2 shall be permitted. Interior walls and partitions not less than one hour fire resistance rating or heavy timber conforming with Section 2304.11.2.2 shall be permitted.*

# Item: [SFM 01/19-6-31]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.4.1]

**~~602.4.1~~ *602.4.4.1* Fire-retardant-treated wood in exterior walls.** Fire-retardant-treated wood framing and sheathing complying with Section 2303.2 shall be permitted within exterior wall assemblies ~~not less than 6 inches (152 mm) in thickness~~ with a 2-hour rating or less.

# Item: [SFM 01/19-6-32]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.4.2]

**~~602.4.2~~ *602.4.4.2* Cross-laminated timber in exterior walls.** Cross-laminated timber *not less than 4 inches (102mm) in thickness* complying with Section 2303.1.4 shall be permitted within exterior wall assemblies ~~not less than 6 inches (152 mm) in thickness~~ with a 2-hour rating. ~~or less, provided~~ *Heavy timber structural members appurtenant to the CLT exterior wall shall meet the requirements of Table 2304.11 and be a fire-resistance rated as required for the exterior wall.* ~~t~~*T*he exterior surface of the cross-laminated timber *and heavy timber elements shall be* ~~is~~ protected by one the following:

1. Fire-retardant-treated wood sheathing complying with Section 2303.2 and not less than 15/32 inch (12 mm) thick;
2. Gypsum board not less than 1/2 inch (12.7 mm) thick; or
3. A noncombustible material.

# Item: [SFM 01/19-6-33]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.4.3 (New)]

***~~602.4.3~~ 602.4.4.3 Exterior structural members.*** *Where a horizontal separation of 20 feet (6096 mm) or more is provided, wood columns and arches conforming to heavy timber sizes complying with Section 2304.11 shall be permitted to be used externally.*

# Item: [SFM 01/19-6-34]

**Chapter:** [6, TYPES OF CONSTRUCTION]

**Section:** [602, CONSTRUCTION CLASSIFICATION]

**Express Terms:**

## [Section: 602.4.4.4 (New)]

***602.4.4.4 Concealed spaces.*** *Concealed spaces shall not contain combustible materials other than building elements and electrical, mechanical, or plumbing materials and equipment permitted in plenums in accordance with Section 602 of the California Mechanical Code. Concealed spaces shall comply with applicable provisions of Section 718. Concealed Spaces shall be protected in accordance with one or more of the following:*

1. *The building shall be sprinklered throughout in accordance with Section 903.3.1.1 and automatic sprinklers shall also be provided in the concealed space.*
2. *The concealed space shall be completely filled with noncombustible insulation.*
3. *Surfaces within the concealed space shall be fully sheathed with not less than 5/8-inch Type X gypsum board.*

***Exception:*** *concealed spaces within interior walls and partitions with a one hour or greater fire resistance rating complying with Section 2304.11.2.2, shall not require additional protection.*

**[TALL WOOD AND HEAVY TIMBER 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

110.3.12 (New), 202, 403.3.2, TABLE 504.3, TABLE 504.4, TABLE 506.2, 508.4.4.1, 509.4.1.1 (New), TABLE 601, TABLE 602, 602.4, 602.4.1 (New), 602.4.1.1 (New), 602.4.1.2 (New), 602.4.1.2.1 (New), 602.4.1.3 (New), 602.4.1.4 (New), 602.4.1.5 (New), 602.4.1.6 (New), 602.4.2, 602.4.2.1 (New), 602.4.2.2 (New), 602.4.2.2.1 (New), 602.4.2.2.2 (New), 602.4.2.2.3 (New), 602.4.2.2.4 (New), 602.4.2.3 (New), 602.4.2.4 (New), 602.4.2.5 (New), 602.4.2.6 (New), 602.4.3, 602.4.3.1 (New), 602.4.3.2 (New), 602.4.3.3 (New), 602.4.3.4 (New), 602.4.3.5 (New), 602.4.3.6 (New), 602.4.4 (New), 602.4.4.1, 602.4.4.2, 602.4.4.3, 602.4.4 (New), 703.8 (New), 703.9 (New), 718.2.1, 722.7 (New), 722.7.1 (New), TABLE 722.7.1 (1) (New), TABLE 722.7.1 (2) (New), 722.7.2 (New), 722.7.2.1 (New), 722.7.2.2 (New), 1705.5.3 (New), TABLE 1705.5.3 (New),1705.11.1, 1705.11.2, 1705.12.2, 1705.12.3, 1705.20 (New), 2304.10.1.2 (New), 2304.11.3, 2304.11.4, 3102.3, 3102.6.1.1, (Chapter 35) ANSI/APA PRG 320-18, ASTM D3498-03 (2011) (New), D102.2.5

**Notation:**

Authority: Health and Safety Code Sections 1250, 1569.72, 1569.78, 1568.02, 1502, 1597.44, 1597.45, 1597.46, 1597.54, 1597.65, 13108, 13108.5, 13113, 13113.5, 13114, 13143,13132, 13132.7, 13132, 13133, 13135, 13143.2, 13143.6, 13146, 13210, 13211, 17921, 18928, 18949.2, 25500-25545, Government Code Section 51189, Education Code 17074.50

Reference(s): Health and Safety Code Sections 13143, 13143.1, 13143.9, 13211, 18949.2, 25500 through 25545, Government Code Sections 51176, 51177, 51178, 51179, Public Resources Code Sections 4201-4204

**CHAPTER 7**

**FIRE AND SMOKE PROTECTION FEATURES**

**SECTION 703**

**FIRE-RESISTANCE RATINGS AND FIRE TESTS**

# Item: [SFM 01/19-7-1]

**Chapter:** [7, FIRE AND SMOKE PROTECTION FEATURES]

**Section:** [703, FIRE-RESISTANCE RATINGS AND FIRE TESTS]

**Express Terms:**

## [Section: 703.8 (New)]

***703.8 Determination of noncombustible protection time contribution.*** *The time, in minutes, contributed to the fire resistance rating by the noncombustible protection of mass timber building elements, components, or assemblies, shall be established through a comparison of assemblies tested using procedures set forth in ASTM E 119 or UL 263. The test assemblies shall be identical in construction, loading, and materials, other than the noncombustible protection. The two test assemblies shall be tested to the same criteria of structural failure.*

1. *Test Assembly 1 shall be without protection.*
2. *Test Assembly 2 shall include the representative noncombustible protection. The protection shall be fully defined in terms of configuration details, attachment details, joint sealing details, accessories and all other relevant details.*

*The noncombustible protection time contribution shall be determined by subtracting the fire resistance time, in minutes, of Test Assembly 1 from the fire resistance time, in minutes, of Test Assembly 2.*

# Item: [SFM 01/19-7-2]

**Chapter:** [7, FIRE AND SMOKE PROTECTION FEATURES]

**Section:** [703, FIRE-RESISTANCE RATINGS AND FIRE TESTS]

**Express Terms:**

## [Section: 703.9 (New)]

*703.9 Sealing of adjacent mass timber elements. In buildings of Type IVA, IVB, and IVC construction, sealant or adhesive shall be provided to resist the passage of air in the following locations:*

1. *At abutting edges and intersections of mass timber building elements required to be fire resistance-rated*
2. *At abutting intersections of mass timber building elements and building elements of other materials where both are required to be fire resistance-rated.*

*Sealants shall meet the requirements of ASTM C920. Adhesives shall meet the requirements of ASTM D3498.*

*Exception: Sealants or adhesives need not be provided where they are not a required component of a tested fire resistance-rated assembly.*

**[TALL WOOD AND HEAVY TIMBER 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

110.3.12 (New), 202, 403.3.2, TABLE 504.3, TABLE 504.4, TABLE 506.2, 508.4.4.1, 509.4.1.1 (New), TABLE 601, TABLE 602, 602.4, 602.4.1 (New), 602.4.1.1 (New), 602.4.1.2 (New), 602.4.1.2.1 (New), 602.4.1.3 (New), 602.4.1.4 (New), 602.4.1.5 (New), 602.4.1.6 (New), 602.4.2, 602.4.2.1 (New), 602.4.2.2 (New), 602.4.2.2.1 (New), 602.4.2.2.2 (New), 602.4.2.2.3 (New), 602.4.2.2.4 (New), 602.4.2.3 (New), 602.4.2.4 (New), 602.4.2.5 (New), 602.4.2.6 (New), 602.4.3, 602.4.3.1 (New), 602.4.3.2 (New), 602.4.3.3 (New), 602.4.3.4 (New), 602.4.3.5 (New), 602.4.3.6 (New), 602.4.4 (New), 602.4.4.1, 602.4.4.2, 602.4.4.3, 602.4.4 (New), 703.8 (New), 703.9 (New), 718.2.1, 722.7 (New), 722.7.1 (New), TABLE 722.7.1 (1) (New), TABLE 722.7.1 (2) (New), 722.7.2 (New), 722.7.2.1 (New), 722.7.2.2 (New), 1705.5.3 (New), TABLE 1705.5.3 (New),1705.11.1, 1705.11.2, 1705.12.2, 1705.12.3, 1705.20 (New), 2304.10.1.2 (New), 2304.11.3, 2304.11.4, 3102.3, 3102.6.1.1, (Chapter 35) ANSI/APA PRG 320-18, ASTM D3498-03 (2011) (New), D102.2.5

**SECTION 707**

**FIRE BARRIERS**

# Item: [SFM 01/19-7-3]

**Chapter:** [7, FIRE AND SMOKE PROTECTION FEATURES]

**Section:** [707, FIRE BARRIERS]

**Express Terms:**

## [Section: 707.4]

**707.4 Exterior walls.** Where exterior walls serve as a part of a required fire-resistance rated shaft or stairway or ramp enclosure, or separation, such walls shall comply with the requirements of Section 705 for exterior walls and the fire-resistance-rated enclosure or separation requirements shall not apply.

**Exception*s*:**

1. Exterior walls required to be fire-resistance rated in accordance with Section 1021 for exterior egress balconies, Section 1023.7 for interior exit stairways and ramps and Section 1027.6 for exterior exit stairways and ramp.

*2. Exterior walls required to be fire-resistance rated in accordance with Section 1206 of the California Fire Code for enclosure of energy storage systems.*

**[ENERGY STORAGE SYSTEMS 2019 INTERVEING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

306.2, TABLE 414.5.1, TABLE 509, 707.4, TABLE 716.1(2), T ABLE 716.1(3), 716.2.5.4.1 (New), 716.3.2.1.1.1 (New), TABLE 903.2.11.6, [Chapter 35] NFPA 68 (New)

**SECTION 709**

**SMOKE BARRIERS**

# Item: [SFM 01/19-7-4]

**Chapter:** [7, FIRE AND SMOKE PROTECTION FEATURES]

**Section:** [709, SMOKE BARRIERS]

**Express Terms:**

## [Section: 709.5]

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

**Exceptions:**

1. In Group I-2, *I-2.1, R-2.1* and ambulatory care facilities, where a pair of opposite-swinging doors are installed across a corridor in accordance with Section 709.5.1, the doors shall ~~not be required to~~ be protected in accordance with Section 716. The doors shall ~~be close fitting within operational tolerances, and~~ shall not have a center mullion*.* ~~or undercuts in excess of 3/4 inch (19.1 mm), louvers or grilles. The doors shall have head and jamb stops, and astragals or rabbets at meeting edges. Where permitted by the door manufacturer’s listing, positive-latching devices are not required.~~ Factory-applied or field applied protective plates are not required to be labeled. *Doors installed across corridors shall comply with Section 1010.1.1.*
2. In Group I-2, *R-2.1* and ambulatory care facilities, special purpose horizontal sliding, accordion or folding doors installed in accordance with Section 1010.1.4.3 and protected in accordance with Section 716. *Doors installed across corridors shall comply with Section 1010.1.1.*

**[Office of Statewide Health Planning Department (OSHPD) 2019 INTERVENING PROPOSALS]**

**[Related Sections in Part 2, California Building Code]**

404.6, 407, 407.1.1, 407.4.4.3, 407.4.4.5, 407.9, 407.11, 407.12 (New), 508.3.1.2 (Delete), 709.5, 903.3.1.1.1, 904.13, 907.2.6.2.2, 907.3.2, 907.3.2.1, 907.3.2.2, 907.3.2.3, 907.3.2.4, 907.3.2.5 (New), 909.5.3, 1010.1.9.7, 1010.1.9.8, 1026.4.1

**SECTION 716**

**OPENING PROTECTIVES**

# Item: [SFM 01/19-7-5]

**Chapter:** [7, FIRE AND SMOKE PROTECTION FEATURES]

**Section:** [716, OPENING PROTECTIVES]

**Express Terms:**

## [Section: TABLE 716.1(2)]

**TABLE 716.1(2)**

**OPENING FIRE PROTECTION ASSEMBLIES, RATINGS AND MARKINGS**

(partial table shown to indicate where proposed changes occur)

**Opening Fire Protection Assemblies, Ratings and Markings

Battery storage systems, now referred to as Energy Storage Systems, have historically been separated from other portions of an occupancy by one or two-hour fire-resistance-rated construction as an Incidental Use. The enclosure protects the general occupancy areas from an event involving the Incidental Use.

One of the hazards of an energy storage system is thermal runaway leading to a fire event. These fire events can be significant and last several hours. The systems are required to be designed to prevent thermal runaway internally, however, thermal runaway can be induced in some case by an exterior event such as a damaging impact or from a fire exposure. Though the code now requires fire suppression of the space occupied by the energy storage system, the remainder of the occupancy may not be protected and the current code language allows the use of fire protection rated glazing material in door and window openings.

Fire protection rated glazing is intended to stop spread of flame and smoke, but not radiant heat. The radiant heat flow through the glazing is significant, enough to cause a fire on the other side of the fire-resistance-rated separation assembly, and, specific to this issue, induce thermal runaway of the energy storage system. (See the included Intertek
test report and heat transmittal through ceramic fire protection rated glazing with a revision date of May 13, 2016.)

https://www.dropbox.com/sh/n8h65nht5dcruq5/AAAZxIS4ioKu_eTXz1GqjwQ3a?dl=0

A large part of the new requirements in the International Fire Code targeting energy storage systems and in the current cycle of NFPA 855 Energy Storage Systems Standard is protecting the energy storage system from exposure hazards to the system. This proposal builds on that part of the protection to the systems by prohibiting the use of fire protection rated glazing in one hour assemblies that are used to enclose energy storage systems.
**

(footnotes a. through e. unchanged)

*f. Fire-protection-rated glazing is not permitted for fire barriers required by Section 1206 of the California Fire Code to enclose energy storage systems. Fire-resistance-rated glazing assemblies tested to ASTM E119 or UL 263, as specified in Section 716.1.2.3 shall be permitted.*

# Item: [SFM 01/19-7-6]

**Chapter:** [7, FIRE AND SMOKE PROTECTION FEATURES]

**Section:** [716, OPENING PROTECTIVES]

**Express Terms:**

## [Section: TABLE 716.1(3)]

**TABLE 716.1(3)**

**FIRE WINDOW ASSEMBLY FIRE PROTECTION RATINGS**

(partial table shown to indicate where proposed changes occur)

![Fire Window Assembly Fire Protection Ratings

Battery storage systems, now referred to as Energy Storage Systems, have historically been separated from other portions of an occupancy by one or two-hour fire-resistance-rated construction as an Incidental Use. The enclosure protects the general occupancy areas from an event involving the Incidental Use.

One of the hazards of an energy storage system is thermal runaway leading to a fire event. These fire events can be significant and last several hours. The systems are required to be designed to prevent thermal runaway internally, however, thermal runaway can be induced in some case by an exterior event such as a damaging impact or from a fire exposure. Though the code now requires fire suppression of the space occupied by the energy storage system, the remainder of the occupancy may not be protected and the current code language allows the use of fire protection rated glazing material in door and window openings.

Fire protection rated glazing is intended to stop spread of flame and smoke, but not radiant heat. The radiant heat flow through the glazing is significant, enough to cause a fire on the other side of the fire-resistance-rated separation assembly, and, specific to this issue, induce thermal runaway of the energy storage system. (See the included Intertek
test report and heat transmittal through ceramic fire protection rated glazing with a revision date of May 13, 2016.)

https://www.dropbox.com/sh/n8h65nht5dcruq5/AAAZxIS4ioKu_eTXz1GqjwQ3a?dl=0

A large part of the new requirements in the International Fire Code targeting energy storage systems and in the current cycle of NFPA 855 Energy Storage Systems Standard is protecting the energy storage system from exposure hazards to the system. This proposal builds on that part of the protection to the systems by prohibiting the use of fire protection rated glazing in one hour assemblies that are used to enclose energy storage systems.
]()

(footnotes a. through b. unchanged)

*c. Fire-protection-rated glazing is not permitted for fire barriers required by Section 1206 of the California Fire Code to enclose energy storage systems. Fire-resistance-rated glazing assemblies tested to ASTM E119 or UL 263, as specified in Section 716.1.2.3 shall be permitted.*

# Item: [SFM 01/19-7-7]

**Chapter:** [7, FIRE AND SMOKE PROTECTION FEATURES]

**Section:** [716, OPENING PROTECTIVES]

**Express Terms:**

## [Section: 716.2.5.4.1 (New)]

**716.2.5.4 Fire door frames with transom lights and sidelights.** (no code change proposal, section title included for reader ease)

***716.2.5.4.1 Energy storage system separation.*** *Fire-protection-rated glazing shall not be permitted in fire door frames with transom lights and sidelights in fire barriers required by Section 1206 of the California Fire Code to enclose energy storage systems.*

# Item: [SFM 01/19-7-8]

**Chapter:** [7, FIRE AND SMOKE PROTECTION FEATURES]

**Section:** [716, OPENING PROTECTIVES]

**Express Terms:**

## [Section: 716.3.2.1.1.1 (New)]

**716.3.2.1 Interior fire window assemblies.** (no code change proposal, section title included for reader ease)

**716.3.2.1.1 Where 3/4-hour-fire-protection window assemblies permitted.** (no code change proposal, section title included for reader ease)

***716.3.2.1.1.1 Energy storage system separation.*** *Fire-protection-rated glazing is not permitted for use in fire window assemblies in fire barriers required by Section 1206 of the California Fire Code to enclose energy storage systems.*

**[ENERGY STORAGE SYSTEMS 2019 INTERVEING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

306.2, TABLE 414.5.1, TABLE 509, 707.4, TABLE 716.1(2), T ABLE 716.1(3), 716.2.5.4.1 (New), 716.3.2.1.1.1 (New), TABLE 903.2.11.6, [Chapter 35] NFPA 68 (New)

**SECTION 718**

**CONCEALED SPACES**

# Item: [SFM 01/19-7-9]

**Chapter:** [7, FIRE AND SMOKE PROTECTION FEATURES]

**Section:** [718, CONCEALED SPACES]

**Express Terms:**

## [Section: 718.2.1]

718.2.1 Fireblocking materials. Fireblocking shall consist of the following materials:

1. (existing code language remain unchanged)

*9. Mass timber complying with Section 2304.11.*

**[TALL WOOD AND HEAVY TIMBER 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

110.3.12 (New), 202, 403.3.2, TABLE 504.3, TABLE 504.4, TABLE 506.2, 508.4.4.1, 509.4.1.1 (New), TABLE 601, TABLE 602, 602.4, 602.4.1 (New), 602.4.1.1 (New), 602.4.1.2 (New), 602.4.1.2.1 (New), 602.4.1.3 (New), 602.4.1.4 (New), 602.4.1.5 (New), 602.4.1.6 (New), 602.4.2, 602.4.2.1 (New), 602.4.2.2 (New), 602.4.2.2.1 (New), 602.4.2.2.2 (New), 602.4.2.2.3 (New), 602.4.2.2.4 (New), 602.4.2.3 (New), 602.4.2.4 (New), 602.4.2.5 (New), 602.4.2.6 (New), 602.4.3, 602.4.3.1 (New), 602.4.3.2 (New), 602.4.3.3 (New), 602.4.3.4 (New), 602.4.3.5 (New), 602.4.3.6 (New), 602.4.4 (New), 602.4.4.1, 602.4.4.2, 602.4.4.3, 602.4.4 (New), 703.8 (New), 703.9 (New), 718.2.1, 722.7 (New), 722.7.1 (New), TABLE 722.7.1 (1) (New), TABLE 722.7.1 (2) (New), 722.7.2 (New), 722.7.2.1 (New), 722.7.2.2 (New), 1705.5.3 (New), TABLE 1705.5.3 (New),1705.11.1, 1705.11.2, 1705.12.2, 1705.12.3, 1705.20 (New), 2304.10.1.2 (New), 2304.11.3, 2304.11.4, 3102.3, 3102.6.1.1, (Chapter 35) ASTM D3498-03 (2011) (New), D102.2.5

**SECTION 722**

**CALCULATED FIRE RESISTANCE**

# Item: [SFM 01/19-7-10]

**Chapter:** [7, FIRE AND SMOKE PROTECTION FEATURES]

**Section:** [722, CALCULATED FIRE RESISTANCE]

**Express Terms:**

## [Section: 722.7 (New)]

*722.7 Fire resistance rating of mass timber. The required fire resistance of mass timber elements in Section 602.4 shall be determined in accordance with Section 703.2 or Section 703.3. The fire resistance rating of building elements shall be as required in Tables 601 and 602 and as specified elsewhere in this code. The fire resistance rating of the mass timber elements shall consist of the fire resistance of the unprotected element added to the protection time of the noncombustible protection.*

# Item: [SFM 01/19-7-11]

**Chapter:** [7, FIRE AND SMOKE PROTECTION FEATURES]

**Section:** [722, CALCULATED FIRE RESISTANCE]

**Express Terms:**

## [Section: 722.7.1 (New)]

*722.7.1 Minimum required protection. Where required by Sections 602.4.1 through 602.4.3, noncombustible protection shall be provided for mass timber building elements in accordance with Table 722.7.1(1). The rating, in minutes, contributed by the noncombustible protection of mass timber building elements, components, or assemblies, shall be established in accordance with Section 703.8. The protection contributions indicated in Table 722.7.1(2) shall be deemed to comply with this requirement when installed and fastened in accordance with Section 722.7.2.*

# Item: [SFM 01/19-7-12]

**Chapter:** [7, FIRE AND SMOKE PROTECTION FEATURES]

**Section:** [722, CALCULATED FIRE RESISTANCE]

**Express Terms:**

## [Section: TABLE 722.7.1 (1) (New)]

*TABLE 722.7.1(1)*

*PROTECTION REQUIRED FROM NONCOMBUSTIBLE COVERING MATERIAL*

| *Required Fire Resistance Rating of Building Element per Tables 601 and 602 (hours)* | *Minimum Protection Required from noncombustible Protection (minutes)* |
| --- | --- |
| *1 hr.* | *40* |
| *2 hr.* | *80* |
| *3 hr. or more* | *120* |

# Item: [SFM 01/19-7-13]

**Chapter:** [7, FIRE AND SMOKE PROTECTION FEATURES]

**Section:** [722, CALCULATED FIRE RESISTANCE]

**Express Terms:**

## [Section: TABLE 722.7.1 (2) (New)]

*TABLE 722.7.1(2)*

*PROTECTION PROVIDED BY NONCOMBUSTIBLE COVERING MATERIAL*

| *Noncombustible Protection* | *Protection Contribution (minutes)* |
| --- | --- |
| *1/2-inch Type X Gypsum Board* | *25* |
| *5/8-inch Type X Gypsum Board* | *40* |

# Item: [SFM 01/19-7-14]

**Chapter:** [7, FIRE AND SMOKE PROTECTION FEATURES]

**Section:** [722, CALCULATED FIRE RESISTANCE]

**Express Terms:**

## [Section: 722.7.2 (New)]

*722.7.2 Installation of gypsum board noncombustible protection. Gypsum board complying with Table 722.7.1(2) shall be installed in accordance with this section.*

# Item: [SFM 01/19-7-15]

**Chapter:** [7, FIRE AND SMOKE PROTECTION FEATURES]

**Section:** [722, CALCULATED FIRE RESISTANCE]

**Express Terms:**

## [Section: 722.7.2.1 (New)]

*722.7.2.1 Interior surfaces. Layers of Type X gypsum board serving as noncombustible protection for interior surfaces of wall and ceiling assemblies determined in accordance with Table 722.7.1(1) shall be installed in accordance with the following:*

1. *Each layer shall be attached with Type S drywall screws of sufficient length to penetrate the mass timber at least 1 inch when driven flush with the paper surface of the gypsum board.*

*Exception: The third layer, where determined necessary by Section 722.7, shall be permitted to be attached with1 inch #6 Type S drywall screws to furring channels in accordance with ASTM C645.*

1. *Screws for attaching the base layer shall be 12 inches on center in both directions.*
2. *Screws for each layer after the base layer shall be 12 inches on center in both directions and offset from the screws of the previous layers by 4 inches in both directions.*
3. *All panel edges of any layer shall be offset 18 inches from those of the previous layer.*
4. *All panel edges shall be attached with screws sized and offset as in items 1 through 4 above and placed at least 1 inch but not more than 2 inches from the panel edge.*
5. *All panels installed at wall-to-ceiling intersections shall be installed such that ceiling panels are installed first and the wall panels are installed after the ceiling panel has been installed and is fitted tight to the ceiling panel. Where multiple layers are required, each layer shall repeat this process.*
6. *All panels installed at a wall-to-wall intersection shall be installed such that the panels covering an exterior wall or a wall with a greater fire resistance rating shall be installed first and the panels covering the other wall shall be fitted tight to the panel covering the first wall. Where multiple layers are required, each layer shall repeat this process.*
7. *Panel edges of the face layer shall be taped and finished with joint compound. Fastener heads shall be covered with joint compound.*
8. *Panel edges protecting mass timber elements adjacent to unprotected mass timber elements in accordance with Section 602.4.2.2 shall be covered with 1 1/4-inch metal corner bead and finished with joint compound.*

# Item: [SFM 01/19-7-16]

**Chapter:** [7, FIRE AND SMOKE PROTECTION FEATURES]

**Section:** [722, CALCULATED FIRE RESISTANCE]

**Express Terms:**

## [Section: 722.7.2.2 (New)]

*722.7.2.2 Exterior surfaces. Layers of Type X gypsum board serving as noncombustible protection for the outside of the exterior heavy timber walls determined in accordance with Table 722.7.1(1) shall be fastened 12 inches on center each way and 6 inches on center at all joints or ends. All panel edges shall be attached with fasteners located at least 1inch but not more than 2 inches from the panel edge. Fasteners shall comply with one of the following:*

1. *Galvanized nails of minimum 12 Gage with a 7/16-inch head of sufficient length to penetrate the mass timber a minimum of 1 inch.*
2. *Screws which comply with ASTM C1002 (Type S, Type W, or Type G) of sufficient length to penetrate the mass timber a minimum of 1 inch.*

**[TALL WOOD AND HEAVY TIMBER 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

110.3.12 (New), 202, 403.3.2, TABLE 504.3, TABLE 504.4, TABLE 506.2, 508.4.4.1, 509.4.1.1 (New), TABLE 601, TABLE 602, 602.4, 602.4.1 (New), 602.4.1.1 (New), 602.4.1.2 (New), 602.4.1.2.1 (New), 602.4.1.3 (New), 602.4.1.4 (New), 602.4.1.5 (New), 602.4.1.6 (New), 602.4.2, 602.4.2.1 (New), 602.4.2.2 (New), 602.4.2.2.1 (New), 602.4.2.2.2 (New), 602.4.2.2.3 (New), 602.4.2.2.4 (New), 602.4.2.3 (New), 602.4.2.4 (New), 602.4.2.5 (New), 602.4.2.6 (New), 602.4.3, 602.4.3.1 (New), 602.4.3.2 (New), 602.4.3.3 (New), 602.4.3.4 (New), 602.4.3.5 (New), 602.4.3.6 (New), 602.4.4 (New), 602.4.4.1, 602.4.4.2, 602.4.4.3, 602.4.4 (New), 703.8 (New), 703.9 (New), 718.2.1, 722.7 (New), 722.7.1 (New), TABLE 722.7.1 (1) (New), TABLE 722.7.1 (2) (New), 722.7.2 (New), 722.7.2.1 (New), 722.7.2.2 (New), 1705.5.3 (New), TABLE 1705.5.3 (New),1705.11.1, 1705.11.2, 1705.12.2, 1705.12.3, 1705.20 (New), 2304.10.1.2 (New), 2304.11.3, 2304.11.4, 3102.3, 3102.6.1.1, (Chapter 35) ANSI/APA PRG 320-18, ASTM D3498-03 (2011) (New), D102.2.5

**Notation:**

Authority: Health and Safety Code Sections 1250, 1569.72, 1569.78, 1568.02, 1502, 1597.44, 1597.45, 1597.46, 1597.54, 1597.65, 13108, 13108.5, 13113, 13113.5, 13114, 13143,13132, 13132.7, 13132, 13133, 13135, 13143.2, 13143.6, 13146, 13210, 13211, 17921, 18928, 18949.2, 25500-25545, Government Code Section 51189, Education Code 17074.50

Reference(s): Health and Safety Code Sections 13143, 13143.1, 13143.9, 13211, 18949.2, 25500 through 25545, Government Code Sections 51176, 51177, 51178, 51179, Public Resources Code Sections 4201-4204

**CHAPTER 7A [SFM]**

**MATERIALS AND CONSTRUCTION METHODS**

**FOR EXTERIOR WILDFIRE EXPOSURE**

**SECTION 705A**

***ROOFING***

# Item: [SFM 01/19-8-1]

**Chapter:** [7A, MATERIALS AND CONSTRUCTION METHODS FOR EXTERIOR WILDFIRE EXPOSURE]

**Section:** [705A, ROOFING]

**Express Terms:**

## [Section: 705A.1]

***705A.1 General.*** *Roofs shall comply with the requirements of Chapter 7A and Chapter 15. Roofs shall have a roofing assembly installed in accordance with its listing and the manufacturer’s installation instructions. Roof assemblies in the Fire Hazard Severity Zones shall be Class A rating when tested in accordance with ASTM E108 or UL790.*

# Item: [SFM 01/19-8-2]

**Chapter:** [7A, MATERIALS AND CONSTRUCTION METHODS FOR EXTERIOR WILDFIRE EXPOSURE]

**Section:** [705A, ROOFING]

**Express Terms:**

## [Section: 705A.2]

***705A.2 Roof coverings.*** *~~Where the roof profile allows a space between the roof covering and roof decking, the spaces shall be constructed to resist the intrusion of flames and embers, be firestopped with approved materials or have one layer of minimum 72 pound (32.4 kg) mineral-surfaced nonperforated cap sheet complying with ASTM D3909 installed over the combustible decking.~~ Where the roofing profile has an airspace under the roof covering, installed over a combustible deck, a 72 lb. (32.7kg) cap sheet complying with ASTM D3909 Standard Specification for “Asphalt Rolled Roofing (Glass Felt) Surfaced with Mineral Granules”, shall be installed over the roof deck. Bird stops shall be used at the eaves when the profile fits, to prevent debris at the eave.  Hip and ridge caps shall be mudded in to prevent intrusion of fire or embers.*

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

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

**SECTION 706A**

***VENTS***

# Item: [SFM 01/19-8-3]

**Chapter:** [7A, MATERIALS AND CONSTRUCTION METHODS FOR EXTERIOR WILDFIRE EXPOSURE]

**Section:** [706A, VENTS]

**Express Terms:**

## [Section: 706A.2]

***706A.2 Requirements.*** *Ventilation openings for enclosed attics, enclosed eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, and underfloor ventilation openings shall be fully covered with Wildland Flame and Ember Resistant (WUI) vents approved and listed by the California State Fire Marshal, or WUI vents listed to ASTM E2886, by complying with all ~~metal wire mesh, vents, other materials or other devices that meet one~~ of the following requirements~~:~~*

1. *~~Vents shall be listed to ASTM E2886 and comply with all of the following:~~*
   1. *1.There shall be no flaming ignition of the cotton material during the Ember Intrusion Test.*
   2. *2. There shall be no flaming ignition during the Integrity Test portion of the Flame Intrusion Test.*
   3. *3.The maximum temperature of the unexposed side of the vent shall not exceed 662°F (350°C).*
2. *~~Vents shall comply with all of the following:~~*
   1. *~~The dimensions of the openings therein shall be a minimum of 1/16-inch (1.6 mm) and shall not exceed 1/8-inch (3.2 mm).~~*
   2. *~~The materials used shall be noncombustible.~~****~~Exception:~~*** *~~Vents located under the roof covering, along the ridge of roofs, with the exposed surface of the vent covered by noncombustible wire mesh, may be of combustible materials.~~*
   3. *~~The materials used shall be corrosion resistant.~~*

# Item: [SFM 01/19-8-4]

**Chapter:** [7A, MATERIALS AND CONSTRUCTION METHODS FOR EXTERIOR WILDFIRE EXPOSURE]

**Section:** [706A, VENTS]

**Express Terms:**

## [Section: 706A.2.1 (New)]

***706A.2.1*** *The requirements of 706.A.2 shall apply to gable ends, ridge ends, crawl spaces, foundations, and all other ventilation vents that mount on a vertical wall.*

# Item: [SFM 01/19-8-5]

**Chapter:** [7A, MATERIALS AND CONSTRUCTION METHODS FOR EXTERIOR WILDFIRE EXPOSURE]

**Section:** [706A, VENTS]

**Express Terms:**

## [Section: 706A.3]

***706A.3******Ventilation openings on the underside of eaves and cornices.*** *Vents shall not be installed on the underside of eaves and cornices unless the vents are Wildland Flame and Ember Resistant (WUI) vents approved and listed by the California State Fire Marshal, or WUI vents listed to ASTM E2886, by complying with all the following requirements:*

***~~Exceptions:~~***

1. *~~Vents listed to ASTM E2886 and complying with all of the following:~~*
   1. *1. There shall be no flaming ignition of the cotton material during the Ember Intrusion Test.*
   2. *2. There shall be no flaming ignition during the Integrity Test portion of the Flame Intrusion Test.*
   3. *3. The maximum temperature of the unexposed side of the vent shall not exceed 662°F (350°C).*

***Exceptions:***

*~~2.~~1. The enforcing agency shall be permitted to accept or approve special eave and cornice vents that resist the intrusion of flame and burning embers.*

*~~3.~~2. Vents ~~complying with the requirements of Section 706A.2~~ shall be permitted to be installed on the underside of eaves and cornices in accordance with all ~~either one~~ of the following conditions:*

*~~3.1.~~2.1. The attic space being ventilated is fully protected by an automatic sprinkler system installed in accordance with Section 903.3.1.1 and ~~or~~,*

*~~3.2.~~2.2. The exterior wall covering and exposed underside of the eave are of noncombustible materials, or ignition-resistant materials, as determined in accordance with SFM Standard 12-7A-5 Ignition-Resistant Material and the requirements of Section 704A.3, and the vent is located more than 12 feet (3.66 m) from the ground or walking surface of a deck, porch, patio or similar surface.*

**SECTION 709A**

***DECKING***

# Item: [SFM 01/19-8-6]

**Chapter:** [7A, MATERIALS AND CONSTRUCTION METHODS FOR EXTERIOR WILDFIRE EXPOSURE]

**Section:** [709A, DECKING]

**Express Terms:**

## [Section: 709A.1.1 (New)]

***709A.1 General.*** *The walking surface material of decks, porches, balconies and stairs shall comply with the requirements of this section.*

***709A.1.1 Flashing.*** *A minimum of a 6 in. (150 mm) metal flashing, applied vertically on the exterior of the wall, shall be installed at all deck-to-wall intersections.*

# Item: [SFM 01/19-8-7]

**Chapter:** [7A, MATERIALS AND CONSTRUCTION METHODS FOR EXTERIOR WILDFIRE EXPOSURE]

**Section:** [709A, DECKING]

**Express Terms:**

## [Section: 709A.3]

***709A.3 Decking Surfaces.*** *The walking surface material of decks, porches, balconies and stairs shall be constructed with one of the following materials:*

1. *Material that complies with the performance requirements of Section 709A.4 when tested in accordance with both ASTM E2632 and ASTM E2726.*
2. *Ignition-resistant material that complies with the performance requirements of 704A.3 when tested in accordance with ASTM E84 or UL 723.*
3. *Material that complies with the performance requirements of both SFM Standard 12-7A-4 and SFM Standard 12-7A-5.*
4. *Exterior fire-retardant-treated-wood*
5. *Noncombustible material*
6. *Any material that complies with the performance requirements of SFM Standard 12-7A-4A when attached exterior wall covering is also composed of noncombustible or ignition-resistant material.*

***Exception:*** *Wall material shall be permitted to ~~may~~ be of any material that otherwise complies with this chapter when the decking surface material complies with the performance requirements ASTM E84 with a Class B flame spread index ~~rating~~.*

1. *Any material that complies with the performance requirements of Section 709A.5 when tested in accordance with ASTM E2632 and when attached exterior wall covering is also composed of only noncombustible or ignition-resistant materials.*

***Exception:*** *Wall material shall be permitted to be of any material that otherwise complies with this chapter when the decking surface material complies with the performance requirements ASTM E84 with a Class B flame spread index ~~rating~~.*

**[WILDLAND URBAN INTERFACE 2019 INTERVENING PROPOSALS]**

**[Related Sections in Part 2, California Building Code]:**

705A.1, 705A.2, 706A.2, 706A.2.1 (New), 706A.3, 709A.1, 709A.1.1 (New), 709A.3, 1505.1.1, 1505.1.2, 1505.1.3

**Notation:**

Authority: Health and Safety Code Sections 1250, 1569.72, 1569.78, 1568.02, 1502, 1597.44, 1597.45, 1597.46, 1597.54, 1597.65, 13108, 13108.5, 13113, 13113.5, 13114, 13143,13132, 13132.7, 13132, 13133, 13135, 13143.2, 13143.6, 13146, 13210, 13211, 17921, 18928, 18949.2, 25500-25545, Government Code Section 51189, Education Code 17074.50

Reference(s): Health and Safety Code Sections 13143, 13143.1, 13143.9, 13211, 18949.2, 25500 through 25545, Government Code Sections 51176, 51177, 51178, 51179, Public Resources Code Sections 4201-4204

**CHAPTER 9**

**FIRE PROTECTION AND LIFE SAFETY SYSTEMS**

**SECTION 903**

**AUTOMATIC SPRINKLER SYSTEMS**

# Item: [SFM 01/19-9-0]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [903, AUTOMATIC SPRINKLER SYSTEMS]

**Express Terms:**

## [Section: 903.2.10.2 (New)]

***903.2.10.2 Mechanical-access enclosed parking garages.*** *An approved automatic sprinkler system shall be provided throughout buildings used for the storage of motor vehicles in a mechanical-access enclosed parking garage. The portion of the building that contains the mechanical-access enclosed parking garage shall be protected with a specially engineered automatic sprinkler system.*

# Item: [SFM 01/19-9-1]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [903, AUTOMATIC SPRINKLER SYSTEMS]

**Express Terms:**

## [Section: TABLE 903.2.11.6 (Automatic Parking Garage Workgroup)]

**TABLE 903.2.11.6**

**ADDITIONAL REQUIRED SUPPRESSION SYSTEMS**

| **SECTION** | **SUBJECT** |
| --- | --- |
| *406.6.4* | *Mechanical-access enclosed parking garages* |

**[AUTOMATIC PARKING GARAGE 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

202 (New), 406.6.4 (New), 406.6.4.1 (New), 406.6.4.2 (New), 406.6.4.3 (New), 406.6.4.3.1 (New), 406.6.4.4 (New), TABLE 508.4, Table 903.2.11.6

# Item: [SFM 01/19-9-2]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [903, AUTOMATIC SPRINKLER SYSTEMS]

**Express Terms:**

## [Section: TABLE 903.2.11.6 (Energy Storage Workgroup)]

**TABLE 903.2.11.6**

**ADDITIONAL REQUIRED FIRE SUPPRESSION SYSTEMS**

| **SECTION** | **SUBJECT** |
| --- | --- |
| *California Fire Code Section 1206* | *Stationary and mobile energy storage systems* |

**[ENERGY STORAGE SYSTEMS 2019 INTERVEING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

306.2, TABLE 414.5.1, TABLE 509, 707.4, TABLE 716.1(2), T ABLE 716.1(3), 716.2.5.4.1 (New), 716.3.2.1.1.1 (New), TABLE 903.2.11.6, [Chapter 35] NFPA 68 (New)

# Item: [SFM 01/19-9-3]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [903, AUTOMATIC SPRINKLER SYSTEMS]

**Express Terms:**

## [Section: TABLE 903.2.11.6 (Puzzle Room Workgroup)]

**TABLE 903.2.11.6**

**ADDITIONAL REQUIRED FIRE SUPPRESSION SYSTEMS**

| **SECTION** | **SUBJECT** |
| --- | --- |
| 411.~~4~~*2* | Special amusement ~~buildings~~ *areas* |

**[PUZZLE ROOM 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

Table of Contents, 202, Title 411, 411.1, 411.2, 411.3, 411.4, 411.5, 411.6, 411.6.1, 411.7, TABLE 903.2.11.6, 907.2.11, 907.2.11.2, 907.2.11.3, TABLE 1017.2, INDEX

# Item: [SFM 01/19-9-4]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [903, AUTOMATIC SPRINKLER SYSTEMS]

**Express Terms:**

## [Section: 903.3.1.1.1]

**[F] 903.3.1.1.1 Exempt locations.** *~~In other than Group I-2, I-2.1 and I-3 occupancies~~* ~~a~~*A*utomaticsprinklers shall not be required in the followingrooms or areas where such rooms or areas are protectedwith an approved automatic fire detectionsystem in accordance with Section 907.2 that willrespond to visible or invisible particles of combustion.Sprinklers shall not be omitted from a roommerely because it is damp, of fire-resistance-ratedconstruction or contains electrical equipment.

1. A room where the application of water, or flame and water, constitutes a serious life or fire hazard *as determined by the authority having jurisdiction*.

2. A room or space where sprinklers are considered undesirable because of the nature of the contents, ~~where approved~~ *as determined* by the ~~fire code official~~ *authority having jurisdiction*.

*3*. *Machine rooms, machinery spaces, control rooms, control spaces and hoistways associated with* ~~F~~*f*ire service access elevator*s* ~~machine rooms and machinery spaces~~ *provided in accordance with Section 3007*.

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

*(Items 5 through 7 existing text remains unchanged)*

**[Office of Statewide Health Planning Department (OSHPD) 2019 INTERVENING PROPOSALS]**

**[Related Sections in Part 2, California Building Code]**

404.6, 407, 407.1.1, 407.4.4.3, 407.4.4.5, 407.9, 407.11, 407.12 (New), 508.3.1.2 (Delete), 709.5, 903.3.1.1.1, 904.13, 907.2.6.2.2, 907.3.2, 907.3.2.1, 907.3.2.2, 907.3.2.3, 907.3.2.4, 907.3.2.5 (New), 909.5.3, 1010.1.9.7, 1010.1.9.8, 1026.4.1

# Item: [SFM 01/19-9-4.1]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [903, AUTOMATIC SPRINKLER SYSTEMS]

**Express Terms:**

## [Section: 903.3.1.2.3]

**903.3.1.2.3 Attics.** Attic protection shall be provided

as follows:

(Items 1 through 3 existing text remains unchanged)

~~4. Group R-4, Condition 2 occupancy attics not required by Item 1 to have sprinklers shall comply with one of the following:~~

* 1. ~~Provide automatic sprinkler system protection.~~
  2. ~~Provide a heat detection system throughout the attic that is arranged to activate the building fire alarm system.~~
  3. ~~Construct the attic using noncombustible materials.~~
  4. ~~Construct the attic using fire-retardant treated wood complying with Section 2303.2 of the~~ *~~California Building~~**~~Code~~*~~.~~
  5. ~~Fill the attic with noncombustible insulation.~~

**SECTION 904**

**ALTERNATIVE AUTOMATIC**

**FIRE-EXTINGUISHING SYSTEMS**

# Item: [SFM 01/19-9-5]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [904, ALTERNATIVE AUTOMATIC FIRE-EXTINGUISHING SYSTEMS]

**Express Terms:**

## [Section: 904.13]

**[F] 904.13 Domestic cooking systems.** Cooktops and ranges installed in the following occupancies shall be protected in accordance with Section 904.13.1:

1. In Group *R-2.1* occupancies where domestic cooking facilities are installed in accordance with Section 420.~~8~~*9*.
2. In Group I-2 *~~and I-2.1~~* occupancies where domestic cooking facilities are installed in accordance with Section 407.2.6.
3. In Group R-2 college dormitories where domestic cooking facilities are installed in accordance with Section 420.10.

**[Office of Statewide Health Planning Department (OSHPD) 2019 INTERVENING PROPOSALS]**

**[Related Sections in Part 2, California Building Code]**

404.6, 407, 407.1.1, 407.4.4.3, 407.4.4.5, 407.9, 407.11, 407.12 (New), 508.3.1.2 (Delete), 709.5, 903.3.1.1.1, 904.13, 907.2.6.2.2, 907.3.2, 907.3.2.1, 907.3.2.2, 907.3.2.3, 907.3.2.4, 907.3.2.5 (New), 909.5.3, 1010.1.9.7, 1010.1.9.8, 1026.4.1

**SECTION 905**

**STANDPIPE SYSTEMS**

# Item: [SFM 01/19-9-6]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [905, STANDPIPE SYSTEMS]

**Express Terms:**

## [Section: 905.4]

**[F] 905.4 Location of Class I standpipe hose connections.**

(Items 1 through 5 existing text remains unchanged)

6. Where the most remote portion of a ~~nonsprinklered~~ floor or story is more than 150 feet (45 720 mm) from a hose connection ~~or the most remote portion of a sprinklered floor or story is more than 200 feet (60 960 mm) from a hose connection~~, the fire code official is authorized to require that additional hose connections be provided in approved locations. *The distances* *from a hose connection shall be measured along the* *path of travel.*

**SECTION 907**

**FIRE ALARM AND DETECTION SYSTEMS**

# Item: [SFM 01/19-9-7]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [907, FIRE ALARM AND DETECTION SYSTEMS]

**Express Terms:**

## [Section: 907.2.6.2.2]

**[WITHDRAWN]**

# Item: [SFM 01/19-9-8]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [907, FIRE ALARM AND DETECTION SYSTEMS]

**Express Terms:**

## [Section: 907.2.10.2.1 (New)]

***907.2.10.2.1 Licensed Group R-2.1 occupancies.*** *Licensed Group R-2.1 occupancies housing more**than six non-ambulatory, elderly clients shall be provided**with an approved manual and automatic fire**alarm system.*

***Exceptions:*** *Buildings housing non-ambulatory clients on the first story only and which are protected throughout by the following:*

1. *An approved and supervised automatic sprinkler system, as specified in the California Fire Code Sections 903.3.1.1 or 903.3.1.2, which upon activation will initiate the fire alarm system to notify all occupants.*
2. *A manual fire alarm system.*
3. *Smoke alarms required by the California Fire Code Section 907.2.10~~1~~.*

# Item: [SFM 01/19-9-9]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [907, FIRE ALARM AND DETECTION SYSTEMS]

**Express Terms:**

## [Section: 907.2.10.2.1.1 (New)]

***907.2.10.2.1.1 Smoke alarms.*** *Single- and multiple-station smoke alarms shall be installed in accordance with California Fire Code Section 907.2.10.*

# Item: [SFM 01/19-9-10]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [907, FIRE ALARM AND DETECTION SYSTEMS]

**Express Terms:**

## [Section: 907.2.10.2.2]

***907.2.10.2.~~1~~2 Group I-4 occupancies.*** *(existing code language remains unchanged)*

# Item: [SFM 01/19-9-11]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [907, FIRE ALARM AND DETECTION SYSTEMS]

**Express Terms:**

## [Section: 907.2.10.2.3]

***907.2.10.2.~~2~~3 Group R-3.1.*** *(existing code language remains unchanged)*

# Item: [SFM 01/19-9-12]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [907, FIRE ALARM AND DETECTION SYSTEMS]

**Express Terms:**

## [Section: 907.2.10.2.4]

***907.2.10.2.~~3~~4 Smoke alarms.*** *(existing code language remains unchanged)*

# Item: [SFM 01/19-9-13]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [907, FIRE ALARM AND DETECTION SYSTEMS]

**Express Terms:**

## [Section: 907.2.10.2.5 (New)]

***907.2.10.2.5 Existing Group R occupancies.*** *See the California Residential Code for existing Group R-3 occupancies or Chapter 11 of the California Fire Code for all other existing Group R occupancies.*

# Item: [SFM 01/19-9-14]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [907, FIRE ALARM AND DETECTION SYSTEMS]

**Express Terms:**

## [Section: 907.2.10.2.6 (New)]

***907.2.10.2.6 Group R-4.*** *A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group R-4 occupancies housing non-ambulatory clients.*

# Item: [SFM 01/19-9-15]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [907, FIRE ALARM AND DETECTION SYSTEMS]

**Express Terms:**

## [Section: 907.2.11]

**907.2.11 Special amusement ~~buildings~~ *areas*.** An automatic smoke detection system shall be provided in special amusement ~~buildings~~ *areas and throughout the exit access to the point of exit discharge* in accordance with Sections 907.2.11.1 through 907.2.11.3.

# Item: [SFM 01/19-9-16]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [907, FIRE ALARM AND DETECTION SYSTEMS]

**Express Terms:**

## [Section: 907.2.11.2]

**907.2.11.1 Alarm.** (no code change proposal, section title included for reader ease)

**907.2.11.2 System response.**

1. (1.-3. Remain unchanged)

4. Activate a prerecorded message, audible throughout the special amusement ~~building~~ *area and throughout the exit access to the point of exit discharge*, instructing patrons to proceed to the nearest exit. Alarm signals used in conjunction with the prerecorded message shall produce a sound that is distinctive from other sounds used during normal operation.

# Item: [SFM 01/19-9-17]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [907, FIRE ALARM AND DETECTION SYSTEMS]

**Express Terms:**

## [Section: 907.2.11.3]

**907.2.11.3 Emergency voice/alarm communication system.** An emergency voice/alarm communication system, which is allowed to serve as a public-address system, shall be installed in accordance with Section 907.5.2.2 and be audible throughout the entire special amusement ~~building~~ *area and throughout the exit access to the point of exit discharge*.

**[PUZZLE ROOM 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

Table of Contents, 202, Title 411, 411.1, 411.2, 411.3, 411.4, 411.5, 411.6, 411.6.1, 411.7, TABLE 903.2.11.6, 907.2.11, 907.2.11.2, 907.2.11.3, 1017.2, INDEX

# Item: [SFM 01/19-9-17.1]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [907, FIRE ALARM AND DETECTION SYSTEMS]

**Express Terms:**

## [Section: 907.2.22]

**[F] 907.2.22 ~~Battery rooms~~ *Energy Storage Systems*.** An automatic smoke detection system *or radiant-energy detection system* shall be installed in *rooms, walk-in units and* areas containing ~~stationary~~ *energy* storage ~~battery~~ systems as required in Section 1206~~.2~~ of the *California Fire Code*.

# Item: [SFM 01/19-9-18]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [907, FIRE ALARM AND DETECTION SYSTEMS]

**Express Terms:**

## [Section: 907.3.2]

**[F] 907.3.2 Special locking systems.** Where special locking systems are installed on means of egress doors in accordance with Sections 1010.1.9.~~6~~*7* or 1010.1.9.~~7~~*8*, an automatic *smoke* detection system shall be installed as required by ~~that~~ *those* section*s* *and Sections 907.3.2.1 through 907.3.2.5*.

# Item: [SFM 01/19-9-19]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [907, FIRE ALARM AND DETECTION SYSTEMS]

**Express Terms:**

## [Section: 907.3.2.1]

***907.3.2.1 Delayed egress.*** *In other than Groups, I, R-2.1 and R-4 occupancies for single-story building, smoke detectors shall be installed at ceilings throughout all occupied areas and mechanical/electrical spaces. For multiple-story buildings, smoke detectors shall be installed throughout all occupied areas and mechanical/electrical spaces for the story where delayed egress devices are installed. Additional detectors are required on adjacent stories where occupants of those stories utilize the same means of egress.*

***Exception:*** *Refer to Section 907.3.2.4 for Group A courthouse occupancies.*

# Item: [SFM 01/19-9-20]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [907, FIRE ALARM AND DETECTION SYSTEMS]

**Express Terms:**

## [Section: 907.3.2.2]

***907.3.2.2 Delayed egress ~~F~~for Group I and R-2.1 occupancies.*** *Smoke detectors shall be installed at ceilings throughout all occupied areas and mechanical/electrical spaces of smoke-compartments where delayed egress devices are installed. Additional detectors are required in adjacent smoke-compartments where occupants of those compartments utilize the same means of egress.*

# Item: [SFM 01/19-9-21]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [907, FIRE ALARM AND DETECTION SYSTEMS]

**Express Terms:**

## [Section: 907.3.2.3]

***907.3.2.3 Delayed egress ~~F~~for Group R-4.*** *Occupancies licensed as residential care facilities for the elderly, and housing clients with Alzheimer’s disease or dementia residential facilities, smoke detectors shall be installed at ceilings throughout all occupiable rooms and areas and mechanical/ electrical rooms and spaces.*

# Item: [SFM 01/19-9-22]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [907, FIRE ALARM AND DETECTION SYSTEMS]

**Express Terms:**

## [Section: 907.3.2.4]

***907.3.2.4 Delayed egress ~~F~~for Group A Courthouse occupancies.*** *An approved automatic smoke detection system shall be installed at ceilings in all occupied corridors and mechanical/electrical spaces of ~~smoke-compartments~~ occupancies where delayed egress devices are installed.*

# Item: [SFM 01/19-9-23]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [907, FIRE ALARM AND DETECTION SYSTEMS]

**Express Terms:**

## [Section: 907.3.2.5 (New)]

***907.3.2.5 Controlled egress doors for Group I-2 occupancies.*** *Smoke detectors shall be installed at ceilings throughout all occupied areas and mechanical/electrical spaces of smoke-compartments where controlled egress doors are installed.*

**[Office of Statewide Health Planning Department (OSHPD) 2019 INTERVENING PROPOSALS]**

**[Related Sections in Part 2, California Building Code]**

404.6, 407, 407.1.1, 407.4.4.3, 407.4.4.5, 407.9, 407.11, 407.12 (New), 508.3.1.2 (Delete), 709.5, 903.3.1.1.1, 904.13, 907.2.6.2.2, 907.3.2, 907.3.2.1, 907.3.2.2, 907.3.2.3, 907.3.2.4, 907.3.2.5 (New), 909.5.3, 1010.1.9.7, 1010.1.9.8, 1026.4.1

**SECTION 909**

**SMOKE CONTROL SYSTEMS**

# Item: [SFM 01/19-9-24]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [909, SMOKE CONTROL SYSTEMS]

**Express Terms:**

## [Section: 909.5.3]

**[F] 909.5.3 Opening protection.** Openings in smoke barriers shall be protected by automatic-closing devices actuated by the required controls for the mechanical smoke control system. Door openings shall be protected by fire door assemblies complying with Section 716.

**Exceptions:**

(exceptions 1 and 2 remain unchanged)

1. In Group I-2, *I-2.1, R-2.1*; and ambulatory care facilities, where a pair of opposite-swinging doors are installed across a corridor in accordance with Section 909.5.3.1, the doors shall ~~not be required to~~ be protected in accordance with Section 716. The doors ~~shall~~ ~~be close-fitting within operational tolerances and~~ shall not have a center mullion*.* ~~or undercuts in excess of 3/4 inch (19.1 mm), louvers or grilles. The doors shall have head and jamb stops and astragals or rabbets at meeting edges and, where permitted by the door manufacturer’s listing, positive-latching devices are not required.~~ *Positive-latching devices are required. Doors* *installed across corridors shall comply with Section* *1010.1.1.*
2. In Group I-2*, I-2.1, R-2.1* and ambulatory care facilities, where such doors are special-purpose horizontal sliding, accordion or folding door assemblies installed in accordance with Section 1010.1.4.3 and are automatic closing by smoke detection in accordance with Section 716.2.6.~~5~~*6, they shall be protected in accordance with Section 716. ~~The doors shall be close fitting within operational tolerances and shall not have undercuts in excess of 3/4-inch (19.1 mm), louvers or grilles. Where permitted by the manufacturer’s listing, positive-latching devices are not required.~~ Doors installed across corridors shall comply with Section 1010.1.1.*

(exceptions 5, 6, and 7 remain unchanged)

**[Office of Statewide Health Planning Department (OSHPD) 2019 INTERVENING PROPOSALS]**

**[Related Sections in Part 2, California Building Code]**

404.6, 407, 407.1.1, 407.4.4.3, 407.4.4.5, 407.9, 407.11, 407.12 (New), 508.3.1.2 (Delete), 709.5, 903.3.1.1.1, 904.13, 907.2.6.2.2, 907.3.2, 907.3.2.1, 907.3.2.2, 907.3.2.3, 907.3.2.4, 907.3.2.5 (New), 909.5.3, 1010.1.9.7, 1010.1.9.8, 1026.4.1

**SECTION 911**

**FIRE COMMAND CENTER**

# Item: [SFM 01/19-9-25]

**Chapter:** [9, FIRE PROTECTION AND LIFE SAFETY SYSTEMS]

**Section:** [911, FIRE COMMAND CENTER]

**Express Terms:**

## [Section: 911.1.2]

**911.1.2 Separation.** The fire command center shall be separated from the remainder of the building by not less than a ~~1~~*2*-hour fire barrier constructed in accordance with

Section 707 or horizontal assembly constructed in accordance with Section 711, or both.

**Notation:**

Authority: Health and Safety Code Sections 1250, 1569.72, 1569.78, 1568.02, 1502, 1597.44, 1597.45, 1597.46, 1597.54, 1597.65, 13108, 13108.5, 13113, 13113.5, 13114, 13143,13132, 13132.7, 13132, 13133, 13135, 13143.2, 13143.6, 13146, 13210, 13211, 17921, 18928, 18949.2, 25500-25545, Government Code Section 51189, Education Code 17074.50

Reference(s): Health and Safety Code Sections 13143, 13143.1, 13143.9, 13211, 18949.2, 25500 through 25545, Government Code Sections 51176, 51177, 51178, 51179, Public Resources Code Sections 4201-4204

**CHAPTER 10**

**MEANS OF EGRESS**

**SECTION 1004**

**OCCUPANT LOAD**

# Item: [SFM 01/19-10-1]

**Chapter:** [10, MEANS OF EGRESS]

**Section:** [1004, OCCUPANT LOAD]

**Express Terms:**

## [Section: 1004.5]

**[WITHDRAWN]**

# Item: [SFM 01/19-10-2]

**Chapter:** [10, MEANS OF EGRESS]

**Section:** [1004, OCCUPANT LOAD]

**Express Terms:**

## [Section: TABLE 1004.5]

**TABLE 1004.5**

**MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT**

**![Maximum Floor Area Allowances Per Occupant

The State Fire Marshal’s I-3 occupancy work group is proposing 3 additional exceptions to section 1004.5, areas without fixed seating.  The functions of institutional occupancies are not a one size fit all approach for an understanding of fire and life safety. The exceptions proposed point to applicable sections in Chapter 12 for unique institutional conditions that warrant different occupant load factors.

In many cases of the numbers are minimums, i.e. a safety cell must be at least 64 sf min and will end up about 70 sf, which does not mean there are two occupants. Holding cells for example need to be a minimum of 40 sf at 10 sf per inmate minimum, but in reality, it is the bench that defines the occupant load (18” min per inmate). If it is an ADA holding cell, we would add 1 occupant for the wheelchair spot.

There are other minimum areas for offices, exam rooms, etc. but those are nuanced because only one needs to meet those minimum sizes. Additional rooms might be provided which are under the minimums. 

The State Fire Marshal is proposing to adopt the sections 1227, 1230 and 1231, for construction and plan review compliance, even though the Board of Community Corrections will also enforce the regulations. This will allow designers to observe the requirements in the early phases of review and design. This will lead to less change orders when a space is found to not meet the requirements of another State agency. The adoption of these sections is within the authority of the State Fire Marshal’s office as they pertain to fire and life safety of the building housing inmates of various degree in asylums, jails, prisons or institutions per Health and Safety Code 13143.

A footnote pointer to the new proposed Table 408.3.13 to be added to Table 1004.5. Table 408.13 is proposed to clarify the occupancy load factor to be used during the review of I-3 facilities, which include housing pods, refuge areas, safe dispersal areas as well as holding cells, and bench seating. Chapter 10, Table 1004.5 does not clearly list any occupant load factor for these functions of space that are unique to the I-3 facilities regulated by Chapter 4. This code change proposal is to address the need for a concise location for evaluating the exiting requirements based on occupant load factor for I-3 functions of space, which are scattered throughout the regulations in Chapter 4. The table format is a tool to bring all the different section requirements in one place for code user ease. By using a standard occupant load factor, the code user can then easily and consistently determine which condition is required to be met. The intent of the proposal is to give the code user a tool for calculating the number of required exits within a detention facility that may not otherwise be clear. A footnote reference is added to Table 1004.5 to point to Table 408.3.13 for these special functions of space.
]()**

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m2.

a. Floor area in square feet per occupant.

*b. See Section 453.2*

*c. See Section 408.3.13 for I-3 Facilities*

**[I-3 OCCUPANCY 2019 INTERVENING PROPOSALS]**

**[Related Sections in Part 2, California Building Code]:**

310.3.1, 408.1.2.2, 408.3.6, TABLE 408.3.13 (New), 408.13, TABLE 504.3, TABLE 504.4, TABLE 506.2, TABLE 508.4. 435.16 (Renumbered from 510.10), 1004.5, TABLE 1004.5, TABLE 1020.2, 1227.5, 1227.5.2, 1227.6-1227.6.3, 1227.7.4, 1227.8.1, 1227.9.1, 1227.9.1.1, 1227.9.2.2, 1227.10-1227.10.7, 1227.12.1, 1227.22.1.1, 1227.23.1, 1230.1.2, 1230.1.4-1230.10, 1230.1.12, 1230.1.16, 1230.1.23, 1230.1.26, 1230.2.7, 1230.2.8, 1230.2.10, 1231.2.2, 1231.2.3, 1231.2.5131.2.6, 1231.2.7, 1231.2.8, 1231.2.9, 1231.2.10, 1231.2.2, 1231.2.3, 1231.2.5131.2.6, 1231.2.7, 1231.2.8, 1231.2.9, 1231.2.10, 1231.2.24, 1231.3.8, 1231.3.10, 1231.5, 1231.6-1231.6.7

**SECTION 1010**

**DOORS, GATES AND TURNSTILES**

# Item: [SFM 01/19-10-3]

**Chapter:** [10, MEANS OF EGRESS]

**Section:** [1010, DOORS, GATES AND TURNSTILES]

**Express Terms:**

## [Section: 1010.1.9.7]

**1010.1.9.7 Controlled egress doors in Group I-2.** Electric locking systems, including electromechanical locking systems and electromagnetic locking systems, shall be permitted to be locked in the means of egress in Group I-2 occupancies where the clinical needs of persons receiving *psychiatric or mental health treatment ~~care~~* require their *restraint or* containment*.* Controlled egress doors shall be permitted in such occupancies where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1~~or~~ *and* an approved automaticsmoke~~or heat~~detection system installed in accordance with Section 907, provided that the doors are installed and operate in accordance with all of the following:

1. The door locks shall unlock on actuation of the automatic sprinkler system or automatic ~~fire~~ *smoke* detection system.
2. The door locks shall unlock on loss of power controlling the lock or lock mechanism.
3. The door locking system shall be installed to have the capability of being unlocked by a switch located at the fire command center, a nursing station or other approved location. The switch shall directly break power to the lock.
4. A building occupant shall not be required to pass through more than one door equipped with a controlled egress locking system before entering an exit.
5. ~~The procedures for unlocking the doors shall be described and approved as part of the emergency planning and preparedness required by Chapter 4 of the~~ *~~California Fire Code.~~*
6. *5*. All ~~clinical~~ staff shall have the keys, codes or other means necessary to operate the locking systems.
7. *6*. Emergency lighting shall be provided at the door.
8. *7*. The door locking system units shall be listed in accordance with UL 294.

**Exception~~s~~:**

* 1. Items 1 through 4 shall not apply to doors to areas occupied by persons who, because of clinical needs, require restraint or containment as part of the function of a psychiatric *or mental health* treatment area.
  2. ~~Items 1 through 4 shall not apply to doors to areas where a listed egress control system is utilized to reduce the risk of child abduction from nursery and obstetric areas of a Group I-2 hospital.~~

# Item: [SFM 01/19-10-4]

**Chapter:** [10, MEANS OF EGRESS]

**Section:** [1010, DOORS, GATES AND TURNSTILES]

**Express Terms:**

## [Section: 1010.1.9.8]

**1010.1.9.8 Delayed egress.** Delayed egress locking systems shall be permitted to be installed on doors serving the following occupancies in buildings that are equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 *and* an approved automatic smoke ~~or heat~~ detection system installed in accordance with Section 907.

1. Group B, F, I, M, R, S and U occupancies.
2. Group E classrooms with an occupant load of less than 50.

**Exception:** Delayed egress locking systems shall be permitted to be installed on exit or exit access doors, other than the main exit or exit access door, serving a *Group A* courtroom in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 *and an approved* *automatic smoke ~~or heat~~ detection system installed* *in accordance with Section 907.*

# Item: [SFM 01/19-10-4.1]

**Chapter:** [10, MEANS OF EGRESS]

**Section:** [1010, DOORS, GATES AND TURNSTILES]

**Express Terms:**

## [Section: 1010.1.9.8.1]

**[BE] 1010.1.9.8.1 Delayed egress locking system.** The delayed egress locking system shall be installedand operated in accordance with all of the following:

1. The delay electronics of the delayed egress locking system shall deactivate upon actuation of the automatic sprinkler system and automatic fire detection system, allowing immediate, free egress.
2. The delay electronics of the delayed egress locking system shall deactivate upon loss of *electrical* power ~~controlling the lock or lock mechanism~~, allowing immediate free egress, *to any one of the* *following:* (existing text to remain unchanged)

**[Office of Statewide Health Planning Department (OSHPD) 2019 INTERVENING PROPOSALS]**

**[Related Sections in Part 2, California Building Code]**

404.6, 407, 407.1.1, 407.4.4.3, 407.4.4.5, 407.9, 407.11, 407.12 (New), 508.3.1.2 (Delete), 709.5, 903.3.1.1.1, 904.13, 907.2.6.2.2, 907.3.2, 907.3.2.1, 907.3.2.2, 907.3.2.3, 907.3.2.4, 907.3.2.5 (New), 909.5.3, 1010.1.9.7, 1010.1.9.8, 1026.4.1

**SECTION 1017**

**EXIT ACCESS TRAVEL DISTANCE**

# Item: [SFM 01/19-10-5]

**Chapter:** [10, MEANS OF EGRESS]

**Section:** [1017, EXIT ACCESS TRAVEL DISTANCE]

**Express Terms:**

## [Section: TABLE 1017.2]

**TABLE 1017.2**

**EXIT ACCESS TRAVEL DISTANCE a**

(Existing table text remains unchanged)

For SI: 1 foot = 304.8 mm.

a. See the following sections for modifications to exit access travel distance requirements:

Section ~~411.3~~ *411.2*: For the distance limitation in special amusement ~~buildings~~ *areas*.

**[PUZZLE ROOM 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

Table of Contents, 202, Title 411, 411.1, 411.2, 411.3, 411.4, 411.5, 411.6, 411.6.1, 411.7, TABLE 903.2.11.6, 907.2.11, 907.2.11.2, 907.2.11.3, TABLE 1017.2, INDEX

**SECTION 1020**

**CORRIDORS**

# Item: [SFM 01/19-10-6]

**Chapter:** [10, MEANS OF EGRESS]

**Section:** [1020, CORRIDORS]

**Express Terms:**

## [Section: TABLE 1020.2]

**TABLE 1020.2**

**MINIMUM CORRIDOR WIDTH**

| **OCCUPANCY** | **MINIMUM WIDTH (inches)** |
| --- | --- |
| Group I-2 *and I-3* in areas where required for bed movement | 96 |
| *Corridors in Group I-2 and I-3 occupancies* *serving any area caring for one or more* *non-ambulatory persons.* | *~~96~~72* |

**[I-3 OCCUPANCY 2019 INTERVENING PROPOSALS]**

**[Related Sections in Part 2, California Building Code]:**

310.3.1, 408.1.2.2, 408.3.6, TABLE 408.3.13 (New), 408.13, TABLE 504.3, TABLE 504.4, TABLE 506.2, TABLE 508.4. 435.16 (Renumbered from 510.10), 1004.5, TABLE 1004.5, TABLE 1020.2, 1227.5, 1227.5.2, 1227.6-1227.6.3, 1227.7.4, 1227.8.1, 1227.9.1, 1227.9.1.1, 1227.9.2.2, 1227.10-1227.10.7, 1227.12.1, 1227.22.1.1, 1227.23.1, 1230.1.2, 1230.1.4-1230.10, 1230.1.12, 1230.1.16, 1230.1.23, 1230.1.26, 1230.2.7, 1230.2.8, 1230.2.10, 1231.2.2, 1231.2.3, 1231.2.5131.2.6, 1231.2.7, 1231.2.8, 1231.2.9, 1231.2.10, 1231.2.2, 1231.2.3, 1231.2.5131.2.6, 1231.2.7, 1231.2.8, 1231.2.9, 1231.2.10, 1231.2.24, 1231.3.8, 1231.3.10, 1231.5, 1231.6-1231.6.7

# Item: [SFM 01/19-10-7]

**Chapter:** [10, MEANS OF EGRESS]

**Section:** [1020, CORRIDORS]

**Express Terms:**

## [Section: 1020.5]

**1020.5 Air movement in corridors.** Corridors shall not serve as supply, return, exhaust, relief or ventilation air ducts.

**Exceptions:**

1. (exceptions 1 through 3 remain unchanged)
2. Incidental air movement from pressurized rooms within health care facilities *and Group L occupancies*, provided ~~that~~ the corridor is not the primary source of supply or return to the room.

**[L OCCUPANCY WORK GROUP 2019 INTERVENING PROPOSALS]**

**[Related Sections in Part 2, California Building Code]:**

453.4.4, 453.4.7.2, 1020.5, 3001.6

**SECTION 1026**

**HORIZONTAL EXITS**

# Item: [SFM 01/19-10-8]

**Chapter:** [10, MEANS OF EGRESS]

**Section:** [1026, HORIZONTAL EXITS]

**Express Terms:**

## [Section: 1026.4.1]

**1026.4.1 Capacity.** The capacity of the refuge area shall be computed based on a net floor area allowance of 3 square feet (0.2787 m2) for each occupant to be accommodated therein. Where the horizontal exit also forms a smoke compartment, the capacity of the refuge area for Group I-2*, I-2.1* ~~and~~ I-3 *and R-2.1* occupancies ~~and Group B ambulatory care facilities~~ shall comply with Sections 407.5.3, 408.6.2, ~~420.6.1~~ and ~~422.3.2~~ *420.6.2* as applicable.

**[Office of Statewide Health Planning Department (OSHPD) 2019 INTERVENING PROPOSALS]**

**[Related Sections in Part 2, California Building Code]**

404.6, 407, 407.1.1, 407.4.4.3, 407.4.4.5, 407.9, 407.11, 407.12 (New), 508.3.1.2 (Delete), 709.5, 903.3.1.1.1, 904.13, 907.2.6.2.2, 907.3.2, 907.3.2.1, 907.3.2.2, 907.3.2.3, 907.3.2.4, 907.3.2.5 (New), 909.5.3, 1010.1.9.7, 1010.1.9.8, 1026.4.1

**SECTION 1030**

**EMERGENCY ESCAPE AND RESCUE**

# Item: [SFM 01/19-10-9]

**Chapter:** [10, MEANS OF EGRESS]

**Section:** [1030, EMERGENCY ESCAPE AND RESCUE]

**Express Terms:**

## [Section: 1030.1]

**1030.1 General.** In addition to the means of egress required by this chapter, emergency escape and rescue openings shall be provided in ~~the~~ ~~following~~ *Group R* occupancies~~:~~*.*

1. ~~Group R-2 occupancies located in stories with only one exit or access to only one exit as permitted by Tables 1006.3.3(1) and 1006.3.3(2).~~
2. ~~Group R-3 and R-4 occupancies.~~

(existing text to remain unchanged)

*~~6.3. In Group R-2.2 occupancies a certified fire escape is acceptable as a secondary means of egress for existing buildings for this section of the code.~~*

(existing text to remain unchanged)

**Notation:**

Authority: Health and Safety Code Sections 1250, 1569.72, 1569.78, 1568.02, 1502, 1597.44, 1597.45, 1597.46, 1597.54, 1597.65, 13108, 13108.5, 13113, 13113.5, 13114, 13143,13132, 13132.7, 13132, 13133, 13135, 13143.2, 13143.6, 13146, 13210, 13211, 17921, 18928, 18949.2, 25500-25545, Government Code Section 51189, Education Code 17074.50

Reference(s): Health and Safety Code Sections 13143, 13143.1, 13143.9, 13211, 18949.2, 25500 through 25545, Government Code Sections 51176, 51177, 51178, 51179, Public Resources Code Sections 4201-4204

**CHAPTER 12**

**INTERIOR ENVIRONMENT**

**[SFM proposed to adopt the following Chapter 12 sections:**

**[WITHDRAWN]**

***SECTION 1230 [BSCC]***

***MINIMUM STANDARDS FOR JUVENILE FACILITIES***

# Item: [SFM 01/19-11-1]

**Chapter:** [12, INTERIOR ENVIRONMENT]

**Section:** [1230, MINIMUM STANDARDS FOR JUVENILE FACILITIES]

**Express Terms:**

## [Section: 1230.2.10]

***1230.2.10 Security glazing.*** *Security glazing shall comply with the minimum requirements of one of the following test standards: American Society for Testing and Materials, ASTM F1233-98, Class III glass, or; California Department of Corrections and Rehabilitation, CDCR ~~860-94d~~ Appendix H, Class C glass or; H.P. White Laboratory, Inc., HPW-TP-0500.02, Forced Entry Level III.*

**[I-3 OCCUPANCY 2019 INTERVENING PROPOSALS]**

**[Related Sections in Part 2, California Building Code]:**

310.3.1, 408.1.2.2, 408.3.6, TABLE 408.3.13 (New), 408.13, TABLE 504.3, TABLE 504.4, TABLE 506.2, TABLE 508.4. 435.16 (Renumbered from 510.10), 1004.5, TABLE 1004.5, TABLE 1020.2, 1227.5, 1227.5.2, 1227.6-1227.6.3, 1227.7.4, 1227.8.1, 1227.9.1, 1227.9.1.1, 1227.9.2.2, 1227.10-1227.10.7, 1227.12.1, 1227.22.1.1, 1227.23.1, 1230.1.2, 1230.1.4-1230.10, 1230.1.12, 1230.1.16, 1230.1.23, 1230.1.26, 1230.2.7, 1230.2.8, 1230.2.10, 1231.2.2, 1231.2.3, 1231.2.5131.2.6, 1231.2.7, 1231.2.8, 1231.2.9, 1231.2.10, 1231.2.2, 1231.2.3, 1231.2.5131.2.6, 1231.2.7, 1231.2.8, 1231.2.9, 1231.2.10, 1231.2.24, 1231.3.8, 1231.3.10, 1231.5, 1231.6-1231.6.7

**Notation:**

Authority: Health and Safety Code Sections 1250, 1569.72, 1569.78, 1568.02, 1502, 1597.44, 1597.45, 1597.46, 1597.54, 1597.65, 13108, 13108.5, 13113, 13113.5, 13114, 13143,13132, 13132.7, 13132, 13133, 13135, 13143.2, 13143.6, 13146, 13210, 13211, 17921, 18928, 18949.2, 25500-25545, Government Code Section 51189, Education Code 17074.50

Reference(s): Health and Safety Code Sections 13143, 13143.1, 13143.9, 13211, 18949.2, 25500 through 25545, Government Code Sections 51176, 51177, 51178, 51179, Public Resources Code Sections 4201-4204

**CHAPTER 15**

**ROOF ASSEMBLIES AND ROOFTOP STRUCTURES**

**SECTION 1505**

**FIRE CLASSIFICATION**

# Item: [SFM 01/19-12-1]

**Chapter:** [15, ROOF ASSEMBLIES AND ROOFTOP STRUCTURES]

**Section:** [1505, FIRE CLASSIFICATION]

**Express Terms:**

## [Section: 1505.1.1]

***1505.1.1 Roof coverings within ~~very high~~ fire hazard severity zones.*** *(existing language remains unchanged)*

# Item: [SFM 01/19-12-2]

**Chapter:** [15, ROOF ASSEMBLIES AND ROOFTOP STRUCTURES]

**Section:** [1505, FIRE CLASSIFICATION]

**Express Terms:**

## [Section: 1505.1.2]

***~~1505.1.2 Roof coverings within state responsibility areas.~~*** *~~The entire roof covering of every existing structure where~~**~~more than 50 percent of the total roof area is replaced~~**~~within any one-year period, the entire roof covering of~~**~~every new structure and any roof covering applied in the~~**~~alteration, repair or replacement of the roof of every existing~~**~~structure shall be a fire-retardant roof covering that is~~**~~at least Class B.~~*

***~~Exception:~~*** *~~Areas designated as moderate fire hazard severity zones.~~*

# Item: [SFM 01/19-12-3]

**Chapter:** [15, ROOF ASSEMBLIES AND ROOFTOP STRUCTURES]

**Section:** [1505, FIRE CLASSIFICATION]

**Express Terms:**

## [Section: 1505.1.2]

***1505.1.~~3~~2 Roof coverings within all other areas.*** *(existing language remains unchanged)*

# Item: [SFM 01/19-12-4]

**Chapter:** [15, ROOF ASSEMBLIES AND ROOFTOP STRUCTURES]

**Section:** [1505, FIRE CLASSIFICATION]

**Express Terms:**

## [Section: 1505.1.3]

***1505.1.~~4~~3 Roofing requirements in a Wildland-Urban Interface Fire Area.*** *(existing language remains unchanged)*

**[WILDLAND URBAN INTERFACE 2019 INTERVENING PROPOSALS]**

**[Related Sections in Part 2, California Building Code]:**

705A.1, 705A.2, 706A.2, 706A.2.1 (New), 706A.3, 709A.1, 709A.1.1 (New), 709A.3, 1505.1.1, 1505.1.2, 1505.1.3

**Notation:**

Authority: Health and Safety Code Sections 1250, 1569.72, 1569.78, 1568.02, 1502, 1597.44, 1597.45, 1597.46, 1597.54, 1597.65, 13108, 13108.5, 13113, 13113.5, 13114, 13143,13132, 13132.7, 13132, 13133, 13135, 13143.2, 13143.6, 13146, 13210, 13211, 17921, 18928, 18949.2, 25500-25545, Government Code Section 51189, Education Code 17074.50

Reference(s): Health and Safety Code Sections 13143, 13143.1, 13143.9, 13211, 18949.2, 25500 through 25545, Government Code Sections 51176, 51177, 51178, 51179, Public Resources Code Sections 4201-4204

**CHAPTER 17**

**SPECIAL INSPECTIONS AND TESTS**

# Item: [SFM 01/19-13-1]

**Chapter:** [17, SPECIAL INSPECTIONS AND TESTS]

**Section:** [1705, REQUIRED SPECIAL INSPECTIONS AND TESTS]

**Express Terms:**

**[SFM proposed to adopt sections 1705.5.3, TABLE 1705.5.3, 1705.14, 1705.15, 1705.20]**

**SECTION 1705**

**REQUIRED SPECIAL INSPECTIONS AND TESTS**

## [Section: 1705.5.3 (New)]

***1705.5.3 Mass timber construction.*** *Special inspections of Mass Timber elements in Types IV-A, IV-B and IV-C construction shall be in accordance with Table 1705.5.3.*

# Item: [SFM 01/19-13-2]

**Chapter:** [17, SPECIAL INSPECTIONS AND TESTS]

**Section:** [1705, REQUIRED SPECIAL INSPECTIONS AND TESTS]

**Express Terms:**

## [Section: TABLE 1705.5.3 (New)]

*TABLE 1705.5.3*

*REQUIRED SPECIAL INSPECTIONS OF MASS TIMBER CONSTRUCTION*

| ***Type*** | ***Continuous Special Inspection*** | ***Periodic Special Inspection*** |
| --- | --- | --- |
| 1. *Inspection of anchorage and connections of mass timber construction to timber deep foundation systems.* |  | *X* |
| 1. *Inspect erection of mass timber construction* |  | *X* |
| 1. *Inspection of connections where installation methods are required to meet design loads* |  |  |
| *3.1 Threaded fasteners* |  |  |
| *3.1.1 Verify use of proper installation equipment* |  | *X* |
| *3.1.2 Verify use of pre-drilled holes where required* |  | *X* |
| *3.1.3 Inspect screws, including diameter, length, head type, spacing, installation angle, and depth* |  | *X* |
| *3.2 Adhesive anchors installed in horizontal or upwardly inclined orientation to resist sustained tension loads* | *X* |  |
| *3.3 Adhesive anchors not defined in 3.2* |  | *X* |
| *3.4 Bolted connections* |  | *X* |
| *3.5 Concealed connections* |  | *X* |

# Item: [SFM 01/19-13-3]

**Chapter:** [17, SPECIAL INSPECTIONS AND TESTS]

**Section:** [1705, REQUIRED SPECIAL INSPECTIONS AND TESTS]

**Express Terms:**

## [Section: 1705.11.1]

**1705.11.1 Structural wood.** Continuous special inspection is required during field gluing operations of elements of the main wind force-resisting system. Periodic special inspection is required for nailing, bolting, anchoring and other fastening of elements of the main wind force-resisting system, including wood shear walls, wood diaphragms, drag struts, braces and hold-downs.

**Exception:** Special inspections are not required for wood shear walls, shear panels and diaphragms, including nailing, bolting, anchoring and other fastening to other elements of the main wind force-resisting system, where the *lateral resistance is provided by the structural sheathing and the* specified fastener spacing at panel edges is more than 4 inches (102 mm) on center.

# Item: [SFM 01/19-13-4]

**Chapter:** [17, SPECIAL INSPECTIONS AND TESTS]

**Section:** [1705, REQUIRED SPECIAL INSPECTIONS AND TESTS]

**Express Terms:**

## [Section: 1705.11.2]

**1705.11.2 Cold-formed steel light-frame construction.** Periodic special inspection is required for welding operationsof elements of the main wind force-resisting system.Periodic special inspection is required for screw attachment,bolting, anchoring and other fastening of elementsof the main wind force-resisting system, including shear

walls, braces, diaphragms, collectors (drag struts) and hold-downs.

**Exception:** Special inspections are not required for cold-formed steel light-frame shear walls and diaphragms, including screwing, bolting, anchoring and other fastening to components of the wind force resisting system, where either of the following applies:

1. The sheathing is gypsum board or fiberboard.
2. The sheathing is wood structural panel or steel sheets on only one side of the shear wall, shear panel or diaphragm assembly and the *specified* fastener spacing ~~of~~ *at* the ~~sheathing~~ *panel or sheet edges* is more than 4 inches (102 mm) on center (o.c.).

# Item: [SFM 01/19-13-5]

**Chapter:** [17, SPECIAL INSPECTIONS AND TESTS]

**Section:** [1705, REQUIRED SPECIAL INSPECTIONS AND TESTS]

**Express Terms:**

## [Section: 1705.12.2]

**1705.12.2 Structural wood.** For the seismic force-resisting systems of structures assigned to Seismic Design Category C, D, E or F:

1. Continuous special inspection shall be required during field gluing operations of elements of the seismic force-resisting system.
2. Periodic special inspection shall be required for nailing, bolting, anchoring and other fastening of elements of the seismic force-resisting system, including wood shear walls, wood diaphragms, drag struts, braces, shear panels and hold-downs.

**Exception:** Special inspections are not required for wood shear walls, shear panels and diaphragms, including nailing, bolting, anchoring and other fastening to other elements of the seismic force-resisting system, where the *lateral resistance is provided by structural sheathing, and the specified* fastener spacing ~~of~~ *at* the ~~sheathing~~ *panel edges* is more than 4 inches (102 mm) on center.

# Item: [SFM 01/19-13-6]

**Chapter:** [17, SPECIAL INSPECTIONS AND TESTS]

**Section:** [1705, REQUIRED SPECIAL INSPECTIONS AND TESTS]

**Express Terms:**

## [Section: 1705.12.3]

**1705.12.3 Cold-formed steel light-frame construction.** For the seismic force-resisting systems of structuresassigned to Seismic Design Category C, D, E or F, periodicspecial inspection shall be required for both:

1. Welding operations of elements of the seismic force-resisting system.
2. Screw attachment, bolting, anchoring and other fastening of elements of the seismic force-resisting system, including shear walls, braces, diaphragms, collectors (drag struts) and hold-downs.

**Exception:** Special inspections are not required for cold-formed steel light-frame shear walls and diaphragms, including screw installation, bolting, anchoring and other fastening to components of the seismic force-resisting system, where either of the following applies:

1. The sheathing is gypsum board or fiberboard.
2. The sheathing is wood structural panel or steel sheets on only one side of the shear wall, shear panel or diaphragm assembly and the *specified* fastener spacing ~~of~~ *at* the ~~sheathing~~ *panel or sheet edge* is more than 4 inches (102 mm) on center.

**[TALL WOOD AND HEAVY TIMBER 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

110.3.12 (New), 202, 403.3.2, TABLE 504.3, TABLE 504.4, TABLE 506.2, 508.4.4.1, 509.4.1.1 (New), TABLE 601, TABLE 602, 602.4, 602.4.1 (New), 602.4.1.1 (New), 602.4.1.2 (New), 602.4.1.2.1 (New), 602.4.1.3 (New), 602.4.1.4 (New), 602.4.1.5 (New), 602.4.1.6 (New), 602.4.2, 602.4.2.1 (New), 602.4.2.2 (New), 602.4.2.2.1 (New), 602.4.2.2.2 (New), 602.4.2.2.3 (New), 602.4.2.2.4 (New), 602.4.2.3 (New), 602.4.2.4 (New), 602.4.2.5 (New), 602.4.2.6 (New), 602.4.3, 602.4.3.1 (New), 602.4.3.2 (New), 602.4.3.3 (New), 602.4.3.4 (New), 602.4.3.5 (New), 602.4.3.6 (New), 602.4.4 (New), 602.4.4.1, 602.4.4.2, 602.4.4.3, 602.4.4 (New), 703.8 (New), 703.9 (New), 718.2.1, 722.7 (New), 722.7.1 (New), TABLE 722.7.1 (1) (New), TABLE 722.7.1 (2) (New), 722.7.2 (New), 722.7.2.1 (New), 722.7.2.2 (New), 1705.5.3 (New), TABLE 1705.5.3 (New),1705.11.1, 1705.11.2, 1705.12.2, 1705.12.3, 1705.20 (New), 2304.10.1.2 (New), 2304.11.3, 2304.11.4, 3102.3, 3102.6.1.1, (Chapter 35) ANSI/APA PRG 320-18, ASTM D3498-03 (2011) (New), D102.2.5

# Item: [SFM 01/19-13-7]

**Chapter:** [17, SPECIAL INSPECTIONS AND TESTS]

**Section:** [1705, REQUIRED SPECIAL INSPECTIONS AND TESTS]

**Express Terms:**

## [Section: 1705.14]

**1705.14 Sprayed fire-resistant materials.** Special inspections and tests of sprayed fire-resistant materials applied to floor, roof and wall assemblies and structural members shall be performed in accordance with Sections 1705.14.1 through 1705.14.6. Special inspections shall be based on the fire-resistance design as designated in the approved construction documents. The tests set forth in this section shall be based on samplings from specific floor, roof and wall assemblies and structural members. Special inspections and tests shall be performed *during construction with an addition visual inspection* after the rough installation of electrical, automatic sprinkler, mechanical and plumbing systems and suspension systems for ceilings *and before concealed*, where applicable. *The required sample size shall not exceed 110% of that specified by the referenced standards in sections 1705.14.4.1 through 1705.14.4.9.*

# Item: [SFM 01/19-13-8]

**Chapter:** [17, SPECIAL INSPECTIONS AND TESTS]

**Section:** [1705, REQUIRED SPECIAL INSPECTIONS AND TESTS]

**Express Terms:**

## [Section: 1705.15]

**1705.15 Mastic and intumescent fire-resistant coatings.** Special inspections and tests for mastic and intumescentfire-resistant coatings applied to structural elements anddecks shall be performed in accordance with AWCI 12-B.Special inspections and tests shall be based on the fire-resistancedesign as designated in the approved construction documents. *Special inspections and test shall be performed after the rough installation of electrical, automatic sprinkler, mechanical and plumbing systems and suspension systems for ceilings, and before concealed, where applicable.*

# Item: [SFM 01/19-13-9]

**Chapter:** [17, SPECIAL INSPECTIONS AND TESTS]

**Section:** [1705, REQUIRED SPECIAL INSPECTIONS AND TESTS]

**Express Terms:**

## [Section: 1705.20 (New)]

*1705.20 Sealing of mass timber. Periodic special inspections of sealants or adhesives shall be conducted where sealant or adhesive required by Section 703.9 is applied to mass timber building elements as designated in the approved construction documents.*

**[TALL WOOD AND HEAVY TIMBER 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

110.3.12 (New), 202, 403.3.2, TABLE 504.3, TABLE 504.4, TABLE 506.2, 508.4.4.1, 509.4.1.1 (New), TABLE 601, TABLE 602, 602.4, 602.4.1 (New), 602.4.1.1 (New), 602.4.1.2 (New), 602.4.1.2.1 (New), 602.4.1.3 (New), 602.4.1.4 (New), 602.4.1.5 (New), 602.4.1.6 (New), 602.4.2, 602.4.2.1 (New), 602.4.2.2 (New), 602.4.2.2.1 (New), 602.4.2.2.2 (New), 602.4.2.2.3 (New), 602.4.2.2.4 (New), 602.4.2.3 (New), 602.4.2.4 (New), 602.4.2.5 (New), 602.4.2.6 (New), 602.4.3, 602.4.3.1 (New), 602.4.3.2 (New), 602.4.3.3 (New), 602.4.3.4 (New), 602.4.3.5 (New), 602.4.3.6 (New), 602.4.4 (New), 602.4.4.1, 602.4.4.2, 602.4.4.3, 602.4.4 (New), 703.8 (New), 703.9 (New), 718.2.1, 722.7 (New), 722.7.1 (New), TABLE 722.7.1 (1) (New), TABLE 722.7.1 (2) (New), 722.7.2 (New), 722.7.2.1 (New), 722.7.2.2 (New), 1705.5.3 (New), TABLE 1705.5.3 (New),1705.11.1, 1705.11.2, 1705.12.2, 1705.12.3, 1705.20 (New), 2304.10.1.2 (New), 2304.11.3, 2304.11.4, 3102.3, 3102.6.1.1, (Chapter 35) ANSI/APA PRG 320-18, ASTM D3498-03 (2011) (New), D102.2.5

**Notation:**

Authority: Health and Safety Code Sections 1250, 1569.72, 1569.78, 1568.02, 1502, 1597.44, 1597.45, 1597.46, 1597.54, 1597.65, 13108, 13108.5, 13113, 13113.5, 13114, 13143,13132, 13132.7, 13132, 13133, 13135, 13143.2, 13143.6, 13146, 13210, 13211, 17921, 18928, 18949.2, 25500-25545, Government Code Section 51189, Education Code 17074.50

Reference(s): Health and Safety Code Sections 13143, 13143.1, 13143.9, 13211, 18949.2, 25500 through 25545, Government Code Sections 51176, 51177, 51178, 51179, Public Resources Code Sections 4201-4204

**CHAPTER 23**

**WOOD**

**SECTION 2304**

**GENERAL CONSTRUCTION REQUIREMENTS**

# Item: [SFM 01/19-14-1]

**Chapter:** [23, WOOD]

**Section:** [2304, GENERAL CONSTRUCTION REQUIREMENTS]

**Express Terms:**

## [Section: 2304.10.1.2 (New)]

***2304.10.1.2 Connection fire resistance rating.*** *Fire resistance ratings for connections in Type IV-A IV-B, or IV-C construction shall be determined by one of the following:*

1. *Testing in accordance with Section 703.2 where the connection is part of the fire resistance test.*
2. *Engineering analysis that demonstrates that the temperature rise at any portion of the connection is limited to an average temperature rise of*

*250°F (139°C) and a maximum temperature rise of 325° F (181 °C) for a time corresponding to the required fire resistance rating of the structural element being connected. For the purposes of this analysis the connection includes connectors fasteners and portions of wood members included in the structural design of the connection.*

# Item: [SFM 01/19-14-2]

**Chapter:** [23, WOOD]

**Section:** [2304, GENERAL CONSTRUCTION REQUIREMENTS]

**Express Terms:**

## [Section: 2304.11.3]

**2304.11.3 Floors.** Floors shall be without concealed spaces~~.~~ *or with concealed spaces complying with Section 602.4.4.4.* Wood floors shall be constructed in accordance with Section 2304.11.3.1 or 2304.11.3.2.

# Item: [SFM 01/19-14-3]

**Chapter:** [23, WOOD]

**Section:** [2304, GENERAL CONSTRUCTION REQUIREMENTS]

**Express Terms:**

## [Section: 2304.11.4]

**2304.11.4 Roof decks.** Roofs shall be without concealed spaces *or with concealed spaces complying with Section 602.4.4.4.* ~~and~~ *~~r~~Roof* decks shall be constructed in accordance with Section 2304.11.4.1 or 2304.11.4.2. Other types of decking shall be an alternative that provides equivalent fire resistance and structural properties. Where supported by a wall, roof decks shall be anchored to walls to resist forces determined in accordance with Chapter 16. Such anchors shall consist of steel bolts, lags, screws or approved hardware of sufficient strength to resist prescribed forces.

**[TALL WOOD AND HEAVY TIMBER 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

110.3.12 (New), 202, 403.3.2, TABLE 504.3, TABLE 504.4, TABLE 506.2, 508.4.4.1, 509.4.1.1 (New), TABLE 601, TABLE 602, 602.4, 602.4.1 (New), 602.4.1.1 (New), 602.4.1.2 (New), 602.4.1.2.1 (New), 602.4.1.3 (New), 602.4.1.4 (New), 602.4.1.5 (New), 602.4.1.6 (New), 602.4.2, 602.4.2.1 (New), 602.4.2.2 (New), 602.4.2.2.1 (New), 602.4.2.2.2 (New), 602.4.2.2.3 (New), 602.4.2.2.4 (New), 602.4.2.3 (New), 602.4.2.4 (New), 602.4.2.5 (New), 602.4.2.6 (New), 602.4.3, 602.4.3.1 (New), 602.4.3.2 (New), 602.4.3.3 (New), 602.4.3.4 (New), 602.4.3.5 (New), 602.4.3.6 (New), 602.4.4 (New), 602.4.4.1, 602.4.4.2, 602.4.4.3, 602.4.4 (New), 703.8 (New), 703.9 (New), 718.2.1, 722.7 (New), 722.7.1 (New), TABLE 722.7.1 (1) (New), TABLE 722.7.1 (2) (New), 722.7.2 (New), 722.7.2.1 (New), 722.7.2.2 (New), 1705.5.3 (New), TABLE 1705.5.3 (New),1705.11.1, 1705.11.2, 1705.12.2, 1705.12.3, 1705.20 (New), 2304.10.1.2 (New), 2304.11.3, 2304.11.4, 3102.3, 3102.6.1.1, (Chapter 35) ASTM D3498-03 (2011) (New), D102.2.5

**Notation:**

Authority: Health and Safety Code Sections 1250, 1569.72, 1569.78, 1568.02, 1502, 1597.44, 1597.45, 1597.46, 1597.54, 1597.65, 13108, 13108.5, 13113, 13113.5, 13114, 13143,13132, 13132.7, 13132, 13133, 13135, 13143.2, 13143.6, 13146, 13210, 13211, 17921, 18928, 18949.2, 25500-25545, Government Code Section 51189, Education Code 17074.50

Reference(s): Health and Safety Code Sections 13143, 13143.1, 13143.9, 13211, 18949.2, 25500 through 25545, Government Code Sections 51176, 51177, 51178, 51179, Public Resources Code Sections 4201-4204

**CHAPTER 30**

**ELEVATORS AND CONVEYING SYSTEMS**

**SECTION 3001**

**GENERAL**

# Item: [SFM 01/19-15-1]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3001, GENERAL]

**Express Terms:**

## [Section: 3001.6]

***3001.6 Elevators utilized to transport hazardous materials.*** *Elevators utilized to transport hazardous materials shall also**comply with the California Fire Code Sections 5003.10.2.2, 5003.10.4 through 5003.10.7.*

**[L OCCUPANCY WORK GROUP 2019 INTERVENING PROPOSALS]**

**[Related Sections in Part 2, California Building Code]:**

453.4.4, 453.4.7.2, 1020.5, 3001.6

**SECTION 3002**

**HOISTWAY ENCLOSURES**

# Item: [SFM 01/19-15-2]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3002, HOISTWAY ENCLOSURES]

**Express Terms:**

## [Section: 3002.4a]

***3002.4a General stretcher requirements.*** *All buildings and structures with one or more passenger service elevators shall be provided with not less than one medical emergency service elevator to all landings meeting the provisions of Section*

*3002.4a. The medical emergency service elevator(s) shall be identified in the construction documents specified in section 107 or the California Administrative Code.*

***Exceptions:***

*1. (exceptions remain unchanged)*

# Item: [SFM 01/19-15-3]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3002, HOISTWAY ENCLOSURES]

**Express Terms:**

## [Section: 3002.4.1a]

***3002.4.1a Gurney size.*** *The medical emergency service elevator shall accommodate the loading and transport of two emergency personnel, each requiring a minimum clear 21-inch (533 mm) diameter circular area and an ambulance gurney or stretcher ~~[maximum~~ minimum size 24 inches by 84 inches (610 mm by 2134 mm) with not less than 5-inch (127 mm) radius corners~~]~~ in the horizontal, open position.*

# Item: [SFM 01/19-15-4]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3002, HOISTWAY ENCLOSURES]

**Express Terms:**

## [Section: 3002.4.3a]

***3002.4.2a Hoistway doors.*** *(no proposed changes, kept section in sequence for reader ease.)*

***~~3002.4.3a Elevator entrance openings and car size.~~*** *~~The elevator car shall be of such a size and arrangement to accommodate a 24-inch by 84-inch (610 mm by 2134 mm) ambulance gurney or stretcher with not less than 5-inch (127 mm) radius corners, in the horizontal, open position, shall be provided with a minimum clear distance between walls or between walls and door excluding return panels not less than 80 inches by 54 inches (2032 mm by 1372 mm), and a minimum distance from wall to return panel not less than 51 inches (1295 mm) with a 42-inch (1067 mm) side slide door.~~*

***~~Exception:~~*** *~~The elevator car dimensions and/or the clear entrance opening dimensions may be altered where it can be demonstrated to the local jurisdictional authority’s satisfaction that the proposed configuration will handle the designated gurney or stretcher with equivalent ease. Documentation from the local authority shall be provided to the Occupational Safety and Health Standards Board.~~*

***3002.4.~~4~~3a Elevator recall.*** *The elevator(s) designated the medical emergency elevator shall be equipped with a key switch to recall the elevator nonstop to the main floor. For the purpose of this section, elevators in compliance with Section 3003.2 shall be acceptable.*

# Item: [SFM 01/19-15-5]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3002, HOISTWAY ENCLOSURES]

**Express Terms:**

## [Section: 3002.4.4a]

***3002.4.~~54~~a Designation.*** *Medical emergency elevators shall be identified by the international symbol (Star of Life) for emergency medical services.*

# Item: [SFM 01/19-15-6]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3002, HOISTWAY ENCLOSURES]

**Express Terms:**

## [Section: 3002.4.5a]

***3002.4.~~6~~5a Symbol size.*** *The symbol shall not be less than 3*

*inches (76 mm) in size.*

# Item: [SFM 01/19-15-7]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3002, HOISTWAY ENCLOSURES]

**Express Terms:**

## [Section: 3002.4.6a]

***3002.4.~~7~~6a Symbol location.*** *A symbol shall be permanently attached to each side of the hoistway door frame on the portion of the frame at right angles to the hallway or landing area. Each symbol shall be not less than 78 inches (1981 mm) and not more than 84 inches (2134 mm) above the floor level at the threshold.*

# Item: [SFM 01/19-15-8]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3002, HOISTWAY ENCLOSURES]

**Express Terms:**

## [Section: 3002.5]

**3002.5 Emergency doors.** *~~Emergency doors in blind hoistways as described in ASME A17.1, Section 2.11.1.2, and access panels as described in ASME A17.1, Section 2.11.1.4, are prohibited in accordance with California Code of Regulations, Title 8, Division 1, Chapter 4, Subchapter 6, Elevator Safety Orders.~~ Where an elevator is installed in a single blind hoistway or on the outside of a building, emergency doors shall be in conformance with the California Code of Regulations, Title 8, Division 1, Chapter 4, Subchapter 6, Elevator Safety Orders.*

# Item: [SFM 01/19-15-9]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3002, HOISTWAY ENCLOSURES]

**Express Terms:**

## [Section: 3002.6.1 (New)]

**3002.6 Prohibited doors.** *(no proposed changes, kept section in sequence for reader ease.)*

***3002.6.1 Prohibited Hoistway Access Doors and Panels.*** *The following types of access doors and panels are prohibited in accordance with the California Code Regulations, Title 8, Division 1, Chapter 4, Subchapter 6, Elevator Safety Orders:*

1. *Access panels or doors to working platforms in the line of movement of the car counterweight in the hoistway.*
2. *Access panels or doors in the hoistway for access to car or hoistway transparent enclosures.*

# Item: [SFM 01/19-15-10]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3002, HOISTWAY ENCLOSURES]

**Express Terms:**

## [Section: 3002.9]

**3002.9 Plumbing and mechanical systems.** Plumbing and mechanical systems shall not be located in an elevator hoistway enclosure *unless permitted by California Code of Regulations, Title 8, Division 1, Chapter 4, Subchapter 6, Elevator Safety Orders*.

**Exception:** Floor drains~~,~~ *and* sumps ~~and sump pumps~~ shall be permitted at the base of the hoistway enclosure provided that they are indirectly connected to the plumbing system.

# Item: [SFM 01/19-15-11]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3002, HOISTWAY ENCLOSURES]

**Express Terms:**

## [Section: 3002.11 (New)]

***3002.11 Pit Access Door.*** *Where separate pit access door(s) are required for access to pit(s) located below the bottom hoistway door landing, permanent stairway access shall be provided to the access door.*

**SECTION 3003**

**EMERGENCY OPERATIONS**

# Item: [SFM 01/19-15-12]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3003, EMERGENCY OPERATIONS]

**Express Terms:**

## [Section: 3003.1]

**[F] 3003.1 Standby power.** In buildings and structures where standby power is required or furnished to operate an elevator, the operation shall be in accordance with *Section 1203 of the California Fire Code* and Sections 3003.1.1 through 3003.1.~~4~~*5 of this code*.

# Item: [SFM 01/19-15-13]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3003, EMERGENCY OPERATIONS]

**Express Terms:**

## [Section: 3003.1.4]

**[F] 3003.1.4 *~~Venting~~ Temperature and Humidity Control*.** Where standby power is connected to elevators, the machine room*, machine space, control room, and control space* ventilation or air conditioning *system*shall be connected to the standby power source.

# Item: [SFM 01/19-15-14]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3003, EMERGENCY OPERATIONS]

**Express Terms:**

## [Section: 3003.1.5 (New)]

***[F] 3003.1.5 Emergency Hoistway Venting.*** *Where standby power is connected to elevators, the emergency hoistway ventilation system, if required, shall be connected to the standby power source.*

# Item: [SFM 01/19-15-15]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3003, EMERGENCY OPERATIONS]

**Express Terms:**

## [Section: 3003.4 (New)]

***[F] 3003.4 Emergency Hoistway Venting.*** *Elevator hoistways containing the driving machine shall be provided with a means for venting smoke and hot gases to the outer air in case of fire.*

# Item: [SFM 01/19-15-16]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3003, EMERGENCY OPERATIONS]

**Express Terms:**

## [Section: 3003.4.1 (New)]

***3003.4.1 Location of vents.*** *Vents shall be located at the top of the hoistway and shall open either directly to the outer air or through noncombustible ducts to the outer air.*

# Item: [SFM 01/19-15-17]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3003, EMERGENCY OPERATIONS]

**Express Terms:**

## [Section: 3003.4.2 (New)]

***3003.4.2 Area of vents.*** *Except as provided for in Section 3003.1.4.4 of the California Building Code, the area of the vents shall be not less than 3½ percent of the area of the hoistway nor less than 3 square feet (0.28 m2) for each elevator car.*

# Item: [SFM 01/19-15-18]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3003, EMERGENCY OPERATIONS]

**Express Terms:**

## [Section: 3003.4.3 (New)]

***3003.4.3 Operation of vents.*** *Vent openings shall automatically open upon detection of smoke in the elevator hoistway and upon activation of a manual override control. The manual override control shall be capable of opening and closing the vents and shall be located in an approved location. Smoke detectors provided in elevator hoistways to activate the hoistway ventilation system, shall also be required to activate the elevator Phase I emergency recall operation function in accordance with California Code of Regulations, Title 8, Division 1, Chapter 4, Subchapter 6, Elevator Safety Orders.*

# Item: [SFM 01/19-15-19]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3003, EMERGENCY OPERATIONS]

**Express Terms:**

## [Section: 3003.4.4 (New)]

***3003.4.4 Reduced vent area.*** *Where mechanical ventilation conforming to the California Mechanical Code is provided, a reduction in the required vent area is allowed provided that all of the following conditions are met:*

1. *The vents required by Section 3003.1.4.1 of the California Building Code do not have outside exposure.*
2. *The hoistway does not extend to the top of the building.*
3. *The hoistway exhaust fan is automatically reactivated by thermostatic means.*
4. *Equivalent venting of the hoistway is accomplished.*

**SECTION 3005**

**MACHINE ROOMS**

# Item: [SFM 01/19-15-20]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3005, MACHINE ROOMS]

**Express Terms:**

## [Section: 3005.1]

**3005.1 Access.** *A~~n~~ permanent and* approved means of access shall be provided to elevator machine rooms, control rooms, control spaces and machinery spaces.

# Item: [SFM 01/19-15-21]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3005, MACHINE ROOMS]

**Express Terms:**

## [Section: 3005.2]

**3005.2 ~~Venting~~*Temperature and Humidity Control*.** Elevator machine rooms, machinery spaces that contain the driving machine, and control rooms or spaces that contain the operation or motion controller for elevator operation shall be provided with an independent ventilation or air-conditioning system to protect against the overheating of the electrical equipment. The system shall ~~be capable of maintaining~~ *maintain the* temperature~~s~~ *and humidity* within the range established ~~for~~ *by the manufacturer of* the elevator equipment.

# Item: [SFM 01/19-15-22]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3005, MACHINE ROOMS]

**Express Terms:**

## [Section: 3005.4.1]

**3005.4 Machine rooms, control rooms, machinery spaces, and control spaces.** (no proposed change, the section title is included for reader ease.)

***3005.4.1 Automatic sprinkler system.*** *Automatic sprinklers shall not be required to be installed in the elevator* *hoistway, elevator machine room, elevator machinery* *space, elevator control space, or elevator control room* *where all the following are met:*

*1. The requirements of NFPA 13, Section 8.15.5.3. ~~Approved smoke detectors shall be installed and connected to the building fire alarm system in accordance with Section 907 in the area where the installation of fire sprinklers was exempted per this section.~~*

*~~2. Activation of any smoke detector located in the elevator hoist way, elevator machine room, elevator machinery space, elevator control space, or elevator control room shall cause the actuation of the building fire alarm notification appliances in accordance with Section 907.~~*

*~~3. Activation of any smoke detector located in the elevator hotstway, elevator machine room, elevator machinery space, elevator control space, or elevator control room shall cause all elevators having any equipment located in that elevator hoist way, elevator machine room, elevator machinery space, elevator control space, or elevator control room to recall nonstop to the appropriate designated floor in accordance with CCR Title~~* ~~8,~~ *~~Division~~* ~~1,~~ *~~Chapter 4, Subchapter~~* ~~6,~~ *~~Elevator Safety Orders.~~*

*~~4.~~2. The elevator machine room, elevator machinery space, elevator control space, or elevator control room shall be enclosed with fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 712, or both. The fire-resistance rating shall not be less than the required rating of the hoistway enclosure served by the machinery. Openings in the fire barriers shall be protected with assemblies having a fire protection rating not less than that required for the hoistway enclosure doors. The exceptions to Section* 3005.4 *shall not apply.*

*~~5. The building fire alarm system shall be monitored by an approved supervising station in accordance with Section 907.~~*

*~~6. An approved sign shall be permanently displayed in the elevator machine room, elevator machinery space, elevator control space, or elevator control room in a conspicuous location with a minimum of 1 ½ inch letters on a contrasting background, stating:~~*

~~NO COMBUSTIBLE STORAGE~~

~~PERMITTED IN THIS ROOM~~

~~By Order of the Fire Marshal [or name Fire authority]~~

**SECTION 3007**

**FIRE SERVICE ACCESS ELEVATOR**

# Item: [SFM 01/19-15-23]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3007, FIRE SERVICE ACCESS ELEVATOR]

**Express Terms:**

## [Section: 3007.1]

**3007.1 General.** Where required by Section 403.6.1, every floor ~~above and including the lowest level of fire department vehicle access of the building~~ shall be served by fire service access elevators complying with Sections 3007.1 through 3007.9. Except as modified in this section, fire service access elevators shall be installed in accordance with this chapter and *California Code of Regulations, Title 8, Division 1,* *Chapter 4, Subchapter 6, Elevator Safety Orders.*

**Exception:** ~~Elevators that only service an open or enclosed~~ *Below grade* parking garage *floors* ~~and the lobby of the building~~ shall not be required to *be* ~~serve~~ *served* ~~as~~ *by* fire service access elevators.

**SECTION 3008**

**OCCUPANT EVACUATION ELEVATORS**

# Item: [SFM 01/19-15-24]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3008, OCCUPANT EVACUATION ELEVATORS]

**Express Terms:**

## [Section: 3008.1]

**3008.1 General.** *Where* ~~E~~*e*levators *are to be* used for occupant self-evacuation during fires*, all passenger elevators for general public use* shall comply with Sections 3008.1 through 3008.10. *Where other elevators are used for occupant self-evacuation, those elevators shall comply with these sections.*

# Item: [SFM 01/19-15-25]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3008, OCCUPANT EVACUATION ELEVATORS]

**Express Terms:**

## [Section: 3008.1.1]

**3008.1.1 *Reserved.* ~~Number of occupant evacuation elevators.~~** ~~The number of elevators available for occupant evacuation~~~~shall be determined based on an egress analysis that~~~~addresses one of the following scenarios:~~

1. ~~Full-building evacuation where the analysis demonstrates that the number of elevators provided for evacuation results in an evacuation time less than 1 hour.~~
2. ~~Evacuation of the five consecutive floors with the highest cumulative occupant load where the analysis demonstrates that the number of elevators provided for evacuation results in an evacuation time less than 15 minutes. Not less than one elevator in each bank shall be designated for occupant evacuation. Not less than two shall be provided in each occupant evacuation elevator lobby where more than one elevator opens into the lobby. Signage shall be provided to denote which elevators are available for occupant evacuation.~~

# Item: [SFM 01/19-15-26]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3008, OCCUPANT EVACUATION ELEVATORS]

**Express Terms:**

## [Section: 3008.1.3 (Renumber)]

**[WITHDRAWN]**

# Item: [SFM 01/19-15-27]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3008, OCCUPANT EVACUATION ELEVATORS]

**Express Terms:**

## [Section: 3008.1.2 (Renumber)]

**[WITHDRAWN]**

# Item: [SFM 01/19-15-28]

**Chapter:** [30, ELEVATORS AND CONVEYING SYSTEMS]

**Section:** [3008, OCCUPANT EVACUATION ELEVATORS]

**Express Terms:**

## [Section: 3008.1.4 (Renumber)]

**[WITHDRAWN]**

[ELEVATOR WORK GROUP 2019 INTERVENING PROPOSALS]

**[Related Sections in Part 2, California Building Code]:**

3002.4a, 3002.4.1a, 3002.4.2a, 3002.4.3a, 3002.4.4a, 3002.4.5a, 3002.4.6a, 3002.4.7a, 3002.5, 3002.6, 3002.6.1 (New), 3002.9, 3002.11 (New), 3003.1, 3003.1.4, 3003.1.5 (New), 3003.4 (New), 3003.4.1 (New), 3003.4.2 (New), 3003.4.3 (New), 3003.4.4 (New), 3005.1, 3005.2, 3005.3, 3005.4, 3005.4.1, 3007.1, 3008.1, 3008.1.1, 3008.1.2, 3008.1.3, 3008.1.4, [Chapter 35] ASME 17.1/CSA B44, [NFPA 13-16] 8.15.5.1, 8.15.5.2, 8.15.5.3, 8.15.5.7.1, 8.15.5.7.2

**Notation:**

Authority: Health and Safety Code Sections 1250, 1569.72, 1569.78, 1568.02, 1502, 1597.44, 1597.45, 1597.46, 1597.54, 1597.65, 13108, 13108.5, 13113, 13113.5, 13114, 13143,13132, 13132.7, 13132, 13133, 13135, 13143.2, 13143.6, 13146, 13210, 13211, 17921, 18928, 18949.2, 25500-25545, Government Code Section 51189, Education Code 17074.50

Reference(s): Health and Safety Code Sections 13143, 13143.1, 13143.9, 13211, 18949.2, 25500 through 25545, Government Code Sections 51176, 51177, 51178, 51179, Public Resources Code Sections 4201-4204

**CHAPTER 31**

**SPECIAL CONSTRUCTION**

**SECTION 3102**

**MEMBRANE STRUCTURES**

# Item: [SFM 01/19-16-1]

**Chapter:** [31, SPECIAL CONSTRUCTION]

**Section:** [3102, MEMBRANE STRUCTURES]

**Express Terms:**

## [Section: 3102.3]

3102.3 Type of construction. Noncombustible membrane structures shall be classified as Type IIB construction. Noncombustible frame or cable-supported structures covered by an approved membrane in accordance with Section 3102.3.1 shall be classified as Type IIB construction. Heavy timber frame-supported structures covered by an approved membrane in accordance with Section 3102.3.1 shall be classified as Type IV*-HT* construction. Other membrane structures shall be classified as Type V construction.

Exception: Plastic less than 30 feet (9144 mm) above any floor used in greenhouses, where occupancy by the general public is not authorized, and for aquaculture pond covers is not required to meet the fire propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701.

# Item: [SFM 01/19-16-2]

**Chapter:** [31, SPECIAL CONSTRUCTION]

**Section:** [3102, MEMBRANE STRUCTURES]

**Express Terms:**

## [Section: 3102.6.1.1]

3102.6.1.1 Membrane. A membrane meeting the fire propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 shall be permitted to be used as the roof or as a skylight on buildings of Type IIB, III, IV*-HT* and V construction, provided that the membrane is not less than 20 feet (6096 mm) above any floor, balcony or gallery.

**[TALL WOOD AND HEAVY TIMBER 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

110.3.12 (New), 202, 403.3.2, TABLE 504.3, TABLE 504.4, TABLE 506.2, 508.4.4.1, 509.4.1.1 (New), TABLE 601, TABLE 602, 602.4, 602.4.1 (New), 602.4.1.1 (New), 602.4.1.2 (New), 602.4.1.2.1 (New), 602.4.1.3 (New), 602.4.1.4 (New), 602.4.1.5 (New), 602.4.1.6 (New), 602.4.2, 602.4.2.1 (New), 602.4.2.2 (New), 602.4.2.2.1 (New), 602.4.2.2.2 (New), 602.4.2.2.3 (New), 602.4.2.2.4 (New), 602.4.2.3 (New), 602.4.2.4 (New), 602.4.2.5 (New), 602.4.2.6 (New), 602.4.3, 602.4.3.1 (New), 602.4.3.2 (New), 602.4.3.3 (New), 602.4.3.4 (New), 602.4.3.5 (New), 602.4.3.6 (New), 602.4.4 (New), 602.4.4.1, 602.4.4.2, 602.4.4.3, 602.4.4 (New), 703.8 (New), 703.9 (New), 718.2.1, 722.7 (New), 722.7.1 (New), TABLE 722.7.1 (1) (New), TABLE 722.7.1 (2) (New), 722.7.2 (New), 722.7.2.1 (New), 722.7.2.2 (New), 1705.5.3 (New), TABLE 1705.5.3 (New),1705.11.1, 1705.11.2, 1705.12.2, 1705.12.3, 1705.20 (New), 2304.10.1.2 (New), 2304.11.3, 2304.11.4, 3102.3, 3102.6.1.1, (Chapter 35) ANSI/APA PRG 320-18, ASTM D3498-03 (2011) (New), D102.2.5

**Notation:**

Authority: Health and Safety Code Sections 1250, 1569.72, 1569.78, 1568.02, 1502, 1597.44, 1597.45, 1597.46, 1597.54, 1597.65, 13108, 13108.5, 13113, 13113.5, 13114, 13143,13132, 13132.7, 13132, 13133, 13135, 13143.2, 13143.6, 13146, 13210, 13211, 17921, 18928, 18949.2, 25500-25545, Government Code Section 51189, Education Code 17074.50

Reference(s): Health and Safety Code Sections 13143, 13143.1, 13143.9, 13211, 18949.2, 25500 through 25545, Government Code Sections 51176, 51177, 51178, 51179, Public Resources Code Sections 4201-4204

**CHAPTER 35**

**REFERENCED STANDARDS**

# Item: [SFM 01/19-17-0]

**Chapter:** [35, REFERENCED STANDARDS]

**Section:** [APA, ANSI/APA PRG 320]

**Express Terms:**

## [Section: ANSI/APA PRG 320]

***ANSI/APA PRG 320-18:*** *Standard for Performance-rated Cross Laminated Timber*

*2303.1.4*

**[TALL WOOD AND HEAVY TIMBER 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

110.3.12 (New), 202, 403.3.2, TABLE 504.3, TABLE 504.4, TABLE 506.2, 508.4.4.1, 509.4.1.1 (New), TABLE 601, TABLE 602, 602.4, 602.4.1 (New), 602.4.1.1 (New), 602.4.1.2 (New), 602.4.1.2.1 (New), 602.4.1.3 (New), 602.4.1.4 (New), 602.4.1.5 (New), 602.4.1.6 (New), 602.4.2, 602.4.2.1 (New), 602.4.2.2 (New), 602.4.2.2.1 (New), 602.4.2.2.2 (New), 602.4.2.2.3 (New), 602.4.2.2.4 (New), 602.4.2.3 (New), 602.4.2.4 (New), 602.4.2.5 (New), 602.4.2.6 (New), 602.4.3, 602.4.3.1 (New), 602.4.3.2 (New), 602.4.3.3 (New), 602.4.3.4 (New), 602.4.3.5 (New), 602.4.3.6 (New), 602.4.4 (New), 602.4.4.1, 602.4.4.2, 602.4.4.3, 602.4.4 (New), 703.8 (New), 703.9 (New), 718.2.1, 722.7 (New), 722.7.1 (New), TABLE 722.7.1 (1) (New), TABLE 722.7.1 (2) (New), 722.7.2 (New), 722.7.2.1 (New), 722.7.2.2 (New), 1705.5.3 (New), TABLE 1705.5.3 (New),1705.11.1, 1705.11.2, 1705.12.2, 1705.12.3, 1705.20 (New), 2304.10.1.2 (New), 2304.11.3, 2304.11.4, 3102.3, 3102.6.1.1, (Chapter 35) ANSI/APA PRG 320-18, ASTM D3498-03 (2011) (New), D102.2.5

# Item: [SFM 01/19-17-1]

**Chapter:** [35, REFERENCED STANDARDS]

**Section:** [ASME, ASME/A17.1]

**Express Terms:**

## [Section: ASME/A17.1]

**ASME/A17.1—~~2016~~/CSA B44—~~16~~ *the edition as referenced in*: Safety Code for Elevators and Escalators, *California Code of Regulations, Title 8, Division 1, Chapter 4, Subchapter 6, Elevator Safety Orders***

907.3.3, 911.1.6, 1009.4.1, *11B-407.1, 11B-407.1.1, 11B-407.4.9, 11B-408.1, 11B-409.1, 11B-411.1, 11B-810.9,*1607.10.1, 3001.2, Table 3001.3, 3001.4, 3001.5, 3002.5, 3003.2, 3007.1, 3008.1.4, 3008.7.1

[ELEVATOR WORK GROUP 2019 INTERVENING PROPOSALS]

**[Related Sections in Part 2, California Building Code]:**

3002.4a, 3002.4.1a, 3002.4.2a, 3002.4.3a, 3002.4.4a, 3002.4.5a, 3002.4.6a, 3002.4.7a, 3002.5, 3002.6, 3002.6.1 (New), 3002.9, 3002.11 (New), 3003.1, 3003.1.4, 3003.1.5 (New), 3003.4 (New), 3003.4.1 (New), 3003.4.2 (New), 3003.4.3 (New), 3003.4.4 (New), 3005.1, 3005.2, 3005.3, 3005.4, 3005.4.1, 3007.1, 3008.1, 3008.1.1, 3008.1.2, 3008.1.3, 3008.1.4, [Chapter 35] ASME 17.1/CSA B44, [NFPA 13-16] 8.15.5.1, 8.15.5.2, 8.15.5.3, 8.15.5.7.1, 8.15.5.7.2

# Item: [SFM 01/19-17-2]

**Chapter:** [35, REFERENCED STANDARDS]

**Section:** [ASTM, D3498-03]

**Express Terms:**

## [Section: D3498-03]

***D3498-03(2011):*** *Standard Specification for Adhesives for Field-Gluing Plywood to Lumber Framing for Floor Systems*

**[TALL WOOD AND HEAVY TIMBER 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

110.3.12 (New), 202, 403.3.2, TABLE 504.3, TABLE 504.4, TABLE 506.2, 508.4.4.1, 509.4.1.1 (New), TABLE 601, TABLE 602, 602.4, 602.4.1 (New), 602.4.1.1 (New), 602.4.1.2 (New), 602.4.1.2.1 (New), 602.4.1.3 (New), 602.4.1.4 (New), 602.4.1.5 (New), 602.4.1.6 (New), 602.4.2, 602.4.2.1 (New), 602.4.2.2 (New), 602.4.2.2.1 (New), 602.4.2.2.2 (New), 602.4.2.2.3 (New), 602.4.2.2.4 (New), 602.4.2.3 (New), 602.4.2.4 (New), 602.4.2.5 (New), 602.4.2.6 (New), 602.4.3, 602.4.3.1 (New), 602.4.3.2 (New), 602.4.3.3 (New), 602.4.3.4 (New), 602.4.3.5 (New), 602.4.3.6 (New), 602.4.4 (New), 602.4.4.1, 602.4.4.2, 602.4.4.3, 602.4.4 (New), 703.8 (New), 703.9 (New), 718.2.1, 722.7 (New), 722.7.1 (New), TABLE 722.7.1 (1) (New), TABLE 722.7.1 (2) (New), 722.7.2 (New), 722.7.2.1 (New), 722.7.2.2 (New), 1705.5.3 (New), TABLE 1705.5.3 (New),1705.11.1, 1705.11.2, 1705.12.2, 1705.12.3, 1705.20 (New), 2304.10.1.2 (New), 2304.11.3, 2304.11.4, 3102.3, 3102.6.1.1, (Chapter 35) ANSI/APA PRG 320-18, ASTM D3498-03 (2011) (New), D102.2.5

# Item: [SFM 01/19-17-3]

**Chapter:** [35, REFERENCED STANDARDS]

**Section:** [CSA, AMSE A17.1]

**Express Terms:**

## [Section: ASME A17.1]

**ASME A17.1—~~2016~~/CSA B44—~~16~~ *the edition as referenced in*: Safety Code for Elevators and Escalators, *California Code of Regulations, Title 8, Division 1, Chapter 4, Subchapter 6, Elevator Safety Orders***

907.3.3, 911.1.6, 1009.4.1, 1607.10.1, 3001.2, Table 3001.3, 3001.5, 3002.5, 3003.2, 3007.1, 3008.1.4, 3008.7.1

[ELEVATOR WORK GROUP 2019 INTERVENING PROPOSALS]

**[Related Sections in Part 2, California Building Code]:**

3002.4a, 3002.4.1a, 3002.4.2a, 3002.4.3a, 3002.4.4a, 3002.4.5a, 3002.4.6a, 3002.4.7a, 3002.5, 3002.6, 3002.6.1 (New), 3002.9, 3002.11 (New), 3003.1, 3003.1.4, 3003.1.5 (New), 3003.4 (New), 3003.4.1 (New), 3003.4.2 (New), 3003.4.3 (New), 3003.4.4 (New), 3005.1, 3005.2, 3005.3, 3005.4, 3005.4.1, 3007.1, 3008.1, 3008.1.1, 3008.1.2, 3008.1.3, 3008.1.4, [Chapter 35] ASME 17.1/CSA B44, [NFPA 13-16] 8.15.5.1, 8.15.5.2, 8.15.5.3, 8.15.5.7.1, 8.15.5.7.2

# Item: [SFM 01/19-17-4]

**Chapter:** [35, REFERENCED STANDARDS]

**Section:** [NFPA, 13-16]

**Express Terms:**

## [Section: NFPA 13-16]

**13—16: Standard for Installation of Sprinkler Systems *as amended\****

712.1.3.1, 903.3.1.1, 903.3.2, 903.3.8.2, 903.3.8.5, 904.12, 905.3.4, 907.6.4, 1019.3

***\*NFPA 13, Amended Sections as follows:***

# Item: [SFM 01/19-17-6]

**Chapter:** [35, REFERENCED STANDARDS]

**Section:** [NFPA, 13-16]

**Express Terms:**

## [Section: NFPA 13-16, 8.15.5.1]

[Delete language to section 8.15.5.1 and reserve section number]

***8.15.5.1\** *Reserved.*** ~~Sidewall spray sprinklers shall be installed at the bottom of each elevator hoistway not more than 2 ft (600 mm) above the floor of the pit.~~

# Item: [SFM 01/19-17-7]

**Chapter:** [35, REFERENCED STANDARDS]

**Section:** [NFPA, 13-16]

**Express Terms:**

## [Section: NFPA 13-16, 8.15.5.2]

[Delete language to section 8.15.5.2 and reserve section number]

***8.15.5.2* *Reserved.*** ~~The sprinkler required at the bottom of the elevator hoistway by 8.15.5.1 shall not be required for enclosed, noncombustible elevator shafts that do not contain combustible hydraulic fluids.~~

# Item: [SFM 01/19-17-8]

**Chapter:** [35, REFERENCED STANDARDS]

**Section:** [NFPA, 13-16]

**Express Terms:**

## [Section: NFPA 13-16, 8.15.5.3]

[Delete and replace California Amendment to 8.15.5.3,]

***~~8.15.5.3 Automatic sprinkler system.~~*** *~~Automatic sprinklers shall not be required to be installed in the elevator hoistway, elevator machine room, elevator machinery space, elevator control space, or elevator control room where all the following are met:~~*

1. *~~Approved smoke detectors shall be installed and connected to the building fire alarm system in accordance with Section 907 in the area where the fire sprinkler was removed per this section.~~*
2. *~~Activation of any smoke detector located in the elevator hoistway, elevator machine room, elevator machinery space, elevator control space, or elevator control room shall cause the actuation of the building fire alarm notification appliances in accordance with 907.~~*
3. *~~Activation of any smoke detector located in the elevator hoistway, elevator machine room, elevator machinery space, elevator control space, or elevator control room shall cause all elevators having any equipment located in that elevator hoistway, elevator machine room, elevator machinery space, elevator control space, or elevator control room to recall nonstop to the appropriate designated floor in accordance with CCR Title 8, Division 1, Chapter 4, Subchapter 6, Elevator Safety Orders.~~*
4. *~~The elevator machine room, elevator machinery space, elevator control space, or elevator control room shall be enclosed with fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 712, or both. The fire-resistance rating shall not be less than the required rating of the hoistway enclosure served by the machinery. Openings in the fire barriers shall be protected with assemblies having a fire protection rating not less than that required for the hoistway enclosure doors. The exceptions to Section 3005.4 shall not apply.~~*
5. *~~The building fire alarm system shall be monitored by an approved supervising station in accordance with 907.~~*
6. *~~An approved sign shall be permanently displayed in the room where the fire sprinkler was removed per this section in a conspicuous location with a minimum of 1½ inch letters on a contrasting background, stating:~~*

*~~NO COMBUSTIBLE STORAGE~~*

*~~PERMITTED IN THIS ROOM~~*

*~~By Order of the Fire Marshal [or name of fire authority]~~*

[Amend NFPA13-16 section 8.15.5.3 by deleting condition (2) and renumbering the following conditions]

**8.15.5.3** Automatic fire sprinklers shall not be required in elevator machine rooms, elevator machinery spaces, control spaces, or hoistways of traction elevators installed in accordance with the applicable provisions in ~~NFPA~~ *~~101~~* *the California Building Code* ~~or the applicable building code~~, where all of the following conditions are met:

(1) The elevator machine room, machinery space, control room, control space, or hoistway of traction elevator is dedicated to elevator equipment only.

~~(2) The elevator machine room, machine room, machinery space, control room, control space, or hoistway of traction elevators are protected by smoke detectors, or other automatic fire detection, installed in accordance with~~ *~~NFPA72~~*~~.~~

(~~3~~*2*) The elevator machinery space, control room, control space, or hoistway of traction elevators is separated from the remainder of the building by walls and floor/ceiling or roof/ceiling assemblies having a fire resistance rating of not less than that specified by the applicable building code.

(~~4~~*3*) No materials unrelated to elevator equipment are permitted to be stored in elevator machine rooms, machinery spaces, control rooms, control spaces, or hoistways of traction elevators.

(~~5~~*4*) The elevator machinery is not of the hydraulic type.

# Item: [SFM 01/19-17-9]

**Chapter:** [35, REFERENCED STANDARDS]

**Section:** [NFPA, 13-16]

**Express Terms:**

## [Section: NFPA 13-16, 8.15.5.7.1]

**[WITHDRAWN]**

# Item: [SFM 01/19-17-10]

**Chapter:** [35, REFERENCED STANDARDS]

**Section:** [NFPA, 13-16]

**Express Terms:**

## [Section: NFPA 13-16, 8.15.5.7.2]

**[WITHDRAWN]**

[ELEVATOR WORK GROUP 2019 INTERVENING PROPOSALS]

**[Related Sections in Part 2, California Building Code]:**

3002.4a, 3002.4.1a, 3002.4.2a, 3002.4.3a, 3002.4.4a, 3002.4.5a, 3002.4.6a, 3002.4.7a, 3002.5, 3002.6, 3002.6.1 (New), 3002.9, 3002.11 (New), 3003.1, 3003.1.4, 3003.1.5 (New), 3003.4 (New), 3003.4.1 (New), 3003.4.2 (New), 3003.4.3 (New), 3003.4.4 (New), 3005.1, 3005.2, 3005.3, 3005.4, 3005.4.1, 3007.1, 3008.1, 3008.1.1, 3008.1.2, 3008.1.3, 3008.1.4, [Chapter 35] ASME 17.1/CSA B44, [NFPA 13-16] 8.15.5.1, 8.15.5.2, 8.15.5.3, 8.15.5.7.1, 8.15.5.7.2

# Item: [SFM 01/19-17-11]

**Chapter:** [35, REFERENCED STANDARDS]

**Section:** [NFPA, 45-15]

**Express Terms:**

## [Section: NFPA 45-15]

**~~45—15: Standard on Fire Protection Laboratories Using Chemicals (2015 Edition)~~**

~~428.3.7~~

# Item: [SFM 01/19-17-5]

**Chapter:** [35, REFERENCED STANDARDS]

**Section:** [NFPA, 45-15]

**Express Terms:**

## [Section: NFPA 68-13]

***68—13:***

***Standard on Explosion Protection by Deflagration Venting***

**[ENERGY STORAGE SYSTEMS 2019 INTERVEING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

306.2, TABLE 414.5.1, TABLE 509, 707.4, TABLE 716.1(2), T ABLE 716.1(3), 716.2.5.4.1 (New), 716.3.2.1.1.1 (New), TABLE 903.2.11.6, [Chapter 35] NFPA 68 (New)

**Notation:**

Authority: Health and Safety Code Sections 1250, 1569.72, 1569.78, 1568.02, 1502, 1597.44, 1597.45, 1597.46, 1597.54, 1597.65, 13108, 13108.5, 13113, 13113.5, 13114, 13143,13132, 13132.7, 13132, 13133, 13135, 13143.2, 13143.6, 13146, 13210, 13211, 17921, 18928, 18949.2, 25500-25545, Government Code Section 51189, Education Code 17074.50

Reference(s): Health and Safety Code Sections 13143, 13143.1, 13143.9, 13211, 18949.2, 25500 through 25545, Government Code Sections 51176, 51177, 51178, 51179, Public Resources Code Sections 4201-4204

**APPENDIX D**

**FIRE DISTRICTS**

**[SFM not adopted]**

**SECTION D102**

**BUILDING RESTRICTIONS**

# Item: [SFM 01/19-18-1]

**Chapter:** [APPENDIX D, FIRE DISTRICTS]

**Section:** [D102, BUILDING RESTRICTIONS]

**Express Terms:**

## [Section: D102.2.5]

D102.2.5 Structural fire rating. Walls, floors, roofs and their supporting structural members shall be not less than 1-hour fire-resistance-rated construction.

Exceptions:

1. Buildings of Type IV*-HT* construction.
2. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
3. Automobile parking structures.
4. Buildings surrounded on all sides by a permanently open space of not less than 30 feet (9144 mm).
5. Partitions complying with Section 603.1, Item 11.

**[TALL WOOD AND HEAVY TIMBER 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

110.3.12 (New), 202, 403.3.2, TABLE 504.3, TABLE 504.4, TABLE 506.2, 508.4.4.1, 509.4.1.1 (New), TABLE 601, TABLE 602, 602.4, 602.4.1 (New), 602.4.1.1 (New), 602.4.1.2 (New), 602.4.1.2.1 (New), 602.4.1.3 (New), 602.4.1.4 (New), 602.4.1.5 (New), 602.4.1.6 (New), 602.4.2, 602.4.2.1 (New), 602.4.2.2 (New), 602.4.2.2.1 (New), 602.4.2.2.2 (New), 602.4.2.2.3 (New), 602.4.2.2.4 (New), 602.4.2.3 (New), 602.4.2.4 (New), 602.4.2.5 (New), 602.4.2.6 (New), 602.4.3, 602.4.3.1 (New), 602.4.3.2 (New), 602.4.3.3 (New), 602.4.3.4 (New), 602.4.3.5 (New), 602.4.3.6 (New), 602.4.4 (New), 602.4.4.1, 602.4.4.2, 602.4.4.3, 602.4.4 (New), 703.8 (New), 703.9 (New), 718.2.1, 722.7 (New), 722.7.1 (New), TABLE 722.7.1 (1) (New), TABLE 722.7.1 (2) (New), 722.7.2 (New), 722.7.2.1 (New), 722.7.2.2 (New), 1705.5.3 (New), TABLE 1705.5.3 (New),1705.11.1, 1705.11.2, 1705.12.2, 1705.12.3, 1705.20 (New), 2304.10.1.2 (New), 2304.11.3, 2304.11.4, 3102.3, 3102.6.1.1, (Chapter 35) ANSI/APA PRG 320-18, ASTM D3498-03 (2011) (New), D102.2.5

**Notation:**

Authority: Health and Safety Code Sections 1250, 1569.72, 1569.78, 1568.02, 1502, 1597.44, 1597.45, 1597.46, 1597.54, 1597.65, 13108, 13108.5, 13113, 13113.5, 13114, 13143,13132, 13132.7, 13132, 13133, 13135, 13143.2, 13143.6, 13146, 13210, 13211, 17921, 18928, 18949.2, 25500-25545, Government Code Section 51189, Education Code 17074.50

Reference(s): Health and Safety Code Sections 13143, 13143.1, 13143.9, 13211, 18949.2, 25500 through 25545, Government Code Sections 51176, 51177, 51178, 51179, Public Resources Code Sections 4201-4204

**INDEX**

# Item: [SFM 01/19-19-1]

**Chapter:** [INDEX]

**Section:** [EDITORIAL CHANGES. REFLECT AMENDMENT ACTIVITY. NOT A REGULATORY ITEM]

**Express Terms:**

**[EDITORIAL AMENDMENTS]**

## [A]

**ASSEMBLY OCCUPANCY (GROUP A)**

**Group-specific provisions**

Special amusement ~~buildings~~ *areas*

## [E]

**EXIT SIGNS**

Special amusement ~~buildings~~ *areas*

## [F]

**FIRE ALARM AND SMOKE DETECTION SYSTEMS**

Special amusement ~~buildings~~ *areas*

411.~~2~~*3*, 411.~~4~~*5*, *411.6*, 907.2.~~12~~*11, 914.7.2*

## [M]

**MEANS OF EGRESS**

Special amusement *areas*

411.4, *1017.2*

## [P]

**PUBLIC ADDRESS SYSTEM**

**(see EMERGENCY COMMUNICATIONS)**

Special amusement buildings

411.~~5~~*4*

## [R]

**RECREATIONAL FACILITIES**

Special amusement ~~buildings~~ *areas*

~~(see AMUSEMENT BUILDINGS, SPECIAL)~~

## [S]

**SMOKE DETECTORS**

Special amusement ~~buildings~~ *areas*

411.~~4~~*3, 411.6, 907.2.11, 914.7.2*

**SPRINKLER SYSTEM, REQUIRED**

Special amusement ~~buildings~~ *areas*

411.~~3~~*2, 903.2.11.6, 914.7*

## [T]

**TRAVEL DISTANCE**

Special amusement ~~building~~ *area*

411.~~3~~*2, 1017.2*

**[PUZZLE ROOM 2019 INTERVENING PROPOSALS]**

**[Associated Sections in Part 2, California Building Code]:**

Table of Contents, 202, Title 411, 411.1, 411.2, 411.3, 411.4, 411.5, 411.6, 411.6.1, 411.7, TABLE 903.2.11.6, 907.2.11, 907.2.11.2, 907.2.11.3, TABLE 1017.2, INDEX

**Notation:**

Authority: Health and Safety Code Sections 1250, 1569.72, 1569.78, 1568.02, 1502, 1597.44, 1597.45, 1597.46, 1597.54, 1597.65, 13108, 13108.5, 13113, 13113.5, 13114, 13143,13132, 13132.7, 13132, 13133, 13135, 13143.2, 13143.6, 13146, 13210, 13211, 17921, 18928, 18949.2, 25500-25545, Government Code Section 51189, Education Code 17074.50

Reference(s): Health and Safety Code Sections 13143, 13143.1, 13143.9, 13211, 18949.2, 25500 through 25545, Government Code Sections 51176, 51177, 51178, 51179, Public Resources Code Sections 4201-4204