

**FINAL STATEMENT OF REASONS  
FOR  
PROPOSED BUILDING STANDARDS  
OF THE  
OFFICE OF THE STATE FIRE MARSHAL (SFM)  
REGARDING THE ADOPTION BY REFERENCE OF THE  
2009 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC)  
WITH AMENDMENTS INTO THE 2010 CALIFORNIA BUILDING CODE (CBC)  
CALIFORNIA CODE OF REGULATIONS TITLE 24, PART 2**

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The Administrative Procedure Act requires that every agency shall maintain a file of each rulemaking that shall be deemed to be the record for that rulemaking proceeding. The rulemaking file shall include a final statement of reasons. The Final Statement of Reasons shall be available to the public upon request when rulemaking action is being undertaken. The following are the reasons for proposing this particular rulemaking action:

**INTRODUCTION TO FINAL STATEMENT OF REASONS**

California's first partnership with the International Building and Fire Codes was completed January 30, 2007 with the adoption and July 4, 2008 publication of the 2007 California Building Standards Codes. Over the past 18 months, the SFM has been working to revise certain elements of the California Building Code and California Fire Code for the triennial rulemaking cycle. This adoption by reference of the 2009 International Building Code and 2009 International Fire Code and these proposed modifications and amendments; correct omissions, complete tasks originally sought and further augment the adoption of the California Codes and to continue bring you the best set of building and fire code proposals possible. Several key things are important to remember:

- The SFM is committed to this adoption and believes strongly in the value of the ICC model code process and the overall quality of the I-Codes as many of the SFM amendments are proposed to the model codes themselves.
- The SFM has taken extraordinary measures to ensure that this package represents the best in fire and life safety considerations, stakeholder involvement and economic considerations.
- Both Fire and Building Code professionals, industry and many other stakeholders have worked with the SFM to develop this rulemaking package.

The adoption of an entire new set of building and fire codes is a complex task. The SFM has promulgated this rulemaking package in an effort to continue to foster, promote and develop additional ways and means of protecting life and property against fire and panic while minimizing the economic impact.

The specific purpose of this rulemaking effort by the SFM is to act accordance with Health and Safety Code section 18928, which requires all proposed regulations to specifically comply with this section in regards to the adoption by reference with amendments to a model code within one year after its publication.

The actions described above are reasonably necessary to carry out the purpose for which it is proposed. The rationale for these actions is to establish minimum requirements for the prevention of fire and for the protection of life and property against fire and panic in occupancies addressed in the 2009 International Building Code and be published as the 2010 California Building Code.

The general purpose of this proposed action is principally intended to update and codify a new edition of the California Building Code (California Code of Regulations, Title 24, Part 2) based upon a more current edition of a model code. The current California Building Code in effect is the 2007 California Building Code which is based upon the 2006 International Building Code of the International Code Council. This proposed action:

- Repeal the adoption by reference of the 2006 International Building Code of the International Code Council and incorporate and adopt by reference in its place the 2009 International Building Code of the International Code Council for application and effectiveness in the 2010 California Building Code pursuant to Health and

Safety Code 18928. Health and Safety Code 18928 requires any state agency adopting model codes to adopt the most recent edition.

- Repeal certain amendments to the 2006 International Building Code and/or California Building Standards not addressed by the model code that are no longer necessary pursuant with Health and Safety Code 18930(a)(7)..
- Adopt new building standards or necessary amendments to the 2009 International Building Code that address inadequacies of the 2009 International Building Code as they pertain to California laws.
- Bring forward previously existing California building standards or amendments, which represent no change in their effect from the 2007 California Building Code.
- Codify non-substantive editorial and formatting amendments from the format based upon the 2006 International Building Code to the format of the 2009 International Building Code.

Health and Safety Code Section 18930 is part of the Building Standards Law that includes a nine-point written analysis that is required to be submitted by the State Fire Marshal (SFM) for approval by the California Building Standards Commission (Commission) prior to the adoption of building standards submitted by the SFM. Under subpart (d) the Commission must give great weight to the determinations and analysis of the SFM for each of the nine-point criteria submitted. Any factual determination used in the nine-point analysis by the SFM shall be considered conclusive by the Commission unless the Commission specifically finds and sets forth in its reasoning in writing that the factual determination is arbitrary and capricious or substantially unsupported by the evidence considered by the SFM.

#### **UPDATES TO THE INITIAL STATEMENT OF REASONS**

(Government Code Section 11346.9(a)(1) requires an update of the information contained in the initial statement of reasons. If the update identifies any data or any technical, theoretical or empirical study, report, or similar document on which the state agency is relying that was not identified in the initial statement of reasons, the state agency shall comply with Government Code Section 11347.1)

The Initial Statement of Reasons has been updated, as follows:

#### **706A**

The SFM proposes to bring forward the attic ventilation and exterior wall vent provisions in 2007 CBC Sections 704A.2 through 704A.2.2 and 704A.3.2.1, and relocate them to new Sections 706A through 706A.3 to assist the user and avoid misapplication of the provisions by consolidating the vent requirements into a single location in the code.

These amendments have been proposed to assist the user and avoid misapplication of the provisions by: relocating the existing vent provisions into one new separate section; clarifying the indented performance goal of protecting buildings from ignition, incorporating the IBC reduction in minimum vent opening size to increase wildfire protection; and codifying prescriptive alternatives that provide equivalent protection.

#### **706A.1**

The SFM proposes to add this new section consolidating the existing general scope provisions for vents in the 2007 CBC with amendments clarifying the specific locations where the requirements apply and add consistency with the ventilation opening language in CBC Chapter 12. The SFM further proposes to amend the provisions of this section to clarify the fire protection performance goal of the regulations. A principle objective to resist, rather than entirely prevent, the impacts of wildfire exposure has been maintained. The SFM proposes to amend the performance goal to reflect that resisting building ignition is the fundamental goal for the provisions of this Section.

#### **706A.2**

The SFM proposes to bring forward the vent provisions in 2007 CBC with modifications to increase the prescriptive requirements for the protection of ventilation openings. The proposed SFM amendments require that all vents be constructed of noncombustible material. The current provisions allow for combustible vents protected by wire mesh which, when subjected to wildfire exposure, may fail to provide protection. This was not the intent of the current provisions.

For all vents subject to the provisions of this section the SFM further proposes to reduce the maximum dimension of vent openings from 1/4-inch to 1/8th of an inch for all vents installed in any location. California building constructions regulations have required 1/4-inch wire mesh vents for decades for all applications, not just wildfire protection. Wildfire protection recommendations to cover vents with 1/4-inch wire mesh go back at least forty years. However, professional wildfire exposure experts from the original 2005 SFM advisory committee for this chapter, professionals from both inside and outside the fire service, and reports in numerous publications have concluded that ember

intrusion through vents (usually presumed to have code compliant 1/4-inch openings) pose a significant hazard during wildfire exposure. The current "Task Force" (the ad hoc SFM Wildfire Protection Building Construction "2010 CBC Ch7A" Task Force) also found that, from a wildfire protection perspective, there was nearly unanimous support for reducing the maximum dimension of vent openings from 1/4 to 1/8th of an inch.

The reduction in the minimum allowable vent opening dimension from 1/4-inch in the previous Uniform Building Code to 1/16th of an inch in the current 2009 International Codes support the SFM proposed amendment to require the dimensions of ventilation openings to be a minimum of 1/16th inch (1.6 mm), and not to exceed 1/8th inch (3.2 mm). This amendment is further supported by recent experimental fire research on building ignition from small ember exposure and post-fire building ignition studies, and one publication from Australia that reported direct ember entry into buildings (through any building gaps or openings, not specifically vents) was a major risk. This paper further stated that regulation of gaps in the building exterior to a dimension less than 2 mm eliminated the potential for active ember entry.

### **706A.3**

The SFM proposes to bring forward the eave and cornice vent provisions in 2007 CBC Sections 704A.2.2 to this new section with modifications. To assist the user with effective hazard mitigation and cost efficient compliance with the code, the SFM further proposes to amend the existing provisions by adding prescriptive alternatives that provide equivalent protection for buildings exposed to wildfire. The eave and cornice vent provisions of the existing California Building Standards Code originated from the widely held professional opinion that eaves and cornices were the most hazardous location for vents, more hazardous than gable vents or roof vents for example. The Task Force heard national fire scientists who directly questioned whether vents located under eaves were more hazardous than vents in other locations such as walls directly exposed to wind-driven embers exposure. While there was a difference of opinion among experts about the relative severity of vent location exposure and hazard, the Task Force concluded that there was no scientific basis or well documented substantiation that ember and wildfire exposure to under eave locations was more severe than other ventilation opening locations such as gable vent. The SFM proposes to maintain existing provisions for special eave protection requirements until there is a well substantiated resolution to this issue while at the same time maintaining a cautious approach to new provisions based on this conventional wisdom.

#### **706A.3 Exception #1**

The SFM proposes to bring forward the eave vent exception provisions in 2007 CBC Sections 704A.2.2 to this new section with modifications. Based on the best available current understanding of wildfire exposure protection, the SFM supports this exception based on the rationale brought forward by industry when proposing this exception in 2005. The SFM proposes to amend the exception to specifically authorize enforcing agencies to accept vents for use under this exception and expand the scope of the exception to include all under eave vents as originally intended.

#### **706A.3 Exception #2**

To assist the user with effective hazard mitigation options, alternatives in building construction design, and cost efficient compliance with the code; the SFM proposes to amend the eave and cornice vent provisions in 2007 CBC Section 704A.2.2 adding an exception to allow noncombustible vents, having ventilation opening dimensions of between 1/16th inch to 1/8th inch for ember intrusion protection, to be placed in eave and cornice locations when the attic space is fully protected by an automatic fire sprinkler system for ember and flame intrusion protection. The SFM further proposes to amend this section and add an exception to allow noncombustible vents, having ventilation opening dimensions of between 1/16th inch to 1/8th inch for ember intrusion protection, to be placed in eave and cornice locations when the flame intrusion hazard has been mitigated by adequate vegetation management, as required by proposed 2010 CBC Section 701A.5, and the exterior coverings of noncombustible or ignition resistant materials.

### **MANDATE ON LOCAL AGENCIES OR SCHOOL DISTRICTS**

(Pursuant to Government Code Section 11346.9(a)(2), if the determination as to whether the proposed action would impose a mandate, the agency shall state whether the mandate is reimbursable pursuant to Part 7 of Division 4. If the agency finds that the mandate is not reimbursable, it shall state the reasons for the finding(s))

The SFM has determined that the proposed regulatory action WOULD NOT impose a mandate on local agencies or school districts.

### **OBJECTIONS OR RECOMMENDATIONS MADE REGARDING THE PROPOSED REGULATION(S)**

(Government Code Section 11346.9(a)(3)) [List a summary of EACH objection or recommendation regarding the specific adoption, amendment, or repeal proposed, and explanation of how the proposed action was changed to accommodate each objection or

recommendation, or the reasons for making no change. This requirement applies only to objections or recommendations specifically directed at the agency's proposed action or to the procedures followed by the agency in proposing or adopting the actions or reasons for making no change. Irrelevant or repetitive comments may be aggregated and summarized as a group]

The following is the Office of the State Fire Marshal's summary of and response to comments specifically directed at the agency's proposed action or to the procedures followed by the agency in proposing or adopting the actions or reasons for making no change:

#### **COMMENTS RECEIVED DURING THE 45-DAY COMMENT PERIOD.**

Pursuant to the requirements of Government Code Section 11346.8 (c), and Section 44 of Title 1 of the California Code of Regulations, the California Building Standards Commission provided a notice of proposed adoption by reference of the 2009 edition of the International Building Code with California Amendments into the California Code of Regulations Title 24, Part 2 which were the subject of a Notice of Proposed Action (Register 2009, Volume No. 40-Z, notice File No. Z-2009-0922-29).

The text with the modifications clearly indicated, were made available to the public for a 45-day written public comment period from October 2, 2009 to November 16, 2009.

[Sections 305.2, 308.5.1, 308.5.2, 310.2]

**Name/Organization:** Larry G. Williams, FPO, Ventura County Fire Protection District

**Comments:** Commenter states 2 years of age implies somewhere between a persons 2<sup>nd</sup> and 3<sup>rd</sup> birthday. Commenter identified the age for children should begin at 2 years of age and older to clarify exactly what the cut off is between an infant and a child. Commenter has identified variations of subjective language exists in other sections of the CBC, CFC and IRC as well. The commenter identifies clarifying language to the term infant to mean any child under 2 years of age and correlates definition with other statues and CCR Title 22 regulations.

Commenter identified that adding the word "day" to the title of these sections clarifies that it is applicable to day care and eliminates confusion with the existing term "child care facilities" that provide care on a 24-hour basis. For Section 308.5.1 the commenter identified the term "infant" is defined as a child under 2 years of age which coincides with Title 22. Further, commenter states the exception in 308.5.1 is no longer applicable because the exception in Section 305.2 overrides and is more restrictive regarding day care occupants who need physical assistance for evacuation during an emergency.

**Response:** The SFM agrees with the commenter and made the following modifications as shown below and made available for comment during the 15-day comment period from November 25, 2009 to December 9, 2009:

#### **OSFM change to accommodate as follows:**

**305.2 Day care.** The use of a building or structure, or portion thereof, for educational, supervision or personal care services for more than ~~five-six~~ children ~~older than~~ 24/2 years of age and older, shall be classified as a Group E occupancy.

**Exception: [SFM]** *A Daycare facility not otherwise classified as an R-3 occupancy, where occupants are not capable of responding to an emergency situation without physical assistance from the staff shall be classified as Group I-4.*

**308.3.1 Definitions.** The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

**CHILD CARE FACILITIES.** Facilities that provide care on a 24-hour basis to more than ~~five-six~~ children, ~~24/2 years of age or less~~ under 2 years of age.

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

**Exception:** ~~A facility where occupants are capable of responding to an emergency situation without physical assistance from the staff shall be classified as Group R-3.~~

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

**Exception:** A child day care facility that provides care for more than ~~five-six~~ but no more than 100 children ~~24/2 years of age or less~~ under 2 years of age, when the rooms where such children are cared for are located on the level of exit discharge and each of these child care rooms has an exit door directly to the exterior, shall be classified as Group E.

**310.2 Definitions.** The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

**INFANT**, for the purpose of these regulations, shall mean any child who because of age only, is unable to walk and requires the aid of another person to evacuate the building. In no case shall the term "infant" mean a child ~~beyond two years of age~~ 2 years of age or older.

**Rational for modifications:** The SFM is proposing modification to Sections 305.2, 308.3.1, 308.5.1, 308.5.2 and 310.2 definitions that revise age limitations based on other statutory definitions of infant and to correlate with CCR Title 22 regulations for child care and infants. However, the use of "age 2" or "2 years of age" does not meet the intent of the SFM. Age 2 or 2 years of age means a child who is somewhere between their 2<sup>nd</sup> birthday, but has not reached their 3<sup>rd</sup> birthday. Title 22 Sec 101152 defines "Infant as a child under 2 years of age". This is also born out by the definition of child with in the Building Code and Title 22: "Child or children is a person under 18 years of age". A person, who is 17 years, 11 months, 29 days is a "child". As such, a person who is 2 years, 11 months, 29 days would still be "age 2". The same reasoning should be used for determining whether a code requirement applies to a child or infant. Additional code amendments are being proposed for other sections of the CBC, CFC and IRC that contain the same issue and are also proposed for revision to the definition of "infant" to correlate with Title 22. This modification has no change in regulatory effect.

Additional modifications to Sections 308.5.1 and 308.5.2 are proposed by adding the word "day" to the title of these sections clarifies that it is applicable to day care. The term "child care facility" is already defined in Section 308.3.1 as facilities that provide care on a 24-hour basis. The intent of Section 308.5.1 and 308.5.2 is for less than 24 hour care facilities. This modification has no change in regulatory effect.

[Section 310.2]

**Name/Organization:** Larry G. Williams, FPO, Ventura County Fire Protection District

**Comments:** Commenter states further scope, construction and occupancy requirements for Group R-2.1 needs to be identified when not specifically addressed for R-2.1 occupancies. Commenter states the code does not fully address all construction and building code requirements for R-2.1 occupancies. The additional language clarifies which building code requirements are applicable if not specifically addressed for R-2.1 occupancies.

**Response:** SFM disagrees as modifications to add such provisions are redundant and are identified in appropriate areas of the code.

[Section 403.2.1]

**Name/Organization:** Rick Thornberry, PE, The Code Consortium, Inc. on behalf of the California Fire Safety Advisory Council (CFSAC)

**Comments:** Commenter identifies modification to add Group L occupancies to the exception of occupancies that are not allowed to take advantage of the reduction in the fire-resistance rating of structural elements of high-rise buildings because they are as hazardous as H occupancies.

**Response:** The SFM disagrees with the commenter. Modifications to add such provisions are not necessary, specific provisions for Group L occupancies contained in Section 443 have been developed for high-rise buildings.

[Section 415.9, 415.10]

**Name/Organization:** State Fire Marshal

**Comment:** The SFM proposed editorial modification.

~~**415.9.1 Fire barrier and – smoke barrier.** Where the building contains any story containing a Group H occupancy above the 10th story, shall be subdivided by a fire-smoke barrier shall be constructed as a fire barrier having a fire resistance rating of not less than two 2 hours and shall also comply with the smoke barrier requirements of California Building Code Section 710. The 2-hour fire-smoke barrier shall be in accordance with Sections 415.9.1.1 through 415.9.1.5.~~

~~**415.9.1.2** The fire-smoke barrier shall divide the floor story so that the square footage on each side of the 2-hour fire-smoke barrier is not less than 30 percent of the total floor area.~~

~~**415.9.1.3** A minimum of one door opening shall be provided across in the 2-hour fire-smoke barrier for emergency access for emergency access.~~

~~**415.10 Elevators and elevator lobbies above the 10th story.** Floors above the 10<sup>th</sup> Any story containing a Group H occupancy above the 10<sup>th</sup> story, shall be provided with elevators and elevator lobbies accordance with Sections 415.10.1 through 415.10.3 on floors above the 10<sup>th</sup> story.~~

~~**415.10.1** An elevator that serves every floor story of the building and provided in accordance with Section 403.6 shall be provided on each side of the 2-hour fire-smoke barrier.~~

**Rational for modification:** The SFM is proposing editorial modification by restructuring the text of the above sections for clarity. Additional modifications are made for clarity and consistency with other sections using code text generally used throughout the IBC and IFC. Furthermore, it will also allow for consistent enforcement throughout the state. This modification has no change in regulatory effect.

[Section 425.3.4]

**Name/Organization:** Larry G. Williams, FPO, Ventura County Fire Protection District

**Comments:** The commenter provides reference to building construction requirements based on identified stories in statute. Matching change also proposed for Table 503. Commenter states that this clarifies the building construction requirements of the Health and Safety Code based upon number of stories housing these clients and refers the reader to the proper Health and Safety Code Section. Matching change also proposed for Table 503.

**Response:** The SFM does not agree with the commenter, modifications to add such provisions are not necessary because as the provisions for nonambulatory elderly clients have been made to the CBC to carry out the intent of the Health and Safety Code 13131.5 without having the user reference or rely on the statute.

[Section 425.8.3.1]

**Name/Organization:** Larry G. Williams, FPO, Ventura County Fire Protection District

**Comments:** The commenter identifies modifications for special egress arrangements for nonambulatory and bedridden clients to include a door within the door opening to bedrooms housing nonambulatory and bedridden clients. Commenter states the current and proposed sections do not mandate a door within the door opening to bedrooms housing nonambulatory and bedridden clients, nor does it prohibit other wall openings, much less any wall at all. The intent of the special egress arrangements for nonambulatory and bedridden clients is to provide separation from smoke to the egress system and allow for the additional time that these persons will need to egress. If these bedrooms are also used for the egress from other rooms, the hallway to common area door required does not provide any protection if there are other wall openings between the common area and the bedroom used for the exterior exit by other clients. The same provisions to prevent or delay smoke intrusion in the egress system should be applied to the walls of rooms used for the same egress system. The proposed language would also now require a bedroom door.

**Response:** Modifications to add such provisions are beyond scope of this rulemaking. Furthermore, the SFM suggests that the appropriate avenue for such modifications be brought to the SFM Residential Care Advisory Committee for future review.

[Section 425.8.3.2]

**Name/Organization:** Larry G. Williams, FPO, Ventura County Fire Protection District

**Comments:** The commenter states use of a sliding glass door as the exterior exit door from a bedroom indicated for one bedridden client in Section 425.8.3.3 should also be acceptable for nonambulatory clients. Also specifies night latch, dead bolt, security chain or any similar locking devices as prohibitive for interior bedroom doors used as a means of egress and specifies egress requirements for bedridden to comply with those for nonambulatory clients when provided with an approved automatic fire sprinkler system. Commenter states the following:

1. Use a sliding glass door as the exterior exit door from a bedroom indicated for one bedridden client in Section 425.8.3.3 is also acceptable for the above egress options.
2. The addition of Section 425.8.3.2.1 clarifies that these doors are required egress doors and shall not be locked to the other clients that need to egress through another bedroom.
3. The addition of section 425.8.3.2.2 clarifies the egress arrangements bedridden clients in fire sprinklered R-3.1 occupancies as indicated in SFM Interpretation #08-073.

**Response:** Modifications to add such provisions are beyond scope of this rulemaking. Furthermore, the SFM suggests that the appropriate avenue for such modifications be brought to the SFM Residential Care Advisory Committee for future review.

[Section 425.8.3]

**Name/Organization:** Larry G. Williams, FPO, Ventura County Fire Protection District

**Comments:** The commenter suggests editorial modification for additional language that clarifies this section is only applicable to R-3.1 occupancies without automatic fire sprinklers per Section 903.

**Response:** The SFM agrees with the commenter and made the following modifications as shown below and made available for comment during the 15-day comment period from November 25, 2009 to December 9, 2009:

**OSFM change to accommodate as follows:**

***425.8.3.3 Group R-3.1 occupancies housing only one bedridden clients.*** *In Group R-3.1 occupancies housing a bedridden client and not provided with an approved automatic fire sprinkler system, all of the following shall apply:*

1. *In Group R-3.1 Occupancies housing a bedridden client, a direct exit to the exterior of the residence shall be provided from the client sleeping room.*
2. *Doors to a bedridden client's sleeping room shall be of a self-closing, positive latching 1-<sup>3</sup>/<sub>8</sub> inch solid wood door. Such doors shall be provided with a gasket so installed as to provide a seal where the door meets the jam on both sides and across the top. Doors shall be maintained self-closing or shall be automatic closing by actuation of a smoke alarm in accordance with Section ~~715.4.7~~ 15.4.8.*
3. *Group R-3.1 Occupancies housing a bedridden client, shall not have a night latch, dead bolt, security chain or any similar locking device installed on any interior door leading from a bedridden client's sleeping room to any interior area such as a corridor, hallway and or general use areas of the residence in accordance with Chapter 10.*
4. *The exterior exit door to a bedridden client's sleeping room shall be operable from both the interior and exterior of the residence.*
5. *Every required exit doorway from a bedridden client sleeping room shall be of a size as to permit the installation of a door not less than 3 feet (914 mm) in width and not less than 6 feet 8 inches (2032 mm) in height. When installed in exit doorways, exit doors shall be capable of opening at least 90 degrees and shall be so mounted that the clear width of the exit way is not less than 32 inches (813 mm).*

***Note:*** *A sliding glass door can be used as an exterior exit doorway as long as it is operable from the inside and outside and the clear width of the exit way is not less than 32 inches (813mm).*

**Rational for modification:** The additional language clarifies that this section is only applicable to R-3.1 occupancies without automatic fire sprinklers per Section 903. This modification has no change in regulatory effect.

[Section 425.8.7.1]

**Name/Organization:** Larry G. Williams, FPO, Ventura County Fire Protection District

**Comments:** The commenter requests doors within floor separations to be self-closing in addition to a tight fitting solid wood door of 1 3/8 inches in thickness. Commenter states that self-closing doors provide the same protection as automatic closing doors and is an acceptable method for closing doors under Chapter 7.

**Response:** Modifications to add such provisions are beyond scope of this rulemaking. Furthermore, the SFM suggests that the appropriate avenue for such modifications be brought to the SFM Residential Care Advisory Committee for future review. Furthermore, the SFM does not agree that such modification should be made, the SFM is the prior rulemaking specifically removed the provisions for “self-closing “ doors to maintain the doors be automatic closing triggered by the detection of smoke thus eliminating the practice of doors being propped open.

[Section 443.3, 443.8]

**Name/Organization:** State Fire Marshal

**Comment:** The SFM proposed editorial modification.

~~443.4.3443.4.3.1 Fire barrier. A fire barrier having a fire resistance rating of not less than two 2-hours shall divide any floor above the 4th story containing more than one laboratory suite above the 4th story.~~

~~443.4.3.2 Fire- smoke barrier. Where the building containsAny story containing a Group L occupancy above the 10th story, shall be subdivided by a fire-smoke barrier shall be constructed as a fire barrier having a fire resistance rating of not less than 2-hours and shall also comply with the smoke barrier requirements of Section 710.~~

~~The 2-hour fire- smoke barrier shall be in accordance with Sections 443.4.3 through 443.4.3.2.3.~~

~~443.4.3.2.1 A minimum of one door opening shall be provided acrossin the 2-hour fire-smoke barrier for emergency access-for emergency access.~~

~~443.8. Elevators and elevator lobbies above the 10th story. Floors above the 10th Any story containing a Group L occupancy above the 10th story, shall be provided with elevators and elevator lobbies accordance with Sections 443.8.1 through 443.8.3 on floors above the 10th story.~~

~~443.8.1 An elevator that serves every floorstory of the building and provided in accordance with Section 403-6 shall be provided on each side of the 2-hour fire-smoke barrier.~~

**Rational for modification:** The SFM is proposing editorial modification by restructuring the text of the above sections for clarity. Additional modifications are made for clarity and consistency with other sections using code text generally used throughout the IBC and IFC. Furthermore, it will also allow for consistent enforcement throughout the state. This modification has no change in regulatory effect.

[Table 503]

**Name/Organization:** Larry G. Williams, FPO, Ventura County Fire Protection District

**Comments:** The commenter proposed editorial modification to Table 503 for Group R-4 occupancies by adding footnotes to the Group R-4 row a new footnote i. This corresponds to the code change proposed for Section 425.3.4.

**Response:** The SFM agrees with the commenter and made the following modifications as shown below and made available for comment during the 15-day comment period from November 25, 2009 to December 9, 2009:

**OSFM change to accommodate as follows:**

**TABLE 503  
ALLOWABLE HEIGHT AND BUILDING AREAS<sup>a</sup>  
Height limitations shown as stories and feet above grade plane.  
Area limitations as determined by the definition of “Area, building,” per story**

GROUP		TYPE OF CONSTRUCTION								
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
HGT(feet)	HGT(S)	UL	160	65	55	65	55	65	50	40

A-1	S	UL	5	3	2	3	2	3	2	1
	A	UL	UL	15,500	8,500	14,000	8,500	15,000	11,500	5,500
A-2	S	UL	11	3	2	3	2	3	2	1
	A	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
A-3	S	UL	11	3	2	3	2	3	2	1
	A	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
A-4	S	UL	11	3	2	3	2	3	2	1
	A	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
A-5	S	UL	UL	UL	UL	UL	UL	UL	UL	UL
	A	UL	UL	UL	UL	UL	UL	UL	UL	UL
B	S	UL	11	5	3	5	3	5	3	2
	A	UL	UL	37,500	23,000	28,500	19,000	36,000	18,000	9,000
E	S	UL	5	3	2	3	2	3	1	1
	A	UL	UL	26,500	14,500	23,500	14,500	25,500	18,500	9,500
F-1	S	UL	11	4	2	3	2	4	2	1
	A	UL	UL	25,000	15,500	19,000	12,000	33,500	14,000	8,500
F-2	S	UL	11	5	3	4	3	5	3	2
	A	UL	UL	37,500	23,000	28,500	18,000	50,500	21,000	13,000
H-1	S	1	1	1	1	1	1	1	1	NP
	A	21,000	16,500	11,000	7,000	9,500	7,000	10,500	7,500	NP
H-2 <sup>d</sup>	S	<del>UL20</del>	3	2	1	2	1	2	1	1
	A	21,000	16,500	11,000	7,000	9,500	7,000	10,500	7,500	3,000
H-3 <sup>d</sup>	S	<del>UL20</del>	6	4	2	4	2	4	2	1
	A	UL	60,000	26,500	14,000	17,500	13,000	25,500	10,000	5,000
H-4	S	<del>UL20</del>	7	5	3	5	3	5	3	2
	A	UL	UL	37,500	17,500	28,500	17,500	36,000	18,000	6,500
H-5	S	4	4	3	3	3	3	3	3	2
	A	UL	UL	37,500	23,000	28,500	19,000	36,000	18,000	9,000
I-1	S	UL	5	2	NP	2	NP	NP	2	NP
	A	UL	55,000	49,000	NP	46,500	NP	NP	40,500	NP
I-2/I-2.1 <sup>f</sup>	S	UL	4	2	1	1	NP	1	1	NP
	A	UL	UL	15,000	11,000	12,000	NP	12,000	9,500	NP
I-3 <sup>e</sup>	S	UL	4.2	2 NP	4 NP	2 NP	4 NP	2 NP	2 NP	4 NP
	A	UL	<del>UL 15,100</del>	45,000 NP	40,000 NP	40,500 NP	7,500 NP	42,000 NP	7,500 NP	5,000 NP
I-4	S	UL	5	3	2	3	2	3	1	1
	A	UL	60,500	26,500	13,000	23,500	13,000	25,500	18,500	9,000
L	S	<del>UL20</del>	6	5	3	5	3	5	3	2
	A	UL	60,000	37,500	17,500	28,500	17,500	36,000	18,000	6,500
M	S	UL	11	4	2	4	2	4	3	1
	A	UL	UL	21,500	12,500	18,500	12,500	20,500	14,000	9,000
R-1	S	UL	11	4	4	4	4	4	3	2
	A	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
R-2	S	UL	11	4	4	4	4	4	3	2
	A	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
R-2.1	S	UL	<u>56<sup>h</sup></u>	<u>23<sup>g</sup></u>	NP	<u>23<sup>g</sup></u>	NP	NP	<u>23<sup>g</sup></u>	NP
	A	UL	<u>55,000</u>	<u>19,000</u>	NP	<u>16,500</u>	NP	NP	<u>10,500</u>	NP
R-3/R-3.1	S	UL	11	4	4	4	4	4	3	3
	A	UL	UL	UL	UL	UL	UL	UL	UL	UL
R-4	S	UL	<u>11<sup>h</sup></u>	<u>4<sup>g</sup></u>	<u>4<sup>i</sup></u>	<u>4<sup>g</sup></u>	<u>4<sup>i</sup></u>	<u>4<sup>i</sup></u>	<u>3<sup>g</sup></u>	<u>2<sup>i</sup></u>
	A	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000

S-1	S	UL	11	4	2	3	2	4	3	1
	A	UL	48,000	26,000	17,500	26,000	17,500	25,500	14,000	9,000
S-2 <sup>b, c</sup>	S	UL	11	5	3	4	3	5	4	2
	A	UL	79,000	39,000	26,000	39,000	26,000	38,500	21,000	13,500
U <sup>c</sup>	S	UL	5	4	2	3	2	4	2	1
	A	UL	35,500	19,000	8,500	14,000	8,500	18,000	9,000	5,500

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m<sup>2</sup>.

A = building area per story, S = stories above grade plane, UL = Unlimited, NP = Not permitted.

a. See the following sections for general exceptions to Table 503:

1. Section 504.2, Allowable height increase due to automatic sprinkler system installation.
2. Section 506.2, Allowable area increase due to street frontage.
3. Section 506.3, Allowable area increase due to automatic sprinkler system installation.
4. Section 507, Unlimited area buildings.

b. For open parking structures, see Section 406.3.

c. For private garages, see Section 406.1.

d. See Section 415.5 for limitations.

e. [SFM] See Section 408.1.1 for specific exceptions for one-story Type IIA, Type IIIA or Type VA construction.

f. Restraint shall not be permitted in any building except in Group I-3 occupancies constructed for such use (see Section ~~308.2~~ 408.1.2).

g. Nonambulatory persons shall be limited to the first 2 stories.

h. Nonambulatory persons shall be limited to the first 5 stories.

i. Nonambulatory elderly clients are not permitted in non-rated buildings. See Section 425.3.3 and 425.3.4.

**Rational for modification:** The SFM is proposing modification to Group R-4 occupancies for clarification and correlation with provisions contained in Section 425.3.4 and the statutory provisions contained in Health and Safety Code Section 13131. This modification has no change in regulatory effect.

[Section 506.5.2]

**Name/Organization:** State Fire Marshal

**Comment:** The SFM proposed editorial modification.

**506.5.2 More than one story above grade plane.** For buildings with more than one story above grade plane and containing mixed occupancies, each story shall individually comply with the applicable requirements of Section 508.1.

For ~~other than high-rise buildings, Group A, E, H, I, L, and R occupancies,~~ high-rise buildings, and other applications listed in Section 4111.11 regulated by the Office of the State Fire Marshal, buildings with more than three stories above grade plane, the total building area shall be such that the aggregate sum of the ratios of the actual area of each story divided by the allowable area of such stories based on the applicable provisions of Section 508.1 shall not exceed 3.

For ~~high-rise buildings, Group A, E, H, I, L, and R occupancies,~~ high-rise buildings, and other applications listed in Section 4111.11 regulated by the Office of the State Fire Marshal, buildings with more than ~~three~~ two stories above grade plane, the total building area shall be such that the aggregate sum of the ratios of the actual area of each story divided by the allowable area of such stories based on the applicable provisions of Section 508.1 shall not exceed 2.

**Rational for modification:** The SFM is proposing editorial modification to correct the number of stories in accordance with existing amendments made to the 2007 CBC Section 506.4.1 that are brought forward with format revisions only for the 2009 IBC. This modification has no change in regulatory effect.

[Section 508.2.4]

**Name/Organization:** State Fire Marshal

**Comment:** The SFM proposed editorial modification for consistency with Section 443.4.1.1.

**508.2.4 Separation of occupancies.** No separation is required between accessory occupancies or the main occupancy.

**Exceptions:**

1. Groups H-2, H-3, H-4 ~~and H-5, I-2, I-2.1 and I-3~~ and L occupancies shall be separated from all other occupancies in accordance with Section 508.4.
2. Incidental accessory occupancies required to be separated or protected by Section 508.2.5.
3. Groups ~~I-1, R-1, R-2,~~ R-2.1 and R-3 dwelling units and sleeping units shall be separated from other dwelling or sleeping units and from accessory occupancies contiguous to them per the requirements of Section 420.

**Rational for modification:** The SFM is proposing modification to add the Group L occupancy to the list of those occupancies in Exception 1 that are required to be separated from all other occupancies in the building even if they are classified as accessory occupancies. The Group L occupancy is comparable in hazard to the Group H-2, H-3, H-4, and H-5 occupancies already contained in the Exception. This modification is consistent with Section 443.4.1.1 and has no change in regulatory effect.

[Section 508.3.3]

**Name/Organization:** State Fire Marshal

**Comment:** The SFM proposed editorial modification.

**508.3.3 Separation.** No separation is required between nonseparated occupancies.

**Exceptions:**

1. Groups H-2, H-3, H-4 ~~and H-5, I-2, I-2.1 I-3~~ and L occupancies shall be separated from all other occupancies in accordance with Section 508.4.
2. Groups ~~I-1, R-1, R-2,~~ R-2.1 and R-3 dwelling units and sleeping units shall be separated from other dwelling or sleeping units and from other occupancies contiguous to them in accordance with the requirements of Section 420.

**Rational for modification:** The SFM is proposing editorial modification to correct the terminology which is intended to apply to all of the occupancies noted. This modification has no change in regulatory effect.

[Section 708.14.1 Ex 3]

**Name/Organization:** Rick Thornberry, PE, The Code Consortium, Inc. on behalf of Smoke Guard

**Comments:** The commenter identifies when enclosed elevator lobbies are not required and doors are provided at the hoistway openings, such doors shall comply with the smoke and draft control door assembly requirements in Section 715.4.3.1 when tested in accordance with UL 1784. The proposed new language provides the performance criteria to which the door must perform. Commenter states UL1784 describes the test method to be used to measure the leakage but does not contain requirements for what the allowable or maximum air leakage should be for this additional door.

**Response:** Although the proposed amendments sought by the commenter may have merit such amendments are beyond scope of this rulemaking. The SFM believes that the proposed amendments necessitate further study and full stakeholder review via SFM advisory committees or task force work group. Furthermore, the SFM suggests that a more appropriate avenue for such amendments be brought to the ICC code development for consideration.

[Section 708.14.1 Ex 4 and 5]

**Name/Organization:** Rick Thornberry, PE, The Code Consortium, Inc. on behalf of Smoke Guard

**Comments:** The commenter identifies a NFPA 13R sprinkler system is not as effective in controlling and/or extinguishing fires as an NFPA 13 sprinkler system and allows for sprinklers to be omitted in combustibles concealed spaces such as attics and floor/ceiling assemblies, as well as other areas permitted by Sections 6.6.2 through 6.6.7 of NFPA 13R-2010. Further, it does not appear reasonable nor prudent to allow the NFPA 13R sprinkler system to be used to trade-off the 1-hour fire-resistance rated enclosed elevator lobby in multistory buildings. NFPA 13R sprinkler systems are limited to buildings not greater than 4 stories in height. Therefore, these Exceptions would apply to a very limited building stock of residential occupancies.

**Response:** The SFM has proposed amendments throughout the IBC/IFC and NFPA 13/13R standards as recommended by the SFM Ad-Hoc Task Force that was created in 2008 to review NFPA 13/13R and IBC/IFC provisions for correlation. The SFM Ad-Hoc Task Force reviewed similar provisions and made no recommendation to propose such. The SFM suggests that the appropriate avenue for such modifications be brought to the ICC code development or the NFPA 13/13R development for consideration.

[Section 716.5.4 Ex 1]

**Name/Organization:** Rick Thornberry, PE, The Code Consortium, Inc. on behalf of the Air Movement and Control Association (AMCA)

**Comments:** The commenter identifies deletion of this section reference will not allow the use of an NFPA 13R sprinkler system for the elimination of fire dampers in ducts penetrating 1-hour fire partitions constructed as corridor walls. NFPA 13R sprinkler systems are limited to residential occupancy buildings not greater than 4 stories in height. Fire dampers are part of the basic building construction compartmentation features which should not be allowed to be traded-off for a life safety system such as NFPA 13R.

**Response:** The SFM has proposed amendments throughout the IBC/IFC and NFPA 13/13R standards as recommended by the SFM Ad-Hoc Task Force that was created in 2008 to review NFPA 13/13R and IBC/IFC provisions for correlation. The SFM Ad-Hoc Task Force reviewed similar provisions and made no recommendation to propose such. The SFM suggests that the appropriate avenue for such modifications be brought to the ICC code development or the NFPA 13/13R development for consideration.

[Section 719.7]

**Name/Organization:** Howard Ahern, Plumberex, Palm Springs, Ca

**Comments:** The commenter identifies that “Hot water and drain pipes under lavatories [and sinks] shall be insulated or otherwise “covered” should be changed to “configured to protect against contact”. This clarifies and coincides with ADA language that it is intended to provide thermal protection as well as protection against contact from sharp or abrasive surfaces under lavatories.

**Response:** Although the proposed amendments sought by the commenter may have merit such amendments are beyond scope of this rulemaking. Furthermore, the SFM suggests that the appropriate avenue for such modifications be brought to the attention of the Division of State Architect and the SFM in future rulemaking cycles during pre rulemaking activities and stakeholder reviews.

[Chapter 7A]

**Name/Organization:** Jeff White, Building Official (Calveras County Building Department)

**Comment:** Supports prescriptive options and alternatives to facilitate implementation of language in chapter 7A of the California Building Code.

**Response:** The SFM acknowledges the commenter’s support for the proposed amendments to the California Building Standards Code.

[Section 706A]

**Name/Organization:** Larry Dumm, President (Fire Vents Safety Association 1<sup>st</sup> Letter 11/16/09)

**Note:** subsequent to the several letters received from this stakeholder during the 45-Day comment period, the commenter submitted a 15-Day Comment Period letter dated 12/9/09 (see below) in support of the language proposed by SFM in the November, 24, 2009 15-Day Comment Period Modified Express Terms document.

**Comment:** The Fire Vents Safety Association was not adequately represented, issues were not adequately vetted (e.g. with CalChiefs, BIA, BSC, AIA, FPO’s, and CalBO), and interested parties were not clearly informed of the process. There was no warning to the Fire Vents Safety Association prior to the June meeting that the vent language was going to be changed.

**Response:** The SFM announced the formation and purpose of the “2010 CBC Ch7A” Task Force in March 2009 with a “Hot Topic” on the main SFM webpage that included the tentative date and location of the first stakeholder meeting on April 17<sup>th</sup> in Glendale. SFM was not made aware of the existence of the Fire Vents Safety Association until August 2009. Several vent manufacturers made presentations to the Task Force at the April 17<sup>th</sup> stakeholder meeting in Glendale. All stakeholder material submitted was reviewed by the Task Force, some of it was used for the Task Force recommendations to the SFM, and other material was not. SFM held a second stakeholder meeting on May 22<sup>nd</sup> to present the final draft of the Task Force recommendations (which included the vent language at issue) to interested parties. At both stakeholder meetings, SFM staff explained the informal three month “pre-rulemaking cycle” Task Force and stakeholder involvement process, the six month formal Building Standards Commission stakeholder participation process, and the BSC timeline and the public comment periods. SFM staff held several conference calls with the Task Force Co-Chairs and available members to review the Building, Fire, and Other Code Advisory Committee comments. The stakeholders were represented at the conference calls by their comments.

[Section 706A]

**Name/Organization:** Jack Henderson, President (DCI Products Inc. / SmartVent)

**Comment 1:** Requests revision of language in Section 706A related to vents. Commenter states:

- The need for both intake and exhaust vents to provide attic ventilation and further,
- Most ridge vents are made of plastic or combustible materials,
- Plastic roof top vents perform well and should not be prohibited by the code,
- Plastic vents have no known fire hazard and should not be eliminated.

**Comment 2:** Supports the addition of the Section 706A.3 exception for 1/16” ember intrusion screening to eliminate ember ignition threat. Presentations were made to SFM that do not support the proposed 1/8” mesh openings.

**Comment 3:** Seal up all soffit vents to reduce hazard and move attic ventilation openings to the roof surface where all ventilation requirements will fall into a single (roofing) building trade, keep the roofer on the roof.

**Comment 4:** Implementing the proposed vent regulations will create havoc within the building industry.

**Response 1:** The SFM disagrees with the general statement that plastic vent pose no hazard and contends that the original intent of the SFM vent provisions was to require vents be entirely constructed noncombustible material. However, review of comments along with follow up discussions resulted in 15-Day Comment Period Modifications to Express Terms adding a Section 706A.2 exception permitting plastic vents to be located under the roof covering, along the ridge of roofs, with the exposed surface of the vent covered by noncombustible wire mesh.

The SFM contends that the proposal to permit roof top plastic vents that melt and seal the opening before the building ignites (in addition to those allowed by the above exception) has merit but lacks substantiation and evaluation with public participation. Without a recognized test standard there is no way to objectively evaluate the claimed product performance. With the exception of roof covering classification for fire protection, wildfire exposure protection is a new concept to the building industry in many parts of California and was only incorporated into the California Building Standards Code in 2005. Until building materials that comply with recognized performance standards for wildfire protection are readily available, SFM contends that the code must contain prescriptive options to facilitate code compliance.

The SFM will take the concerns expressed in the comment under consideration in the development of future rulemaking packages. For additional responses to the comment see the Revised Statement of Reasons in this document and the Section 706A.2 rationale statement in the November, 24, 2009 15-Day Comment Period Modified Express Terms document.

**Response 2:** No new code change is proposed to address this comment. SFM has not seen strong objective substantiation that 1/16-inch vent screens would eliminate ember ignition hazards while 1/8-inch vent screens will not provide adequate protection. Indeed, comments have been submitted with conflicting or alternate viewpoints on this issue. The vent industry made presentations on vent screen opening sizes to the Task Force at the April 17, 2009 stakeholder meeting in Glendale. The Task Force recommended that the size of vent openings be a minimum of 1/16th inch and not to exceed 1/8-inch. Review of the proposed revisions and comments received at the Code Advisory Committee meeting August 10, 2009 along with follow up discussions resulted in the SFM decision that no new persuasive arguments had been made on the issue and that SFM would bring forward amendments based on recommendations of the Task Force.

**Response 3:** Although the SFM agrees with aspects of this comment and believes it may have merit, however, no new code change is proposed to address this comment. SFM agrees that eliminating vents is a good ember hazard

mitigation method and has supported building design options such as unvented attics. Relocating attic intake ventilation away from soffits and eaves in particular, as recommended by this comment, was the original intent of the SFM for this section. The SFM Wildland-Urban Interface Building Standards Advisory Committee (2003-2005) initially recommended soffit and eave vents be prohibited altogether. However, building and vent industry stakeholders recommended the exception to permit eave vents that met the performance goal of "...resist the intrusion of flame and embers..." presuming a performance test standard would be developed. A test standard for vents was among the test standards SFM funded researchers to develop and it has been an area of work by ASTM and others for some years without success to date. The elimination of under eave & soffit vents has not been a viable option for some enforcing agencies and the building industry in some places in the state, especially areas where snow fall can block roof top vents.

For additional responses to the comment see the Revised Statement of Reasons in this document and the Section 706A.2 rationale statement in the November, 24, 2009 15-Day Comment Period Modified Express Terms document. SFM will take the concerns expressed in the comment under consideration in the development of future rulemaking packages.

**Response 4:** SFM disagrees with the comment that the proposed amendments will create havoc in the building industry and no new code change is proposed to address this comment. This is based on upon recommendations from the Task Force which had broad representation from enforcing agencies and the building industry including: California Building Officials Association, League of California Cities, California Fire Prevention Officers, and the California Building Industry Association.

[Section 706A]

**Name/Organization:**

**Larry Dumm, President (Fire Vents Safety Association 2<sup>nd</sup> Letter 11/16/09)**

**Larry Dumm, President (Fire Vents Safety Association 3<sup>rd</sup> Letter 11/23/09)**

**Brent Berkompas (Brandguard Vents)**

**Laura Blaul, Fire Official (BFO CAC-Orange County Fire Authority)**

**Gregory S. Daniels, President (O'Hagin's, Inc.)**

**Rod Marusic, Partner and Tom Carlson, Partner (Vivico LLC)**

**John Simontacchi, Founder and Bruno Tapolsky, Chairman of the Board (Vulcan Technologies, Inc.)**

**Note:** Subsequent to the 45-Day comment, the following commenter's submitted a 15-Day Comment Period letter dated 12/7/09 (see below) in support or acceptance in part of the modified language proposed by the SFM in the November, 24, 2009 15-Day Comment Period Modified Express Terms document.

**Larry Dumm, President (Fire Vents Safety Association 4<sup>th</sup> Letter 11/30/09)**

**Larry Dumm, President (Gunter Manufacturing, Inc.)**

**Rod Marusic, Partner and Tom Carlson, Partner (Vivico LLC)**

**Brent Berkompas (Brandguard Vents)**

**Steve Beck, Director (Vulcan Vent)**

**Comment 1:** The proposed vent language weakens protection for buildings, takes a step backwards, and requests reconsideration of changes to Section 706A regarding vents. Suggests new exception to Section 706A.3 be deleted or revised for the reason that it does not require additional protection for attic vents located in particularly vulnerable locations (i.e. the underside of eaves and cornices). Does not support the replacement of the required additional protection for attic vents with the allowance of the 1/8" metal mesh without test results.

**Comment 2:** The proposed code specifies in the General section (706A.1) that vents used shall "...resist building ignition from the intrusion of burning embers and flame..." but no such language is in the Requirements section (706A.2) and there is no requirement for specialized vents.

**Comment 3:** Testing procedures by the vent industry have shown 1/8-inch mesh does little or nothing to stop flame intrusion.

**Comment 4:** Testing procedures by the vent industry and fire losses have shown 1/8-inch mesh does little or nothing to stop ember intrusion.

**Comment 5:** Proposes additional prescriptive methods for ventilation code compliance.

**Response 1:** The SFM disagrees that the proposed vent language weakens protection and no new code change is proposed to address this comment. SFM contends that the proposed building standards for vents are, in general, more restrictive and provide the potential for greater overall protection for ventilation openings from ember exposure when compared to the current 2007 building standards (2007 CBC Section 704A.2, January 1, 2009 supplement).

The maximum vent screen opening size is proposed to be reduced from 1/4-inch to 1/8-inch for all applicable vents (ventilation openings for enclosed attics, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, and underfloor ventilation) with the exception of eave vents. While this opening size reduction will not provide 100% protection and it is possible that it will not make a significant difference in disastrous losses, SFM has found no evidence this reduction in screen opening size for the majority of building vents will weaken the code or reduce the level of protection.

For a response to the issue of eave vent screen opening size see response #4 (below) to this commenter and additional responses in the Revised Statement of Reasons in this document and the Section 706A.2 rationale statement in the November, 24, 2009 15-Day Comment Period Modified Express Terms document.

Following lengthy review and deliberation within the Task Force, a search for the most current data and comparative evaluation of vent screen size openings (specifically how do 1/8-inch openings compare relative to 1/4-inch), and review and consideration of public input in a systematic manner, SFM has decided that it is reasonable to conclude, based on the best information available at this time, that reducing the maximum size of vent screen openings from 1/4-inch to 1/8-inch will minimize the chance of embers resulting in building ignition because smaller embers have less energy and burn for a shorter duration.

**Response 2:** The SFM disagrees with the comment that "...resist building ignition from the intrusion of burning embers and flame..." language should be made a requirement and no new code change is proposed to address this comment. Note that subsequent to this comment the commenter submitted a 15-Day Comment Period letter (dated 12/9/09) in support of the language proposed in the November, 24, 2009 15-Day Comment Period Modified Express Terms document.

Review of the proposed revisions and comments along with follow up discussions have resulted in the SFM decision that it would be inappropriate to make a specific requirement of a performance goal for which there is no recognized test standard to evaluate code compliance. Furthermore, it has never been the intent of SFM to require "special vents" but simply to allow them as an option.

With the exception of roof covering classification for fire protection, wildfire exposure protection is a new concept to the building industry in many parts of California and was only incorporated into the California Building Standards Code in 2005. Until building materials that comply with recognized performance standards for wildfire protection are readily available, SFM contends that the code must contain prescriptive options to facilitate code compliance.

The SFM believes it would be appropriate to consider requiring vents that comply with a vent test standard, such as ASTM, and the SFM will take the concerns expressed in the comment under consideration in the development of future rulemaking packages.

**Response 3:** The SFM agrees that wire mesh screens do little or nothing to prevent flame intrusion. As the proposed language does not rely on vents with wire mesh screens to protect against flames, no new code change is proposed to address this comment. Protecting buildings from flame intrusion through ventilation openings with wire mesh screens (between 1/16-inch and 1/4-inch in size) may have some support (see Henderson letter), but very little, and the SFM believes this method of mitigating the hazard of potential flame contact has no merit.

Notwithstanding the original 2005 language (2007 CBC 704A.2.1), it has never been the intent of the SFM that the wire mesh screens of vents be used for flame intrusion protection. The SFM believes generally that the most reasonable, efficient, and cost-effective method to protect buildings from extensive direct flame contact is not extensive building construction regulations, but rather property owner reduction in the potential severity of wildfire exposure through compliance with the fuel management required by existing state law and this code (proposed Section 701A.5). In specific limited situations SFM has, however, brought forward amendments requiring building standards regulations to protect against limited direct flame contact. SFM proposes that some vents installed in eaves are required to provide flame intrusion protection and this is one code compliance option for vents installed in other locations. This requirement has been problematic because there is no recognized test standard to evaluate products for this performance.

With the exception of roof covering classification for fire protection, wildfire exposure protection is a new concept to the building industry in many parts of California and was only incorporated into the California Building Standards Code in 2005. Until building materials that comply with recognized performance standards for wildfire protection are readily available, the SFM contends that the code must contain prescriptive options to facilitate code compliance.

The SFM will take the concerns expressed in the comment under consideration in the development of future rulemaking packages. For additional responses to the comment see the Revised Statement of Reasons in this document and the Section 706A.2 rationale statement in the November, 24, 2009 15-Day Comment Period Modified Express Terms document.

For additional responses to this comment see the Revised Statement of Reasons in this document and the Section 706A.2 rationale statement in the November 24, 2009 15-Day Comment Period Modified Express Terms document.

**Response 4:** With specific regard to ember intrusion and eave vents with 1/8-inch size screen openings SFM contends that the proposed building standards have adequate support and are a reasonable next step (from prohibiting vents altogether or 1/4-inch openings) in the evolution of wildfire protection requirements given the state of knowledge at this point in time. The proposed amendments pertaining to vent screen size are, furthermore, comparable to other nationally recognized standards and recommendations (see below). The SFM will, therefore, take the vent opening size concerns expressed in the comment under consideration in the development of future rulemaking packages but no new code change is proposed to address this comment.

The SFM agrees with the after action reports and professional observations that frequently cited the hazard of ember caused building ignition and specifically ember intrusion through vents. However, SFM presumes that most buildings destroyed had 1/4-inch vents as required by state code until 2008. No fire exposure data or supporting post-fire observation documentation was submitted indicating 1/8-inch screens were a significant problem during actual wildfire exposure. As described below, the limited fire research information currently available points to a significant reduction in building ignition when building opening size is reduced to between 1/16-inch and 1/8-inch.

The original 2005 standard can be interpreted as creating a very broad with respect to evaluating reasonable vent opening size and, to date, there is no recognized test standard to objectively assist with this evaluation. At the conservative end of the spectrum is the prescriptive requirement not to allow any eave vents. Any subsequent allowance of ventilation openings regardless of how good a vent may be would increase the risk of ember intrusion. At the other end of the spectrum, even the generally acknowledged hazardous wire mesh with 1/4-inch size openings could be interpreted as complying with the code by resisting intrusion of large embers. This would be the case for embers the size of "Class A" roof covering firebrands (used to classify & evaluate roof coverings) which measure 12-Inches by 12-inches and weigh over 2-pounds.

The range of ventilation opening sizes proposed by SFM (1/16-inch to 1/8-inch) is supported by technical observations published by fire research. One paper from Australian Bushfire research reported that "The regulation of gaps in the buildings envelop to less than 2mm [which is between 1/16-inch and 1/8-inch in size] eliminated the potential for active ember entry." (See "Bushfire Impact from a House's Perspective" by J.E. Leonard et.al, 2004, CSIRO Manufacturing & Infrastructure Technology, Melbourne, Victoria, Australia, p.13).

The proposed language is also generally comparable to, if not more restrictive than, national model codes, standards, and recommendations. The SFM is proposing a minimum size (1/6-inch) that is smaller than any nationally recognized standard found. The *International Wildland-Urban Interface Code* (ICC 2009) requires vent openings not to exceed 1/4 inch, or (for Class 1 & 2 Construction only) shall be designed and approved to prevent flame or ember penetration into the structure. The National Fire Protection Association, NFPA 1144, *Standard for Reducing Structure Ignition Hazards from Wildland Fire* (NFPA 2008 edition) requires vent openings not to exceed 1/4 inch. Firewise Communities (*Safer From the Start - Guide Firewise Friendly Developments* 2009) recommends vents should be screened with metal mesh of no more than 1/4 -inch in size (1/8-inch is preferred, but could become clogged if painted). Finally, the Institute for Business & Home Safety (IBHS) recommends vents should be covered with a minimum 1/4 inch metal mesh screen, or better yet, 1/8 inch and states that screens do offer a minimum level of protection, but that newer vent styles appear to offer better protection. These are in the testing phase and should become available to the public in the coming months.

**Response 5:** The SFM agrees with several of the suggestions, some of which are already in place, or have been considered. The exception for buildings fully protected by an NFPA 13 sprinkler system has been an SFM proposed amendment since May 2009. The "alternative" (#1) method of construction utilizing "non-vented" attics has been in place as a "CBC Ch7A Compliance Policy" since February 2009 (Eave Vents and Attic Ventilation policy #09-01). Reducing the combustibility interior materials (e.g. attic) subject to ignition by intruding embers was discussed (August 2009) with a representative of the Fire Vents Safety Association and rejected. Although the other additional prescriptive proposals may have merit, SFM has determined that the proposed amendments are not possible at this stage of the code development process. The SFM believes that further evaluation of the proposed modifications with additional public participation is warranted prior to advancing these amendments. The SFM will take the concerns expressed in the comment under consideration in the development of future rulemaking packages.

**Modification:** The SFM made the following modifications as shown below and made available for comment during the 15-day comment period from November 25, 2009 to December 9, 2009 in part as outlined above in the response to comments:

**OSFM change to accommodate as follows:**

**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 metal wire mesh, vents, other materials, or other devices that meet the following requirements:*

- 1. The dimensions of the openings therein shall be a minimum of 1/16<sup>th</sup> inch (1.6 mm) and shall not exceed 1/8<sup>th</sup> inch (3.2mm).*
- 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.*

**706A.3 Ventilation openings on the Underside of Eaves and Cornices:** *Vents shall not be installed on the underside of eaves and cornices.*

**Exceptions:**

- 1. The enforcing agency may accept or approve special eave and cornice vents that resist the intrusion of flame and burning embers.*
- 2. Vents complying with the requirements of Section 706A.2 may be installed on the underside of eaves and cornices in accordance with either one of the following conditions:*
  - 2.1. The attic space being ventilated is fully protected by an automatic sprinkler system installed in accordance with Section 903.3.1.1 or.*
  - 2.2. The exterior wall covering and exposed underside of the eave are of noncombustible material, or ignition-resistant materials as determined in accordance with SFM Standard 12-7A-5 Ignition-Resistant Material and the vent is located more than 12 feet from the ground or walking surface of a deck, porch, patio, or similar surface.*

**Rationale for modifications:** The SFM received comments during the 45 day comment period expressing concern that Exception 2.2 of Section 706A.3 for ventilation openings on eaves and cornices does not provide adequate protection from wildfire protection. The SFM proposed modification to Exception 2.2 further limits the application of this exception to eave vents located more than 12 feet from potential wildfire exposure originating from the ground or other walking surfaces. The SFM contends that eave vents (on buildings with ignition resistant wall coverings) located more than 12 feet from the ground have not been shown to be significantly more hazardous than other attic vents, such as gable vents, and should be permitted to have protection similar to that of other ventilation openings. The SFM further contends that the proposed wildfire protection requirements for attic ventilation openings in Section 706A.2 provide adequate protection considering the entire building, provide increased protection overall from the requirements contained in the 2007 California Building Code, and are as strict, or stricter, than those found in National Fire Protection Association standards, International Code Council model codes, and similar recommendations. The SFM also contends that the extent of building construction specified by the code to mitigate a particular wildfire exposure hazard, such as ventilation openings in eaves, should be proportional and relative to all of the hazard elements of the entire building, and be consistent with the purpose of the regulations (see Section 701A.2) to help reduce, not eliminate, disastrous conflagration losses. For example, perfecting protection from potential ember ignition through eave vents will not contribute to a reduction in disastrous wildfire losses if the embers are igniting the building at more hazardous construction elements, such as exterior trim, decks, and window frames.

Comments received during the 45 day comment period have also made the SFM aware that most ridge vents are constructed of plastic that could be made to comply with the requirements for attic ventilation openings in Section 706A.2 except for the non-combustibility requirement in proposed Section 706A.2.2. It is not clear what impact eliminating plastic ridge vents might have on the ability of the building industry to provide adequate exhaust ventilation for attics. The modification proposed by SFM (see new exception to Section 706A.2.2) to permit combustible vents at the ridge of roofs is based on fire loss patterns and expected fire exposure. The SFM is not aware of fire loss data or a well substantiated fire exposure scenario that indicates plastic vents installed at the ridge of a roof are a significant hazard for flame intrusion.

The SFM contends that the extent of minimum state building construction requirements for wildfire protection in the California Building Standards Code should be based on reasonable property owner compliance with the vegetation management requirements prescribed by law and this code (see Section 701A.5). Direct flame contact at the ridge top of a roof is unlikely given such vegetation management. Furthermore, wildfire exposure resulting in flame contact at the ridge top would also likely result in extreme exposure to other building construction elements, such as windows, that would fail before flame intrusion at ridge vents became a significant issue.

[Section 708A.3]

**Name/Organization:** Bryan Harden, Western Region Manager (Architectural Traditions)

**Comment:** Requests clarification of language in Section 708A.3 related to the thickness of raised, routed or beveled panels in wood doors. Suggests alternate code to clarify intent to allow raised panel tongue (perimeter) to be thinner than 1-1/4" with a minimum 1/4" thick.

**Response:** The SFM agrees with the comment in general. Review of the proposed revisions along with follow up discussions and work with industry stakeholders resulted in agreeable language that is reflected in the 15-Day Modifications to Express Terms.

[Section 708A.3]

**Name/Organization:** Jeff Inks (Window and Door Manufacturers Association)

**Comment:** Request Section 708A.3 regarding exterior doors to be altered to indicate non-glazed exterior doors for compliance while removing the exception stating: solid doors having a fire resistance rating of not less than 20 minutes may have untested glazing that complies with Section 708A.2. Suggests addition of exception to testing with intent to meet performance requirements of SFM standard 12-7A-1 that states non-glazed doors that meet the requirement of Section 708A.3 may contain glazing that meets the requirement of Section 708A.2.1. This comment proposes the same change in the equivalent section of the California Residential Code where duplicate provisions are found for Part 2.5.

**Response:** The SFM disagrees with the commenter's reasoning and proposed editorial changes to the section but, as the change will not reduce the level of protection nor easy of code use, SFM agrees to eliminate the exception. There were no challenges to the revised language and it will be incorporated into the Final Express Terms.

The SFM made the following modifications as shown below and made available for comment during the 15-day comment period from November 25, 2009 to December 9, 2009 in part as outlined above in the response to comment:

**OSFM change to accommodate as follows:**

**708A.3 Exterior doors.** *Exterior doors shall comply with one of the following:*

- 1. The exterior surface or cladding shall be of noncombustible or Ignition-resistant material, or*
- 2. Shall be constructed of solid core wood ~~having stiles and rails not less than 1 3/8 inches thick with interior field panel thickness no less than 1 1/4 inches thick, that comply with the following requirements:~~*
  - 2.1. Stiles and rails shall not be less than 1 3/8 inches thick*
  - 2.2. Raised panels shall not be less than 1 1/4 inches thick, except for the exterior perimeter of the raised panel that may taper to a tongue not less than 3/8 inch thick.*
- 3. Shall have a fire-resistance rating of not less than 20 minutes when tested according to NFPA 252.*

~~**Exception:** Solid doors having a fire resistance rating of not less than 20 minutes may have untested glazing that complies with Section 708A.2.~~
- 4. Shall be tested to meet the performance requirements of SFM Standard 12-7A-1.*

**Rationale for modifications:** The SFM has been made aware that the provisions on the thickness of wooden doors in proposed Section 708A.3.2 are confusing and have been enforced inconsistently. The SFM received comments during the 45 day comment period suggesting clarifying language which the SFM used for the proposed modification which codifies the original intent of the SFM, that a raised panel may have a tapered tongue around exterior perimeter less than 1 1/4 inches thick where it fits into the stiles and rails.

The SFM received comments during the 45 day comment period expressing concern that the exception to proposed Section 708A.3.3 could be inconsistent with requirements and/or standards (NFPA 252) referenced in the California Building Code. The modification proposed by the SFM deletes the exception and eliminates any potential inconsistency.

The SFM received additional comments during the 45 day comment period suggesting editorial changes to clarify Section 708A.3.3. SFM contends that, other than the above modifications, the provisions of Section 708A.3.3 clearly specify the requirements as written and should not be changed.

[Section 903.2.18]

**Name/Organization:** State Fire Marshal

**Comment:** The SFM proposed editorial modification.

**903.2.18 Group U private garages and carports accessory to Group R-3 occupancies.** ~~Private carports~~  
~~Carports with habitable space above and attached garages accessory to Group R-3 occupancies shall be protected by residential fire sprinklers in accordance with this Section. Residential fire sprinklers shall be connected to, and installed in accordance with, an automatic residential fire sprinkler system that complies with Section R313 of the California Residential Code or with NFPA 13D. Fire sprinklers shall be residential sprinklers or quick-response sprinklers, designed to provide a density of 0.05 gpm/ft<sup>2</sup> (2.04 mm/min) over the area of the garage and/or carport, but not to exceed two sprinklers. Garage doors shall not be considered obstructions with respect to sprinkler placement.~~

**Exception:** ~~An automatic residential fire sprinkler system shall not be required when additions or alterations are made to existing carports or garages that do not have an automatic residential fire sprinkler system installed in accordance with this Section.~~

**Rational for modification (from Part 9):** The title has been revised to be consistent with the text of the section to provide better guidance to the code user. The rest of the revisions are made for clarity and consistency with other sections using code text generally used throughout the IBC and IFC.

For the specific purpose and rational for each section containing California regulation, modification, amendment or repeal see the Statement of Reasons for Part 9 California Fire Code (CFC). The SFM is correlating amendments for Part 2 California Building Code (CBC) which are derived from the amendments proposed to the CFC.

The promulgation and format of the IBC and IFC necessitate this action. Code sections are generally considered by the ICC Fire Code Development Committee for the IFC and correlated into the IBC where necessary. SFM is following the format of the code in these instances; where the primary code is the CFC and SFM is proposing amendments to the section, those same amendments are correlated into the CBC as amendments.

[Section 904.11]

**Name/Organization:** Shea Johnson, Ventura County Fire Protection District

**Comment:** Commenter states that carrying over language from the 2007 CBC, 2007 CFC to the 2010 Code is unnecessary and problematic. The requirement deadline to change out an existing system has passed (Jan 1<sup>st</sup> 2009 being the last possible date). There is no reason to keep language as it would imply that existing non-UL 33 systems are still acceptable until the second service date after January 1, 2011. This language will clarify requirements for systems to comply with UL 300 as required under current 2007 CBC / CFC. It will also allow for consistent enforcement throughout the state.

**Response:** The SFM agrees with the commenter and made the following modifications as shown below and made available for comment during the 15-day comment period from November 25, 2009 to December 9, 2009:

**OSFM change to accommodate as follows:**

**[F] 904.11 Commercial cooking systems.** ~~The automatic fire extinguishing system for commercial cooking systems shall be of a type recognized for protection of commercial cooking equipment and exhaust systems of the type and arrangement protected. Preengineered automatic dry and wet chemical extinguishing systems shall be tested in accordance with UL 300 and listed and labeled for the intended application. Other types of automatic fire extinguishing systems shall be listed and labeled for specific use as protection for commercial cooking operations. The system shall be installed in accordance with this code, its listing and~~

~~the manufacturer's installation instructions. Automatic fire extinguishing systems of the following types shall be installed in accordance with the referenced standard indicated, as follows:~~

- ~~1. Carbon dioxide extinguishing systems, NFPA 12.~~
- ~~2. Automatic sprinkler systems, NFPA 13.~~
- ~~3. Foam water sprinkler system or foam water spray systems, NFPA 16.~~
- ~~4. Dry chemical extinguishing systems, NFPA 17.~~
- ~~5. Wet chemical extinguishing systems, NFPA 17A.~~

~~Commercial cooking equipment that produce grease laden vapors shall be provided with a Type I Hood, in accordance with the California Mechanical Code, and an automatic fire extinguishing system that is listed and labeled for its intended use as follows:~~

- ~~1. Wet chemical extinguishing system, complying with UL 300.~~
- ~~2. Carbon dioxide extinguishing systems,~~
- ~~3. Automatic fire sprinkler systems.~~

~~All existing dry chemical and wet chemical extinguishing systems shall comply with UL 300, no later than the second required servicing of the system following the effective date of this section,~~

~~**Exception** Public schools kitchens, without deep-fat fryers, shall be upgraded to a UL 300 compliant system during state funded modernization projects that are under the jurisdiction of the Division of the State Architect~~

~~All systems shall be installed in accordance with the California Mechanical Code, appropriate adopted standards, their listing and the manufacturers' installation instructions.~~

~~**Exception:** Factory-built commercial cooking recirculating systems that are tested, listed, labeled and installed in accordance with UL 710B. and listed, labeled and installed in accordance with Section 304.1 of the International Mechanical Code.~~

**Rational for modification (from Part 9):** The SFM is proposing modification to eliminate provisions no longer necessary as they relate to the servicing date deadline. The requirement deadline to change out an existing system has passed (January 1, 2009 being the last possible date). There is no reason to keep language as it would imply that existing non-UL 33 systems are still acceptable until the second service date after January 1, 2011. This language will clarify requirements for systems to comply with UL 300 as required under current 2007 CBC and CFC. Furthermore, it will also allow for consistent enforcement throughout the state. This modification has no change in regulatory effect.

For the specific purpose and rational for each section containing California regulation, modification, amendment or repeal see the Statement of Reasons for Part 9 California Fire Code (CFC). The SFM is correlating amendments for Part 2 California Building Code (CBC) which are derived from the amendments proposed to the CFC.

The promulgation and format of the IBC and IFC necessitate this action. Code sections are generally considered by the ICC Fire Code Development Committee for the IFC and correlated into the IBC where necessary. SFM is following the format of the code in these instances; where the primary code is the CFC and SFM is proposing amendments to the section, those same amendments are correlated into the CBC as amendments.

[Section 909.12]

**Name/Organization:** Rick Thornberry, PE, The Code Consortium, Inc. on behalf of the California Fire Safety Advisory Council (CFSAC)

**Comment:** The commenter identifies clarifying language for dampers to identify status using limit or proximity switches. The commenter states that the proposed amendment will help to clarify the intent of this paragraph being added to Section 909.12 for the situation where multiple dampers are grouped together to control the airflow through a large duct or plenum. It clarifies that when there are multiple dampers mechanically linked together and controlled by a separate actuator or actuators, that the group of dampers as a whole can be provided with a single limit or proximity switch in lieu of requiring each damper to have its own actuator and limit or proximity switch. It also further clarifies that the group of mechanically linked dampers could actually consist of more than one grouping of dampers to completely fill the opening in the duct or plenum with each mechanically linked group of dampers having its own actuator or actuators and its own limit or proximity switch.

**Response:** The SFM agrees with the commenter and made the following modifications as shown below and made available for comment during the 15-day comment period from November 25, 2009 to December 9, 2009:

**OSFM change to accommodate as follows:**

**909.12 Detection and control systems.** Fire detection systems providing control input or output signals to mechanical smoke control systems or elements thereof shall comply with the requirements of Section 907. Such systems shall be equipped with a control unit complying with UL 864 and listed as smoke control equipment.

Control systems for mechanical smoke control systems shall include provisions for verification. Verification shall include positive confirmation of actuation, testing, manual override, the presence of power downstream of all disconnects and, through a preprogrammed weekly test sequence, report abnormal conditions audibly, visually and by printed report.

The status of dampers shall be determined using limit or proximity switches installed at the damper or incorporated into the damper actuator. Where multiple dampers are grouped together in an assembly requiring one or more actuators, each group of dampers shall be independently controlled independently by a separate actuator and provided with an individual limit or proximity switch, or the dampers shall be permanently linked together and by permanent mechanical means into one or more groups controlled by one or more actuators with each group provided with a common limit or proximity switch.

The status of fans shall be determined by sensing the air flow downstream of the fans using pressure differential switches or transmitters, or by other means of positive proof of air flow where approved by the enforcing authority.

**Rational for modification (from Part 9):** The SFM is proposing modification to clarify the intent of this paragraph being added to Section 909.12 for the situation where multiple dampers are grouped together to control the airflow through a large duct or plenum. It clarifies that when there are multiple dampers mechanically linked together and controlled by a separate actuator or actuators that the group of dampers as a whole can be provided with a single limit or proximity switch in lieu of requiring each damper to have its own actuator and limit or proximity switch. It also further clarifies that the group of mechanically linked dampers could actually consist of more than one grouping of dampers to completely fill the opening in the duct or plenum with each mechanically linked group of dampers having its own actuator or actuators and its own limit or proximity switch.

For the specific purpose and rational for each section containing California regulation, modification, amendment or repeal see the Statement of Reasons for Part 9 California Fire Code (CFC). The SFM is correlating amendments for Part 2 California Building Code (CBC) which are derived from the amendments proposed to the CFC.

The promulgation and format of the IBC and IFC necessitate this action. Code sections are generally considered by the ICC Fire Code Development Committee for the IFC and correlated into the IBC where necessary. SFM is following the format of the code in these instances; where the primary code is the CFC and SFM is proposing amendments to the section, those same amendments are correlated into the CBC as amendments.

[Section 909.20.2.5]

**Name/Organization:** State Fire Marshal

**Comment:** The SFM proposed editorial modification.

**909.20.2.5 Relief vent.** A relief vent capable of discharging a minimum of 2,500 cubic feet per minute (1180 L/s) of air at the design pressure difference shall be located in the upper portion of such pressurized exit enclosures.

**Exception:** ~~Other~~ When approved by the enforcing agency, other engineered design methods approved by the enforcing agency capable of discharging a minimum of 2,500 cubic feet per minute (1180 L/s) of air at the design pressure difference shall be permitted.

**Rational for modification:** The SFM is proposing editorial modification by restructuring the text of the exception for clarity. Furthermore, it will also allow for consistent enforcement throughout the state. This modification has no change in regulatory effect.

[Section 1011.6]

**Name/Organization:** Manny Muniz, Manny Muniz Associates, LLC

**Comment:** The regulations originally adopted by the State Fire Marshal in the early 1990's included Group E Occupancies as required by Health and Safety Code Section 13143. Subsequent editions of the California Building Code (1989 Supplement, 1991 CBC, 1995 CBC, 1998 CBC, 2001 CBC) also included Group E Occupancies as required by Health and Safety Code Section 13143. It is not clear if the omission of Group E Occupancies in the 2007 California Building Code occurred as the result of a rulemaking proposal or whether the omission was the result of a publishing or other editorial error. The issue of what occupancies are required to have distinctive devices, signs, or other means that identify exits and can be felt or seen near the floor is clearly specified in Health & Safety Code Section 13143 and specifically includes "...school, or any similar occupancy of any capacity,...".

**Response:** The SFM agrees in part with the commenter and made the following modifications as shown below and made available for comment during the 15-day comment period from November 25, 2009 to December 9, 2009:

**OSFM change to accommodate as follows:**

**1011.6 Floor-level exit signs.** Where exit signs are required by Chapter 10, additional approved low-level exit signs which are internally or externally illuminated photoluminescent or self-luminous, shall be provided in all interior corridors of Group A, ~~E, occupancies, Group I and R-2.1~~ occupancies and in all interior rated exit corridors serving guest rooms of hotels in Group R, Division 1 occupancies.

**Exceptions:**

1. Group A occupancies that are protected throughout by an approved supervised fire sprinkler system.
2. Group E Occupancies where direct exits have been provided from each classroom.
- ~~2.3.~~ Group I and R-2.1 occupancies which are provided with smoke barriers constructed in accordance with Section 407.4
- ~~3.4.~~ Group I, Division 3-1-3 occupancies.

The bottom of the sign shall not be less than 6 inches (152 mm) or more than 8 inches (203 mm) above the floor level and shall indicate the path of exit travel. For exit and exit-access doors, the sign shall be on the door or adjacent to the door with the closest edge of the sign or marker within 4 inches (102 mm) of the door frame.

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

**Rational for modification:** The SFM reviewed the comment\ made during the 45 day comment period expressing concern that provisions relating to Group E occupancy floor level exit signs having not been adequately addressed during the triennial adoption of Title 24, Part 2, for the 2007 California Building Code (CBC). The SFM has reviewed the prior rulemaking records and concurs, this modification is necessary to correct an omission made during the SFM original adoption and amendments of the CBC. During the adoption and amendment of the 2007 CBC and CFC the initial draft language for these sections was not correctly brought forward from the 2001 CBC for Group E occupancies. The SFM is submitting this modification as a change without regulatory effect to Part 2, Chapter 10, Sections 1011.6 in accordance with Health and Safety Code 13143. This modification has no change in regulatory effect.

[Section 1016.1]

**Name/Organization:** State Fire Marshal

**Comment:** The SFM proposed editorial modification.

**TABLE 1016.1**  
**EXIT ACCESS TRAVEL DISTANCE<sup>a</sup>**

<b>OCCUPANCY</b>	<b>WITHOUT SPRINKLER SYSTEM (feet)</b>	<b>WITH SPRINKLER SYSTEM (feet)</b>
A, E, F-1, <del>I-1</del> , M, R, S-1	200	250 <sup>b</sup>

B	200	300 <sup>c</sup>
F-2, S-2, U	300	400 <sup>c</sup>
H-1	Not Permitted	75 <sup>c</sup>
H-2	Not Permitted	100 <sup>c</sup>
H-3	Not Permitted	150 <sup>c</sup>
H-4	Not Permitted	175 <sup>c</sup>
H-5	Not Permitted	200 <sup>c</sup>
I-2, <del>I-2.1</del> , I-3 <sup>d</sup> , I-4	150	200 <sup>c</sup>
L	<i>Not Permitted</i>	200 <sup>c</sup>

For SI: 1 foot = 304.8 mm.

a. See the following sections for modifications to exit access travel distance requirements:

Section 402.4: For the distance limitation in malls.

Section 404.9: For the distance limitation through an atrium space.

Section 407.4: For the distance limitation in Group I-2.

Sections 408.6.1 and 408.8.1: For the distance limitations in Group I-3.

Section 411.4: For the distance limitation in Special Amusement Buildings.

Section 1014.2.2: For the distance limitation in Group I-2 Hospital Suites.

Section 1015.4: For the distance limitation in refrigeration machinery rooms.

Section 1015.5: For the distance limitation in refrigerated rooms and spaces.

Section 1021.2: For buildings with one exit.

Section 1028.7: For increased limitation in assembly seating.

Section 1028.7: For increased limitation for assembly open-air seating.

Section 3103.4: For temporary structures.

Section 3104.9: For pedestrian walkways.

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

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

d. Not permitted in non-sprinklered Group I-3 Occupancies

**Rational for modification:** The SFM is proposing editorial modification to add Group I-2.1 occupancies to Table 1016.1, currently the table gives no direction. This modification has no change in regulatory effect.

#### COMMENTS RECEIVED AFTER CLOSE OF THE 45-DAY COMMENT PERIOD:

[Section 706A]

**Name/Organization:** Scott Young, (Stockton Products 11/25/09)

**Note:** This comment was received after the close of the 45-Day comment period and the commenter resubmitted the comment during the 15-Day Comment Period (see below).

[Section 706A]

**Name/Organization:** Tami Smull, Partner (Trimms Building Materials Inc.)

**Comment:** Supports the revision of code 706A regarding vents due to past confusion this had caused. Suggests that the 1/8 holes is acceptable.

**Response:** The SFM acknowledges the commenter's support for the proposed amendments to the California Building Standards Code.

#### COMMENTS RECEIVED DURING THE 15-DAY COMMENT PERIOD.

Subsequent to the original public comment period, text with the modifications clearly indicated, was made available to the public for a 15-day public written comment period from November 25, 2009 to December 9, 2009.

[Section 706A]

**Name/Organization: Larry Dunn, President (Fire Vents Safety Association 4<sup>th</sup> Letter 11/30/09)**

**Note:** subsequent to this 15-Day comment, the commenter signed on to a 15-Day Comment Period letter dated 12/9/09 (see below) in support of the language proposed by the SFM in the November, 24, 2009 15-Day Comment Period Modified Express Terms document.

**Comment 1:** The commenter appreciates the consideration given by the SFM to the public comments and acknowledges portions of the revised provisions.

**Comment 2:** Requests that the "resist the intrusion of flame and embers" language from the 2007 CBC be incorporated into the vent requirements section (proposed 706A.2).

**Response 1:** The SFM acknowledges the commenter's appreciation of the SFM code development process.

**Response 2:** The SFM disagrees with the comment that "...resist building ignition from the intrusion of burning embers and flame..." language should be made a requirement and no new code change is proposed to address this comment. Note that subsequent to this comment the commenter submitted a 15-Day Comment Period letter (dated 12/9/09) in support of the language proposed in the November, 24, 2009 15-Day Comment Period Modified Express Terms document.

Review of the proposed revisions and comments along with follow up discussions have resulted in the SFM decision that it would be inappropriate to make a specific requirement of a performance goal for which there is no recognized test standard to evaluate code compliance. Furthermore, it has never been the intent of the SFM to require "special vents" but simply to allow them as an option.

With the exception of roof covering classification for fire protection, wildfire exposure protection is a new concept to the building industry in many parts of California and was only incorporated into the California Building Standards Code in 2005. Until building materials that comply with recognized performance standards for wildfire protection are readily available, the SFM contends that the code must contain prescriptive options to facilitate code compliance.

The SFM believes it would be appropriate to consider requiring vents that comply with a vent test standard, such as ASTM, and the SFM will take the concerns expressed in the comment under consideration in the development of future rulemaking packages.

[Section 706A]

**Name/Organization: Larry Dumm, President (Gunter Manufacturing, Inc.)**

**Comment 1:** There should at least be a suggestion of the "...resist the intrusion of burning flame and embers..." language be included under 706A.2.

**Comment 2:** In support the current 15-Day language.

**Response 1:** The SFM disagrees with the comment that "...resist the intrusion of burning flame and embers..." language should be made a requirement and no new code change is proposed to address this comment. Note that subsequent to this comment the commenter submitted a 15-Day Comment Period letter (dated 12/9/09) in support of the language proposed in the November, 24, 2009 15-Day Comment Period Modified Express Terms document.

Review of the proposed revisions and comments along with follow up discussions have resulted in the SFM decision that it would be inappropriate to make a specific requirement of a performance goal for which there is no recognized test standard to evaluate code compliance. Furthermore, it has never been the intent of the SFM to require "special vents" but simply to allow them as an option.

With the exception of roof covering classification for fire protection, wildfire exposure protection is a new concept to the building industry in many parts of California and was only incorporated into the California Building Standards Code in 2005. Until building materials that comply with recognized performance standards for wildfire protection are readily available, the SFM contends that the code must contain prescriptive options to facilitate code compliance.

The SFM believes it would be appropriate to consider requiring vents that comply with a vent test standard, such as ASTM, and the SFM will take the concerns expressed in the comment under consideration in the development of future rulemaking packages.

**Response 2:** The SFM acknowledges the commenter's support for the proposed amendments to the California Building Standards Code.

[Section 706A]

**Name/Organization:** **Scott Young, (Stockton Products)**

**Comment 1:** The proposed code change allowing the use of 1/16-inch to 1/8-inch strengthens the code and better supports the stated intent of the code to resist flame and ember intrusion.

**Comment 2:** Suggests WUI designation better clarify the separation between wildland and urban residential and clarify application to commercial/industrial buildings regarding the use of continuous soffit vents.

**Response 1:** The SFM acknowledges the commenter's support for the proposed amendments to the California Building Standards Code.

**Response 2:** The remaining comments are outside the scope of the 15-Day comment period but SFM will consider the comments during training and implementation of the 2010 California Building Standards Code and during the development of future rulemaking packages.

[Section 706A]

**Name/Organization:** **Kelly Berkompas, President (Brandguard Vents)**

**Comment 1:** The commenter appreciates the consideration given by the SFM to the public comments.

**Comment 2:** The "...resist the intrusion of burning flame and embers..." language should be included under 706A.2.

**Response 1:** The SFM acknowledges the commenter's appreciation of the SFM code development process.

**Response 2:** The SFM disagrees with the comment that "...resist the intrusion of burning flame and embers..." language should be made a requirement and no new code change is proposed to address this comment. Note that subsequent to this comment the commenter submitted a 15-Day Comment Period letter (dated 12/9/09) in support of the language proposed in the November, 24, 2009 15-Day Comment Period Modified Express Terms document.

Review of the proposed revisions and comments along with follow up discussions have resulted in the SFM decision that it would be inappropriate to make a specific requirement of a performance goal for which there is no recognized test standard to evaluate code compliance. Furthermore, it has never been the intent of the SFM to require "special vents" but simply to allow them as an option.

With the exception of roof covering classification for fire protection, wildfire exposure protection is a new concept to the building industry in many parts of California and was only incorporated into the California Building Standards Code in 2005. Until building materials that comply with recognized performance standards for wildfire protection are readily available, the SFM contends that the code must contain prescriptive options to facilitate code compliance.

The SFM contends that it would be appropriate to consider requiring vents that comply with a vent test standard, such as ASTM, and the SFM will take the concerns expressed in the comment under consideration in the development of future rulemaking packages.

[Section 706A]

**Name/Organization:** **Rod Marusic, and Tom Carlson (Vivico LLC)**

**Comment:** Agrees with the new language.

**Response:** The SFM acknowledges the commenter's agreement with the proposed amendments to the California Building Standards Code.

[Section 706A]

**Name/Organization:** **Steve Beck, Director (Vulcan Technologies, Inc. 12/07/09)**

**Comment:** Accepts the 15-Day language.

**Response:** The SFM acknowledges the commenter's acceptance of the proposed amendments to the California Building Standards Code.

[Section 706A]

**Name/Organization: Coalition of Groups providing a joint support letter below (12/09/09):**

**Fire Vents Safety Association  
California Building Officials, State Code Committee  
California Business Properties Association  
California Apartment Association  
California Building Industry Association  
Building Industry Association of Southern California  
Building Industry Association of San Diego County  
Building Industry Association of Orange County  
Building Industry Association - LA/Ventura Chapter  
Building Industry Association – Riverside County Chapter**

**Comment:** The groups cited above support the 15-Day language proposed by the SFM on November 24, 2009.

**Response:** The SFM acknowledges the commenter's support of the proposed amendments to the California Building Standards Code.

[Section 909.12]

**Name/Organization: John A. Lee, P.E.**

**Comments:** The commenter disagrees with modification and identifies that a single limit switch to monitor grouped dampers is inconsistent with confirming actuation because multiple dampers are susceptible to linkage failures and actuator failures, which cannot be detected by a single limit switch. The commenter further states that such modification conflicts with published ICC guidance.

**Response:** Item 1. The commenter states that a single limit switch used to monitor the position of group dampers is inconsistent with the current requirements for confirmation of actuation. The current requirements for verification are found in the second paragraph of Section 909.12 Detection and Control Systems.

The commenter goes on to suggest that the single limit switch fails to satisfy the requirement because multiple dampers may be susceptible to linkage and actuator failures which cannot be detected by a single limit switch. However, multiple dampers which are indicated as "multiple assemblies" in UL 555S, the standard for listing smoke dampers used in smoke control systems, are required to pass several severe performance tests to assure the reliability and durability of the damper assembly, including the actuators and linkages. In fact, one of the tests in UL 555S requires that the damper assemblies be cycled a minimum 20,000 times. Also, Section 6 Actuators of UL 555S requires the actuator to "be formed and assembled to have the strength and rigidity required to resist the abuses to which it is subjected, without the loosening or displacement of any parts, or other serious defects."

The commenter further states that during commissioning of smoke control systems, his company has experienced linkage slippage and actuator failure in group damper assemblies. Linkage slippage and actuator failure are critical and can be devastating to the performance of the smoke control system, however this seems to indicate that there is either a problem in the field with inappropriate dampers being used that are not listed per UL 555S as required by Section 909.10.4 or the dampers are not being installed in accordance with the manufacturer's listing instructions. Or, possibly, there could be a problem with the installation and not adequately testing the actuators and linkages of group assemblies known as multiple assemblies in UL 555S. At any rate, this would not be an issue or a problem that is related to the contents of the paragraph under discussion.

Item 2. The commenter states that the proposed modification to Section 909.12 is in direct conflict with published ICC guidance because it fails to detect linkage or actuator failure. It should be noted that the code is a minimum standard that specifies performance to be achieved. This performance is verified in the field by initial testing, as well as follow up inspection, maintenance, and additional periodic testing, as specified in Section 909.20. And, as stated above, the dampers used in smoke control systems are required to be listed in accordance with UL 555S per Section 909.10.4.

The guide referenced in the commenter's comment is merely that – a guide. It is not intended to represent minimum code requirements nor does it represent the official opinion of the ICC. It is provided for use by designers of smoke control systems and for the enforcing agency as a tool. It indicates several options for determining how to monitor automatic dampers used in smoke control systems and suggests ways that may provide a reliable means for accomplishing positive verification that may exceed that required by the code minimums. So this is not a conflict; it is simply a matter of design versus minimum code requirements.

However, following multiple discussions with the commenter and the original proponent of the modifications to the 45-day language have lead to further non-substantive revisions to the language. Revisions made clarify the intent of damper linking by "...reliable and durable mechanical or otherwise permanent means..." opposed to "permanent mechanical means" (which may have excluded "welding" as an approved fastening method.). Further editorial/non-substantive revisions eliminate redundant language.

**OSFM change to accommodate as follows:**

**909.12 Detection and control systems.** Fire detection systems providing control input or output signals to mechanical smoke control systems or elements thereof shall comply with the requirements of Section 907. Such systems shall be equipped with a control unit complying with UL 864 and listed as smoke control equipment.

Control systems for mechanical smoke control systems shall include provisions for verification. Verification shall include positive confirmation of actuation, testing, manual override, the presence of power downstream of all disconnects and, through a preprogrammed weekly test sequence, report abnormal conditions audibly, visually and by printed report.

The status of dampers shall be determined using limit or proximity switches installed at the damper or incorporated into the damper actuator. Where multiple dampers are grouped together in an assembly requiring one or more actuators, each damper shall be independently controlled by a separate actuator and provided with an individual limit or proximity switch, or the dampers shall be linked together by a reliable and durable mechanical or otherwise permanent mechanical means into one or more groups, controlled by one or more actuators with each group provided with a common limit or proximity switch.

The status of fans shall be determined by sensing the air flow downstream of the fans using pressure differential switches or transmitters, or by other means of positive proof of air flow where approved by the enforcing authority.

**DETERMINATION OF ALTERNATIVES CONSIDERED AND EFFECT ON PRIVATE PERSONS**

(Government Code Section 11346.9(a)(4))

The SFM has determined that no alternative considered would be more effective in carrying out the purpose for which the regulation is proposed or would be as effective and less burdensome to affected private persons than the adopted regulation.

**REJECTED PROPOSED ALTERNATIVE THAT WOULD LESSEN THE ADVERSE ECONOMIC IMPACT ON SMALL BUSINESSES**

(Government Code Section 11346.9(a)(5))

No proposed alternatives were received by the SFM.

**COMMENTS MADE BY THE OFFICE OF SMALL BUSINESS ADVOCATE**

(Government Code Section 11347.6) [List each comment by the Trade and Commerce Agency directed at the proposed regulation or at the procedures followed by the Agency in proposing or adopting the regulation, and a response to each comment, including the basis why a comment was rejected, if applicable.]

No comments were received from the Office of Small Business Advocate.

**COMMENTS MADE BY THE TRADE AND COMMERCE AGENCY**

(Government Code Section 11347.6) [List each comment by the Trade and Commerce Agency directed at the proposed regulation or at the procedures followed by the Agency in proposing or adopting the regulation, and a response to each comment, including the basis why a comment was rejected, if applicable.]

No comments were received from the Trade and Commerce Agency.