

SIGNIFICANT CHANGES TO THE CALIFORNIA FIRE CODE  
2016 EDITION

By Kevin Reinertson, Fulton R. Cochran, CBO, CFCO and Kevin H Scott\  
 A book report prepared by the Sacramento Valley Association of Building Officials  
 Code Development and Review Committee

NOTE: This report is not intended to replace the book Significant Changes to the California Fire Code 2016 Edition. SVABO members are encouraged to purchase the publication for insights, additional information, and comments regarding the significance of the changes.

Section	Code Change	Significance	Remarks
<b>PART 1 ADMINISTRATION AND DEFINITIONS</b>			
202	“Congregate Health Living Facility” has been revised	The definition has been revised to correlate with current California law. The revised definition provides greater specifics related to number of beds, population of the County where the facility may be located, and types of services to be provided.	
202	“Persons with Intellectual Disabilities, Profoundly or Severely” has been revised.	The prior definition was in conflict with State Law.	
202	“Occupancy Classification for Group E, day care facilities within places of worship has been revised.	Prior CFC did not specifically address day care in places of worship. This code modification reinstates a portion of the IFC/IBC to specifically allow nonlicensed day care to operate during religious functions as a part of the primary occupancy.	
<b>PART 2 GENERAL SAFETY PROVISIONS</b>			
312.3	The provisions relating to “other” vehicle barriers have been revised.	This change authorizes the Code Official barriers other than posts.	
315.6	New provisions prohibit storage in Plenums and requires abandoned wiring in Plenums to be removed.		
403	Section 403 has been completely revised and the content updated for consistency.	To assist the fire code official, many provisions of this chapter have been relocated in an attempt to consolidate into one section all of the requirements for emergency preparedness	
<b>PART 3 BUILDING EQUIPMENT AND DESIGN FEATURES</b>			

604.1	Section changes to bring the CBC requirements related to emergency and standby power systems into the CFC to provide for consistency and uniform enforcement. Load-transfer timing and duration are both quantified to assist the fire code official. Criteria have been added for Group I-2 occupancies that are located in flood hazard areas.		
604.2.6	New language alerts the designer of essential electrical systems of the requirements of CBC Chapter 27 and NFPA 99.		
605.11	The requirements for solar PV systems have been clarified and coordinated with the CBC and the California Electrical Code.	The book provides a table cross referencing Section 605.11 in the 2013 CFC and 2016 CFC.	
606.12	Pressure relief devices for Mechanical Refrigeration.	The revisions reference Institute of Ammonia Refrigeration (IAR) standards and one ASHRAE standard for design and operation of ammonia refrigeration systems	
607.6	New section "Methods to prevent water from infiltrating into a hoistway enclosure required by Section 3307.4 and Section 3008.4 in the CBC shall be maintained." Added to fire service elevator requirements.	The requirement to prevent water from entering the hoistway does not apply to all elevators, only fire service elevators. The source of water that must be addressed is from fire sprinklers and not firefighter hoses. The water of concern is limited to sprinkler activations outside the lobby.	
609.2	Modification that states that Class I hoods are not required over electric cooking appliances when the appliances produce a minimal amount of grease laden vapors.		
609.3.3.2	Code section now references anew standard ANSI/IKECA C10 that addresses the cleaning of commercial cooking exhaust hoods and ducts.		
609.4	Listed flexible connectors are required		

	between the fixed fuel-gas piping and cooking appliances on casters or other appliances that are moved for cleaning.		
611	A new Section 611 on hyperbaric facilities has been added to the CFC. The section requires that the facilities be inspected, tested and maintained in accordance with NFPA 99. Records shall be maintained by the Code Official.		
807	The requirements for decorative materials, other than decorative vegetation have been reorganized and clarified.		
901.4.1	The code has been clarified concerning how an inspector can determine if a fire protection system is to be considered a "required" system or "non-required" system: "A fire protection system for which a design option exception or reduction to the provisions of this code or the CBC has been granted shall be considered a required system"		
901.8.2	Removal of Existing Occupant-use Hose Lines. Authorizes the code official to permit the removal of existing occupant use hose lines under certain specified conditions.		
903.2.1	Modifies the requirements for automatic sprinkler systems in A Occupancies: requires that where fire sprinklers are required for a Group A Occupancy located on other than the level of exit discharge, fire sprinklers must be installed on all stories leading to all levels of exit discharge that are used by the Group A occupancy.		
903.2.1.6	Assembly Occupancies on roofs.	Fire sprinklers are now required on all floors between the occupied roof and the level of exit discharge when	

		assembly uses occur on the rooftop of buildings and the occupant load exceeds 100 for Group A2 or 300 for other A Occupancies.	
903.2.1.7	Fire sprinklers for multiple Group A occupancies. When multiple Group A1, A2, A3 or A4 fire areas share egress paths, the occupant load will be combined for determining if a fire sprinkler system is required. The occupant load threshold is 300 or more.		
903.2.9	Commercial Motor Vehicles – Fire Sprinkler Requirement.	The code change provides a specific definition for commercial motor vehicles, which is applicable when the fire code official is determining whether a fire sprinkler system is required in specific occupancies.	
903.2.11.3	Section has been clarified how the height of a building is to be measured and that this section applies to buildings that have one or more stories.	Measurement is now specifically to the finished floor, not the lowest level of fire vehicle access.	
903.2.1.1.1, 508.1.6	Exempt locations – sprinklers not required when automatic Fire Detection System is provided.	This change introduces the concept of Machine-Room-Less elevators (MRLs) to the CFC and provides correlation with ASME A17.1. In the 2013 CFC, sprinklers are provided for elevator machine rooms and machinery spaces. This change expands the exemption to the control rooms and control spaces associated occupant evacuation elevators and the code has been changes regarding area smoke detection and fire command center requirements to reflect the defining of elevator rooms and control spaces.	
903.3.1.2	Bathrooms are now exempt from fire sprinkler requirements as follows: Not an R4 Occupancy Bathrooms do not exceed 55 square feet. Bathrooms must be located within an		

	individual dwelling unit or sleeping unit. Walls and ceilings must be limited combustible materials (35 min).		
903.3.1.2	Change correlates the height limits for NFPA 13R with NFPA 13R.	4 stories in height maximum 60 feet maximum above the grade plane Stories measured from the horizontal assembly creating separate buildings ("Podium").	
903.3.1.2.2, 1027.6, 1104.22	Open ended corridor is defined. Sprinklers required in open ended corridors and associated exterior stairways and ramps. Revisions to section 1027 add clarity regarding separation requirements for open-ended corridors. A Chapter 11 requirement that previously required existing open ended corridors in existing buildings to be retroactively sprinklered.		
903.3.8	Limited area sprinkler systems	The number of sprinkler heads that can be used in a limited area sprinkler system from 20 to 6 heads. Change also provided additional criteria regarding the use of limited area sprinklers.	
904.2 904.11	This change recognizes that, under limited circumstances, water mist systems may be used as an alternate to conventional sprinkler systems.	Automatic water mist systems are most commonly used for special protection applications for special hazard applications such as computer room subfloors and machinery spaces.	
905.3.11	Provisions have been added to adopt and correlate NFPA 130 Standard for Fixed Guideway Transit and Passenger Rail Systems.		
907.1.2	Fire Alarm Shop Drawings – Design Minimum Audibility Level.	The fire alarm designer is now required to provide the design minimum audibility level for occupant notification, and the phrase "where applicable" has been added to the charging language to clarify that not all items on the list may be applicable for installation.	

907.2.3	Group E Manual Fire Alarm System.	The threshold for requiring a manual fire alarm system has been raised from 30 occupants to 50. The emergency voice/alarm communication system requirement has been raised to 100 occupants.	
907.2.6, 907.5.2.1	Fire alarm and Detection Systems for Group I-2 Occupancies.	The change to the exception on Section 907.2.6 links the use of “private mode” signaling under NFPA 72 to the fire safety and evacuation plan requirements of Chapter 4. Section 907.5.2.1 has been revised to allow the use of a private mode audible alarm in critical care areas.	
907.2.6.4	Fire Alarm and Detection Systems Large-Family Day Care.	This modification provides clarity and eliminates contradicting provisions for fire alarm signals in the large-family day care homes.	
907.2.9.3	Fire Alarm and Detection Systems fro Group R College and University Buildings.	The addition of the language “occupancies operated by a college or university for student or staff housing” is intended to clarify this section and the requirement for automatic smoke detection.  An automatic smoke detection system is not required in buildings that do not have interior corridors serving sleeping units or dwelling units and where the sleeping unit or dwelling unit either has a means of egress door directly opening to an exterior exit acces that leads directly to an exit or a means of egress door opening directly to an exit.	
907.2.11.7	Smoke Detection System	New section providing the option of using a smoke detection system in lieu of single-station and multiple-station alarms in Groups R-2, R2.1, R-3 and R-4. In larger buildings of R-2 Occupancies this can provide significant savings because the installation and subsequent testing od duplicate devices within a dwelling unit or sleeping unit are avoided.	
907.2.14	Fire Alarm and Detection Systems for Atriums.	Clarifies that smoke detection in atriums is based on the rational analysis prescribed in Section 909.4 and that a generic requirement for installation of smoke	

		detectors is not necessarily warranted.	
907.2.22.1, 907.2.22.2	Smoke Detection for Airport Traffic Control Towers.	New section providing specific requirements for smoke detectors located in airport traffic control towers. A different criteria is used depending upon sprinklers or no sprinklers.	
907.5.2.2.4	Emergency Voice/alarm Communications Captions.	This modification provides the scoping language not previously included in 907.5.2.2.4 for pre-recorded or real-time captions in emergency/voice alarm communications systems.	
909.4.7	Smoke Control System interaction.	New section adding the requirement that the design shall consider the interaction effects of the operation of multiple smoke control systems for all design scenarios.	
909.6.3	Smoke Control Systems – Pressurized Stairways and Elevator Hoistways.	In conjunction with 909.21, this change brings the requirements for pressurization that were previously only included in the CBC into the CFC. The lack of duplicity in both Codes has led some designers to uncertainty as to the appropriate authority for these sections.	
909.12.1, 909.20.6	Verification of Mechanical Smoke Control Systems.	This modification allows the fire code official the discretion to by-pass individual components from the weekly preprogrammed smoke control verification testing. It also requires testing of all bypassed components on a semiannual basis.	
909.21	Elevator Hoistway Pressurization Alternate.	This change provides the option of pressurizing the elevator hoistway in lieu of enclosing the elevator lobby. Additionally 4 exceptions have been added to the pressurization requirements that, in effect, provide an alternate way for the smoke control system to be designed.	
910	Smoke and Heat Removal.	This section has been extensively rewritten . It provides direction on Group F-1 and S-1 occupancies greater than 50,000 SF of undivided area and piled high combustible storage. Criteria for using either	

		heat or smoke vents for mechanical smoke removal have been provided.	
913.2.2	Electric Circuits Supplying Fire Pumps.	This new provision references UL Standard 2196 which provides for survivability for fire pump power-supply wiring.	
915	Carbon Monoxide Detection	The requirements for carbon monoxide detection have been completely rewritten to clarify the provisions relocated to new section 913. They have also been expanded to address classrooms in Group E occupancies.	
Chapter 10	Means of Egress.	This Chapter has been reformatted with the provisions for egress requirements from a space or story being consolidated into new Section 1006 and a New Section 1007.	
1004.1.1	Cumulative Occupant Loads.	The determination of the cumulative design occupant load for intervening spaces, adjacent levels and adjacent stories have been clarified and combined into a single section. A subsection has been added to clarify that the number of occupants from adjacent stories are not added together unless there is a convergence of egress at an intermediate level by occupants leaving a story from above or below a point.	
Table 1004.1.2	Occupant Load Factors for Mercantile Occupancies.	Mercantile Occupancies now have an Occupant Load Factor of 60, regardless of the story in which they occur.	
1006, 1007	Number of Exits and Exit Access Doorways.	This modification has consolidated the egress requirements for rooms and spaces along with those for stories into a single location. It has also created a single section to deal with the number of exits (Section 1006) and a separate Section (1007) to deal with the arrangement and separation requirements.	
1007.1	Door and Exit Access Doorway Configuration.	This section now provides specific information regarding the point where exit separation is to be	



		measured.	
1009.8	Two-Way Communication.	Change clarifies that the two-way communications system may serve multiple elevators and that the systems are not required for service elevators, freight elevators or private residence elevators.	
1010.1.9	Door Operations – Locking Systems.	Numerous provisions throughout these locking provisions help clarify requirements and their application by using consistent terminology. These changes allow an existing locking system exception for main doors that are not located at the exterior of the building.	
1011.15, 1011.16	Ships Ladders and Ladders	This section has been added to list the locations where ladders can be used for access. Permanent ladders must follow the provisions of Section 304.3 of the CMC.	
1014.8	Handrail Projections.	Sections now provide guidance and enforceable language so that the building official can determine when a pair of intermediate handrails begins to obstruct the required egress width of a stairway.	
1016.2	Egress through Intervening Spaces.	Modification allows occupant egress through an elevator lobby provided access to at least one exit is available without the occupant passing through the lobby. It addresses the extent of the required elevator lobby protection.	
1017.2.2	Travel Distance Increase for Groups F-1 and S-1	This modification allows an increase to exit access travel distance within Group F-1 and S-1 occupancies meeting specific requirements. Also, it restores a travel distance that was allowed on the 2006 Code but not allowed in the 2009 or 2012 Editions.	
1018.3, 1018.5	Aisles.	The required widths of aisles on Groups B and M occupancies as well as aisles in other occupancies are now tied to the required widths for corridors and not just to the capacity based on the occupant load served.	

1020.2	Corridor Width and Capacity.	A new exception helps to clarify the width requirement for corridors in Group I-2 occupancies for areas where bed or stretcher movement is not necessary.	
1023.3.1	Stairway Extension	An interior exit stairway is now permitted to continue directly to an exit passageway without the requirement for a fire door assembly to separate the two elements.	
1029.13.2.2.1	Stepped Aisle Construction Tolerances.	New section limits the variation allowed between adjacent risers within a stepped aisle. The previous Code did not limit the variation for these risers.	
1103.4.1	Vertical Openings in Existing I-2 and I-3 Occupancies	Retroactive construction of a 1-hour fire-resistance-rated separation is now required in existing hospitals and jails to protect vertical openings. Alternatives have been included that can be used in lieu of the separation to mitigate the hazard created by the vertical openings.	
1103.7.6.	Manual Fire Alarm Systems in Existing Group R-2 Occupancies.	The installation of interconnected smoke alarms within dwellings units along with the fire-resistance-rated separation of dwelling units is now allowed as an alternative to the retroactive installation of a manual fire alarm system throughout the building in existing Group R02 occupancies.	
1105	Construction Requirements for Existing I-2 Occupancies.	Retroactive construction requirements have been added to the CFC to provide a minimum level for fire and life safety in existing Group I-2 occupancies.	
PART 4 SPECIAL OCCUPANCIES			
2307.4	LP-gas Dispensing Operations	LP-gas requirements have been revised to improve correlation with other industry standards and to allow self-service LP-gas refueling by the public.	
3103.9.1	Structural Design of Multistory Tents and Membrane Structures.	Temporary multistory tents and membrane structures are now required to comply with the structural requirements in the CBC.	
3105	Temporary Stage Canopies	Temporary stage canopies are now permitted and	

		regulated under Chapter 31 and must have structurally sound design.	
3203.2	Class I Commodities.	A building containing Class 1 commodities stored on plastic pallets will now require a fire sprinkler system to be designed based on the NFPA 13 criteria. The allowance to include any solid-deck polyethylene pallets are acceptable for Class I commodities has been deleted.	
3206.4.1	Plastic pallets used in High-piled Combustible Storage.	NFPA 13 provisions are now referenced to address the use of plastic pallets in high-piled combustible storage. Plastic pallets can affect the classification of the commodity.	
3206.9.3	Dead-end Aisles in High-piled Combustible Storage.	Specific limitations are now provided for dead-end corridors and aisles in high-piles storage areas. These limits are more restrictive than the common path of egress travel limitations due to hazards associated with high-piled combustible storage.	
3306.2	Cleaning with Flammable Gas.	Safety requirements for the purging and cleaning of flammable gas piping systems have been added to the CFC.	
3504.1.7, 3510	Hot Work on Flammable and Combustible Liquid Storage Tanks.	Requirments for hot work on tanks containing flammable and combustible liquids is now included in the 2016 CFC.	
PART 5 HAZARDOUS MATERIALS			
Table 5003.1.1(1)	Maximum Allowable Quantities of Hazardous Materials.	Table 5003.1.1(1) contains several revisions related to consumer fireworks, combustible fibers, unstable reactive materials, alcohol-based hand rubs and gas rooms	
5101.4, 5104	Plastic Aerosol Containers	Aerosol products are now allowed in plastic containers up to 33.8 fluid ounces, or 1 liter size. Specific product criteria must be met if the plastic containers exceed 4 fluid ounces.	
5307	Carbon Dioxide (CO2) Systems Used in Beverage Dispensing Applications.	Large refrigerated carbon dioxide systems create a life safety hazard. Regulation of these systems is now	

		included in the 2016 CFC.	
Chapter 36	Explosives and Fireworks.	California's initial adoption and amendment of Chapter 56. Significant modifications were made to correlate with state and federal laws, the Bureau of Alcohol, Tobacco and Firearms, California Code of Regulations Title 19, and other national standards. Additional provisions from California's Code of Regulations (CCR), Title 19, provisions were brought forward and reprinted or referenced into the Chapter relating to explosives, small arms ammunition, fireworks and experimental rockets.	
5704.2.9.7.3	Flame Arrestors on Protected Above-ground Storage Tanks.	Flame arrestors or pressure-vacuum (PV) breather valves are no longer required on all protected above-ground storage tanks, only those containing Class 1 flammable liquids.	
5808	Hydrogen Fuel Gas Rooms.	Requirements applicable to a hydrogen fuel gas room have been added to the CFC, providing correlation with industry standards.	
PART 6 REFERENCED STANDARDS			
Chapter 80	Referenced Standards	Updated NFPA referenced standards to latest editions.	
PART 7 APPENDICES A THROUGH M			
Appendix Chapter 4	Special Detailed Requirements Based on Use and Occupancy.	Specific language has been added for when floor separations are required in Group R-3.1 occupancies.	
Appendix A, Chapter 4, Section 436, 452, 455	Special Detailed Requirements	Additional provisions that are contained in the CBC Chapter 4 for certain occupancies have been reproduced into Appendix Chapter 4 for ease of use by the fire official.	
Appendix Chapter B, B105	Fire Flow Requirements for Buildings.		
	Criteria have been added to Appendix B that		

