

## 2016 California Building Code (CBC) Changes

### SUMMARY

Most of the significant changes are modifications to existing requirements or additional requirements. Several of the modification omitted code language and referenced various standards. There were also clarifications to align the CBC with the CRC and ADA. NOTE: Because most Master Plan Dwellings are designed to the CRC, the majority of CBC changes affecting dwellings will not affect most master plans.

### SIGNIFICANT CHANGES

NEW-CHANGE		CBC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO	
D	Z	101.2	<b>Exempt Residential Accessory Structures.</b> Modifications to the California Residential Code (CRC) provisions have been reflected in the exception to CBC Section 101.2 such that the limiting height of a CRC structure accessory to a dwelling unit or townhouse has increased from two stories to three stories above grade plane.	Z	D
D	Z	111.1	<b>Change of Use or Occupancy.</b> A change in a building's use, or portion of a building's use, with no change in its occupancy classification now requires that a new certification of occupancy be issued by the building official.	D	Z
Z	D	202.0	<b>Definitions.</b> Covered Multifamily Dwellings (HCD 1-AC), Horizontal Exit, Platform, Public Use Areas and Treated Wood have been modified or clarified. And Private Garage has been added.	D	Z
D	Z	304.1	<b>Use and Occupancy Classification.</b> Small food processing establishments and commercial kitchens not associated with dining facilities are now considered a Group B occupancies.	D	Z
D	Z	304.1	<b>Business Group B.</b> The Group B classification for training and skill development uses has been clarified to address the ages of the occupants using the facility, the occupant load limitation where the facility is used for assembly purposes, and the types of permitted uses.	D	Z
D	Z	305.2.1	<b>Within places of religious worship.</b> Day care uses during religious functions are part of the primary occupancy.	D	Z
D	Z	306.2	<b>Moderate-Hazard Factory Industrial, Group F-1.</b> A classification of Group F-1 is now applied only to larger-sized food processing facilities and commercial kitchens not associated with dining facilities.	D	Z
D	Z	310.5	<b>Group R-3 Lodging Houses.</b> Lodging houses are now specifically defined in Chapter 2 and are typically permitted to be constructed in accordance with the California Residential Code (CRC) if they contain no more than five guest rooms.	D	Z
Z	D	310.5.2	<b>Lodging House (HCD 1 &amp; HCD 1-AC).</b> A new section and definition for Lodging Houses has been added.	D	Z

**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CBC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D [81]	311.1.1	<b>Accessory Storage Spaces.</b> Storage rooms less than 100 square feet in floor area are not to be classified as Group S, but rather as the same occupancy as the portion of the building to which they are accessory.	D [81]
D [81]	404.5	<b>Smoke Control.</b> Smoke control is now required in atriums in Group 1-2 occupancies, as well as those in Group 1-1 occupancies classified as Condition 2, that connect two stories.	D [81]
D [81]	404.9, 404.10	<b>Exit Access Travel Distance.</b> The three distinct travel distance conditions that could potentially occur for areas open to an atrium are now each addressed individually in order to clarify their application.	D cgJ
I I IXI	406.3.1	<b>Classification.</b> Increase in area of private garages.	IXI I I
D [81]	406.3.2	<b>Clear Height.</b> The allowance for a 7-foot ceiling height previously permitted for public garages has now been extended to private garages and carports.	cgJ D
D [81]	406.6.2	<b>Ventilation.</b> Large Group R-3 accessory garages do not require mechanical ventilation.	D cgJ
[81] D	407.2.5	<b>Nursing Home Housing Units.</b> Shared living spaces, group meeting areas, and multipurpose therapeutic spaces are now permitted to be open to corridors in Group 1-2 nursing homes provided five specific conditions are met.	D [81]
[81] D	407.2.6	<b>Nursing Home Cooking Facilities.</b> A room or space containing a cooking facility with domestic cooking appliances is now permitted to be open to the corridor in a Group 1-2 nursing home provided six specific conditions are met.	D cgJ
[81] D	410.3.5	<b>Proscenium Curtain.</b> An additional method of stage proscenium opening protection has now been provided that permits the use of horizontal sliding doors having a minimum fire protection rating of 1-hour.	D [81]
D [81]	412.7	<b>Aircraft Manufacturing Facilities.</b> The travel distance allowances for aircraft manufacturing facilities have been significantly increased based upon a combination of the manufacturing area's height and floor area.	D cgJ
D cgJ	420.7	<b>(HCD-1) Construction waste management.</b> The percentage of nonhazardous construction and demolition waste recycling has increased to 65%.	cgJ D
[81] D	420.9	<b>(HCD-1) Electric vehicle (EV) charging for new construction.</b> Installation of EV charging infrastructure in new construction.	[81] D
D [81]	444	<b>Explosives [SMF].</b> The section on explosives has been replaced by CFC Chapter 56.	D cgJ
D cgJ	503	<b>General Building Height and Area Limitations.</b> The provisions regulating building height and area limitations have been extensively revised with no change in technical application in order to provide an increased degree of user-friendliness and technical consistency.	D cgJ

**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CBC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D	Tables 504.3, 504.4	<b>Height in Feet and Number of Stories.</b> In order to increase the degree of user-friendliness of the process by which the allowable building height provisions are determined Table 503 has now been reformatted as Tables 504.3 (allowable height in feet) and 504.3 (allowable number of stories above grade plane), and any applicable sprinkler increase has been incorporated directly into the new tables.	D
D	505.2.3, Exception 2	<b>Openness.</b> Direct access to at least one exit at the mezzanine level is no longer required for those enclosed mezzanines regulated by Exception 2 of Section 505.2.3.	D
D	Table 506.2	<b>Allowable Area Determination.</b> In order to increase the degree of user-friendliness of the process by which the allowable building area provisions are determined, Table 503 has now been reformatted as new Table 506.2 (allowable area factor in square feet), and any applicable sprinkler increase has been incorporated directly into the new table.	D
D	507.1	<b>Basements in Unlimited Area Buildings - General.</b> The allowance of a single-story basement in unlimited area buildings has now been clarified.	D
D	507.9	<b>Unlimited Mixed Occupancy Buildings with Group H-5.</b> Group H-5 buildings are now permitted to be unlimited in area under the special provisions of Section 507.	D
D	510.2	<b>Horizontal Building Separation Allowance.</b> In the special provisions of Section 510.2 addressing pedestal buildings, there is no longer a limit of one story above grade plane for that portion of the structure that occurs below the 3-hour horizontal separation.	D
D	Table 601, Footnoted	<b>One-Hour Substitution - General.</b> Footnote d to Table 601 addressing 1-hour substitution has been deleted based on the extremely limited applicability of the footnote, along with the significant potential for misuse.	D rgJ
D	602.4	<b>Type IV.</b> Equivalent size dimensions for structural composite lumber (SCL) in relationship to solid-sawn Type IV heavy-timber members have been introduced into Table 602.4.	D rgJ
D D	602.4.2	<b>Cross-Laminated Timber in Exterior Walls.</b> Cross-laminated timber is now permitted within the exterior walls of Type IV buildings where protected by one of three specified materials.	D rgJ
D	603.1, Item 26	<b>Allowable Materials.</b> Walls of freezers and coolers located in buildings of Type I and II construction may now be constructed of wood materials provided three conditions are met.	D rgJ
D	704.4	<b>Protection of Secondary Members.</b> For structural fire protection purposes, the secondary member protection requirements have been reformatted and clarifies that the secondary members in a horizontal assembly can be protected by a ceiling membrane.	D

**SIGNIFICANT CHANGES** (cont'd)

NEW- CHANGE	CBC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D 181	705.2	<b>Projections.</b> The minimum required separation between the leading edge of a projection and the line used to determine the fire separation distance has been modified in a manner that provides for a significant increase in the separation required.	D 181
D 181	705.2.3	<b>Combustible Projections.</b> The provisions regulating combustible projections adjacent to an interior lot line or other line used to determine fire separation distance have been modified to provide a simple and consistent approach that is less restrictive than previously determined.	D 181
D 181	705.3	<b>Buildings on the Same Lot.</b> Openings are permitted through adjacent exterior walls of a Group S-2 parking garage and a Group R-2 building on the same lot where such buildings are regulated as two buildings on the same lot and the fire separation distance is zero.	D 181
D 181	705.6	<b>Structural Stability.</b> Interior structural elements, such as floor or roof elements, that brace exterior walls are no longer required to be regulated for fire resistance due to the exterior wall's rating regardless of the building's proximity to a lot line.	D 181
D 181	705.8.5	<b>Vertical Separation of Openings.</b> Where a fire-resistance-rated wall is provided to address the concern of a fire spreading out of the building and then exposing an upper-level opening, the exterior wall must be rated from both sides, regardless of the fire separation distance.	D 181
D 181	706A.2 and 706A.3	<b>Ventilation Opening Protection - Requirements.</b> ASTM E2886 is an allowable test standard for exterior vent protection from ember penetration.	D 181
D 181	706.2	<b>Structural Stability.</b> The reference to NFPA 221 for fire wall design and construction has been expanded to permit the use of the "tied" and "cantilevered" options addressed in the standard.	D 181
D 181	707A.5 through 707A.9	<b>Enclosed Roof Eaves and Roof Eave Soffits.</b> The allowance of ASTM E2957 test for the protection of eaves and other exterior projections.	D [8J
D 181	709.4	<b>Continuity.</b> The horizontal continuity of smoke barriers has been clarified for smoke barriers used to create smoke compartments, as well as for smoke barrier walls intended to create enclosures for elevator lobbies or areas of refuge.	D 181
D 181	711,712	<b>Horizontal Assemblies and Vertical Openings - General.</b> The reorganization of Sections 711 and 712 has been continued such that Section 711 now contains only the construction requirements for floor and roof assemblies, and Section 712 only contains the requirements related to the protection of vertical openings.	D [81

**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CBC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D cg]	714.4.2	<b>Membrane Penetrations.</b> Where the double top plates of a wall interrupt the ceiling membrane of a horizontal assembly, the wall must now be sheathed on with Type X gypsum wallboard. The wall will not require a fire-resistance rating unless needed due to some other code requirement.	D cg]
D cg]	717.3, 717.5	<b>Corridor Damper.</b> Where a duct penetration occurs in the ceiling of a fire-resistance-rated corridor where the lid of the corridor is constructed using a corridor wall placed horizontally, a corridor damper is now specifically mandated.	D cg]
cg] D	903.2.1.6	<b>Assembly Occupancies on Roofs.</b> An automatic sprinkler system is now required to be installed in a building when the roof is used for a Group A-2 assembly occupancy with an occupant load exceeding 100, as well as for other Group A occupancies where the occupant load exceeds 300.	D cg]
cg] D	903.2.1.7	<b>Multiple Fire Areas.</b> Where small Group A fire areas share a common means of egress, the occupant load of the spaces must now be added together to determine if a sprinkler system is required.	D
D cg]	903.2.8	<b>Group R.</b> Sprinkler requirements for Group R-4 occupancies are now dependent on the capabilities of the occupants. In buildings where occupants require limited assistance when responding to an emergency condition, additional sprinkler protection is required for attic spaces.	D
D cg]	903.3.1.2.2	<b>Open-Ended Corridors.</b> Where an NFPA 13R sprinkler system is installed, the sprinkler protection must now be extended to any open-ended corridors and associated exterior stairways, clarifying that an open breezeway is considered as an interior portion of the building and not an exterior location for the application of the sprinkler requirements.	D
D cg]	903.8	<b>Limited Area Sprinkler Systems.</b> Additional restrictions have been placed on limited area sprinkler systems, including a reduction in the system size to a maximum of six sprinklers within a single fire zone.	D
D cg]	907.2.3	<b>Group E.</b> The threshold for alarm systems in Group E occupancies has been increased such that a manual fire alarm is required where the occupant load exceeds 50, and an emergency voice/alarm communication (EVAC) system must only be provided where the occupant load exceeds 100.	D
D cg]	907.2.9.3	<b>Group R-2 College and University Buildings.</b> The scope of the fire alarm provisions for Group R-2 college and university buildings has been revised to apply to facilities "operated by" the college or university whether owned by the school or not.	D
D	909.21.1	<b>Elevator Hoistway Pressurization.</b> Viable alternatives to the general elevator hoistway pressurization requirements are now available where pressurization is provided in lieu of an enclosed elevator lobby or an additional door.	D

**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CBC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D 181	910	<b>Smoke and Heat Removal.</b> The format and technical requirements for smoke and heat removal systems have been revised, including a new allowance permitting a mechanical smoke removal system as an alternative to smoke and heat vents.	D 181
D 181	915	<b>Carbon Monoxide Detection.</b> The carbon monoxide (CO) alarm provisions have been relocated, reformatted and revised; the scope has been modified to exclude Group 1-3 occupancies while adding Group E occupancies.	D 181
D 181	1 004.1.1	<b>Cumulative Occupant Loads.</b> The determination of the cumulative design occupant load for intervening spaces, adjacent levels and adjacent stories has been clarified.	D 181
D [81	Table 1004.1.2	<b>Occupant Load Factors.</b> The mercantile occupant load factor has been revised such that a single factor is now applicable regardless of the story on which the mercantile use is located.	D 181
D [81	1004.3	<b>Posting of Occupant Load.</b> In coordination with the CFC, the list of the required posting of occupant load has expanded.	D 181
D [81	1006, 1007	<b>Number of Exits and Exit Access Doorways.</b> The means of egress requirements for rooms and spaces, along with those for stories, have been consolidated in Chapter 10.	D 181
D [81	100 7.1	<b>Exit and Exit Access Doorway Configuration.</b> Specific information is now provided regarding the point where exit separation is to be measured. In addition, where three or more means of egress are required, performance language has been included to ensure the egress paths are adequately separated.	D 181
D 181	1009.8	<b>Two-Way Communication.</b> It has been clarified that a two-way communication system may serve multiple elevators and that the systems are not required at service elevators, freight elevators or private residence elevators.	D 181
D [81	1010.1.9	<b>Door Operations-Locking Systems.</b> Numerous revisions throughout the locking provisions now help clarify requirements and their application through the use of consistent terminology.	D 181
D [81	1011.15, 1011.16	<b>Ships Ladders.</b> Ships ladders are allowed for access to lifeguard towers.	D 181
D 181	1 014.8	<b>Handrail Projections.</b> Guidance is now provided regarding potential obstructions in the required egress width of a stairway where a pair of intermediate handrails is installed.	D 181
D [81	1 015.8	<b>Window Openings.</b> Group R-1 occupancies are included in the requirement for window openings.	D 181
D [81	1016.2	<b>Egress Through Intervening Spaces.</b> A means of egress is now permitted through an elevator lobby provided access to at least one exit is available without passing through the lobby.	D 181

**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CBC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D	1017.2.2	<b>Travel Distance Increase for Groups F-1 and 5-1.</b> An increased exit access travel distance is now permitted for Groups F-1 and S-1 occupancies where specific requirements are met. Modification	D
D	1018.3	<b>Aisles in Groups Band M.</b> The required width of aisles in Groups B and M occupancies is now consistent with the widths required for corridors and is no longer limited only to the capacity based on the occupant load served.	D
D	1020 .2.2	<b>Corridor Width and Capacity.</b> A new exception helps to clarify the width requirements for corridors within Group I-2 occupancies for areas where bed or stretcher movement is not necessary.	D
D	1023.3.1	<b>Stairway Extension.</b> An interior exit stairway is now permitted to continue directly into an exit passageway without a required fire door assembly to separate the two elements.	D
D	1029 .13.2.2.1	<b>Stepped Aisle Construction Tolerances.</b> The variation allowed between adjacent risers within a stepped aisle is now limited.	D 181
D	11B-106.5	<b>Definitions Added to Chapter 2.</b> Adjusted Construction Cost, Drive-up Electric Vehicle Charging Station, Electric Vehicle (EV), Electric Vehicle Charging Space (EV Space), Electric Vehicle Charging Station (EVCS), Electric Vehicle (EV) Connector and Sign was added. And Public Use Areas was modified.	D
D	11B-202.4 Exception, 4	<b>Barrier Removal Exception.</b> Expands the list of barriers, that when removed, will not trigger additional accessibility requirements.	D 181
D	11B-202.4 Exception, 8	<b>Cost Proportionality.</b> The definition has been relocated to Chapter 2. Providing a Single Unisex (single user or a family) restroom has been added as an upgrade compliance method.	0 181
D	11B-203	<b>General Exceptions.</b> The limits of the Employee Workstations exception has been clarified.	D [g]
D	11B-208	<b>Parking Spaces.</b> Clarifies that electrical vehicle charging stations are not parking spaces for the purpose of this section.	D
D	11B-213 .3.1	<b>Toilet Compartments.</b> At least 5% of the toilet compartments, or 5% of the combination of toilet compartments and urinals, but no fewer than 1 shall comply with Section 11B-604.8.1.	D 181
D	11B-216.8.1	<b>Geometric Symbol.</b> The requirements were relocated from Section 11B-703.7.2.6 to clarify that these are symbols, not signs. Exceptions to the requirements were also modified.	D 181
D	11B-220.2, Exception 2	<b>Point-of-Sale Devices.</b> Point-of-sale devices at electric vehicle charging stations required to comply with Section 812 shall comply with Section 118 -812.10.3	D 181
D 181	11B-224.7, Exceptions 1 & 2	<b>Housing at a Place of Education.</b> The term sleeping room is interchangeable with guest room. Exceptions 1 and 2 have been repealed.	D 181

**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CBC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D [8J]	11B-228.3	<b>When provided EVCS shall comply with 228.3.</b> Adds accessibility requirements for existing facilities. Including: Operable Parts, Minimum Number and provides an exception for drive-up EVCS.	D [8J]
D [8J]	11B-245	<b>Public Accommodations Located in Private Residences.</b> The term Public Accommodation replaced Commercial Facilities for consistency with the ADA.	D [8J]
D [8J]	11B-309.4	<b>Operable Parts.</b> Adds Electric Vehicle Connector to the Operation exception list.	D [8J]
D [8J]	11B-505.2.1	<b>Handrail Orientation.</b> The orientation of at least one handrail shall be in the direction of the stair run, perpendicular to the direction of the stair nosing, and shall not reduce the minimum required width of the stair.	D [8J]
D [8J]	11B-604.8.1.1	<b>Toilet Compartments.</b> Clarification for the maneuvering space required from side opening and end opening doors.	D [8J]
0 [8J]	11B-604.9	<b>Water Closets and Toilet Compartments for Children's Use.</b> The exception applies for water closets and toilet compartments for children's use. And the change clarifies the use of both terms "suggested" and "shall Comply" in one provision.	D [8J]
D [8J]	11B-703.7.2.6.4	<b>Edges and Vertices on Geometric Symbols.</b> This section now includes specification for eased, rounded or chamfered edges and a radius range for vertices.	D [8J]
[8J] D	11B-812	<b>Electric Vehicle Charging Stations (EVCS).</b> This section was added to provide accessibility provisions for EVCS. The provisions include: Floor/Ground Surfaces, Vertical Clearance, Accessible Route, Location Arrangement, Size and Identification.	D [8J]
D [8J]	1405.3	<b>Vapor Retarders.</b> The required types and locations appropriate for each class of vapor retarder have been revised to also indicate where certain vapor retarders are not allowed to be installed.	[8J] D
D [8J]	1602.1	<b>Definitions and Notations.</b> The definitions of "flexible diaphragm" and "rigid diaphragm" have been deleted from the code and replaced by a reference to the procedures for classifying diaphragms in the 2010 edition of the national load standard, <i>Minimum Design Loads for Buildings and Other Structures (ASCE/SEI 7-10)</i> .	0 [8J]
D [8J]	1603	<b>Construction Documents.</b> Two additional items related to snow load drifting are now required to be identified on the construction documents.	D [8J]
D [8J]	1603.1.7	<b>Flood Design Data.</b> The term "subject to high-velocity wave action" in regard to flood hazard areas has been replaced with "coastal high-hazard areas" in several chapters and sections of the code.	D [8J]
[8J] D	1603.1.8	<b>Special Loads.</b> The dead load of any rooftop-mounted photovoltaic (PV) solar panels must now be identified on the construction documents.	[8J] D
D [8J]	1604.3	<b>Serviceability.</b> Modifications have been made to the deflection limits established in Table 1604.3 for interior partitions, wood members, and wind loads to both clarify and update the provisions.	0 [8J]



**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CBC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D rgJ	1604.5	<b>Risk Category.</b> In the application of assigning the appropriate risk category for a structure, Section 1604.5 has been revised to clarify that where standards refer to ASCE 7 Table 1.5-1, CBC Table 1604.5 should be used instead. In addition, descriptions for Risk Category III structures have been revised to include occupancy classifications to help clarify the intent.	D rgJ
D rgJ	1607.5	<b>Partition Loads.</b> In office buildings and in other buildings where the location of partitions is subject to change, partition loads are to be considered unless the floor is designed for an 80-psf or greater live load.	D rgJ
181 D	1607.9	<b>Impact Loads for Façade Access Equipment.</b> Provisions addressing impact loads for elements supporting façade access equipment and lifeline anchorages have been established.	D rgJ
D rgJ	1607.10.2	<b>Alternative Uniform Live Load Reduction.</b> The alternate live load reduction method has been corrected to be consistent with the original intent as it appeared in the <i>Uniform Building Code (UBC)</i> .	D rgJ
D 181	1607.12	<b>Roof Loads.</b> The term "vegetative roof" has been defined in Section 202 and a reference to ASTM E2397 has been added to Section 1607.	D
D	1607.12.5	<b>Photovoltaic Panel System.</b> Design requirements for roof structures supporting photovoltaic (PV) solar panels and modules have been added to Section 1607.	D rgJ
D rgJ	1609.1.1	<b>Determination of Wind Loads.</b> A reference to the new wind tunnel testing standard ASCE 49 has been added to Section 1609.1.1, Exception 6.	D
D	1613.3.1	<b>Mapped Acceleration Parameters.</b> The U.S. Geological Survey (USGS) recently developed seismic hazard and Risk-Targeted Maximum Considered Earthquake (MCER) ground motion maps for Guam and American Samoa, which have now been included in the CBC.	D
D	1613.6	<b>Ballasted Photovoltaic Panel Systems.</b> Seismic requirements for ballasted roof-mounted photovoltaic (PV) solar panels have been added to Section 1613.6.	D
D	1704.5	<b>Submittal to the Building Official.</b> Requirements for submittal of reports and certificates related to construction that is subject to special inspections and tests are now clearly specified.	D
D 181	1705.2	<b>Steel Construction.</b> The special inspection requirements for structural steel elements and cold-formed steel decks have been modified to coordinate the provisions with the new terminology used for structural steel elements within CBC Chapter 22, AISC 360 and the new SDI standard.	D
D	1705.2.3	<b>Open-Web Steel Joists and Joist Girders.</b> Special inspections are now required during the installation of open web steel joists and joist girders, and a new table specifies the type of inspection and applicable referenced standard.	D rgJ

**SIGNIFICANT CHANGES** (cont'd)

NEW- CHANGE	CBC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D [gJ]	Table 1705.3	<b>Required Special Inspections of Concrete Construction.</b> The requirement for special inspection of cast-in-place anchors in concrete where allowable loads have been increased or strength design is used has been deleted from Table 1705.3, specific requirements for the design and installation of adhesive anchors are now included in ACI 318, and continuous special inspection has been added for these types of anchors installed horizontally or in upwardly inclined orientations with sustained loads.	0 D
D [gJ]	1705.11	<b>Special Inspection for Wind Resistance.</b> To better identify the intent, revisions have been made to the special inspection requirements for wind resistance. Specific requirements for the inspection of wind-resisting components have also been clearly identified.	0 D
0 D	1705.12	<b>Special Inspection for Seismic Resistance.</b> Periodic special inspection of cold-formed steel special bolted moment frames (CFS-SBMFs) is now mandated. In addition, several modifications to the special inspection requirements for seismic resistance have been made in order to clarify the intent.	0 D
D 0	1708.3.2	<b>Static Load Testing.</b> Static load test requirements have been revised to clarify the intent, the arbitrary factor of two has been removed, and the method for testing components that carry dynamic loads has been specified. Differences influenced by load duration effects when testing wood elements are now also addressed.	D 0
D 0	1709.5	<b>Exterior Window and Door Assemblies.</b> The required design pressure ratings for exterior window and door assemblies are to be done on an allowable stress design basis.	D 181
D 0	1711	<b>Material and Test Standards.</b> The requirements for testing joist hangers in Section 1711.1 have been deleted entirely, and the requirements for testing concrete and clay roof tiles in Section 1711.2 have been relocated to Section 1504 addressing performance requirements for roof coverings and assemblies.	0 D
D 0	1803.5	<b>Investigated Conditions.</b> The requirements addressing the evaluation of rock materials for foundation support have been updated to be more consistent with the current geotechnical engineering practice. In addition, basic requirements for providing adequate underpinning and excavations have been added.	0 D
[gJ] D	1804.1	<b>Excavation Near Foundations.</b> Basic requirements for providing safe and adequate underpinning at excavations have been added because the code was not specific on how to address excavations adjacent to structures.	D 0
[gJ] D	1808.3	<b>Design Surcharge Loads.</b> Requirements pertaining to surcharge loads that could affect an adjacent structure have been added.	D 0

**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CBC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D rgi	1810.2.5	<b>Group Effects.</b> The requirements related to the evaluation of group effects on uplift of grouped deep foundation elements have been clarified.	D rgi
rgi D	1810.3	<b>Design and Detailing.</b> Provisions addressing structural steel sheet piles have been added and the code provisions and standards related to steel deep foundation systems have been updated to clarify their intent.	D rgi
D rgi	1901.3	<b>Anchoring to Concrete.</b> Sections 1908 and 1909 of the 2013 CBC, which contain the requirements for anchorage to concrete, have been deleted because they are obsolete and not consistent with current referenced standards. In their place, new provisions on anchoring to concrete have been added to the general provisions found in Section 1901.	[8I] D
D [8I]	1901.4	<b>Composite Structural Steel and Concrete Structures.</b> Section 1912 of the 2013 CBC containing specific requirements for concrete-filled pipe columns has been deleted because it is no longer necessary, as new provisions on composite structural steel and concrete structures have been added to the general provisions in Section 1901.	D [8I]
D [8I]	1904	<b>Durability Requirements.</b> The durability requirements for structural concrete have been deleted from the CBC and replaced by a reference to the durability provisions in ACI 318.	[8J] D
D [8I]	1905.1.3	<b>Modifications to ACI 318, Section 18.5.</b> The requirements for the design of wall piers have been deleted from Section 1905 because they are now addressed in ACI 318.	D [8J]
D [8I]	1905.1.8	<b>Modifications to ACI 318, Section 17.2.3.</b> Extensive modifications have been made to the concrete anchorage provisions of Section 1905.1.8 to maintain the intent regarding light-framed shear wall anchorage, while achieving consistency with Chapter 17 of the 2014 edition of ACI 318.	[8J] D
D [8I]	2101.2	<b>Masonry Design Methods.</b> The references in Chapter 21 to specific section in the Masonry Standards Joint Committee (MSJC) code have been deleted because the 2013 edition of TMS 402/ACI 30/ASCE 5 has been substantially reorganized to be more user-friendly. The charging language of Section 2102.2 has been modified to simply reference TMS 402/ACI 530/ASCE 5 or TMMS 403 for the design and construction of masonry structures.	D [8]
D [8I]	2103	<b>Masonry Construction Materials.</b> Masonry material provisions that have historically been found in Section 2103 have been deleted because they are contained in the MSJC Specification TMS 602/ACI 530/ ASCE 6.	D [8]
D [8]	2104	<b>Masonry Construction.</b> Many masonry construction provisions previously found in Section 2104 that are contained in the MSJC Specification TMS 602/ACI 530.1/ASCE 6 have been deleted and replaced with references to the specification.	D [8]

**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CBC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D rzl	2105	<b>Quality Assurance.</b> Provisions for the quality assurance of masonry structures and related definitions have been deleted from Section 2105 and replaced with a reference to the MSJC Specification TMS 602/ACI 530.1/ASCE 6 and the special inspection and testing requirements contained in Chapter 17.	D rzl
D !81	2111,2113	<b>Masonry Fireplaces and Chimneys.</b> The definitions of "masonry fireplace" and "masonry chimney" have been deleted from Chapter 21 and appropriately relocated to Chapter 2. Requirements for the reinforcement and anchorage of masonry fireplaces and chimney in Sections 2111 and 2113 have been updated and reorganized to clarify the intent.	D !81
D rzl	2210	<b>Cold-Formed Steel.</b> A new Steel Deck Institute (SDI) standard addressing the design and construction of composite concrete slabs and steel decks has been added to CBC Chapter 35.	D !81
D !81	2211	<b>Cold-Formed Steel Light-Frame Construction.</b> A new American Iron and Steel Institute standard, AIAI S220, is now referenced for the construction of cold-formed steel light-frame non-structural products.	D !81
rzl D	2303.1.4	<b>Structural Glued Cross-Laminated Timber.</b> A new definition for a wood-based product identified as cross-laminated timber (CLT) has been added to Chapter 2. The new manufacturing standard ANSI/APA PRG 320 is now referenced in Chapter 23 and has been added to Chapter 35.	!81 D
!XI D	2303.1.13	<b>Engineered Wood Rim Board.</b> A new definition for engineered wood rim board has been added to Chapter 2 and two new standards are now referenced in Chapter 23 and have been added to Chapter 35.	!81 D
D !81	2304.6	<b>Exterior Wall Sheathing.</b> Section 2304.6 has been modified to establish minimum structural performance requirements and clarify that wall sheathing on the outside of exterior walls, as well as connection of sheathing to framing, must be capable of resisting wind pressures in accordance with Section 1609, which in turn references ASCE/SEI 7-10. The new term "gable" has been added to clarify that exterior wall sheathing requirements for out-of-plane wind resistance are equally applicable to the gable area at end walls.	!ZI !81
D	2304.10.6	<b>Load Path.</b> The minimum required thickness of steel straps used to splice discontinuous framing members has been modified to be consistent with the standard thickness established in the new AISI Product Data Standard, S201.	!ZI D
D rzl	2304.12	<b>Protection Against Decay and Termites.</b> Modifications to Section 2304.12 identify exactly where waterborne preservatives are required and where they are not required.	D rzl

**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CBC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D 18]	2308	<b>Conventional Light-Frame Construction.</b> Section 2308, which contains prescriptive requirements for conventional wood frame construction, has been reformatted and reorganized in its entirety. Significant changes include the introduction of new designations for wall bracing methods similar to those in the CRC as shown in new Table 2308.6.3(1), and reformatted wall bracing requirements set forth in Table 2308.6.1.	D [8]
D [8]	2308.2.5	<b>Allowable Roof Span.</b> Provisions related to limitations on roof span have been clarified as a part of the reformatting and reorganization of Section 2308.	[8] D
D 18]	2308.7	<b>Roof and Ceiling Framing.</b> Ceiling joist and rafter span tables from the CRC have been incorporated into the conventional construction provisions of the CBC.	D [8]
[8] D	2309	<b>Wood Frame Construction Manual.</b> Section 2309 has been added to reference the American Wood Council's (AWC) <i>Wood Frame Construction Manual</i> (WFCM) for structural design of wood frame buildings assigned to Risk Category I or II.	[8] D
D [8]	2406.4.7	<b>Safety Glazing Adjacent to Bottom Stair Landing.</b> The height criteria for regulating glazing at the landing at the bottom of a stair has been revised and the method for measuring the horizontal distance has been clarified, now generally requiring safety glazing if located less than 60 inches above the bottom landing of a stair.	D [8]
[8] D	Chapter 25	<b>Gypsum Panel Products.</b> The definition of "gypsum board" has been revised and a new definition for "gypsum panel product" has been added to Chapter 2. Multiple references to gypsum panel products have also been added to Chapter 25 where applicable.	D [8]
18] D	2612	<b>Plastic Composites.</b> New definitions and applicable test standards now address the use of plastic composites for use as exterior deck boards, stair treads, handrails and guards.	D [g]
D [8]	3004	<b>Elevator Hoistway Venting.</b> The elevator hoistway venting provisions of Section 3004 have been deleted, such hoistways are no longer required to be vented to the exterior.	D (81)
D 18]	3006	<b>Elevator Lobbies.</b> The elevator lobby requirements have been relocated from Section 713.14.1, where they were previously included with the general shaft enclosure requirements, to Chapter 30, which addressed elevators.	D [g]
D 18]	Chapter 34	<b>Existing Structures.</b> Chapter 34 has been deleted from the CBC in its entirety, and existing building will now be solely regulated by Title 24 Part 10, <i>California Existing Building Code</i> which is based on the model code provisions in the <i>International Existing Building Code</i> .	[8] D

## 2016 California Residential Code (CRC) Changes

### SUMMARY

The following checklist includes the relevant changes in the 2016 CRC from the previous 2013 CRC

### SIGNIFICANT CHANGES

NEW- CHANGE	CRC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D IZJ	1. 1.3.2, 1.1.7.3.1	<b>Efficiency Dwelling Units.</b> The regulation of efficiency dwelling units is included under the 2016 CRC. And a statement is added to clarify that the designer may choose to use the CBC or the CRC but not both.	D IZJ
D IZJ	1. 8.10.2	<b>Moved Structures of The CRC.</b> Change now reference the CEBC (California Existing Building Code) instead of chapter 34 of the CBC (California Building Code).	D IZJ
IZJ D	R101.2	<b>Scope- Accessory Structures.</b> The maximum height for accessory structures has been increased from two to three stories above grade plane. Technical requirements have been removed from the definition.	D IZJ
D IZJ	R104.11	<b>Alternative Materials, Design, and Methods of Construction and Equipment.</b> When proposed alternatives are not approved, the reason for the disapproval must be stated in writing by the building official.	D IZJ
D IZJ	R105.3.1.1	<b>Existing Building In Flood Hazards.</b> Determination of substantial improvement for existing buildings in flood hazard areas is the responsibility of the building Official.	D IZJ
D IZJ	R106.1.4	<b>Information for Construction in Flood Hazard Areas.</b> Construction documents for dwellings in coastal A zones shall include the elevation of the bottom of the lowest horizontal structural member.	D IZJ
D IZJ	R202	<b>Definitions: Climate Zone.</b> Climate Zones are the 16 geographic areas of California for which the California Energy Commission has established typical weather data, prescriptive packages and energy budgets. Climate zones are defined by ZIP code and listed in Reference Joint Appendix JA2. Note: The term "Climate zone" is added and defined as the 16 geographic areas established by the California Energy Commission.	D IZJ
D IZJ	R202	<b>Definitions: Lodging House.</b> The term "Lodging House" is added and defined as " Any building or portion thereof containing not more than five guestrooms where rent is paid in money, goods, labor or otherwise , and that is occupied by the proprietor as the residence of such proprietor". HCD states that this modification is intended to provide clarity in the definition of transient lodging.	D IZJ

**SIGNIFICANT CHANGES** (cont'd)


NEW-CHANGE	CRC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
12] D	Table R301.2(1)	<p><b>Climatic and Geographic Design Criteria.</b> The jurisdiction must indicate if it contains special wind regions or wind borne debris zones.</p> <p>CLIMATIC GEOGRAPHIC 81GN CInEAIA</p> <p>CLIMATIC GEOGRAPHIC 81GN CInEAIA</p>	
LOAD INOW s, o, t, m, ...	CAP @RY OUIGH	<p>UJECf 100*11e 10UHOH</p> <p>ICWIIIC UNJII.PIIIII IEDURTO</p> <p>FLOOR AIR (R)UHQ INDEX TEIP</p> <p>D [81</p> <p>(Portions of footnotes that remain unchanged are not shown)</p>	
D	R301.2.	<p><b>Wind Design Criteria.</b> Ultimate design wind speed values replace basic wind speed values for 3-sec gust wind speeds in Section R301.2.2. A wind speed conversion table has been added for conversion from ultimate design to nominal design wind speeds.</p> <p>WIND SPEED CONVERSIONS</p> <p>V<sub>115</sub> 141J   110   100   no 180 190 200</p> <p>101 101   116 J 124   III 119 141 III</p> <p>Note: The changes bring the wind provisions of the California Residential Code (CRC) in line with the 2016 California Building Code (CBC) and ASCE 7-10 standard. *May affect some master plans</p>	D [81
D [81	Table R301.2 (2)	<p><b>Component &amp; cladding loads.</b> The component &amp; cladding loads table is revised to indicate the Ultimate design wind speed instead of the previous basic wind speeds. And the roof slopes area divided in new categories for determining component and cladding loads.</p> <p><b>Sunrooms.</b> The 2016 CRC requires sunrooms to comply with AAMA/NPEA/NSA 2100-12. The standard contains requirements for habitable and non-habitable sunrooms.</p>	D [81
D [ZJ	R301.2.1.1.1	<p><b>Protection of Openings in Wind Borne Debris Regions.</b> The mean roof height limit has been increased</p>	D [81
D 12]	R301.2.1.2	<p>from 33 feet to 45 feet for the prescriptive attachment provisions for wood structural panels protecting glazing. The ASTM E 1996 standard has been modified to classify wind zones according to ultimate design wind speed.</p>	D [81

**SIGNIFICANT CHANGES** (continued)

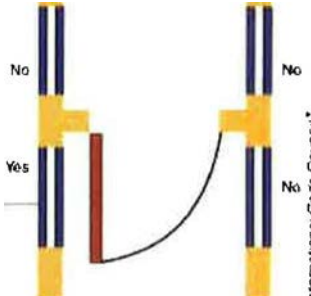
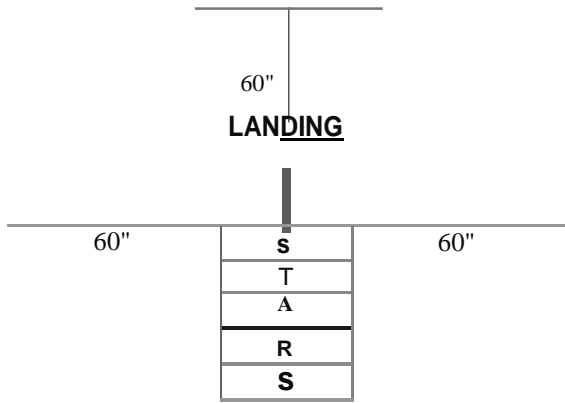
D	12]	R301.2.1.4	<p><b>Wind Exposure Category.</b> Wind Exposure Category A has been deleted because it no longer exists in the CBC and ASCE 7, which is the basis for determination of wind exposure categories. Wind Exposure Category D now applies to open water, mud and salt flats, and unbroken ice fields, which includes hurricane-prone regions.</p>	D	
D		<p>Table R301.2.1.5.1</p>	<p><b>Modifications for Topographic Wind Exposure Effects.</b> Table R301.2.1.5.1 is revised to reflect the Ultimate design wind speed values for a building on or above a slope.</p>	D	[Z]



**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CRC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
[81] D	R301.2.4	<b>Floodplain Construction.</b> Buildings located in a flood hazard area must comply with the provisions for the most restrictive flood hazard area and may use ASCE 24 for design	D !81
[81] D	R301.3	<b>Story Height.</b> Story height of wood and steel wall framing insulated concrete, and SIP walls may not exceed 11ft 7in. Masonry wall height is limited to 13ft 7in.	0 !81
[81] D	R302.1	<b>Exterior Walls.</b> Unprotected roof overhangs are now permitted to project to within 2ft of the property line when fireblocking is installed between the top of the wall and the roof sheathing. In most cases, projections are not permitted less than 2ft from the property line. For dwellings with or without fire sprinkler protection, penetrations of exterior walls do not require fire resistant protection unless they are located less than 3ft from the property line.  <small>(Portions of footnotes and table that remain unchanged are not shown)</small>	D !81
0 !81	R302.2.	<b>Townhouse Separation.</b> The provisions for separating townhouses with structurally independent fire-resistant-rated walls in accordance with Section R302.1 have been removed in favor of the common wall provisions of Section R302.2. Common walls separating townhouses must now be rated for 2hrs when an automatic fire sprinkler system is not installed in the townhouse dwellino units.	0 !81
0 !81	R302.13.	<b>Fire Protection of Floors.</b> The provisions for fire protection of floors have been relocated from Chapter 5 to the fire-resistant construction provisions of Section R302. New language clarifies that the code does not regulate penetrations or openings in the fire protection membrane.	!81 0
!81 0	R303.7, R303.8	<b>Stairway Illumination.</b> Interior and exterior stairway illumination provisions have been placed in separate sections. Conflicting language has been removed to clarify the requirements. *May affect some master plans	!81 0
D !81	R304.1	<b>Minimum Habitable Room Area.</b> The requirement for one habitable room with a minimum floor area of 120sf has been removed from the code.	0 !81
D !81	R305.1	<b>Ceiling Height.</b> The minimum ceiling height for bathrooms, toilet rooms, and laundry rooms has been reduced to 6ft Bin. The exception for allowing beams, gi rders, ducts or other obstructions to project to within 6ft 4in of the finished floor includes now basement with habitable space.	D !81

**SIGNIFICANT CHANGES** (cont'd)

NEW_CHANGE	CRC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D	R308.4.2.	<p><b>Glazing Adjacent to Doors.</b> Glazing installed perpendicular to a door in a closed position and within 24in of the door only requires safety glazing if it is on the hinge side of an in-swinging door.</p>  <p><small>Only window within 24 inches of door requires safety glazing if it is on the hinge side of an in-swinging door.</small></p> <p><small>*May affect some master plans</small></p>	D
D	R308.4.5 .	<p><b>Glazing and wet Surfaces.</b> The exception from the safety glazing requirement for glazing that is 60 in. or greater from the water's edge of a bathtub, hot tub, spa, whirlpool, or swimming pool has been expanded to include glazing that is an equivalent distance from the edge of a shower, sauna, or steam room.</p> <p><small>*May affect some master plans</small></p>	D
D	R308.4.7.	<p>Glazing Adjacent to the Bottom Stair Landing. This change will limit the requirement for glazing at the bottom of a landing by excluding windows greater than 180 degrees from the bottom face of the landing.</p>  <p><b>FIGURE R308.4.7 PROHIBITED GLAZING LOCATIONS AT BOTTOM STAIR LANDINGS</b></p> <p><small>*May affect some master plans</small></p>	D
D	R308.4.7.	<p><b>Electric Vehicle (EV) Charging Infrastructure.</b> New one and two family dwellings and townhouses shall comply with the requirements for EV infrastructure requirements in accordance with The CGBSC.</p>	D

**SIGNIFICANT CHANGES** (cont'd)

NEW- CHANGE	CRC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
[8J] D	R310.	<b>Emergency Escape and Rescue Openings.</b> The emergency escape and rescue openings provisions have been reorganized. Separate provisions spell out the requirements for windows and doors used for emergency escape and rescue	D [8J]
D [8j]	R310.5, R310.6	<b>Emergency Escape and Rescue Openings for Additions, Alterations and Repairs.</b> The basement of a dwelling addition does not require an emergency escape and rescue opening if there is access to a basement that does have an emergency escape and rescue opening. Remodeling of an existing basement does not trigger the emergency escape and rescue opening requirements unless a new bedroom is created.	D [8j]
D [8j]	R311.1	<b>Means of Egress.</b> The required egress door of a dwelling must open directly into a public way or to a yard or court that opens to a public way.	D [gJ]
[8j] D	R311.7.3, R311.7.5.1	<b>Stair Risers.</b> The total vertical rise in a stairway without an intermediate landing has increased from 144in to 147 in. The provision for allowing open risers has been clarified. It is based on the distance above grade or the floor below, not on the total rise of the stair. A new exception clarifies that open risers are permitted on spiral stairways.	D [8j]
[8] D	R311.7.10.1	<b>Spiral Stairways.</b> The code adds a definition of spiral stairway that omits any requirement for a center post to allow for design flexibility. The code now limits the size of spiral stairways by restricting the radius at the walk line to a dimension not greater than 24 ½ ins. The method of measurement for tread depth now matches the winder provisions and measures at the intersection of the walk line and the tread nosing rather than perpendicular to the leading edge of the tread.	D [8]
[8j] D	R311.7.11, R311.7.12	<b>Alternating Tread Devices and Ship Ladders.</b> Alternating tread devices and ship ladders have been added to the stair provisions. Neither device is approved for use as a means of egress.	D [8j]
D [gJ]	R311.8	<b>Ramps.</b> Ramps that do not serve the required egress door are now permitted to have a slope not greater than 1 unit vertical in 8 units horizontal.	D [gJ]
D [8]	R312.1.2	<b>Guard Height.</b> The provision requiring that the guard height be measured from the surface of adjacent fixed seating has been removed from the code.	D [gJ]
D [8j]	R312.2.1	<b>Window Fall Protection.</b> The window fall protection provisions have been revised to clarify the meaning, remove redundant language, and achieve consistency with the CBC provisions	[8j] D

**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CRC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D [8]	R314	<b>Smoke Alarms.</b> Battery-operated smoke alarms are permitted for satisfying the smoke alarm power requirements when alterations, repairs, and additions occur. New provisions address nuisance alarms related to devices installed near bathrooms and cooking appliances. *May affect some master plans	D [8]
D [8]	R315	<b>Carbon Monoxide Alarms.</b> Carbon monoxide alarms now require connection to the house wiring system with battery backup. Exterior work such as roofing, siding, windows, doors, and decks and porch additions no longer trigger the carbon monoxide alarm provisions for existing buildings. An attached garage is one criterion for requiring carbon monoxide alarms, but only if the garage has an opening into the dwelling. A carbon monoxide alarm is required in bedrooms when there is a fuel-fired appliance in the bedroom and adjoining bathroom. Carbon Monoxide detection systems only require detectors installed in the locations prescribed by the code and not those locations described in NFPA 720. *May affect some master plans	D [8]
D [8]	R316.4	<b>Thermal Barrier.</b> This change adds 23/32 wood structural panels as an acceptable alternative for thermal barrier protection for foam plastic insulation	D C&J
D C&J	R322.1, R322.2	<b>Flood Hazards.</b> Section R322.1 is modified to emphasize that the provision applies to existing buildings in flood hazard areas where 50% or more of the structure has damage and requires restoration. Section R322.2 limits the minimum elevation allowed for dwellings in flood hazard areas and defines a Coastal A Zone.	D C&J
D C&J	R322.3	<b>Coastal High-Hazard Areas.</b> Coastal A Zones are defined and an exception for foundation types in Coastal A Zones is added.	D [8]
D C&J	R325	<b>Mezzanines.</b> New provisions place limitations on the construction of mezzanines related to ceiling height and openings consistent with the CBC.	D C&J

**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CRC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO																																																																																															
D	R403.1.1.	<p><b>Minimum Footing Size.</b> The table for minimum footing size and thickness is divided into three expanded tables based on the type of construction being supported: light frame, light frame with veneer, and concrete or masonry. The values are also based on the type of foundations: slab on grade, crawl space, or basement.</p> <table border="1" data-bbox="613 535 1263 934"> <thead> <tr> <th colspan="2">MINIMUM WIDTH AND THICKNESS FOR CONCRETE FOUNDATIONS</th> <th colspan="6">HEIGHT-DEPENDENT</th> </tr> <tr> <th rowspan="2">SNOW LOAD OR ROOF LIVE LOAD</th> <th rowspan="2">9 DAY AVERAGE WIND SPEED (MPH)</th> <th colspan="6">HEIGHT (IN FT)</th> </tr> <tr> <th>0-10</th> <th>10-20</th> <th>20-30</th> <th>30-40</th> <th>40-50</th> <th>50-60</th> </tr> </thead> <tbody> <tr> <td rowspan="10">Light Frame</td> <td>Slab on grade</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> </tr> <tr> <td>Crawl space</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> </tr> <tr> <td>Basement</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> </tr> <tr> <td rowspan="7">Light Frame with Veneer</td> <td>Slab on grade</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> </tr> <tr> <td>Crawl space</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> </tr> <tr> <td>Basement</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> </tr> <tr> <td rowspan="4">Concrete or Masonry</td> <td>Slab on grade</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> </tr> <tr> <td>Crawl space</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> </tr> <tr> <td>Basement</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> </tr> <tr> <td>Other</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> <td>12 x 6</td> </tr> </tbody> </table> <p>(portion of table shown - see CRC for complete tables)</p>	MINIMUM WIDTH AND THICKNESS FOR CONCRETE FOUNDATIONS		HEIGHT-DEPENDENT						SNOW LOAD OR ROOF LIVE LOAD	9 DAY AVERAGE WIND SPEED (MPH)	HEIGHT (IN FT)						0-10	10-20	20-30	30-40	40-50	50-60	Light Frame	Slab on grade	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	Crawl space	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	Basement	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	Light Frame with Veneer	Slab on grade	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	Crawl space	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	Basement	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	Concrete or Masonry	Slab on grade	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	Crawl space	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	Basement	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	Other	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	D
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D	R403.1.2 & R602.9.10.9.1	<p><b>Continuous footing in Seismic Design Categories D<sub>0</sub>, D<sub>1</sub>, and D<sub>2</sub>.</b> Clarifies the continuous footing requirements and moves the requirement for braced wall panel support for seismic categories Seismic Design Categories (SOC) D<sub>0</sub>, D<sub>1</sub>, and D<sub>2</sub> under section R602.10.9.1 to section R403.1.2.</p>	D																																																																																															

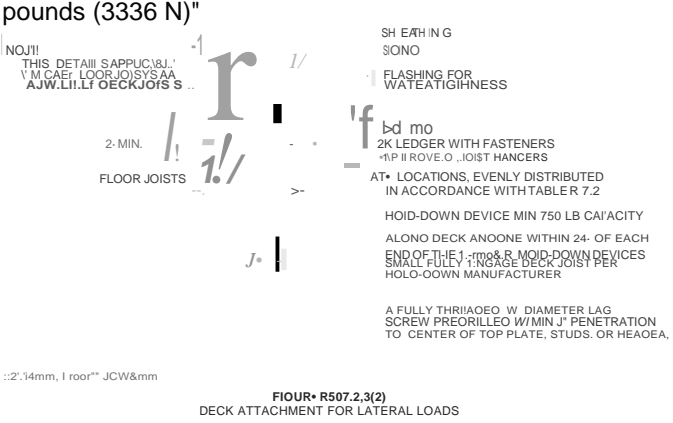
**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CRC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D	R403.1.3.	<p><b>Footing and Stem Wall Reinforcing in Seismic Design Categories D<sub>0</sub>, D<sub>1</sub>, and D<sub>2</sub></b>, Updated figures and code provisions in Section R403.1.3 now clearly define minimum required reinforcement in footings and stem walls located in Seismic Design Categories (SOC) D<sub>0</sub>, D<sub>1</sub>, and D<sub>2</sub>.</p> <p>W = Width of footing. T = Thickness of footing and r = Projection per Section R401.1.1</p> <p>NOTES:  a. See Section R404.3 for sill requirements.  b. See Section R403.1.6 for sill attachment.  c. See Section R506.2 for vapor barrier requirements.  d. See Section R403.1 for base.  e. See Section R408 for under-floor ventilation and LIC, etc. requirements.  f. See Section R401.5 for reinforcement requirements.</p> <p>FIGURE R403.1.3  REINFORCED CONCRETE FOOTINGS AND MASONRY AND CONCRETE STEM WALLS IN SDC D<sub>0</sub>, D<sub>1</sub>, AND D<sub>2</sub>.</p>	D
D	R403.1.6.	<p><b>Foundation Anchorage.</b> Anchor bolts are now required to be placed in the middle third of the sill plate. Approved anchors may be used instead of 1/2 inch anchor bolts</p>	D

**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CRC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO																																																																																																																																																										
f81 D	R403.1.4.1.	<b>Masonry Foundation Walls in SDC D<sub>0</sub>, D<sub>1</sub>, and D<sub>2</sub>.</b> Minimum vertical reinforcement in masonry stem walls has been increased from No. 3 bars to No. 4 bars spaced in maximum of 4ft on center in grouted cells.	D f81																																																																																																																																																										
f81 D	R404.4	<b>Retaining Walls.</b> Retaining walls, freestanding walls not supported at the top, with more than 48 inches of unbalanced backfill must be designed by an engineer. Retaining walls resisting additional lateral loads and with more than 24inches of unbalanced backfill must also be designed in accordance with accepted engineering practice.	D f81																																																																																																																																																										
D f81	Tables R502.3.1 (1), R502.3.1 (2)	<p><b>Floor Joist Spans for Common Lumber Species.</b> Changes to Southern Pine (SP), Douglas Fir-Larch (DFL), and Hemlock Fir (HF) lumber capacities have changed the floor joist span length in the prescriptive tables of the CRC. Span lengths for Southern Pine have decreased: lengths for DFL and HF joists have increased.</p> <p style="text-align: center;"><b>TABLE A102.1(1)</b> FLOOR JOIST SPANS FOR COMMON LUMBER SPECIES (Raidntial llttpling IFNI, IM load, 30 pat, Uti • 360)<sup>1</sup></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">JOIST &amp; PITCH (Inohn)</th> <th rowspan="2">SPECO AND BADE</th> <th colspan="2">DEAD LOAD = 10 psf</th> <th colspan="2">DEAD LOAD = 20 psf</th> </tr> <tr> <th>h = 8 - f</th> <th>l = 1</th> <th>2al</th> <th>TWT</th> </tr> </thead> <tbody> <tr> <td>Douglas fir-larch</td> <td>DS</td> <td>12-6</td> <td>16-6</td> <td>21-0</td> <td>11-1</td> <td>11-6</td> <td>21-0</td> <td>25-1</td> </tr> <tr> <td>Hemlock fir</td> <td>HS</td> <td>11-0</td> <td>15-0</td> <td>20-3</td> <td>24-1</td> <td>120</td> <td>15-1</td> <td>19-0</td> </tr> <tr> <td>Southern pine</td> <td>SP</td> <td>11-0</td> <td>15-7</td> <td>19-10</td> <td>23-0</td> <td>111</td> <td>14-9</td> <td>18-7</td> </tr> <tr> <td>Douglas fir/arch</td> <td>DS</td> <td>9-11</td> <td>12-1</td> <td>15-5</td> <td>11-10</td> <td>111</td> <td>11-1</td> <td>13-9</td> </tr> <tr> <td>Hemlock</td> <td>HS</td> <td>11-10</td> <td>15-7</td> <td>19-10</td> <td>24-2</td> <td>111</td> <td>13-1</td> <td>19-10</td> </tr> <tr> <td>Ufir-HF</td> <td>HS</td> <td>11-7</td> <td>15-3</td> <td>19-5</td> <td>23-7</td> <td>11-7</td> <td>13-3</td> <td>18-9</td> </tr> <tr> <td>Hemlock</td> <td>HS</td> <td>11-0</td> <td>14-6</td> <td>18-0</td> <td>22</td> <td>110</td> <td>14-4</td> <td>18-1</td> </tr> <tr> <td>Hem-fir</td> <td>HS</td> <td>9-8</td> <td>12-4</td> <td>15-0</td> <td>17-5</td> <td>110</td> <td>11-0</td> <td>13-5</td> </tr> <tr> <td>Southern pine</td> <td>SS</td> <td>12-0</td> <td>16-3</td> <td>21</td> <td>25-1</td> <td>12-3</td> <td>11-1</td> <td>21H</td> </tr> <tr> <td>Southern pine</td> <td>SS</td> <td>11-10</td> <td>15-1</td> <td>19-10</td> <td>24-2</td> <td>11,10</td> <td>11-1</td> <td>15-7</td> </tr> <tr> <td>Southern pine</td> <td>SS</td> <td>11-7</td> <td>14-7</td> <td>18-1</td> <td>21,4</td> <td>109</td> <td>11,1</td> <td>16-2</td> </tr> <tr> <td>Southern pine</td> <td>SS</td> <td>9-2</td> <td>11-6</td> <td>14-0</td> <td>16-0</td> <td>8-1</td> <td>10-3</td> <td>14-0</td> </tr> <tr> <td>Spruce-pine-fir</td> <td>SS</td> <td>11-J</td> <td>11-J</td> <td>19-1</td> <td>23-1</td> <td>11,7</td> <td>11-J</td> <td>19-5</td> </tr> <tr> <td>Spruce-pine-fir</td> <td>HS</td> <td>11-J</td> <td>14-11</td> <td>19,0</td> <td>23-0</td> <td>111</td> <td>14,7</td> <td>19</td> </tr> <tr> <td>Spruce-pine-fir</td> <td>HS</td> <td>11-1</td> <td>13-1</td> <td>17-0</td> <td>21-1</td> <td>11-3</td> <td>14-1</td> <td>17-9</td> </tr> <tr> <td>Southern pine</td> <td>SS</td> <td>9-8</td> <td>11-4</td> <td>11-0</td> <td>11-1</td> <td>11-0</td> <td>13-5</td> <td>11-1</td> </tr> </tbody> </table> <p>(portion of table shown -see CRC for complete tables)</p>	JOIST & PITCH (Inohn)	SPECO AND BADE	DEAD LOAD = 10 psf		DEAD LOAD = 20 psf		h = 8 - f	l = 1	2al	TWT	Douglas fir-larch	DS	12-6	16-6	21-0	11-1	11-6	21-0	25-1	Hemlock fir	HS	11-0	15-0	20-3	24-1	120	15-1	19-0	Southern pine	SP	11-0	15-7	19-10	23-0	111	14-9	18-7	Douglas fir/arch	DS	9-11	12-1	15-5	11-10	111	11-1	13-9	Hemlock	HS	11-10	15-7	19-10	24-2	111	13-1	19-10	Ufir-HF	HS	11-7	15-3	19-5	23-7	11-7	13-3	18-9	Hemlock	HS	11-0	14-6	18-0	22	110	14-4	18-1	Hem-fir	HS	9-8	12-4	15-0	17-5	110	11-0	13-5	Southern pine	SS	12-0	16-3	21	25-1	12-3	11-1	21H	Southern pine	SS	11-10	15-1	19-10	24-2	11,10	11-1	15-7	Southern pine	SS	11-7	14-7	18-1	21,4	109	11,1	16-2	Southern pine	SS	9-2	11-6	14-0	16-0	8-1	10-3	14-0	Spruce-pine-fir	SS	11-J	11-J	19-1	23-1	11,7	11-J	19-5	Spruce-pine-fir	HS	11-J	14-11	19,0	23-0	111	14,7	19	Spruce-pine-fir	HS	11-1	13-1	17-0	21-1	11-3	14-1	17-9	Southern pine	SS	9-8	11-4	11-0	11-1	11-0	13-5	11-1	D f81
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D f81	R502.10	<b>Framing of Floor Openings.</b> Requirements for header joist and trimmer connections in the framing of floor openings have been deleted. This section conflicted with Section R502.6, which contains minimum bearing lengths for all joists and headers.	D f81																																																																																																																																																										
D f81	R507.1, R507.4	<b>Decks.</b> New Table R507.4 sets the maximum joist spacing for support of decking materials. The spacing is based on the type and thickness of decking material and its orientation to the joist.	D f81																																																																																																																																																										
D f81	R507.2	<b>Connection to Band Joist.</b> The deck ledger section is reorganized to better describe the minimum requirements for connection of deck ledgers to band joists.	D f81																																																																																																																																																										

**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CRC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D 18]	R507.2.4	<p><b>Alternative deck Lateral Load Connection.</b> When the prescriptive deck lateral load connection that has appeared in the previous editions of the code is chosen as a design option, the code now requires the two hold-down devices to be within 2 feet of the ends of the deck. A new lateral load connection option prescribes four hold-downs installed below the deck structure.</p> <p>Section 507.2.4: "...Where the lateral load connections are provided in accordance with Figure R507.2.3(2), the hold-down tension devices shall be installed in not less than four locations per deck, and each device shall have an allowable stress design capacity of not less than 750 pounds (3336 N)"</p>  <p>SH EATH IN G SONO</p> <p>FLASHING FOR WATEATIGHNESS</p> <p>bd mo 2K LEDGER WITH FASTENERS 1P II ROVE.O ..IOIST HANCERS</p> <p>AT* LOCATIONS, EVENLY DISTRIBUTED IN ACCORDANCE WITH TABLE 7.2</p> <p>HOID-DOWN DEVICE MIN 750 LB CAI'ACITY ALONO DECK ANOONE WITHIN 24" OF EACH END OF THE J - rmo &amp; R MOID-DOWN DEVICES SMALL FULLY TINGAGE DECK JOIST PER HOLO-DOWN MANUFACTURER</p> <p>A FULLY THRIAQEO W DIAMETER LAG SCREW PREORILLEO W/MIN J' PENETRATION TO CENTER OF TOP PLATE, STUDS, OR HEAOEA,</p> <p>FIGURE R507.2.3(2) DECK ATTACHMENT FOR LATERAL LOADS</p>	D 18]
D 18]	R507.5, R507.6, R507.7	<p><b>Deck Joists and Beams.</b> New sections and tables provide prescriptive methods for joists and beams in deck construction. Section R507.5 describes requirements for deck joists, Section R507.6 lists requirements for deck beams, and Section R507.7 describes minimum bearing requirements for joists and beams.</p>	D 18]
D 18]	R507.8	<p><b>Deck Posts.</b> New Section R507.8 establishes minimum sizes of wood posts supporting wood decks and describes the requirements for connection of deck posts to the footing.</p>	D 18]
D 18]	Table R602.3 (1)	<p><b>Fastening Schedule.</b> The Fastening Schedule now contains multiple nail size options. Roof rafter connections at ridge, valley, and hip are revised. Double top plate splicing is clarified. Clarification of the joist-to band- joist (rim board) connection is added.</p>	D
D 18]	R602.3.1	<p><b>Stud Size, Height, and Spacing.</b> Table R602.3.1 is deleted and the exception for walls greater than 10ft tall is added to the text of Section R602.3.1. If studs in a tall wall meet Exception 2, they meet the requirements of the CRC and do not need engineering or use of an alternate standard.</p>	D [gJ



**SIGNIFICANT CHANGES** (cont'd)

NEW- CHANGE	CRC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D [8J]	R602.7, Tables R602.7(1), R602.7(2), R602.7(3), R602.7.5	<b>Headers.</b> The girder and header span tables of Chapter 5 have been moved to the header section in Chapter 6, Multiply and single header tables are combined. A new section describing rim board headers is added	D [8J]
D [8J]	Table R602.10.3 (1)	<b>Required Length of Bracing.</b> Table values for bracing requirements based on wind speed have changed slightly due to use of ultimate design wind speed values to calculate required bracing length.	D [8J]
D [8J]	Table R602.10.5	<b>Minimum Length of a Braced Wall Panel.</b> The contributing length of continuously sheathed portal frames (Method CS-PF) in low seismic regions has increased by 50%	D [8J]
D [8J]	R602.10.6.2	<b>Method PFH: Portal frame with Hold-Downs.</b> Due to recent testing of Method PFH (Portal Frame with Hold-downs), the minimum required capacity of the hold-downs is lowered to 3500lbs in the 2016 CRC. Additionally, the new testing confirms that two sill plates are sufficient under each braced wall panel of the portal rather than the three plates used in Method PFH for 2012 CRC	D [8J]
D [8J]	R 602.10.11	<b>Cripple Wall Bracing.</b> A reduction is no longer required in determining the maximum distance between braced wall panels in a cripple wall. References to the bracing length adjustment tables clarify that increased bracing is required if any wall finish is not applied to the cripple wall.	D [8J]
D [8J]	R602.12	<b>Simplified Wall Bracing.</b> Simplified wall bracing is now allowed for one-to three-story dwellings and townhouse in Wind Exposure Category B or C with ultimate design wind speeds ( $V_{ult}$ ) of 130 mph or less	D [8J]
D [8J]	Section R603.9.5	<b>Structural Sheathing over Steel Framing for Stone and Masonry Veneer.</b> Section R603.9.5 addressing the bracing requirements for cold-formed steel framing with stone or masonry veneer has been expanded to include the higher seismic design categories. This section directs the user to increase bracing length when a structure is located in SCD C, Do, D1, and Dz and has stone or masonry veneer.	D [8J]
D [8J]	R606	<b>Masonry Walls.</b> Sections R606, R607, R608, and R609 under the 2013 CRC have been organized into one section providing requirements for masonry construction of single and two dwellings and townhouses.	D [8J]
D [8J]	R606.3.5	<b>Grouting Requirements for Masonry Construction.</b> With reorganization of the masonry wall provisions in the 2016 CRC, the section covering provisions for grouting above-ground masonry walls now combines all the requirements for single, multiple-wythe, and reinforced masonry construction in one section. Clarified provisions address grout placement, cleanouts, and construction for all three types of masonry construction.	D [8J]

**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CRC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D [8J]	R610.7	<b>Drilling and Notching in Structural Insulated Panels.</b> Drilling and notching provisions for structural insulated panels (SIP) are clarified.	D [8J]
D [8J]	R703.3 & Table R703.3.1 & Table 703.3(1)	<b>Siding Material Thickness and Attachment.</b> New code language clarifies limitations of use of Table R703.4 in 2013 CRC and describes fastener type, length, and penetration criteria. Table R703.4, Weather Resistant Siding Attachment and Minimum Thickness, is simplified and replaced with table R703.3.1 and table 703.3(1).	D [8J]
D [8J]	R703.5	<b>Wood, Hardboard, and Wood Structural Panel Siding.</b> Minimum spacing based on siding thickness has been moved from 2013 CRC Table R703.4 footnote i, siding attachment and minimum thickness, to 2016 CRC Section R703.5.2, panel siding. Requirements for vertical wood siding have moved from 2013 CRC footnote j to 2016 CRC Section R703.5.1 vertical wood siding.	D [8J]
D [8J]	R703.6	<b>Wood Shakes and Shingles on Exterior Walls.</b> The provisions for the application of wood shakes and shingles on exterior walls have been reorganized to give more information within tables for ease of use.	D [8J]
D [8J]	R703.9	<b>Exterior Insulation and Finish Systems.</b> Limitations for exterior insulation and finish systems (EIFS) with and without drainage have been added to the 2016 CRC. EIFS with drainage is required over all wall assemblies except concrete and masonry.	D [8J]
D [8J]	R703.11.1	<b>Vinyl Siding Attachment.</b> This code clarifies nailing penetration and spacing requirements for horizontal and vertical vinyl siding.	D [8J]
D [8J]	R703.13, R703.14	<b>Insulated Vinyl Siding and Polypropylene Siding.</b> New sections set minimum requirements for insulated vinyl siding and polypropylene siding. Polypropylene siding requires a minimum 5-ft fire separation distance and must maintain 10-ft separation from buildings on other lots.	0 D
D [8J]	R703.15, R703.16, R703.17	<b>Cladding Attachment over Foam Sheathing.</b> Three new sections set minimum requirements for cladding attachment over foam sheathing to wood framing (R703.15), cold-formed steel framing (R703.16), and masonry or concrete walls (R703.17). For light-frame construction, prescriptive requirements are given. Connection to concrete and masonry construction continues to require engineered design in most cases when placing foam over the concrete or masonry wall	D [8J]

**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CRC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO																																																																																																
D	Tables R802.4, R802.5.1	<p><b>Ceiling Joist and Rafter tables.</b> Changes to Southern Pine, Douglas Fir-Larch, and Hemlock Fir capacities have changed the maximum spans for lumber in the ceiling joist and rafter span tables of the CRC. The new design values apply only to new construction. The integrity of existing structures designed and built using the design values meeting the applicable building codes in effect at the time of permitting is not a concern.</p> <p style="text-align: center;"><b>TABLE R802.4(1)---contnLlId CEILING JOIST SPANS F-OA COMMON LUMBER SPECES (Uninhabitable ulct wHnout , tori , Uve lold = 1opal, LJfl. e HO)</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Lumber</th> <th style="width: 10%;">SS</th> <th style="width: 10%;">10,</th> <th style="width: 10%;">16</th> <th style="width: 10%;">20</th> <th style="width: 10%;">24</th> </tr> </thead> <tbody> <tr> <td>L.f.u "</td> <td>ii</td> <td>10.0</td> <td>15.9</td> <td>20.1</td> <td>24.6</td> </tr> <tr> <td>Dooglruiffr,larch</td> <td>12</td> <td>9-10</td> <td>11-0</td> <td>19-1</td> <td>11-1</td> </tr> <tr> <td>Dou lIL fir-to-h</td> <td>II</td> <td>7-10</td> <td>11-6</td> <td>14.7</td> <td>17.9</td> </tr> <tr> <td>Hcm, fir</td> <td>SS</td> <td>9-10</td> <td>11-6</td> <td>20-1</td> <td>Nuteu</td> </tr> <tr> <td>Hr,m-lir</td> <td>II</td> <td>9-8</td> <td>11-2</td> <td>19-10</td> <td>24-1</td> </tr> <tr> <td>lk-m-fir</td> <td>12</td> <td>9-2</td> <td>14.5</td> <td>18-6</td> <td>22-7</td> </tr> <tr> <td>Hem-fir</td> <td>13</td> <td>7-8</td> <td>11-2</td> <td>14-2</td> <td>17-4</td> </tr> <tr> <td>24 Southern pi</td> <td>SS</td> <td>10-3</td> <td>16-1</td> <td>21-2</td> <td>Nolcil</td> </tr> <tr> <td>Southemploc</td> <td>II</td> <td>9-10</td> <td>15.6</td> <td>20-1</td> <td>24-0</td> </tr> <tr> <td>Southempinc</td> <td>12</td> <td>9.3</td> <td>13-11</td> <td>17-7</td> <td>2011</td> </tr> <tr> <td>Sou lhempinr.</td> <td>IJ</td> <td>7-2</td> <td>10-6</td> <td>11.3</td> <td>16.1</td> </tr> <tr> <td>Spruce pine, fir</td> <td>SS</td> <td>9-8</td> <td>11.2</td> <td>19-11</td> <td>11c-1</td> </tr> <tr> <td>Spru, " pine lir</td> <td>#1</td> <td>9.5</td> <td>14-9</td> <td>18-9</td> <td>22-11</td> </tr> <tr> <td>Sprut. l., pine-fir</td> <td>12</td> <td>9.5</td> <td>14-9</td> <td>18-9</td> <td>11-11</td> </tr> <tr> <td>Spruce, pin. c, fir</td> <td>IJ</td> <td>1-8</td> <td>11-2</td> <td>14-2</td> <td>11-4</td> </tr> </tbody> </table> <p>(portion of table shown -see CRC for complete table)</p>	Lumber	SS	10,	16	20	24	L.f.u "	ii	10.0	15.9	20.1	24.6	Dooglruiffr,larch	12	9-10	11-0	19-1	11-1	Dou lIL fir-to-h	II	7-10	11-6	14.7	17.9	Hcm, fir	SS	9-10	11-6	20-1	Nuteu	Hr,m-lir	II	9-8	11-2	19-10	24-1	lk-m-fir	12	9-2	14.5	18-6	22-7	Hem-fir	13	7-8	11-2	14-2	17-4	24 Southern pi	SS	10-3	16-1	21-2	Nolcil	Southemploc	II	9-10	15.6	20-1	24-0	Southempinc	12	9.3	13-11	17-7	2011	Sou lhempinr.	IJ	7-2	10-6	11.3	16.1	Spruce pine, fir	SS	9-8	11.2	19-11	11c-1	Spru, " pine lir	#1	9.5	14-9	18-9	22-11	Sprut. l., pine-fir	12	9.5	14-9	18-9	11-11	Spruce, pin. c, fir	IJ	1-8	11-2	14-2	11-4	D [8J]
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D	R806.5, item 4.1.	<p><b>Vapor Retarders installation in Unvented Attics. A</b> requirement for installation of Class I or II vapor retarders in unventilated high performance attics has been added.</p>	D																																																																																																
D	R806.5, item 5.1 & Table R806.5.	<p><b>Vapor Retarders installation in Unvented Attics.</b> The modification removes the previous amendments and reference table R806.5. Section R806.5 provides three options for installing insulation at the roof line for unvented attics and unvented rafters spaces.</p> <p style="text-align: center;"><b>TABLE R806.5 INSULATION FOR CONDENSATION CONTROL</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">CLIMATE ZONE</th> <th style="width: 50%;">MINIMUM RIGID BOARD OR AIR-LIP/IRMI/ABU/INSULATION R-VALUE</th> </tr> </thead> <tbody> <tr> <td>6-15 tile roof only</td> <td>0 (none required)</td> </tr> <tr> <td>1-15</td> <td>R-5</td> </tr> <tr> <td>I&amp;2</td> <td>R-10</td> </tr> <tr> <td>16</td> <td>R-15</td> </tr> </tbody> </table>	CLIMATE ZONE	MINIMUM RIGID BOARD OR AIR-LIP/IRMI/ABU/INSULATION R-VALUE	6-15 tile roof only	0 (none required)	1-15	R-5	I&2	R-10	16	R-15	D																																																																																						
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D	R905.1.1, R905.1.2	<p><b>Underlayment.</b> Roof underlayment provisions have been combined into Section R905.1.1 with three tables listing underlayment type, application, and attachment. Sections on ice barriers from the 2013 CRC are reorganized and combined into Section R905.1.2</p>	D [9J]																																																																																																

**SIGNIFICANT CHANGES** (cont'd)

NEW- CHANGE	CRC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO																																
0 181	R905.7.5.	<p><b>Wood Shingle Application.</b> The minimum requirements for application of wood shingles are expanded. Fastener type is clarified and new table lists minimum sizes for box nails. Labeling requirements for fastener packaging have also been added.</p> <p style="text-align: center;"><b>TASL R905.7.5(2)</b> <b>NAIL REQUIREMENTS FOR WOOD SHAKES AND WOOD SHINGLES</b></p> <table border="1" data-bbox="630 556 1222 930"> <thead> <tr> <th data-bbox="630 556 846 625">SHAKES</th> <th data-bbox="846 556 976 625">NAIL TYPE AND MINIMUM LENGTH</th> <th data-bbox="976 556 1089 625">MIN. NAIL HEAD SIZE</th> <th data-bbox="1089 556 1222 625">MIN. SHANK DIAMETER</th> </tr> </thead> <tbody> <tr> <td data-bbox="630 625 846 657">18" straight-split</td> <td data-bbox="846 625 976 657">3d box 1 1/2"</td> <td data-bbox="976 625 1089 657">0,19"</td> <td data-bbox="1089 625 1222 657">.080"</td> </tr> <tr> <td data-bbox="630 657 846 716">18" and 24" handsplit and resawn</td> <td data-bbox="846 657 976 716">6d box 2"</td> <td data-bbox="976 657 1089 716">0,19"</td> <td data-bbox="1089 657 1222 716">.0915"</td> </tr> <tr> <td data-bbox="630 716 846 747">24" tapcr-tiplit</td> <td data-bbox="846 716 976 747">3d box 1 1/2"</td> <td data-bbox="976 716 1089 747">0,19"</td> <td data-bbox="1089 716 1222 747">.080"</td> </tr> <tr> <td data-bbox="630 747 846 779">1 1/2" and 2 1/4" lap-split</td> <td data-bbox="846 747 976 779">6d box 2"</td> <td data-bbox="976 747 1089 779">0, 19"</td> <td data-bbox="1089 747 1222 779">.0915"</td> </tr> <tr> <th data-bbox="630 779 846 856">SHINGLES</th> <th data-bbox="846 779 976 856">NAIL TYPE AND MINIMUM LENGTH</th> <th data-bbox="976 779 1089 856"></th> <th data-bbox="1089 779 1222 856"></th> </tr> <tr> <td data-bbox="630 856 846 888">16" w/d 18"</td> <td data-bbox="846 856 976 888">3d box 1 1/2"</td> <td data-bbox="976 856 1089 888">0, 19"</td> <td data-bbox="1089 856 1222 888">.0915"</td> </tr> <tr> <td data-bbox="630 888 846 930">24"</td> <td data-bbox="846 888 976 930">4d box 1 1/2"</td> <td data-bbox="976 888 1089 930">0,19"</td> <td data-bbox="1089 888 1222 930">.0915"</td> </tr> </tbody> </table>	SHAKES	NAIL TYPE AND MINIMUM LENGTH	MIN. NAIL HEAD SIZE	MIN. SHANK DIAMETER	18" straight-split	3d box 1 1/2"	0,19"	.080"	18" and 24" handsplit and resawn	6d box 2"	0,19"	.0915"	24" tapcr-tiplit	3d box 1 1/2"	0,19"	.080"	1 1/2" and 2 1/4" lap-split	6d box 2"	0, 19"	.0915"	SHINGLES	NAIL TYPE AND MINIMUM LENGTH			16" w/d 18"	3d box 1 1/2"	0, 19"	.0915"	24"	4d box 1 1/2"	0,19"	.0915"	D 181
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0 181	R905.8.6.	<p><b>Wood Shake Application.</b> The minimum requirements for application of wood shakes are expanded. Fastener type is clarified, and a new table lists minimum sizes for box nails. Labeling requirements for fastener packaging have also been added.</p>	D 181																																
181 D	R905.16	<p><b>Photovoltaic Shingles.</b> Additional requirements and limits for photovoltaic shingles have been added to Section R905.16</p>	0 181																																
0 181	R907	<p><b>Roof-top-Mounted Photovoltaic Systems.</b> This code provision describes the requirements and limits of rooftop-mounted photovoltaic.</p>	D 181																																
0 181	R1004.1.1.	<p><b>Factory-built Wood burning Fireplaces.</b> A reference to the federal regulations found in Cal green has been added to the factory-built fireplaces</p>	D 181																																
181 D	Appendix R	<p><b>Light Straw-Clay Construction.</b> Prescriptive provisions for light straw-clay construction have been added as an appendix to the 2016 CRC. Light straw-clay walls are nonbearing infill around a structural frame.</p>	D 181																																
0 181	Appendix S	<p><b>Strawbale Construction.</b> Prescriptive provisions for strawbale construction have been added as an appendix to the 2016 CRC</p>	D 181																																

## 2016 California Fire Code Changes

### SUMMARY

Some of the significant changes are: There are more emphases on Title 19 for enforcement and staff training regardless of occupancies. A good example would be Chapter 56, Explosive and Fireworks. This chapter went from one-page to 35-pages with Title 19 added into the body of the fire code. Carbon monoxide has been add as a permitted item. There are changes to how fire flow is determined and the number fire hydrants required. There are also noted requirements and provisions found throughout the 2016 Edition that have been added but enforced in other adopted codes and standards for some time. One example would be fire doors. Testing of fire doors is a requirement in NFPA 80, which has been adopted by the State for several editions. Now it's noted in the body of the fire code to enforce.

### SIGNIFICANT CHANGES

NEW- CHANGE	CFC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D [81]	105.1.4	<b>Emergency Repair.</b> Permits required the next business day.	0 [81]
D [81]	105.4.5	<b>Amended Construction Documents.</b> Changes during inspection, resubmittal required.	[81] D
181 D	105.6.4	<b>Carbon Dioxide System Use In Beverage Dispensing Applications.</b> Operating permit is now required if over 100 pounds of CO being used.	D 181
181 D	105.7.9	<b>Gates &amp; barricades across fire apparatus access roads.</b> Construction permit required.	D [81]
D 181	105.7.15	<b>Solar Photovoltaic Power System.</b> Permit not required for maintenance.	D [81]
181 D	202-Definition	<b>AGRO-INDUSTRIAL.</b> Transforming of raw agricultural products.	D 181
D [81]	202-Definition	<b>Congregate Living Health Facility (CLHF).</b> Major changes to the limitation for R-occupancies. s 12 beds, s 59 beds if operated by city/county, s 25 beds if county population is s 500,000.	D 181
181 D	202-Definition	<b>Educational Group E.</b> Group E day-care facilities within places of worship. Treat as part of assembly.	D 181
181 D	202-Definition	<b>Factory Industrial, F-1 Moderate-hazard.</b> Food processing & commercial kitchens not associated with restaurants, cafeterias, etc., 2,500 sq ft.	D [81]
D 181	202-Definition	<b>Persons with intellectual Disabilities, Profoundly or Severely.</b> Unable to evacuate unassisted.	D [81]
D 181	202-Definition	<b>Residential Group (R-3) - Lodging Homes.</b> s Five guest rooms, comply with CRC.	D [81]
[81] D	202-Definition	<b>Storage Group-Accessory Storage Space.</b> s 100 sq ft treat as part of occupancy use.	D 181

**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CFC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
fZ] D	311.6	<b>Unoccupied tenant spaces in mall buildings.</b> No storage allowed, ½ inch gypsum separation, door lock, broom swept clean.	D [81
D [8]	312.3	<b>Vehicle Impact Protection.</b> Still require size and dimensions but no longer require 12,000 lbs. impact force.	D [8J
[8J D	315.3.3	<b>Equipment Rooms &amp; Storage.</b> No combustible storage in fire command center (added)	D [8]
[8] D	315.6	<b>Storage in Plenums.</b> Abandoned cables shall be labeled or removed. Six inches max length per CEC.	D [8]
D [8]	403	<b>Emergency Preparedness Requirements.</b> Section has been expanded from ½ page to several pages. Required for all occupancies based on occupancy load number of floors.	D [8]
D [8J	404	<b>Fire Safety, Evacuation &amp; Lockdown Plans.</b> For all occupancies based on occupant load. Defend in place added. Title 19 referenced.	D [8]
D [8]	405	<b>Emergency Evacuation Drills.</b> For all occupancies based on O.L. and floor levels. Title 19 referenced	D [8]
D [8J	406	<b>Employee Training &amp; Response Procedures.</b> Training records shall be maintained.	D [8]
D [8]	504	<b>Access to Building Openings &amp; Roof.</b> Security fencing, razor wire fencing, etc. Title 19 referenced. Note this needs approval by the FD not code official.	D [8]
D [8]	508.1.6 (#3)	<b>Fire Alarm, Required features.</b> Zoning annunciator panel required. Addressable for high-rise buildings.	D [8]
[8] D	510.4.2.3	<b>Emergency Responder Radio, Standby power.</b> 24 hrs standby power required. Must be supervised by building FA system.	D [8]
D [8]	604.1.3	<b>Emergency &amp; Standby Power Systems, Load transfer.</b> Emergency (10 seconds) and Standby Power Systems (60 seconds).	D [8]
I I [X]	604.1.4	<b>Load duration.</b> 2-hrs without refueling (minimum).	I I [X]
D [8]	604.2.6	<b>Essential power.</b> Group 1-2, comply Ch-27, CBC, NFPA 99. Example would be during operational procedures.	D [8]
D [8]	605.11.1.3.2	<b>Solar Photovoltaic Power Systems.</b> Non-R-3, 6 feet minimum around perimeter, 4 feet minimum around fire systems, vents, standpipes, etc.	D [8]
D [8]	606.12	<b>Discharge &amp; termination of pressure relief &amp; purge system.</b> Pressure relief device for mechanical refrigeration. Several methods including AMMR. Shall comply with ASHARE 15.	D [8]
D [8J	607.6	<b>Water protection of hoistway enclosures.</b> Design to prevent water into hoistways. Similar to opening protection around escalators.	D [8]
D [8]	609.2	<b>Commercial Cooking Appliances Producing a Low Volume of Grease-Laden Vapors (electric devices).</b> Type 1 Hood not required if product only product 5 mg/m <sup>3</sup> at an exhaust flow rate of 500 cfm.	D [8]

**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CFC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D [8J]	609.3.3.3.1	<b>Commercial Kitchen Exhaust Hoods -Tags.</b> Testing & Inspection of systems shall be taaaed when serviced.	D [8J]
D [8J]	609.4	<b>Appliance connection to building piping.</b> Listed flexible connectors are required between the fixed fuel-gas piping and cooking appliance on casters.	D [8J]
D [8J]	610	<b>Commercial Kitchen Cooking Oil Storage.</b> Separation of storage tanks between metallic and non-metallic. Venting for normal and "emergency". System components shall be listed at least maximum operating temperature.	D [8J]
I I [XI]	611.2	<b>Hyperbaric Facilities.</b> Comply with NFPA 99.	I I [XI]
D [8J]	703.1	<b>Fire-Resistance-Rated Construction - Maintenance.</b> Records of inspections and repairs maintained. Inspection not required if not accessible .	D [8J]
D [8J]	703.4	<b>Testing - sliding rated fire doors.</b> Annual testing noted in accordance with NFPA 80.	D [8J]
D [8J]	803.5	<b>Textiles, Interior walls and ceilings.</b> Expanded to include Title 19 materials regarding testing specimen.	D [8J]
D [8J]	807	<b>Decorative Materials Other Than Decorative Vegetation in New &amp; Existing Buildings.</b> Now include motion picture productions, institutions and dormitories.	D [8J]
D [8J]	807.5.2	<b>Artwork in Group E and 1-4.</b> In corridors :!> 20% but now :!> 50% of the classroom wall areas.	D [8J]
D [8J]	901.4.1	<b>Required fire protection systems.</b> Design options approved shall be considered an acceptable required system.	D [8J]
D [8J]	901.6	<b>Inspection, testing and maintenance.</b> NFPA 25, 2013 Edition , California version now adopted.	D [8J]
D [8J]	901.6.2.1	<b>Records information.</b> All fire systems shall be maintained for the life of the installation.	D [8J]
D [8J]	901.8.2	<b>Removal of existing occupant-use hose lines.</b> If not required, hoses can be removed. Outlets shall remain.	D [8J]
D [8J]	903.2.1.6	<b>Assembly occupancies on roofs.</b> In an A-2 > 100 & All other A's > 300 O.L. all floors of exit discharge below shall be sprinklered.	D [8J]
D [8J]	903.2.1.7	<b>Multiple fire areas.</b> If shared exits, sprinklers are req'd if occupant load exceeds 300 combined.	D [8J]
D [8J]	903.2.1.1.2	<b>Group R Occupancies, Bathrooms.</b> Except R-4, sprinklers are not req'd if less than 55 sq ft. Same for 13, 13R and 13D.	D [8J]
D [8J]	903.2.8	<b>Sprinklers, Group R-2.1 &amp; R-4.</b> Must be designed to either 13R or 13 (not 13D) Special requirements for attic protection (construction or detection)	D [8J]
D [8J]	903.2.10.1	<b>Commercial parking garages (5-1 Occupancy).</b> Storage of commercial vehicles over 5,000 sq ft shall be sprinklered.	D [8J]
D [8J]	903.3.1.2	<b>NFPA 13R sprinkler systems.</b> Four-stories or less and less than 60 feet in height.	D [8J]

**SIGNIFICANT CHANGES** (cont'd)

NEW- CHANGE	CFC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D [8]	903.3.1.2.2	<b>Open-ended corridors.</b> In R-occupancies, open-ended corridors and associated exterior stairways and ramps shall be sprinklered.	D [8]
D [8]	903.3.5	<b>Water supplies.</b> Water supply information shall be based on seasonal chanQe.	D [8]
D [2]	903.3.8	<b>Limited area sprinkler systems.</b> Max six sprinklers (use to be 19). Must be light or OH only. Plumbing system okay, no control valves, supervision not required but must be hydraulically calculated.	D [8]
I I IXI	903.3.9	<b>Floor control valves.</b> Required if > 4-stories or > 30 feet.	I I IXI
D [8]	904.11	<b>Automatic water mist systems.</b> Recognized as alternative but not equal to fire sprinklers. Comply with NFPA 750.	D [Z]
D [8]	905.3.11	<b>Fixed guideway and passenger rail transit systems.</b> Class I instead of Class III.	D [8]
D [8]	906.1	<b>Portable Fire Extinguishers, Where required.</b> Added Exception 9, Within 30 feet from cooking equipment in 1- 2.	D [8]
D [8]	906.2	<b>Portable Fire Extinguishers, General requirements.</b> Exception 3, "1-2" & 1-3 permitted to be in staff location	D [8]
D [8]	907.1.2	<b>Fire alarm shop drawings.</b> Added item number 4, Design minimum audibility level for occupant notification.	D [8]
D [Z]	907.2.3	<b>FA, Group E Occupancies.</b> Emergency voice/alarm communication systems not required when O.L. < 100.	D [8]
D [8]	907.2.6.4	<b>Large family day care.</b> Manual pull shall be listed by the SFM's Office. Red pull box	D [8]
D [8]	907.2.11.7	<b>Smoke detection system.</b> FA system can be installed provided only within alarm notification is within the dwelling unit. Must be monitored per NFPA 72. i.e. row houses/apartments etc.	D
D [8]	907.2.11.8	<b>S/Ds, Specific location requirements.</b> Refer to 72-29.8.3.4, distances from cooking appliances, bathrooms, etc.	[8] D
D [8]	907.2.22	<b>Airport traffic control towers.</b> Automatic smoke detection system required	D [8]
D [8]	907.3.1	<b>Duct smoke detectors.</b> Supervisory signal and not as a fire alarm signal.	D [8]
D [8]	907.4.2.1	<b>Manual fire alarm boxes, Locations.</b> 200 feet spacing unless buildinQ is sprinklered then 5 ft from door only.	D [8]
D [8]	907.5.2.2.5	<b>Voice Evac Systems - Emergency power.</b> 24 hrs min. for all occupancies if required.	D [8]
D [8]	907.6.3	<b>Initiating device identification (For High-Rises).</b> Unless < 22,500 sq ft, < 10 alarm-initiating devices, or replacing existinQ systems.	D [8]
D [8]	907.8.5	<b>Inspection, testing and maintenance.</b> Building owners shall maintained records.	D [8]
D [8]	908.7	<b>Carbon dioxide (CO2) systems.</b> Emergency alarm systems in accordance with Section 5307.5.2	D [8]
D [8]	909.4.6	<b>Duration of operation.</b> 20 minutes or 1.5 times the calculated egress time, whichever is greater.	D [8]



**SIGNIFICANT CHANGES** (cont'd)

NEW- CHANGE	CFC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D [81]	909.4.7	<b>Smoke control system interaction.</b> Shall consider all design scenarios.	D [81]
D [81]	909.21	<b>Elevator hoistway pressurization alternative.</b> Pressurized elevator hoistway in lieu of enclosing the elevator lobby.	D [81]
D [81]	910.2	<b>Smoke &amp; Heat Removal.</b> Vents shall not be required for control mode sprinklers or < 12 sprinklers	D [81]
D [81]	913.2.2	<b>Circuits supplying fire pumps.</b> Cables shall be installed for survivability in accordance with UL2196 (2Hrs).	D [81]
D [81]	913.5	<b>Fire Pump, Testing and maintenance.</b> Records of testing shall be maintained per Title 19.	D [81]
D [81]	914.3.1.2	<b>Water supply to required fire pumps.</b> Buildings over 120 feet, pumps must be supplied from two mains from two different streets without interruptions. Can be same street frontage without interruptions.	D [81]
D [81]	914.8.2	<b>Automatic sprinkler system for new airport traffic control towers.</b> New towers over 35 feet shall be sprinklered.	D [81]
D [81]	915	<b>Carbon Monoxide Detection. Required in 1-2 &amp; 4, R's &amp; E-classrooms.</b> Exempt only if no open communication. Must have visible alarms in multi-dwelling units.	D [81]
D [81]	1004.1.1.2	<b>Adjacent levels of mezzanines.</b> The occupant load shall be the combined cumulative occupant load within the space below.	D [81]
D [81]	Table 1004.1.2	<b>Occupant Load Table.</b> Mercantile O.L. 60 for all floors instead of 30.	D [81]
D [81]	1006.3	<b>Egress from stories or occupied roofs.</b> Allow to pass through only one floor, then in a rated assembly. If three exits are required, 50% must pass through rated stairwells.	D [81]
D [81]	1007.1.1.1(1)	<b>Measurement point.</b> Now can be measured at any point from door to door.	D [81]
D [81]	1007.2	<b>Exit &amp; Exit Access Doorway Configuration.</b> If 3 exit doors are required, two must be ½ the diagonal distance.	D [81]
D [81]	1008.3.3	<b>Emergency Power, Rooms &amp; Spaces.</b> Exit signs now requires in electrical equipment, fire command centers, fire pump and public restrooms over 300 sq ft.	D [81]
D [81]	1103.4.1	<b>Vertical Openings/ Existing 1-2 &amp; 3.</b> Not SFM Adopted. Separation req'd, smoke barriers, smoke partitions, > 3 stories must be sprinklered, AMR can be proposed.	D [81]
D [81]	1114.20	<b>EVAC in high-rise buildings.</b> Not SFM Adopted. All existing high-rise over 150 feet shall have installed EVAC.	D [81]
D [81]	1114.27	<b>Existing NS High-rise buildings.</b> Not SFM Adopted. All existing non-rated high-rises shall be sprinklered.	D [81]
D [81]	2306.8.1	<b>Alcohol blended fuel dispensing.</b> All components shall be listed for use with alcohol-blended fuels, comply with UL87A	D [81]
D [81]	2307.4	<b>LP-gas dispensing operations. Allows self-service LP-gas refueling by the public.</b> Special nozzles required.	D [81]

**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CFC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D r2J	2404.7.3	<b>Flammable Finishes, Air velocity.</b> Expanded to have ventilation maintained based on use.	D r2J
D [?Q	2808.3	<b>Lumber Yard &amp; Argo-Industrial Biomass &amp; Woodworking Facilities, Storage of Product. Size of piles.</b> Piles can be larger if approved by AHJ if, FD access roads, water supply, trained personnel & additional on-site fire protection.	D [8j
D [8j	3103.9.1	<b>Structural design of multistory tents &amp; membrane structures.</b> Tents> one-story must comply with CBC even if temporary.	D [8j
I J IXI	3105	<b>Temporary Staae Canopies.</b> > 400 sq ft, permit req'd.	I J IXI
D [8j	3203.2	<b>Plastic pallets.</b> Now considered a hazardous product unless listed by FM.	D r2J
D r2J	3206.6.1	<b>Number FD Access doors required.</b> Must comply if change of occupancy.	D r2J
I I IXI	3206.9.3	<b>HPS, Dead-end aisles.</b> S :s; 50 ft & M :s; 20 ft	I I IXI
D r2J	3306.2	<b>Flammable Gases.</b> Cleaning and purging with flammable gas shall comply with NFPA 56. New and existing shall comply.	D [8j
D r2J	3504.1.7	<b>Precaution in hot work. New hot work permit.</b> Cleaning and purging with flammable gas shall comply with NFPA 56. New and existing shall comply.	D r8j
D r2J	3703.7	<b>Combustible Fibers, Sources of ignition. No smoking sign and open flame provisions added.</b>	D r2J
D r2J	Table 5003.1.1(1)	<b>Hazardous Materials, Maximum Allowable Quantities.</b> Consumer fireworks - 125 lbs even with sprinklers, Combustible fibers - technical report required. Explosive - Division 1.3 (H-3), Increased from 5 to 10 lbs/ cubic ft., Unstable reactive materials - Class 3 gasses 250 to 750 cubic ft = NFPA 55. Alcohol-based hand rubs - added footnote p(5) - excluded from MAQ, Gas rooms - added footnote e, must be sprinklered/ ventilation / separation.	D r2J
D r2J	5104.1.1	<b>Plastic containers (Aerosols).</b> Allow btw 4 to 33.8 fluid ounces to be classified Commodity Class III. All others, protection system shall extend beyond 20 feet.	D r2J
D r2J	5307	<b>Carbon Dioxide Systems Used in Beverage Dispensing Applications.</b> Over 100 lbs (874.1 cubic ft) operating permit req'd.	D r2J
I I IXI	5601	<b>Explosives &amp; Fireworks. Title 19 written in fire code.</b>	I I IXI
D r2J	5808	<b>Hydrogen Fuel Gas Rooms.</b> H2 shall not exceed MAQ. H-2 shall have gas detectors and ventilation	D r2J
D r2J	Appendix B	<b>Fire Flow Requirements for Buildings.</b> 75% Reduction in fire flow. No longer states....up to 75%.	D 121
D r2J	Appendix C	<b>Fire Hydrant Location &amp; Distribution.</b> 50% increase for commercial & 25% increase for residential.	D r2J
D r2J	Appendix D	<b>Fire Apparatus Access Road.</b> Access gates shall be either 20 ft or a pair of 12 ft gates.	D r2J

**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CFC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D	Appendix K	<b>Construction Requirements for Existing Ambulatory Care Facilities. (Not SFM Adopted).</b> Comply with Ch-11.	D
D	Appendix L	<b>Requirements for Fire Fighter Air Replenishment System. (Not SFM Adopted).</b> Maintenance requirement listed in this appendixes.	D
D	Appendix M	<b>High-Rise Buildings - Retroactive Automatic Sprinkler Requirement. (Not SFM Adopted)</b> High-rises shall be sprinklered.	D

## 2016 California Electrical Code (CEC) Changes

### SUMMARY

A few new requirements were added this cycle. However, most of the significant changes were modification or clarifications to existing requirements. About one-third of the changes affected master plan dwellings.

### SIGNIFICANT CHANGES

NEW- CHANGE	CEC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D [8J]	110.21 (B)	<b>Field Applied Hazard markings.</b>	D [8J]
D 0	1102.25	<b>Requirements for lockable disconnecting means. First steps in raising the 600v ceiling on premise wiring to 1000.</b>	D [8J]
D [8J]	110.26 (C)(3)	<b>Requirement for all doors within 25 feet of switchgear rated 800 amps or more shall have panic hardware and open in the direction of egress.</b>	D [8J]
D 0	110.26 (E)(2)	<b>Dedicated space for electrical equipment in now required for outdoor installations.</b>	D [8J]
D [8J]	200.4	<b>Neutral Conductors must be identified with the ungrounded conductors in multi-wire branch circuits.</b>	D [8J]
D [8J]	210.5 (C)(2)	<b>Identification of positive and negative conductors in DC systems.</b>	0 D
D 0	210.8 A 910	<b>Laundry Area and within 6 feet of sink for refrigerator and garbage disposal?</b>	[8J] D
D [8J]	210.8(8)(8)	<b>All commercial garages and service bays. GFCI outlet</b>	D [8J]
D [8J]	210.8(0)	<b>GFCI protection on all dishwashers in dwelling units.</b>	[8J] D
D [8J]	210.12A	<b>AFCI protection added to kitchen and laundry areas.</b>	[8J] D
D [8J]	210.12 (C)	<b>AFCI required on dormitory units.</b>	D [8J]
D [8J]	210.13	<b>GFCI Protection on equipment and service feeders 1000amps or higher 277/480.</b>	D [8J]
D [8J]	210.17	<b>Vehicle charging equipment shall have no other outlets.</b>	D [8J]
D [8J]	210.52 E1	<b>Outdoor receptacles readily accessible from grade level.</b>	0 D
D [8J]	210.52 G	<b>Garage receptacles to be deducted to garage only and at least 1 receptacle for each car space.</b>	[8J] D

## SIGNIFICANT CHANGES (cont'd)

NEW-CHANGE	CEC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D [81]	210.64	1 receptacle to be installed within 50 feet of all service equipment.	[81] D
D [81]	220.12	Lighting loads to be calculated by local energy codes.	[81] D
D [81]	230.44	Cable trays to be labeled every 10 feet when service entrance conductors are in it.	D [81]
D [81]	250.166	Added a maximum size for DC GEC to 3/0 cu. or 250 alum.	D [81]
D [81]	300.6	Field threading of rigid conduit must be protected from corrosion.	D [81]
D [81]	310 15 B7	Service feeders for dwelling units table has been removed. They are allowed to be 83% of OCPD they are serving.	[81] D
D [81]	334.40 B	NMC interconnectors allowed without box and concealed.	D rgJ
D [81]	406.3 E	All controlled receptacles shall be marked with the same symbol.	D rgJ
D [81]	406.9 (1)	All outdoor receptacles to have extra duty rated in use covers.	rgJ D
D [81]	406.12	All 125v receptacles in hotel, motel rooms/suites and child care facilities shall be tamper resistant.	D rgJ
D [81]	408.4(B)	Panelboards and switchboard fed from more than one source must be labeled what sources and where they are located.	D rgJ
D [81]	410.6	All retrofit kits for lamp holders and LTG must be listed.	D [81]
D [81]	410.130 G1	All fluorescent LTG containing serviceable ballast shall have a disconnecting mean in each LT.	D rgJ
D [81]	422.5	GFCI devices for protection of appliances, drinking fountains, vending and vacuum cleaners must be readily accessible.	rgJ D
D [81]	422.23	GFCI protection for tire inflation and vacuums in commercial applications	D rgJ
D [81]	440.9	Equipment ground conductor required in all outdoor HVAC equipment in LFMC and EMT	rgJ D
D [81]	517.2	Several changes in Healthcare Facilities in definitions patient care areas and operating rooms.	D rgJ
D [81]	590.4(0)(2)	All temp power 125 and 250v 15 20 amp receptacles to have extra duty in-use covers.	D rgJ

## SIGNIFICANT CHANGES (cont'd)

NEW-CHANGE	CEC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D [81]	590.4(J)	<b>Cable assemblies and flexible cords used for temporary power distribution are prohibited from being laid on the floor and must be protected from physical damage.</b>	D [81]
D C8J	600.4 (E)	<b>Signs, outline lighting and retrofit kits require field wiring and installation instructions.</b>	D C8J
D [81]	690	<b>Many changes to PV installation.</b>	C8J D
D C8J	700.8	<b>Surge protection on panelboards for emergency systems.</b>	D [81]
D C8J	700.24	<b>Emergency lighting cannot be part of a dimmer system or must be listed for use in an emergency lighting system.</b>	D C8J
D	646	<b>Modular Data Centers</b>	D [81]
D	393	<b>Suspended low voltage power distribution.</b>	D [81]
D	728	<b>Fire resistive cable system.</b>	D [81]
181 D	750	<b>Energy management systems.</b>	D [81]

# 2016 California Energy Code (CEC) Changes

## SUMMARY

New and altered homes are to become more efficient in several ways to create energy and environmental savings for Californians. Building systems that include updates are: High Performance Attics, High Performance Walls, Improved Water Heating System Efficiency and High Efficacy Lighting.

Changes to the nonresidential requirements largely follow ASHRAE 90.1 national standards and include energy conservation measures related to the following building systems: Door and Window Interlocks, Direct Digital Controls, Outdoor Lighting, Escalators and Elevators.

## SIGNIFICANT CHANGES

NEW-CHANGE	CEC SECTION/TABLE NUMBER	COMMENTARY (RESIDENTIAL)	MASTER PLAN IMPACT YES - NO
D	150.0	<b>Mandatory Requirements (Residential Envelope).</b> There are several new thresholds for mandatory envelope requirements including a new exception allows for 30 sqft for dual glazed greenhouse windows.	D
D	150.1	<b>Prescriptive High Performance Walls.</b> In Climate Zones 1-5 & 8-16, above grade framed wall assemblies must not exceed a maximum U-factor of 0.051. In Climate Zones 6 & 7, the maximum Li-factor is 0.065.	8  D
8  D	150.1	<b>Prescriptive High Performance Attics.</b> There are three options that may be used to comply: Two options allow ducts and air handler to be located in the attic; One option requires ducts and air handler to be located in conditioned space.	D
D	150.2	<b>Prescriptive Additions.</b> Provides several options that allow for extensions of existing wood-framed walls to retain the same dimensions.	D
D	150.0(m)	<b>Mandatory Requirements (Residential Mechanical).</b> All ducts in conditioned spaces must include R-4.2 insulation. Duct leakage requirement has been reduced to 5% maximum for single family homes.	D
D	150.1	<b>Prescriptive Requirements.</b> Provides the duct insulation requirements for high performance attic. Air flow requirements for whole house fans (cfm/sf) attic vent areas (sf/cfm) requirements have been reduced.	D
D	110.3(c)7	<b>Mandatory Isolation Valves (Domestic Hot Water).</b> Instantaneous water heaters with an input rating of 6.8kBTU/hr (2 kW) or greater need an isolation valve on the cold water supply and hot water leaving the water heater. Each valve will need a hose bibb or other fitting allowing for flushing the water heater when the valves are closed.	D

## SIGNIFICANT CHANGES(cont'd)

NEW-CHANGE	CEC SECTION/TABLE NUMBER	COMMENTARY (RESIDENTIAL)	MASTER PLAN IMPACT YES - NO
D 121	150.1(c)8	<b>Domestic-Water-Heating-System.</b> Water heater prescriptive efficiencies have been Increased. Options have been provided for 3 different (gas or propane) systems, which include efficiency and pipe insulation requirements.	[8J] D
D 121	150.2(b)1G	<b>Mandatory Water Heater Pipe Insulation.</b> For water heater replacements, install piping insulation per mandatory requirements. Insulation for existing accessible piping must meet the requirements of Sections 150.0(i)2Ai, iii and iv.	121 D
D 121	Guidebook (NSHP)	<b>Onsite Renewable Systems.</b> Compliance credit for installing PV systems is only available if the project used a performance approach and meets several other conditions. Note: Taking the PV system credit does not require HERS verification unless getting a rebate from the New Solar Homes Partnership (NSHP)	121 D
D 121	150.0(k)	<b>Mandatory High Efficacy Lighting (Residential Lighting).</b> All permanently installed light fixtures shall be high efficacy, including screw-based which must contain JA8 compliant lamps.	121 D
D 121	150.0(k)G	<b>Screw Based Luminaires.</b> Must contain JA8 compliant light sources. Must not be contained in recessed downlight luminaires. Incandescent sources are prohibited from havinQ a GU-24 base (per Title 20 Section 1605.3(k).	121 D
121 D	150.0(k)B	<b>Blank Electrical Boxes.</b> The number of blank electrical boxes more than 5 feet above the finished floor shall not be greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor, or fan speed control.	121 D
D [8J]	150.0(k)2J	<b>Bathrooms, Garages, Laundry Rooms, and Utility Rooms.</b> At least one fixture must be controlled by a vacancy sensor.	121 D
D 121	150.0(k)2L	<b>Under Cabinet Lighting.</b> Any under cabinet lighting (including kitchen) must be switched separately from other lighting systems.	121 D
D 121	150.0(k)3	<b>Outdoor Lighting.</b> Must be high efficacy and include a manual on/off switch and one of the following: Photocontrol and motion sensor; Photocontrol and automatic time switch control; Astronomical time switch control; EnerQv ManaQement Control Svstem.	121 D



## SIGNIFICANT CHANGES(cont'd)

NEW-CHANGE	CEC SECTION/TABLE NUMBER	COMMENTARY (NONRESIDENTIAL)	MASTER PLAN IMPACT YES - NO
D [8]	120.7	<b>Mandatory Requirements (Envelope).</b> Wall insulation levels have been changed for metal framed and metal demising. All other mandatory insulation levels are unchanged. Additional exceptions apply for dedicated data centers.	D tgJ
D [8]	140.3 & Table 140.3	<b>Prescriptive Requirements.</b> Prescriptive envelope requirements have been updated in Table 140.3-B & C. Prescriptive roof/ceiling insulation tradeoff for Aged Solar Reflectance Table 140.3 has been updated and applies to new installations as well as roof replacements.	D [8]
D [8]	120.6(9)	<b>Escalators and Moving Walkways.</b> Will be required to run at lower speeds when unoccupied while not in use in use in high traffic areas like airports, hotels, and transportation function areas.	D 181
D [8]	120.6(f)	<b>Elevators.</b> Energy efficient lighting and fan changes. Automatic shut-off controls for lights and fans after 15 minutes of no service. Lighting and ventilation to be operable during emergency stop situations while occupied with passengers.	D [8]
D r8l	110.2	<b>Mandatory Equipment Efficiencies (Mechanical).</b> Air conditioning unit efficiencies have increased. Chiller and DX equipment efficiencies have become more stringent.	D [8]
tgJ D	120.2(i)	<b>Economizers.</b> New mandatory requirements for Fault Detection and Diagnostics (FDD) on all economizers installed on new air-cooled packaged DX units with cooling capacity of 54,000 Btu/hr or greater. Stand alone or integrated FDD accepted per Section 120.2(i).	D [8]
D 18]	120.2 & 140.4	<b>HVAC System Controls.</b> Mandatory Direct Digital Controls (DDC) must be capable of monitoring several points, have optimum start/stop controls, and perform automatic information transfers. Prescriptive HVAC Shut-off Sensors for Windows and Doors when left open for more than five minutes, sensors will adjust thermostats to disable the HVAC equipment by resetting the temperature setpoints. Exemptions for doors with automatic closers or any space without thermostatic controls.	D [8]
D 18]	120.8	<b>Nonresidential Building Commissioning.</b> Commissioning is required for all new buildings with nonresidential conditioned space, including nonresidential spaces in hotel/motel and high-rise residential buildings. The Owner's Project Requirements (QPR) must include building envelope performance expectations. Section 10-103 in Part 1 specifies that the Design Reviewer may be a licensed architect or licensed contractor in addition to a professional engineer.	D [9]

## SIGNIFICANT CHANGES(cont'd)

NEW-CHANGE	CEC SECTION/TABLE NUMBER	COMMENTARY (NONRESIDENTIAL)	MASTER PLAN IMPACT YES - NO
D	140.6	<p><b>Prescriptive Calculation Methodology (Lighting).</b> Allowed Lighting Power Densities are reduced for both Complete Building and Area Category Methods per Tables 140.6-B &amp; C. Lighting Power Density Values for the Tailored Method are updated per Table 140.6-G. Allowances in Table 140.6-D remain unchanged</p>	D
D	130.1 & 140.6	<p><b>Indoor Lighting Controls.</b> An additional exception is included for Mandatory Shut-Off Controls.</p> <p><b>Mandatory Multi-Level Controls</b> shall be provided for enclosed areas 100 ft<sup>2</sup> or greater with a general lighting load greater than 0.5 w/ft<sup>2</sup>. Some exceptions apply.</p> <p><b>Mandatory Partial-ON Occupancy Sensor</b> for areas requiring occupant sensing controls (offices 250 ft<sup>2</sup>, multipurpose rooms &lt; 1,000 ft<sup>2</sup>, classrooms, and conference rooms), and multilevel controls, the occupant sensing controls shall function as partial-ON or vacancy sensor. Where no multi-level controls are required, an automatic full-on occupancy sensor is acceptable.</p> <p><b>Control Credits:</b> Power Adjustment Factors (PAF) listed in Table 140.6-A have been updated and include several options.</p>	D
D	141.2.1	<p><b>Entire Luminaire Alterations.</b> Renamed for clarity. Lighting shall meet the lighting power allowance in Section 140.6 and altered permanently installed luminaires shall meet the applicable requirements in Table 141.0-E if the following options occur:</p> <ul style="list-style-type: none"> <li>• Removing/reinstalling 10% or more of the existing luminaires (if there are more than 2) in a space, or</li> <li>• Replacing or adding entire luminaires, or</li> <li>• Adding, removing, or replacing walls or ceilings along with lighting redesign.</li> </ul> <p>When replacing existing luminaires and the alteration is not in conjunction with adding, removing or replacing walls or ceilings, the new luminaires must:</p> <ul style="list-style-type: none"> <li>• Reduce rated power by 50% for office, retail and hotel occupancies and 35% for all others, compared to the original luminaires, at full light output, and</li> <li>• Meet all the control requirements in the Sections listed.</li> </ul>	D

SIGNIFICANT CHANGES(cont'd)

NEW-CHANGE	CEC SECTION/TABLE NUMBER	COMMENTARY (NONRESIDENTIAL)	MASTER PLAN IMPACT YES - NO
D	141.2J	<p><b>Luminaire Component Modifications.</b> Formerly, luminaire modifications-in-place. Alterations that replace the ballasts or drivers and the associated lamps in the luminaire, or permanently change the light source or the optical system of the luminaire.</p> <p>Modifying the components of fewer than 70 existing luminaires on a single floor or within a tenant space within a year, does not trigger code. If there are 70 or more modifications per year on a single floor or tenant space, then the project needs to meet lighting power allowances and reduced power ratings.</p> <p>Modifications should not prevent or disable multi-level, shut-off or daylight controls.</p>	D
D	141.0(b)2K	<p><b>Lighting Wiring Alteration.</b> Alterations that add a circuit feeding luminaires, that replace, modify or relocate wiring between a switch or panelboard and luminaires, or replace lighting control panels, panelboards, or branch circuit wiring.</p> <p>Wiring alterations (unless strictly to add lighting controls) in each enclosed space shall meet the control requirements of the sections listed.</p> <p>Exceptions for all lighting alterations are included at the end of this section.</p>	D
D	Table 140.7-A	<p><b>Hardscape Lighting Power (Outdoor Lighting).</b> Zone 0 has been added for undeveloped areas of state or national parks.</p>	D
D	Table 140.7-B	<p><b>Specific Applications in Lighting Power.</b> Lighting power allowances for building entrances/exits are reduced. Lighting power allowances for ATM machines is now specified.</p>	D
D	[8J] 130.2(c)3	<p><b>Motion Sensors.</b> Must be able to reduce lighting power of each luminaire by at 40% (90% max.). Sales lot and sales canopies are no longer exempt.</p>	D
D	[8J] 141.(b)2L	<p><b>Outdoor Lighting Alterations.</b> Alteration to outdoor lighting shall meet several mandatory control requirements.</p> <p>Added or altered luminaires that increase the connected light load must meet applicable control and specific lighting application requirements.</p> <p>Control requirements are also provided for alterations that do not increase the connecting lighting load but where the greater of 5 luminaires or 10% of existing luminaires are replaced <b>and</b> for alterations that do not increase the connecting lighting load but where the greater of 5 luminaires or 50% of existing luminaires are replaced.</p> <p>An exception to lighting control acceptance testing is provided for a total of 20 or fewer controlled luminaires</p>	D

## 2016 California Plumbing Code (CPC) Changes

### SUMMARY

Some of the significant changes are:

New product standards for plumbing fixtures such as lavatories, showers, bathtubs and whirlpool bathtubs, bidets, urinals, drinking fountains, and sinks. Lead-content provisions have been revised to address the minimum acceptable percentage lead content for pipes and fittings. New provisions for residential fire sprinkler systems. New requirements for the insulation of hot water piping. New requirements for medical gas and vacuum systems based on NFPA 99. New testing and inspection provisions for non-potable alternate water source systems. New requirements for testing, inspection, and maintenance of non-potable rainwater catchment systems. Also, many locations where brass was previously allowed are now required to be copper or copper alloy.

Additionally, several code sections have been reorganized, meaning the previous requirements have been included in other or new sections. A 'Section Relocation' Table has been provided on pages xix-xxii.

### SIGNIFICANT CHANGES

NEW-CHANGE	CPC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT	
			YES	NO
D [2]	1.1.7.3 Except.	<b>J;:xception:</b> Rather than having to comply with the most restrictive requirement, detached one a two family dwellings, efficiency dwelling units, lodging houses, live/work units, and townhouses not more than three stories above grade shall not be required to comply with the California Residential Code if they are constructed to comply with the California Building Code.	0	D
0 D	105.2	ReQuired Inspections outlined.	D	0
0 D	203.0	Definitions of Low Heat and Medium Heat Aooliances.	D	0
0 D	205.0	Definition of Category 1, 2, and 3 systems.	D	0
0 D	205.0	Chimney types defined.	D	0
D [2]	312.14	ABS and PVC exposed to sunlight must be protected with water based synthetic latex paint or tape.	D	[2]
[2] D	314.1	Trenches deeper than the footing must be installed outside the surcharge path of the footing.	D	0
0 D	314.4.1	Trench size requirements for Thermoplastic Pipe and Fittings.	D	0
[2] D	316.1	Copper alloy cleanout fittings may not be used as a reducer or adapter from cast-iron drainage pipe to iron pipe size (IPS) pipe.	D	[2]
0 D	316.1	Essential plumbing provisions for OSHPD facilities reQuiring electrical power.	D	[2]
0 D	Table 313.1	Hanger and support table some pipe types re-categorized with other pipe types.	D	0
[2] D	403.3	Protectors and insulators at accessible lavatory pipes must comply with ASME A112.18.9.	D	0

**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CPC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
[Z] D	407.4	Self-Closing or metered faucets required on transient public lavatories (i.e.; service stations, train stations, airports, restaurants, and convention halls.).	D [Z]
[Z] D	408.5	Areas immediately adjacent to showers without thresholds shall be considered wet locations and shall comply with the requirements of the California Building, California Residential, and California Electrical Codes.	[Z] D
D [X]	408.7	Requirements for specific shower liner materials outlined.	I I [X]
[Z] D	409.6.1	Flexible PVC hoses and tubing for whirlpool bathtubs must comply with IAPMO 21033.	D [Z]
D [Z]	411.2	The effective flush volume of all water closets shall not exceed 1.28 gallons per flush.	[Z] D
D	412.1	Wall mounted urinals shall have an average water consumption not to exceed 0.125 gallons per flush. Others shall not exceed 0.5 gallons.	D [Z]
[X] I I	413.1	Clinical sinks now require flushing devices.	I I [Z]
D	415.2	Bottle filling stations shall be permitted to be substituted for drinking fountains of up to 50 percent of the requirements for drinkinQ fountains.	D [Z]
[Z] I I	417.1.1	Maximum flow rates for wash fountains.	I I [X]
D	418.3(4)	Floor drains shall be provided in boiler rooms.	I I [X]
D 181	420.2.1	Adjusted maximum flow rate for kitchen faucets to 1.8 gallons per minute (temporary boost to 2.2 allowed, default must be 1.8).	[Z] D
D	422.1	Fixture count now based on occupant load as calculated in the California Building Code.	D [Z]
D	422.2.1	Two Family or assisted-use toilet facilities may be permitted in place of separate facilities for each sex (1 each) when each requires only one water closet.	D
D	505.4.1	Changes to allowable mediums for single wall heat exchangers.	D 181
D	507.5	Minimum depth for water heater drainage pan when required shall be 1-1/2".	D
D	509.6.2.7	Insulation Shield required when gas vent passes through an insulated assembly. Shield must extend a minimum of 2" above simulation surface.	D 181
D	604.2	Lead content maximum for material intended to convey or dispense water for human consumption shall not exceed 0.25 percent and 0.2 percent for solder and flux used on these materials.	D [Z]
[Z] D	607.0	Potable water supply tank requirements for venting, overflow, and valves.	D [Z]
D	609.11	Most exceptions for providing insulation on domestic hot water lines eliminated.	[Z] D
[Z] D	612.1	Required residential fire sprinkler systems must be installed by an ASSE Series 7000 certified installer.	D [Z]
[Z] D	612	Provisions for Residential Fire Sprinkler systems.	[Z] D
[Z] D	705.1.3 & 705.5.2	Low VOE primer, cement, and solvent cement required for plastic pipe and fittings. [HCD 1 & 2]	D [Z]

**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CPC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
[gJ] D	707.4	A cleanout shall be installed at each urinal above the fixture connection fitting.	D [gJ]
D [ZI]	707.9	Cleanout clearance in front of the cleanout shall be a minimum of 18" for 2" cleanout or less and 24" for cleanouts larger than 2". Underfloor cleanouts shall not be greater than 5' from the under floor access point.	[ZI] D
D [gJ]	814.0	Additional condensate controls required for units installed in areas where damage can occur.	D [gJ]
D [ZI]	908.2	Additional requirements for horizontal wet venting of bathrooms.	D [ZI]
D	1102.1	Additional materials allowed for roof drains.	D [ZI]
[gJ] D	1211.7	Earthquake-Actuated Gas Shutoff Valves to be installed when required by local ordinance.	D [ZI]
D [gj]	Chapter 13	Extensive changes to allowances for Health Care Facilities and requirements for medical gas systems. <b>[SFM and OSHPD 1, 2, 3, and 4]</b>	D [81]
D [ZI]	Chapter 15	Extensive changes to allowances for Alternative Water Sources for non-potable applications.	D [ZI]
D [81]	Chapter 16	Various changes to allowances for non-potable rainwater catchment systems.	D [ZI]

# 2016 California Mechanical Code (CMC) Changes

## SUMMARY

Some of the significant changes are:

Equipment platforms required on roofs with greater than a 4 in 12 pitch. New Air Classification types defined by area served and recirculation restrictions between them. Minimum exhaust rates revised based on Air Class. Newly installed gas fireplaces must be direct vent type. Listings for specific mechanical equipment have been added to the sections where requirements for those pieces of equipment are located.

Additionally, several code sections have been reorganized, meaning the previous requirements have been included in other or new sections. A 'Section Relocation' Table has been provided on pages xviii-xxi.

## SIGNIFICANT CHANGES

NEW-CHANGE	CMC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D IZI	1 .1 .7.3 Except.	<b>Exception:</b> Rather than having to comply with the most restrictive requirement, detached one a two family dwellings, efficiency dwelling units, lodging houses, live/work units, and townhouses not more than three stories above grade shall not be required to comply with the California Residential Code if they are constructed to comply with the California Building Code.	IZI D
IZI D	<b>302.1</b>	Listed materials required to be used in mechanical systems unless approved by AHJ.	D IZI
IZI D	<b>302.3</b>	Process for approval of 'Alternative Engineered Designs'.	D IZI
D IZI	<b>303.2</b>	Closet or Alcove installations of furnaces or boilers shall not be allowed to have the clearances reduced.	D IZI
D IZI	303.10.1	Unlisted appliances must be installed in accordance with Table 303.10.1 when more restrictive than the manufacture's installation instructions.	D IZI
IZI D	<b>304.2</b>	Equipment and appliances requiring service with a roof pitch of 4 in 12 or more shall be provided with a level platform of not less than 30"x30" and shall be provided at the service side of the unit.	IZI D
D IZI	<b>304.3.1.2 (4)</b>	Rungs for permanent ladders to access mechanical equipment must not exceed 12" and each rung must be capable of supporting 300lb.	D IZI
D IZI	305.1	All appliances installed in garages and adjacent spaces with burners or burner ignition devices must be installed so that such is installed 18" above the floor unless it is listed as flammable vapor ignition resistant.	IZI D
D IZI	305.3	No mechanical systems may be installed in elevator shafts unless required for functionality and safety of the elevator system.	D IZI
IZI D	310.1.1	Requirements for Condensate Pumps.	D IZI
IZI D	310.2 (1) (2) (3) (4)	Additional allowances for method of secondary condensate overflow control.	IZI D

**SIGNIFICANT CHANGES** (cont'd)

<b>NEW-CHANGE</b>	<b>CMC SECTION/TABLE NUMBER</b>	<b>COMMENTARY</b>	<b>MASTER PLAN IMPACT YES - NO</b>
I Z D	310.2.1	Insulation and associated components of mechanical equipment with condensate pans shall be installed above the flood rim level of the of the drain pan. Where supports are in contact with condensate waste they shall be approved corrosion resistant material.	D  Z
D  Z	310.3	Condensate waste pipe material must be approved for the material that it will be discharging.	D  Z
I Z  D	310.3.1	Cleanouts for condensate piping shall be provided.	D  Z
I Z  D	311.2	Media-type air filters must comply with UL900	D  Z
D 18)	<b>402.2.1</b>	Requirements for floor areas to be ventilated for natural ventilation systems .	D  Z
I Z  D	<b>403.9</b> Table 402.1	Air classification and recirculation allowances of each class of air. Also, see Definitions in chapter 2 for definition of Class 1, 2, 4, and 4 Air and table 402.1 for specific Occupancy Categories Air Class.	D  Z
I Z  D	Table 403.7	Minimum Exhaust Rates table now includes Air Class types for specific occupancies.	D  Z
I Z  D	502.1	Exhaust openings terminating to the outdoors shall be covered with a corrosion resistant screen having not less than ¼" openings, and shall have not more than ½" openings. Except Clothes dryers.	D  Z
I Z  D	<b>502.2.1</b>	Environmental Air Ducts shall not terminate less than 10' from a forced air inlet and shall not discharge on to a public way.	D  Z
I Z  D	<b>503.3</b>	Minimum Efficiency Reporting Value (MERV) 8 filters installed before occupancy on outside and return air on units having over 60,000 BTU/h. Units under provided with ASHRAE 10-15% efficiency filter.	D  Z
D  Z	504.1 Except.	Ductless Range Hoods and Condensing Clothes Dryers are exempt from environmental air duct requirements.	D  Z
D  Z	504.1 Except. <b>(2)(2)</b>	Backdraft protection is not required where the exhaust duct serves spaces that are not mechanically heated or cooled or at a space that is maintained at positive pressure.	D  Z
I Z  D	<b>504.2</b>	Single or combined mechanical exhaust systems shall be independent of other exhaust systems.	D  Z
I Z  D	504.4.3.1(6)	Exhaust fans for Type 2 clothes dryers shall operate continuously or be interlocked to exhaust air where a clothes dryer is in operation.	D  Z
I Z  D	<b>504.4.4</b>	Requirements for common exhaust systems for clothes dryers.	D  Z
I Z  D	<b>504.4.5</b>	UL listing requirements for Heat (Energy) Recovery Ventilators.	D  Z
I Z  D	505.2	Fire dampers shall not be installed where product conveying ducts are carrying material considered toxic where the toxic hazard is more than the fire hazard. Exhaust ducts shall not pass through fire walls.	D  Z



**SIGNIFICANT CHANGES** (cont'd)

NEW-CHANGE	CMC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D 18]	508	Clarification on where type I and II hoods shall be installed.	D 18]
18] D	510.1.3	Drains shall be provided at low points of horizontal ducts in exhaust systems.	D 18]
D 18]	510.5	Factory built grease ducts shall be listed with UL 1978.	D 18]
D 18]	510.5.6	Testing procedures for grease duct systems.	D 18]
18] D	510.8	Requirements for underground grease ducts.	D 18]
D 18]	510.10	Termination of type II hoods.	D 18]
18] D	511.2.2	Performance and capture and containment testing required for hoods.	D 18]
18] D	511.2.3	Exhaust fans serving hoods shall be provided with a means so that the fan is activated when an appliance under the hood is turned on.	D 18]
18] D	511.3.1	Air balance plans for facilities with commercial kitchen ventilation required.	D 18]
18] D	513.2.5.6	Separate control valves for fire sprinklers and water supply of hoods with water wash.	D 18]
18] D	513.11	Class K fire extinguishers required at cooking appliances that involve combustible cooking media such as vegetable oils, animal oils, and fats.	D 18]
18] D	517.3.1.1	Requirements for Equipment with Solid Fuel for Flavoring.	D 18]
D 18]	517.7.6	Exceptions for providing sprinklers at solid fuel storage.	D 18]
18] D	518	Downdraft Appliance requirements.	D 18]
D 18]	602.2	Changes in combustible materials allowed in ducts or plenums.	D 18]
18] D	603.3.3	Ducts in structures that are classified as seismic design category C, D, E, or F shall be in accordance with the building code.	D 18]
18] D	603.5	Flexible air ducts shall not penetrate fire-resistance rated assemblies or construction and shall be not more than 5'.	D 18]
18] D	603.6	Plastic duct allowed underground if listed for installation.	D 18]
18] D	802.6.2.7	Metal shield required where a gas vent passes through and insulated assembly to 2" above the insulation.	D 18]
D 18]	905.9	Requirements for heaters in Aircraft Hangars separated from repair garages.	D 18]
18] D	912.2 (HCD 1 & HCD 2)	Newly installed gas fireplaces shall be direct-vent sealed-combustion type.	18] D
18] D	913.0	Listing requirements for Factory-Built Fireplaces.	D 18]
18] D	935.0	Requirements for Refrigeration Appliances	D 18]
18] D	936.0	Requirements for Ductless Mini-Split Systems.	D 18]
D 18]	Chapter 11	Many changes to refrigerant systems requirements.	D 18]
D 18]	Chapter 12	The entire chapter on Hydronic systems has been revised.	D 18]
D 18]	1308.5.2.3	Aluminum Alloy pipe not allowed underground or exterior.	D 18]

# 2016 California Green Building Standards Code (CGBSC) Changes

## SUMMARY

Several definitions have been added, most related to electric vehicles and waste management. Most mandatory measure changes were related to the definitions and to the clarification or addition of referenced manuals, handbooks and standards.

## SIGNIFICANT MANDATORY MEASURE CHANGES

NEW-CHANGE	CGBSC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D 18)	202	<b>Definitions.</b> Several definitions were added or revised. Several affect Electric Vehicles Chargers and Charging. Others include: Hot Water Recirculation System, Hybrid Urinal, Organic Waste, OVE, Postconsumer Content, Preconsumer , Recycled Content, Recycled Content Value, and Universal Waste.	18) D
[g] D	301.3.2	<b>Waste Diversion.</b> The requirement of Section 5.408 shall be required for nonresidential additions and alterations whenever a permit is required for work.	D [8J
D [2J	303.1.1	<b>Initial Tenant Improvements.</b> Provides references to the scooina provisions for alterations and additions.	D 18)
[8J] D	4.106.4.2 thru 4.106.4.2.5	<b>New Multi-Family Dwellings (Residential Mandatory Measures).</b> Provides additional electric vehicle charging space requirements including: quantity , location, size, single EV space, multiple EV spaces and identification.	[8J] D
D [2J	4.408.1	<b>Construction Waste Management.</b> Minimum recycle or salvage of nonhazardous residential waste increased to 65%.	D 18)
D [8J	4.408.4.1	<b>Waste Stream reduction alternative.</b> Residential criteria has been revised for consistency with Section 4.408.1.	D 18)
D [2J	4.503.1	<b>Fireplace.</b> Any installed wood stove or pellet stove shall have a permanent NSPS label certifying emission limits.	[8J] D
D 18)	4.504.2.3	<b>Aerosol Paints and Coatings.</b> The referenced Product-weighted MIR Limits for ROC sections have been u pdated.	18) D
D 18)	Table 4.504.1 - 3	<b>VOE Limit Tables.</b> The word Current has been omitted from the VOE Limit column headings.	18) D
D [Z]	4.504.5.1	<b>Documentation (Resilient Flooring Systems) .</b> Canadian Standards have been added for exterior grade products.	[2J] D
D [2J	4.507.2	<b>Heating and Air-Conditioning System Design.</b> The editions of the referenced manuals, handbooks and standards have been updated.	[gJ] D
D 18)	5.106.4.1.2	<b>Long-Term Bicycle Parking (Nonresidential Mandatory Measures).</b> Scoping now includes "10 or more" language.	D [2J
D [2J	Table 5.106.5.3.3	<b>Number of Required EV Charging Spaces.</b> This table has been revised in its entirety.	D [2J

**SIGNIFICANT MANDATORY MEASURE CHANGES** (cont'd)

NEW-CHANGE	CGBSC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
D [8J]	5.108 Exceptions:	<b>Light Pollution Reduction.</b> Exceptions have been added to include limited building facades and custom lighting features.	D [81]
(gJ) D	5.303.4	<b>Commercial Kitchen Equipment.</b> Provides water use conservation and automatic shut-off requirements.	D [81]
[8J] D	5.408.2	<b>Universal Waste.</b> Provides documentation and verification requirements for the identification and proper disposal of universal waste (fluorescent lamps and ballast and mercury containing thermostats, among others).	D [81]
(gJ) D	5.410.1 Exception:	<b>Recycling by Occupants.</b> An Exception is provided for unincorporated rural jurisdictions.	D [81]
D (gJ)	5.410.2	<b>Commissioning.</b> All occupancies other than I-occupancies and L-occupancies shall comply with the California Energy Code. I-occupancies not regulated by OSHPD or for I-occupancies and L-occupancies not regulated by the California Energy Code shall comply with this section.	D [81]
D [8]	5.503.1.1	<b>Woodstoves.</b> Any installed wood stove or pellet stove shall have a permanent NSPS label certifying emission limits.	D [8]

# 2016 California Electrical Code (CEC) Changes

## SUMMARY

A few new requirements were added this cycle. However, most of the significant changes were modification or clarifications to existing requirements. About one-third of the changes affected master plan dwellings.

## SIGNIFICANT CHANGES

NEW - CHANGE	CEC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO	
<input type="checkbox"/> <input checked="" type="checkbox"/>	110.21 (B)	<b>Field Applied Hazard markings.</b>	<input type="checkbox"/> <input checked="" type="checkbox"/>	
<input type="checkbox"/> <input checked="" type="checkbox"/>	1102.25	<b>Requirements for lockable disconnecting means. First steps in raising the 600v ceiling on premise wiring to 1000.</b>	<input type="checkbox"/> <input checked="" type="checkbox"/>	
<input type="checkbox"/> <input checked="" type="checkbox"/>	110.26 (C)(3)	<b>Requirement for all doors within 25 feet of switchgear rated 800 amps or more shall have panic hardware and open in the direction of egress.</b>	<input type="checkbox"/> <input checked="" type="checkbox"/>	
<input type="checkbox"/> <input checked="" type="checkbox"/>	110.26 (E)(2)	<b>Dedicated space for electrical equipment in now required for outdoor installations.</b>	<input type="checkbox"/> <input checked="" type="checkbox"/>	
<input type="checkbox"/> <input checked="" type="checkbox"/>	200.4	<b>Neutral Conductors must be identified with the ungrounded conductors in multi-wire branch circuits.</b>	<input type="checkbox"/> <input checked="" type="checkbox"/>	
<input type="checkbox"/> <input checked="" type="checkbox"/>	210.5 (C)(2)	<b>Identification of positive and negative conductors in DC systems.</b>	<input checked="" type="checkbox"/> <input type="checkbox"/>	
<input type="checkbox"/> <input checked="" type="checkbox"/>	210.8 A 910	<b>Laundry Area and within 6 feet of sink for refrigerator and garbage disposal?</b>	<input checked="" type="checkbox"/> <input type="checkbox"/>	
<input type="checkbox"/> <input checked="" type="checkbox"/>	210.8(B)(8)	<b>All commercial garages and service bays. GFCI outlet</b>	<input type="checkbox"/> <input checked="" type="checkbox"/>	
<input type="checkbox"/> <input checked="" type="checkbox"/>	210.8(D)	<b>GFCI protection on all dishwashers in dwelling units.</b>	<input checked="" type="checkbox"/> <input type="checkbox"/>	
<input type="checkbox"/> <input checked="" type="checkbox"/>	210.12 A	<b>AFCI protection added to kitchen and laundry areas.</b>	<input checked="" type="checkbox"/> <input type="checkbox"/>	
<input type="checkbox"/> <input checked="" type="checkbox"/>	210.12 (C)	<b>AFCI required on dormitory units.</b>	<input type="checkbox"/> <input checked="" type="checkbox"/>	
<input type="checkbox"/> <input checked="" type="checkbox"/>	210.13	<b>GFCI Protection on equipment and service feeders 1000amps or higher 277/480.</b>	<input type="checkbox"/> <input checked="" type="checkbox"/>	
<input type="checkbox"/> <input checked="" type="checkbox"/>	210.17	<b>Vehicle charging equipment shall have no other outlets.</b>	<input type="checkbox"/> <input checked="" type="checkbox"/>	
<input type="checkbox"/> <input checked="" type="checkbox"/>	210.52 E1	<b>Outdoor receptacles readily accessible from grade level.</b>	<input checked="" type="checkbox"/> <input type="checkbox"/>	
<input type="checkbox"/> <input checked="" type="checkbox"/>	210.52 G	<b>Garage receptacles to be deducted to garage only and at least 1 receptacle for each car space.</b>	<input checked="" type="checkbox"/> <input type="checkbox"/>	

## SIGNIFICANT CHANGES (cont'd)

NEW - CHANGE	CEC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO	
<input type="checkbox"/> <input checked="" type="checkbox"/>	210.64	<b>1 receptacle to be installed within 50 feet of all service equipment.</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	220.12	<b>Lighting loads to be calculated by local energy codes.</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	230.44	<b>Cable trays to be labeled every 10 feet when service entrance conductors are in it.</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	250.166	<b>Added a maximum size for DC GEC to 3/O cu. or 250 alum.</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	300.6	<b>Field threading of rigid conduit must be protected from corrosion.</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	310 15 B7	<b>Service feeders for dwelling units table has been removed. They are allowed to be 83% of OCPD they are serving.</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	334.40 B	<b>NMC interconnectors allowed without box and concealed.</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	406.3 E	<b>All controlled receptacles shall be marked with the same symbol.</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	406.9 (1)	<b>All outdoor receptacles to have extra duty rated in use covers.</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	406.12	<b>All 125v receptacles in hotel, motel rooms/suites and child care facilities shall be tamper resistant.</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	408.4(B)	<b>Panelboards and switchboard fed from more than one source must be labeled what sources and where they are located.</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	410.6	<b>All retrofit kits for lamp holders and LTG must be listed.</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	410.130 G1	<b>All fluorescent LTG containing serviceable ballast shall have a disconnecting mean in each LT.</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	422.5	<b>GFCI devices for protection of appliances, drinking fountains, vending and vacuum cleaners must be readily accessible.</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	422.23	<b>GFCI protection for tire inflation and vacuums in commercial applications</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	440.9	<b>Equipment ground conductor required in all outdoor HVAC equipment in LFMC and EMT</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	517.2	<b>Several changes in Healthcare Facilities in definitions patient care areas and operating rooms.</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	590.4(D)(2)	<b>All temp power 125 and 250v 15 20 amp receptacles to have extra duty in-use covers.</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**SIGNIFICANT CHANGES** (cont'd)

NEW - CHANGE	CEC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
<input type="checkbox"/> <input checked="" type="checkbox"/>	590.4(J)	<b>Cable assemblies and flexible cords used for temporary power distribution are prohibited from being laid on the floor and must be protected from physical damage.</b>	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	600.4 (E)	<b>Signs, outline lighting and retrofit kits require field wiring and installation instructions.</b>	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	690	<b>Many changes to PV installation.</b>	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	700.8	<b>Surge protection on panelboards for emergency systems.</b>	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	700.24	<b>Emergency lighting cannot be part of a dimmer system or must be listed for use in an emergency lighting system.</b>	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	646	<b>Modular Data Centers</b>	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	393	<b>Suspended low voltage power distribution.</b>	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	728	<b>Fire resistive cable system.</b>	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	750	<b>Energy management systems.</b>	<input type="checkbox"/> <input checked="" type="checkbox"/>

# 2016 California Energy Code (CEC) Changes

## SUMMARY

New and altered homes are to become more efficient in several ways to create energy and environmental savings for Californians. Building systems that include updates are: High Performance Attics, High Performance Walls, Improved Water Heating System Efficiency and High Efficacy Lighting.

Changes to the nonresidential requirements largely follow ASHRAE 90.1 national standards and include energy conservation measures related to the following building systems: Door and Window Interlocks, Direct Digital Controls, Outdoor Lighting, Escalators and Elevators.

## SIGNIFICANT CHANGES

NEW - CHANGE	CEC SECTION/TABLE NUMBER	COMMENTARY (RESIDENTIAL)	MASTER PLAN IMPACT YES - NO
<input type="checkbox"/> <input checked="" type="checkbox"/>	150.0	<b>Mandatory Requirements (Residential Envelope).</b> There are several new thresholds for mandatory envelope requirements including a new exception allows for 30 sqft for dual glazed greenhouse windows.	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	150.1	<b>Prescriptive High Performance Walls.</b> In Climate Zones 1-5 & 8-16, above grade framed wall assemblies must not exceed a maximum U-factor of 0.051. In Climate Zones 6 & 7, the maximum U-factor is 0.065.	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	150.1	<b>Prescriptive High Performance Attics.</b> There are three options that may be used to comply: Two options allow ducts and air handler to be located in the attic; One option requires ducts and air handler to be located in conditioned space.	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	150.2	<b>Prescriptive Additions.</b> Provides several options that allow for extensions of existing wood-framed walls to retain the same dimensions.	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	150.0(m)	<b>Mandatory Requirements (Residential Mechanical).</b> All ducts in conditioned spaces must include R-4.2 insulation. Duct leakage requirement has been reduced to 5% maximum for single family homes.	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	150.1	<b>Prescriptive Requirements.</b> Provides the duct insulation requirements for high performance attic. Air flow requirements for whole house fans (cfm/sf) attic vent areas (sf/cfm) requirements have been reduced.	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	110.3(c)7	<b>Mandatory Isolation Valves (Domestic Hot Water).</b> Instantaneous water heaters with an input rating of 6.8kBTU/hr (2 kW) or greater need an isolation valve on the cold water supply and hot water leaving the water heater. Each valve will need a hose bibb or other fitting allowing for flushing the water heater when the valves are closed.	<input checked="" type="checkbox"/> <input type="checkbox"/>

SIGNIFICANT CHANGES (cont'd)

NEW - CHANGE	CEC SECTION/TABLE NUMBER	COMMENTARY (RESIDENTIAL)	MASTER PLAN IMPACT YES - NO
<input type="checkbox"/> <input checked="" type="checkbox"/>	150.1(c)8	<b>Domestic-Water-Heating-System.</b> Water heater prescriptive efficiencies have been increased. Options have been provided for 3 different (gas or propane) systems, which include efficiency and pipe insulation requirements.	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	150.2(b)1G	<b>Mandatory Water Heater Pipe Insulation.</b> For water heater replacements, install piping insulation per mandatory requirements. Insulation for existing accessible piping must meet the requirements of Sections 150.0(j)2Ai, iii and iv.	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	Guidebook (NSHP)	<b>Onsite Renewable Systems.</b> Compliance credit for installing PV systems is only available if the project used a performance approach and meets several other conditions. Note: Taking the PV system credit does not require HERS verification unless getting a rebate from the New Solar Homes Partnership (NSHP)	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	150.0(k)	<b>Mandatory High Efficacy Lighting (Residential Lighting).</b> All permanently installed light fixtures shall be high efficacy, including screw-based which must contain JA8 compliant lamps.	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	150.0(k)G	<b>Screw Based Luminaires.</b> Must contain JA8 compliant light sources. Must not be contained in recessed downlight luminaires. Incandescent sources are prohibited from having a GU-24 base (per Title 20 Section 1605.3(k).	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	150.0(k)B	<b>Blank Electrical Boxes.</b> The number of blank electrical boxes more than 5 feet above the finished floor shall not be greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor, or fan speed control.	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	150.0(k)2J	<b>Bathrooms, Garages, Laundry Rooms, and Utility Rooms.</b> At least one fixture must be controlled by a vacancy sensor.	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	150.0(k)2L	<b>Under Cabinet Lighting.</b> Any under cabinet lighting (including kitchen) must be switched separately from other lighting systems.	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	150.0(k)3	<b>Outdoor Lighting.</b> Must be high efficacy and include a manual on/off switch and one of the following: Photocontrol and motion sensor; Photocontrol and automatic time switch control; Astronomical time switch control; Energy Management Control System.	<input checked="" type="checkbox"/> <input type="checkbox"/>



SIGNIFICANT CHANGES (cont'd)

NEW - CHANGE	CEC SECTION/TABLE NUMBER	COMMENTARY ( <b>NONRESIDENTIAL</b> )	MASTER PLAN IMPACT YES - NO
<input type="checkbox"/> <input checked="" type="checkbox"/>	120.7	<b>Mandatory Requirements (Envelope).</b> Wall insulation levels have been changed for metal framed and metal demising. All other mandatory insulation levels are unchanged. Additional exceptions apply for dedicated data centers.	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	140.3 & Table 140.3	<b>Prescriptive Requirements.</b> Prescriptive envelope requirements have been updated in Table 140.3-B & C. Prescriptive roof/ceiling insulation tradeoff for Aged Solar Reflectance Table 140.3 has been updated and applies to new installations as well as roof replacements.	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	120.6(g)	<b>Escalators and Moving Walkways.</b> Will be required to run at lower speeds when unoccupied while not in use in use in high traffic areas like airports, hotels, and transportation function areas.	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	120.6(f)	<b>Elevators.</b> Energy efficient lighting and fan changes. Automatic shut-off controls for lights and fans after 15 minutes of no service. Lighting and ventilation to be operable during emergency stop situations while occupied with passengers.	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	110.2	<b>Mandatory Equipment Efficiencies (Mechanical).</b> Air conditioning unit efficiencies have increased. Chiller and DX equipment efficiencies have become more stringent.	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	120.2(i)	<b>Economizers.</b> New mandatory requirements for Fault Detection and Diagnostics (FDD) on all economizers installed on new air-cooled packaged DX units with cooling capacity of 54,000 Btu/hr or greater. Stand alone or integrated FDD accepted per Section 120.2(i).	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	120.2 & 140.4	<b>HVAC System Controls.</b> Mandatory Direct Digital Controls (DDC) must be capable of monitoring several points, have optimum start/stop controls, and perform automatic information transfers. Prescriptive HVAC Shut-off Sensors for Windows and Doors when left open for more than five minutes, sensors will adjust thermostats to disable the HVAC equipment by resetting the temperature setpoints. Exemptions for doors with automatic closers or any space without thermostatic controls.	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	120.8	<b>Nonresidential Building Commissioning.</b> Commissioning is required for all new buildings with nonresidential conditioned space, including nonresidential spaces in hotel/motel and high-rise residential buildings. The Owner's Project Requirements (OPR) must include building envelope performance expectations. Section 10-103 in Part 1 specifies that the Design Reviewer may be a licensed architect or licensed contractor in addition to a professional engineer.	<input type="checkbox"/> <input checked="" type="checkbox"/>

SIGNIFICANT CHANGES (cont'd)

NEW - CHANGE	CEC SECTION/TABLE NUMBER	COMMENTARY ( <b>NONRESIDENTIAL</b> )	MASTER PLAN IMPACT YES - NO
<input checked="" type="checkbox"/> <input type="checkbox"/>	140.6	<p><b>Prescriptive Calculation Methodology (Lighting).</b> Allowed Lighting Power Densities are reduced for both Complete Building and Area Category Methods per Tables 140.6-B &amp; C.</p> <p>Lighting Power Density Values for the Tailored Method are updated per Table 140.6-G. Allowances in Table 140.6-D remain unchanged</p>	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	130.1 & 140.6	<p><b>Indoor Lighting Controls.</b> An additional exception is included for Mandatory Shut-Off Controls.</p> <p><b>Mandatory Multi-Level Controls</b> shall be provided for enclosed areas 100 ft<sup>2</sup> or greater with a general lighting load greater than 0.5 w/ft<sup>2</sup>. Some exceptions apply.</p> <p><b>Mandatory Partial-ON Occupancy Sensor</b> for areas requiring occupant sensing controls (offices ≤ 250 ft<sup>2</sup>, multipurpose rooms &lt; 1,000 ft<sup>2</sup>, classrooms, and conference rooms), and multilevel controls, the occupant sensing controls shall function as partial-ON or vacancy sensor. Where no multi-level controls are required, an automatic full-on occupancy sensor is acceptable.</p> <p><b>Control Credits:</b> Power Adjustment Factors (PAF) listed in Table 140.6-A have been updated and include several options.</p>	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	141.2.I	<p><b>Entire Luminaire Alterations.</b> Renamed for clarity. Lighting shall meet the lighting power allowance in Section 140.6 and altered permanently installed luminaires shall meet the applicable requirements in Table 141.0-E if the following options occur:</p> <ul style="list-style-type: none"> <li>• Removing/reinstalling 10% or more of the existing luminaires (if there are more than 2) in a space, or</li> <li>• Replacing or adding entire luminaires, or</li> <li>• Adding, removing, or replacing walls or ceilings along with lighting redesign.</li> </ul> <p>When replacing existing luminaires and the alteration is not in conjunction with adding, removing or replacing walls or ceilings, the new luminaires must:</p> <ul style="list-style-type: none"> <li>• Reduce rated power by 50% for office, retail and hotel occupancies and 35% for all others, compared to the original luminaires, at full light output, and</li> <li>• Meet all the control requirements in the Sections listed.</li> </ul>	<input type="checkbox"/> <input checked="" type="checkbox"/>

SIGNIFICANT CHANGES (cont'd)

NEW - CHANGE	CEC SECTION/TABLE NUMBER	COMMENTARY ( <b>NONRESIDENTIAL</b> )	MASTER PLAN IMPACT YES - NO
<input type="checkbox"/> <input checked="" type="checkbox"/>	141.2J	<p><b>Luminaire Component Modifications.</b> Formerly, luminaire modifications-in-place. Alterations that replace the ballasts or drivers and the associated lamps in the luminaire, or permanently change the light source or the optical system of the luminaire.</p> <p>Modifying the components of fewer than 70 existing luminaires on a single floor or within a tenant space within a year, does not trigger code. If there are 70 or more modifications per year on a single floor or tenant space, then the project needs to meet lighting power allowances and reduced power ratings.</p> <p>Modifications should not prevent or disable multi-level, shout-off or daylight controls.</p>	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	141.0(b)2K	<p><b>Lighting Wiring Alteration.</b> Alterations that add a circuit feeding luminaires, that replace, modify or relocate wiring between a switch or panelboard and luminaires, or replace lighting control panels, panelboards, or branch circuit wiring.</p> <p>Wiring alterations (unless strictly to add lighting controls) in each enclosed space shall meet the control requirements of the sections listed.</p> <p>Exceptions for all lighting alterations are included at the end of this section.</p>	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	Table 140.7-A	<p><b>Hardscape Lighting Power (Outdoor Lighting).</b> Zone 0 has been added for undeveloped areas of state or national parks.</p>	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	Table 140.7-B	<p><b>Specific Applications in Lighting Power.</b> Lighting power allowances for building entrances/exits are reduced. Lighting power allowances for ATM machines is now specified.</p>	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	130.2(c)3	<p><b>Motion Sensors.</b> Must be able to reduce lighting power of each luminaire by at 40% (90% max.).</p> <p>Sales lot and sales canopies are no longer exempt.</p>	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	141.(b)2L	<p><b>Outdoor Lighting Alterations.</b> Alteration to outdoor lighting shall meet several mandatory control requirements.</p> <p>Added or altered luminaires that increase the connected light load must meet applicable control and specific lighting application requirements.</p> <p>Control requirements are also provided for alterations that do not increase the connecting lighting load but where the greater of 5 luminaires or 10% of existing luminaires are replaced <b>and</b> for alterations that do not increase the connecting lighting load but where the greater of 5 luminaires or 50% of existing luminaires are replaced.</p> <p>An exception to lighting control acceptance testing is provided for a total of 20 or fewer controlled luminaires</p>	<input type="checkbox"/> <input checked="" type="checkbox"/>

# 2016 California Fire Code Changes

## SUMMARY

Some of the significant changes are: There are more emphases on Title 19 for enforcement and staff training regardless of occupancies. A good example would be Chapter 56, Explosive and Fireworks. This chapter went from one-page to 35-pages with Title 19 added into the body of the fire code. Carbon monoxide has been add as a permitted item. There are changes to how fire flow is determined and the number fire hydrants required. There are also noted requirements and provisions found throughout the 2016 Edition that have been added but enforced in other adopted codes and standards for some time. One example would be fire doors. Testing of fire doors is a requirement in NFPA 80, which has been adopted by the State for several editions. Now it's noted in the body of the fire code to enforce.

## SIGNIFICANT CHANGES

NEW - CHANGE	CFC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT	
			YES	NO
<input type="checkbox"/> <input checked="" type="checkbox"/>	105.1.4	<b>Emergency Repair.</b> Permits required the next business day.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	105.4.5	<b>Amended Construction Documents.</b> Changes during inspection, resubmittal required.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	105.6.4	<b>Carbon Dioxide System Use In Beverage Dispensing Applications.</b> Operating permit is now required if over 100 pounds of CO being used.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	105.7.9	<b>Gates &amp; barricades across fire apparatus access roads.</b> Construction permit required.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	105.7.15	<b>Solar Photovoltaic Power System.</b> Permit not required for maintenance.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	202-Definition	<b>AGRO-INDUSTRIAL.</b> Transforming of raw agricultural products.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	202-Definition	<b>Congregate Living Health Facility (CLHF).</b> Major changes to the limitation for R-occupancies. ≤ 12 beds, ≤ 59 beds if operated by city/county, ≤ 25 beds if county population is ≤ 500,000.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	202-Definition	<b>Educational Group E.</b> Group E day-care facilities within places of worship. Treat as part of assembly.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	202-Definition	<b>Factory Industrial, F-1 Moderate-hazard.</b> Food processing & commercial kitchens not associated with restaurants, cafeterias, etc., ≥ 2,500 sq ft.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	202-Definition	<b>Persons with intellectual Disabilities, Profoundly or Severely.</b> Unable to evacuate unassisted.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	202-Definition	<b>Residential Group (R-3) – Lodging Homes.</b> ≤ Five guest rooms, comply with CRC.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	202-Definition	<b>Storage Group–Accessory Storage Space.</b> ≤ 100 sq ft treat as part of occupancy use.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**SIGNIFICANT CHANGES** (cont'd)

NEW - CHANGE	CFC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO	
<input checked="" type="checkbox"/> <input type="checkbox"/>	311.6	<b>Unoccupied tenant spaces in mall buildings.</b> No storage allowed, ½ inch gypsum separation, door lock, broom swept clean.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	312.3	<b>Vehicle Impact Protection.</b> Still require size and dimensions but no longer require 12,000 lbs. impact force.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	315.3.3	<b>Equipment Rooms &amp; Storage.</b> No combustibile storage in fire command center (added)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	315.6	<b>Storage in Plenums.</b> Abandoned cables shall be labeled or removed. Six inches max length per CEC.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	403	<b>Emergency Preparedness Requirements.</b> Section has been expanded from ½ page to several pages. Required for all occupancies based on occupancy load number of floors.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	404	<b>Fire Safety, Evacuation &amp; Lockdown Plans.</b> For all occupancies based on occupant load. Defend in place added. Title 19 referenced.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	405	<b>Emergency Evacuation Drills.</b> For all occupancies based on O.L. and floor levels. Title 19 referenced	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	406	<b>Employee Training &amp; Response Procedures.</b> Training records shall be maintained.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	504	<b>Access to Building Openings &amp; Roof.</b> Security fencing, razor wire fencing, etc. Title 19 referenced. Note this needs approval by the FD not code official.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	508.1.6 (#3)	<b>Fire Alarm, Required features.</b> Zoning annunciator panel required. Addressable for high-rise buildings.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	510.4.2.3	<b>Emergency Responder Radio, Standby power.</b> 24 hrs standby power required. Must be supervised by building FA system.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	604.1.3	<b>Emergency &amp; Standby Power Systems, Load transfer.</b> Emergency (10 seconds) and Standby Power Systems (60 seconds).	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	604.1.4	<b>Load duration.</b> 2-hrs without refueling (minimum).	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	604.2.6	<b>Essential power.</b> Group I-2, comply Ch-27, CBC, NFPA 99. Example would be during operational procedures.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	605.11.1.3.2	<b>Solar Photovoltaic Power Systems.</b> Non-R-3, 6 feet minimum around perimeter, 4 feet minimum around fire systems, vents, standpipes, etc.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	606.12	<b>Discharge &amp; termination of pressure relief &amp; purge system.</b> Pressure relief device for mechanical refrigeration. Several methods including AMMR. Shall comply with ASHARE 15.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	607.6	<b>Water protection of hoistway enclosures.</b> Design to prevent water into hoistways. Similar to opening protection around escalators.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	609.2	<b>Commercial Cooking Appliances Producing a Low Volume of Grease-Laden Vapors (electric devices).</b> Type 1 Hood not required if product only product 5 mg/m <sup>3</sup> at an exhaust flow rate of 500 cfm.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

SIGNIFICANT CHANGES (cont'd)

NEW - CHANGE	CFC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO	
<input type="checkbox"/> <input checked="" type="checkbox"/>	609.3.3.3.1	<b>Commercial Kitchen Exhaust Hoods – Tags.</b> Testing & Inspection of systems shall be tagged when serviced.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	609.4	<b>Appliance connection to building piping.</b> Listed flexible connectors are required between the fixed fuel-gas piping and cooking appliance on casters.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	610	<b>Commercial Kitchen Cooking Oil Storage.</b> Separation of storage tanks between metallic and non-metallic. Venting for normal and “emergency”. System components shall be listed at least maximum operating temperature.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	611.2	<b>Hyperbaric Facilities.</b> Comply with NFPA 99.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	703.1	<b>Fire-Resistance-Rated Construction – Maintenance.</b> Records of inspections and repairs maintained. Inspection not required if not accessible.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	703.4	<b>Testing – sliding rated fire doors.</b> Annual testing noted in accordance with NFPA 80.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	803.5	<b>Textiles, Interior walls and ceilings.</b> Expanded to include Title 19 materials regarding testing specimen.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	807	<b>Decorative Materials Other Than Decorative Vegetation in New &amp; Existing Buildings.</b> Now include motion picture productions, institutions and dormitories.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	807.5.2	<b>Artwork in Group E and I-4.</b> In corridors ≤ 20% but now ≤ 50% of the classroom wall areas.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	901.4.1	<b>Required fire protection systems.</b> Design options approved shall be considered an acceptable required system.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	901.6	<b>Inspection, testing and maintenance.</b> NFPA 25, 2013 Edition, California version now adopted.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	901.6.2.1	<b>Records information.</b> All fire systems shall be maintained for the life of the installation.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	901.8.2	<b>Removal of existing occupant-use hose lines.</b> If not required, hoses can be removed. Outlets shall remain.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	903.2.1.6	<b>Assembly occupancies on roofs.</b> In an A-2 > 100 & All other A's > 300 O.L. all floors of exit discharge below shall be sprinklered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	903.2.1.7	<b>Multiple fire areas.</b> If shared exits, sprinklers are req'd if occupant load exceeds 300 combined.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	903.2.1.1.2	<b>Group R Occupancies, Bathrooms.</b> Except R-4, sprinklers are not req'd if less than 55 sq ft. Same for 13, 13R and 13D.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	903.2.8	<b>Sprinklers, Group R-2.1 &amp; R-4.</b> Must be designed to either 13R or 13 (not 13D) Special requirements for attic protection (construction or detection)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	903.2.10.1	<b>Commercial parking garages (S-1 Occupancy).</b> Storage of commercial vehicles over 5,000 sq ft shall be sprinklered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	903.3.1.2	<b>NFPA 13R sprinkler systems.</b> Four-stories or less and less than 60 feet in height.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**SIGNIFICANT CHANGES** (cont'd)

NEW - CHANGE	CFC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO	
<input type="checkbox"/> <input checked="" type="checkbox"/>	903.3.1.2.2	<b>Open-ended corridors.</b> In R-occupancies, open-ended corridors and associated exterior stairways and ramps shall be sprinklered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	903.3.5	<b>Water supplies.</b> Water supply information shall be based on seasonal change.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	903.3.8	<b>Limited area sprinkler systems.</b> Max six sprinklers (use to be 19). Must be light or OH only. Plumbing system okay, no control valves, supervision not required but must be hydraulically calculated.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	903.3.9	<b>Floor control valves.</b> Required if > 4-stories or > 30 feet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	904.11	<b>Automatic water mist systems.</b> Recognized as alternative but not equal to fire sprinklers. Comply with NFPA 750.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	905.3.11	<b>Fixed guideway and passenger rail transit systems.</b> Class I instead of Class III.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	906.1	<b>Portable Fire Extinguishers, Where required.</b> Added Exception 9, Within 30 feet from cooking equipment in I-2.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	906.2	<b>Portable Fire Extinguishers, General requirements.</b> Exception 3, "I-2" & I-3 permitted to be in staff location	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	907.1.2	<b>Fire alarm shop drawings.</b> Added item number 4, Design minimum audibility level for occupant notification.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	907.2.3	<b>FA, Group E Occupancies.</b> Emergency voice/alarm communication systems not required when O.L. < 100.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	907.2.6.4	<b>Large family day care.</b> Manual pull shall be listed by the SFM's Office. Red pull box	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	907.2.11.7	<b>Smoke detection system.</b> FA system can be installed provided only within alarm notification is within the dwelling unit. Must be monitored per NFPA 72. i.e. row houses/apartments, etc.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	907.2.11.8	<b>S/Ds, Specific location requirements.</b> Refer to 72-29.8.3.4, distances from cooking appliances, bathrooms, etc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	907.2.22	<b>Airport traffic control towers.</b> Automatic smoke detection system required	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	907.3.1	<b>Duct smoke detectors.</b> Supervisory signal and not as a fire alarm signal.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	907.4.2.1	<b>Manual fire alarm boxes, Locations.</b> 200 feet spacing unless building is sprinklered then 5 ft from door only.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	907.5.2.2.5	<b>Voice Evac Systems – Emergency power.</b> 24 hrs min. for all occupancies if required.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	907.6.3	<b>Initiating device identification (For High-Rises).</b> Unless < 22,500 sq ft, < 10 alarm-initiating devices, or replacing existing systems.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	907.8.5	<b>Inspection, testing and maintenance.</b> Building owners shall maintained records.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	908.7	<b>Carbon dioxide (CO2) systems.</b> Emergency alarm systems in accordance with Section 5307.5.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	909.4.6	<b>Duration of operation.</b> 20 minutes or 1.5 times the calculated egress time, whichever is greater.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

SIGNIFICANT CHANGES (cont'd)

NEW - CHANGE	CFC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO	
<input type="checkbox"/> <input checked="" type="checkbox"/>	909.4.7	<b>Smoke control system interaction.</b> Shall consider all design scenarios.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	909.21	<b>Elevator hoistway pressurization alternative.</b> Pressurized elevator hoistway in lieu of enclosing the elevator lobby.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	910.2	<b>Smoke &amp; Heat Removal.</b> Vents shall not be required for control mode sprinklers or < 12 sprinklers	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	913.2.2	<b>Circuits supplying fire pumps.</b> Cables shall be installed for survivability in accordance with UL2196 (2Hrs).	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	913.5	<b>Fire Pump, Testing and maintenance.</b> Records of testing shall be maintained per Title 19.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	914.3.1.2	<b>Water supply to required fire pumps.</b> Buildings over 120 feet, pumps must be supplied from two mains from two different streets without interruptions. Can be same street frontage without interruptions.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	914.8.2	<b>Automatic sprinkler system for new airport traffic control towers.</b> New towers over 35 feet shall be sprinklered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	915	<b>Carbon Monoxide Detection. Required in I-2 &amp; 4, R's &amp; E-classrooms.</b> Exempt only if no open communication. Must have visible alarms in multi-dwelling units.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	1004.1.1.2	<b>Adjacent levels of mezzanines.</b> The occupant load shall be the combined cumulative occupant load within the space below.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	Table 1004.1.2	<b>Occupant Load Table.</b> Mercantile O.L. 60 for all floors instead of 30.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	1006.3	<b>Egress from stories or occupied roofs.</b> Allow to pass through only one floor, then in a rated assembly. If three exits are required, 50% must pass through rated stairwells.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	1007.1.1.1(1)	<b>Measurement point.</b> Now can be measured at any point from door to door.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	1007.2	<b>Exit &amp; Exit Access Doorway Configuration.</b> If 3 exit doors are required, two must be ½ the diagonal distance.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	1008.3.3	<b>Emergency Power, Rooms &amp; Spaces.</b> Exit signs now requires in electrical equipment, fire command centers, fire pump and public restrooms over 300 sq ft.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	1103.4.1	<b>Vertical Openings / Existing I-2 &amp; 3.</b> Not SFM Adopted. Separation req'd, smoke barriers, smoke partitions, > 3 stories must be sprinklered, AMR can be proposed.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	1114.20	<b>EVAC in high-rise buildings.</b> Not SFM Adopted. All existing high-rise over 150 feet shall have installed EVAC.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	1114.27	<b>Existing NS High-rise buildings.</b> Not SFM Adopted. All existing non-rated high-rises shall be sprinklered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	2306.8.1	<b>Alcohol blended fuel dispensing.</b> All components shall be listed for use with alcohol-blended fuels, comply with UL87A	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	2307.4	<b>LP-gas dispensing operations. Allows self-service LP-gas refueling by the public.</b> Special nozzles required.	<input type="checkbox"/>	<input checked="" type="checkbox"/>



**SIGNIFICANT CHANGES** (cont'd)

NEW - CHANGE	CFC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO	
<input type="checkbox"/> <input checked="" type="checkbox"/>	2404.7.3	<b>Flammable Finishes, Air velocity.</b> Expanded to have ventilation maintained based on use.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	2808.3	<b>Lumber Yard &amp; Argo-Industrial Biomass &amp; Woodworking Facilities, Storage of Product. Size of piles.</b> Plies can be larger if approved by AHJ if, FD access roads, water supply, trained personnel & additional on-site fire protection.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	3103.9.1	<b>Structural design of multistory tents &amp; membrane structures.</b> Tents > one-story must comply with CBC even if temporary.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	3105	<b>Temporary Stage Canopies.</b> > 400 sq ft, permit req'd.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	3203.2	<b>Plastic pallets.</b> Now considered a hazardous product unless listed by FM.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	3206.6.1	<b>Number FD Access doors required.</b> Must comply if change of occupancy.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	3206.9.3	<b>HPS, Dead-end aisles.</b> S ≤ 50 ft & M ≤ 20 ft	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	3306.2	<b>Flammable Gases.</b> Cleaning and purging with flammable gas shall comply with NFPA 56. New and existing shall comply.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	3504.1.7	<b>Precaution in hot work. New hot work permit.</b> Cleaning and purging with flammable gas shall comply with NFPA 56. New and existing shall comply.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	3703.7	<b>Combustible Fibers, Sources of ignition.</b> No smoking sign and open flame provisions added.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	Table 5003.1.1(1)	<b>Hazardous Materials, Maximum Allowable Quantities.</b> Consumer fireworks – 125 lbs even with sprinklers, Combustible fibers – technical report required. Explosive – Division 1.3 (H-3), Increased from 5 to 10 lbs / cubic ft., Unstable reactive materials – Class 3 gasses 250 to 750 cubic ft = NFPA 55. Alcohol-based hand rubs – added footnote p(5) – excluded from MAQ, Gas rooms – added footnote e, must be sprinklered / ventilation / separation.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	5104.1.1	<b>Plastic containers (Aerosols).</b> Allow btw 4 to 33.8 fluid ounces to be classified Commodity Class III. All others, protection system shall extend beyond 20 feet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	5307	<b>Carbon Dioxide Systems Used in Beverage Dispensing Applications.</b> Over 100 lbs (874.1 cubic ft) operating permit req'd.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	5601	<b>Explosives &amp; Fireworks. Title 19 written in fire code.</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	5808	<b>Hydrogen Fuel Gas Rooms.</b> H2 shall not exceed MAQ. H-2 shall have gas detectors and ventilation	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	Appendix B	<b>Fire Flow Requirements for Buildings.</b> 75% Reduction in fire flow. No longer states....up to 75%.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	Appendix C	<b>Fire Hydrant Location &amp; Distribution.</b> 50% increase for commercial & 25% increase for residential.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	Appendix D	<b>Fire Apparatus Access Road.</b> Access gates shall be either 20 ft or a pair of 12 ft gates.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**SIGNIFICANT CHANGES** (cont'd)

NEW - CHANGE	CFC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO	
<input type="checkbox"/> <input checked="" type="checkbox"/>	Appendix K	<b>Construction Requirements for Existing Ambulatory Care Facilities. (Not SFM Adopted).</b> Comply with Ch-11.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	Appendix L	<b>Requirements for Fire Fighter Air Replenishment System. (Not SFM Adopted).</b> Maintenance requirement listed in this appendixes.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	Appendix M	<b>High-Rise Buildings – Retroactive Automatic Sprinkler Requirement. (Not SFM Adopted)</b> High-rises shall be sprinklered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

# 2016 California Green Building Standards Code (CGBSC) Changes

## SUMMARY

Several definitions have been added, most related to electric vehicles and waste management. Most mandatory measure changes were related to the definitions and to the clarification or addition of referenced manuals, handbooks and standards.

## SIGNIFICANT MANDATORY MEASURE CHANGES

NEW - CHANGE	CGBSC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
<input type="checkbox"/> <input checked="" type="checkbox"/>	202	<b>Definitions.</b> Several definitions were added or revised. Several affect Electric Vehicles Chargers and Charging. Others include: Hot Water Recirculation System, Hybrid Urinal, Organic Waste, OVE, Postconsumer Content, Preconsumer, Recycled Content, Recycled Content Value, and Universal Waste.	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	301.3.2	<b>Waste Diversion.</b> The requirement of Section 5.408 shall be required for nonresidential additions and alterations whenever a permit is required for work.	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	303.1.1	<b>Initial Tenant Improvements.</b> Provides references to the scoping provisions for alterations and additions.	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	4.106.4.2 thru 4.106.4.2.5	<b>New Multi-Family Dwellings (Residential Mandatory Measures).</b> Provides additional electric vehicle charging space requirements including: quantity, location, size, single EV space, multiple EV spaces and identification.	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	4.408.1	<b>Construction Waste Management.</b> Minimum recycle or salvage of nonhazardous residential waste increased to 65%.	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	4.408.4.1	<b>Waste Stream reduction alternative.</b> Residential criteria has been revised for consistency with Section 4.408.1.	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	4.503.1	<b>Fireplace.</b> Any installed wood stove or pellet stove shall have a permanent NSPS label certifying emission limits.	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	4.504.2.3	<b>Aerosol Paints and Coatings.</b> The referenced Product-weighted MIR Limits for ROC sections have been updated.	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	Table 4.504.1 - 3	<b>VOC Limit Tables.</b> The word Current has been omitted from the VOC Limit column headings.	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	4.504.5.1	<b>Documentation (Resilient Flooring Systems).</b> Canadian Standards have been added for exterior grade products.	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	4.507.2	<b>Heating and Air-Conditioning System Design.</b> The editions of the referenced manuals, handbooks and standards have been updated.	<input checked="" type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	5.106.4.1.2	<b>Long-Term Bicycle Parking (Nonresidential Mandatory Measures).</b> Scoping now includes "10 or more" language.	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	Table 5.106.5.3.3	<b>Number of Required EV Charging Spaces.</b> This table has been revised in its entirety.	<input type="checkbox"/> <input checked="" type="checkbox"/>

**SIGNIFICANT MANDATORY MEASURE CHANGES** (cont'd)

NEW - CHANGE	CGBSC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO
<input type="checkbox"/> <input checked="" type="checkbox"/>	5.108 Exceptions:	<b>Light Pollution Reduction.</b> Exceptions have been added to include limited building facades and custom lighting features.	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	5.303.4	<b>Commercial Kitchen Equipment.</b> Provides water use conservation and automatic shut-off requirements.	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	5.408.2	<b>Universal Waste.</b> Provides documentation and verification requirements for the identification and proper disposal of universal waste (fluorescent lamps and ballast and mercury containing thermostats, among others).	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	5.410.1 Exception:	<b>Recycling by Occupants.</b> An Exception is provided for qualifying rural jurisdictions.	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	5.410.2	<b>Commissioning.</b> All occupancies other than I-occupancies and L-occupancies shall comply with the California Energy Code. I-occupancies not regulated by OSHPD or for I-occupancies and L-occupancies not regulated by the California Energy Code shall comply with this section.	<input type="checkbox"/> <input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	5.503.1.1	<b>Woodstoves.</b> Any installed wood stove or pellet stove shall have a permanent NSPS label certifying emission limits.	<input type="checkbox"/> <input checked="" type="checkbox"/>

# 2016 California Mechanical Code (CMC) -Significant Changes

## SUMMARY

Equipment platforms required on roofs with greater than a 4 in 12 pitch. New Air Classification types defined by area served and recirculation restrictions between them. Minimum exhaust rates revised based on Air Class. Newly installed gas fireplaces must be direct vent type. Listings for specific mechanical equipment have been added to the sections where requirements for those pieces of equipment are located.

Additionally, several code sections have been reorganized, meaning the previous requirements have been included in other or new sections. A 'Section Relocation' Table has been provided on pages xviii-xxi.

## SIGNIFICANT CHANGES

NEW - CHANGE	CMC SECTION/TABLE NUMBER	COMMENTARY
<input type="checkbox"/> <input checked="" type="checkbox"/>	1.1.7.3 Except.	<b>Exception:</b> Rather than having to comply with the most restrictive requirement, detached one a two family dwellings, efficiency dwelling units, lodging houses, live/work units, and townhouses not more than three stories above grade shall not be required to comply with the California Residential Code if they are constructed to comply with the California Building Code.
<input checked="" type="checkbox"/> <input type="checkbox"/>	302.1	Listed materials required to be used in mechanical systems unless approved by AHJ.
<input checked="" type="checkbox"/> <input type="checkbox"/>	302.3	Process for approval of 'Alternative Engineered Designs'.
<input type="checkbox"/> <input checked="" type="checkbox"/>	303.2	Closet or Alcove installations of furnaces or boilers shall not be allowed to have the clearances reduced.
<input type="checkbox"/> <input checked="" type="checkbox"/>	303.10.1	Unlisted appliances must be installed in accordance with Table 303.10.1 when more restrictive than the manufacturer's installation instructions.
<input checked="" type="checkbox"/> <input type="checkbox"/>	304.2	Equipment and appliances requiring service with a roof pitch of 4 in 12 or more shall be provided with a level platform of not less than 30"x30" and shall be provided at the service side of the unit.
<input type="checkbox"/> <input checked="" type="checkbox"/>	304.3.1.2 (4)	Rungs for permanent ladders to access mechanical equipment must not exceed 12" and each rung must be capable of supporting 300lb.
<input type="checkbox"/> <input checked="" type="checkbox"/>	305.1	All appliances installed in garages and adjacent spaces with burners or burner ignition devices must be installed so that such is installed 18" above the floor unless it is listed as flammable vapor ignition resistant.
<input type="checkbox"/> <input checked="" type="checkbox"/>	305.3	No mechanical systems may be installed in elevator shafts unless required for functionality and safety of the elevator system.
<input checked="" type="checkbox"/> <input type="checkbox"/>	310.1.1	Requirements for Condensate Pumps.
<input checked="" type="checkbox"/> <input type="checkbox"/>	310.2 (1) (2) (3) (4)	Additional allowances for method of secondary condensate overflow control.

SIGNIFICANT CHANGES (cont'd)

NEW - CHANGE	CMC SECTION/TABLE NUMBER	COMMENTARY
<input checked="" type="checkbox"/> <input type="checkbox"/>	310.2.1	Insulation and associated components of mechanical equipment with condensate pans shall be installed above the flood rim level of the of the drain pan. Where supports are in contact with condensate waste they shall be approved corrosion resistant material.
<input type="checkbox"/> <input checked="" type="checkbox"/>	310.3	Condensate waste pipe material must be approved for the material that it will be discharging.
<input checked="" type="checkbox"/> <input type="checkbox"/>	310.3.1	Cleanouts for condensate piping shall be provided.
<input checked="" type="checkbox"/> <input type="checkbox"/>	311.2	Media-type air filters must comply with UL900
<input type="checkbox"/> <input checked="" type="checkbox"/>	402.2.1	Requirements for floor areas to be ventilated for natural ventilation systems.
<input checked="" type="checkbox"/> <input type="checkbox"/>	403.9 Table 402.1	Air classification and recirculation allowances of each class of air. Also, see Definitions in chapter 2 for definition of Class 1, 2, 4, and 4 Air and table 402.1 for specific Occupancy Categories Air Class.
<input checked="" type="checkbox"/> <input type="checkbox"/>	Table 403.7	Minimum Exhaust Rates table now includes Air Class types for specific occupancies.
<input checked="" type="checkbox"/> <input type="checkbox"/>	502.1	Exhaust openings terminating to the outdoors shall be covered with a corrosion resistant screen having not less than ¼" openings, and shall have not more than ½" openings. Except Clothes dryers.
<input checked="" type="checkbox"/> <input type="checkbox"/>	502.2.1	Environmental Air Ducts shall not terminate less than 10' from a forced air inlet and shall not discharge on to a public way.
<input checked="" type="checkbox"/> <input type="checkbox"/>	503.3	Minimum Efficiency Reporting Value (MERV) 8 filters installed before occupancy on outside and return air on units having over 60,000 BTU/h. Units under provided with ASHRAE 10-15% efficiency filter.
<input type="checkbox"/> <input checked="" type="checkbox"/>	504.1 Except.	Ductless Range Hoods and Condensing Clothes Dryers are exempt from environmental air duct requirements.
<input type="checkbox"/> <input checked="" type="checkbox"/>	504.1 Except. (2)(2)	Backdraft protection is not required where the exhaust duct serves spaces that are not mechanically heated or cooled or at a space that is maintained at positive pressure.
<input checked="" type="checkbox"/> <input type="checkbox"/>	504.2	Single or combined mechanical exhaust systems shall be independent of other exhaust systems.
<input checked="" type="checkbox"/> <input type="checkbox"/>	504.4.3.1(6)	Exhaust fans for Type 2 clothes dryers shall operate continuously or be interlocked to exhaust air where a clothes dryer is in operation.
<input checked="" type="checkbox"/> <input type="checkbox"/>	504.4.4	Requirements for common exhaust systems for clothes dryers.
<input checked="" type="checkbox"/> <input type="checkbox"/>	504.4.5	UL listing requirements for Heat (Energy) Recovery Ventilators.
<input checked="" type="checkbox"/> <input type="checkbox"/>	505.2	Fire dampers shall not be installed where product conveying ducts are carrying material considered toxic where the toxic hazard is more than the fire hazard. Exhaust ducts shall not pass through fire walls.

SIGNIFICANT CHANGES (cont'd)

NEW - CHANGE		CMC SECTION/TABLE NUMBER	COMMENTARY
<input type="checkbox"/>	<input checked="" type="checkbox"/>	508	Clarification on where type I and II hoods shall be installed.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	510.1.3	Drains shall be provided at low points of horizontal ducts in exhaust systems.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	510.5	Factory built grease ducts shall be listed with UL 1978.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	510.5.6	Testing procedures for grease duct systems.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	510.8	Requirements for underground grease ducts.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	510.10	Termination of type II hoods.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	511.2.2	Performance and capture and containment testing required for hoods.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	511.2.3	Exhaust fans serving hoods shall be provided with a means so that the fan is activated when an appliance under the hood is turned on.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	511.3.1	Air balance plans for facilities with commercial kitchen ventilation required.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	513.2.5.6	Separate control valves for fire sprinklers and water supply of hoods with water wash.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	513.11	Class K fire extinguishers required at cooking appliances that involve combustible cooking media such as vegetable oils, animal oils, and fats.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	517.3.1.1	Requirements for Equipment with Solid Fuel for Flavoring.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	517.7.6	Exceptions for providing sprinklers at solid fuel storage.
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	518	Downdraft Appliance requirements.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	602.2	Changes in combustible materials allowed in ducts or plenums.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	603.3.3	Ducts in structures that are classified as seismic design category C, D, E, or F shall be in accordance with the building code.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	603.5	Flexible air ducts shall not penetrate fire-resistance rated assemblies or construction and shall be not more than 5'.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	603.6	Plastic duct allowed underground if listed for installation.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	802.6.2.7	Metal shield required where a gas vent passes through and insulated assembly to 2" above the insulation.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	905.9	Requirements for heaters in Aircraft Hangars separated from repair garages.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	912.2 (HCD 1 & HCD 2)	Newly installed gas fireplaces shall be direct-vent sealed-combustion type.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	913.0	Listing requirements for Factory-Built Fireplaces.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	935.0	Requirements for Refrigeration Appliances
<input type="checkbox"/>	<input type="checkbox"/>	936.0	Requirements for Ductless Mini-Split Systems.
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Chapter 11	Many changes to refrigerant systems requirements.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Chapter 12	The entire chapter on Hydronic systems has been revised.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	1308.5.2.3	Aluminum Alloy pipe not allowed underground or exterior.

# 2016 California Plumbing Code (CPC) Changes

## SUMMARY

Some of the significant changes are:

New product standards for plumbing fixtures such as lavatories, showers, bathtubs and whirlpool bathtubs, bidets, urinals, drinking fountains, and sinks. Lead-content provisions have been revised to address the minimum acceptable percentage lead content for pipes and fittings. New provisions for residential fire sprinkler systems. New requirements for the insulation of hot water piping. New requirements for medical gas and vacuum systems based on NFPA 99. New testing and inspection provisions for non-potable alternate water source systems. New requirements for testing, inspection, and maintenance of non-potable rainwater catchment systems. Also, many locations where brass was previously allowed are now required to be copper or copper alloy.

Additionally, several code sections have been reorganized, meaning the previous requirements have been included in other or new sections. A 'Section Relocation' Table has been provided on pages xix-xxii.

## SIGNIFICANT CHANGES

NEW - CHANGE	CPC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO	
<input type="checkbox"/> <input checked="" type="checkbox"/>	1.1.7.3 Except.	<b>Exception:</b> Rather than having to comply with the most restrictive requirement, detached one or two family dwellings, efficiency dwelling units, lodging houses, live/work units, and townhouses not more than three stories above grade shall not be required to comply with the California Residential Code if they are constructed to comply with the California Building Code.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	105.2	Required Inspections outlined.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	203.0	Definitions of Low Heat and Medium Heat Appliances.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	205.0	Definition of Category 1, 2, and 3 systems.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	205.0	Chimney types defined.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	312.14	ABS and PVC exposed to sunlight must be protected with water based synthetic latex paint or tape.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	314.1	Trenches deeper than the footing must be installed outside the surcharge path of the footing.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	314.4.1	Trench size requirements for Thermoplastic Pipe and Fittings.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	316.1	Copper alloy cleanout fittings may not be used as a reducer or adapter from cast-iron drainage pipe to iron pipe size (IPS) pipe.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	316.1	Essential plumbing provisions for OSHPD facilities requiring electrical power.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	Table 313.1	Hanger and support table some pipe types re-categorized with other pipe types.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	403.3	Protectors and insulators at accessible lavatory pipes must comply with ASME A112.18.9.	<input type="checkbox"/>	<input checked="" type="checkbox"/>



SIGNIFICANT CHANGES (cont'd)

NEW - CHANGE	CPC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO	
<input checked="" type="checkbox"/> <input type="checkbox"/>	407.4	Self-Closing or metered faucets required on transient public lavatories (i.e.; service stations, train stations, airports, restaurants, and convention halls.).	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	408.5	Areas immediately adjacent to showers without thresholds shall be considered wet locations and shall comply with the requirements of the California Building, California Residential, and California Electrical Codes.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	408.7	Requirements for specific shower liner materials outlined.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	409.6.1	Flexible PVC hoses and tubing for whirlpool bathtubs must comply with IAPMO Z1033.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	411.2	The effective flush volume of all water closets shall not exceed 1.28 gallons per flush.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	412.1	Wall mounted urinals shall have an average water consumption not to exceed 0.125 gallons per flush. Others shall not exceed 0.5 gallons.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	413.1	Clinical sinks now require flushing devices.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	415.2	Bottle filling stations shall be permitted to be substituted for drinking fountains of up to 50 percent of the requirements for drinking fountains.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	417.1.1	Maximum flow rates for wash fountains.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	418.3(4)	Floor drains shall be provided in boiler rooms.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	420.2.1	Adjusted maximum flow rate for kitchen faucets to 1.8 gallons per minute (temporary boost to 2.2 allowed, default must be 1.8).	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	422.1	Fixture count now based on occupant load as calculated in the California Building Code.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	422.2.1	Two Family or assisted-use toilet facilities may be permitted in place of separate facilities for each sex (1 each) when each requires only one water closet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	505.4.1	Changes to allowable mediums for single wall heat exchangers.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	507.5	Minimum depth for water heater drainage pan when required shall be 1-1/2".	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	509.6.2.7	Insulation Shield required when gas vent passes through an insulated assembly. Shield must extend a minimum of 2" above simulation surface.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	604.2	Lead content maximum for material intended to convey or dispense water for human consumption shall not exceed 0.25 percent and 0.2 percent for solder and flux used on these materials.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	607.0	Potable water supply tank requirements for venting, overflow, and valves.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	609.11	Most exceptions for providing insulation on domestic hot water lines eliminated.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	612.1	Required residential fire sprinkler systems must be installed by an ASSE Series 7000 certified installer.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	612	Provisions for Residential Fire Sprinkler systems.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	705.1.3 & 705.5.2	Low VOC primer, cement, and solvent cement required for plastic pipe and fittings. <b>[HCD 1 &amp; 2]</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**SIGNIFICANT CHANGES** (cont'd)

NEW - CHANGE	CPC SECTION/TABLE NUMBER	COMMENTARY	MASTER PLAN IMPACT YES - NO	
<input checked="" type="checkbox"/> <input type="checkbox"/>	707.4	A cleanout shall be installed at each urinal above the fixture connection fitting.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	707.9	Cleanout clearance in front of the cleanout shall be a minimum of 18" for 2" cleanout or less and 24" for cleanouts larger than 2". Underfloor cleanouts shall not be greater than 5' from the under floor access point.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	814.0	Additional condensate controls required for units installed in areas where damage can occur.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	908.2	Additional requirements for horizontal wet venting of bathrooms.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	1102.1	Additional materials allowed for roof drains.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> <input type="checkbox"/>	1211.7	Earthquake-Actuated Gas Shutoff Valves to be installed when required by local ordinance.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	Chapter 13	Extensive changes to allowances for Health Care Facilities and requirements for medical gas systems. <b>[SFM and OSHPD 1, 2, 3, and 4]</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	Chapter 15	Extensive changes to allowances for Alternative Water Sources for non-potable applications.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> <input checked="" type="checkbox"/>	Chapter 16	Various changes to allowances for non-potable rainwater catchment systems.	<input type="checkbox"/>	<input checked="" type="checkbox"/>