

February 20, 2019

## **SUMMARY OF 2019 CALIFORNIA BUILDING STANDARDS CODE CHANGES**

Changes in the 2019 California Building Standards Code (Parts 1, 2, 3, 4, 5, 10, 11 and 12, California Code of Regulations, Title 24) amended by the Division of the State Architect – Structural Safety (DSA-SS) provide enhanced clarity and consistency in application. The basis for the majority of these changes resulted from California amendments to the 2018 model building codes. Part 1, California Administrative Code, became effective January 8, 2019. Parts 2, 3, 4, 5, 10, 11 and 12 become effective January 1, 2020. Some of the most significant changes include the following:

### **Part 1:**

- Clarifies when an addition is required to have a dedicated egress system.
- Revises project inspector certification examinee eligibility criteria to better recognize appropriate qualifying experience and/or education.

### **Part 2:**

- Aligns engineering requirements in the building code with major revisions to national standards for structural steel and masonry construction, minor revisions to standards for wood construction, and support and anchorage requirements of solar panels in accordance with industry standards.
- Clarifies requirements for testing and special inspection of selected building materials during construction.
- Recognizes and clarifies design requirements for buildings within tsunami inundation zones.

### **Part 4:**

- Increases MERV (Minimum Efficiency Reporting Value) for air filters from 8 to 13.

### **Part 11:**

- Requires electric vehicle charging infrastructure for new parking areas and additions to existing parking.
- Sets minimum requirements for use of shade trees to provide shade to surface parking areas as well as landscape and hardscape areas.

Substantial changes reflected in the 2019 California Building Standards Code as amended by DSA-SS are as follows:

**Part 1 – California Administrative Code (CAC, Effective January 8, 2019)**

SECTION	NOTES
4-306	Clarifies when an addition is required to have a dedicated egress system for the occupants of that addition, independent of the existing building to which it is attached. See DSA <a href="#">BU 19-01</a> .
4-321 & 4-324	Aligns the project filing fee for school buildings, and examples for calculating the fee, in accordance with the AB 111, 2017 Budget Bill, which went into effect June 27, 2017 by amendment to Education Code sections 17300 and 81133. These fees are subject to adjustment per AB 111 which will be published by DSA upon modification.
4-333.1	Changes project inspector examinee candidate eligibility criteria to recognize various qualifying experience and education and to improve alignment with similar programs (e.g., OSHPD), Removes the Class 4 examination and incorporates previous Class 4 qualification criteria into Class 3 criteria.

**Part 2 – California Building Code (CBC, Effective January 2020)**

CHAPTER	SECTION	NOTES
1	106.1.1	Revises existing DSA amendment to clarify posting requirements for design snow loads at floor levels and roofs.
2	202	Definitions were removed from Chapters 16, 16A – 26 and relocated into Chapter 2.
15	1502	2018 IBC relocated roof drainage provisions into Section 1502.
15	1510.7.2.1	Provides additional information regarding seismic and wind design requirements for roof top solar panels and references new sections added to ASCE 7. Amendment also allows DSA to accept industry standards to ensure compliance of solar panel attachments after recent solar panel attachment failures.
16 & 16A	1617 and 1617A	Several DSA amendments were eliminated, resulting from inclusion of same or equivalent requirements in revised masonry reference standards, TMS 402-16 and TMS 602-16.
16 & 16A	1617.3.1 & 1605A.1.1	Adds allowance to use $\phi = 1$ ( $\phi$ for foundation geotechnical capacity at soil-foundation interface as defined in new ASCE 7 Section 12.13.5 “Strength Design for Foundation Geotechnical Capacity”).
16 & 16A	1617.7.1 & 1609A.1.3	Revises amendment language to clarify the drift limit of single-story open “structures” (currently “buildings” in 2016 CBC) applies only where the structure is used for larger occupancies or emergency purposes (Seismic Risk Category III or IV).

<b>16 &amp; 16A</b>	1617.9.4 & 1613A.3	Adds amendment to note that ballasted PV systems must comply with ASCE 7 Section 13.6.12 (new provisions for Rooftop Solar Panels).
<b>16 &amp; 16A</b>	1617.10 & 1615A.1	Adds amendment to clarify how Tsunami Risk Category (TRC) will be determined (new Section 1615 added to 2018 IBC and new Chapter 6 added to ASCE 7-16 regarding Tsunami loads). TRC dictates the level of design and detailing required.
<b>16 &amp; 16A</b>	1617.11.9 & 1617A.1.10	Amendment eliminates the prohibition on extreme torsional irregularity for very stiff structures where diaphragm span-to-depth ratio does not exceed 3 and the maximum story drift in the direction of the irregularity is less than 10% of the allowable story drift.
<b>16 &amp; 16A</b>	1617.11.15& 1617A.1.18	Distinguishes between moveable and mobile equipment; mobile equipment anchorage not required when stored in a storage room, subject to specified conditions.
<b>16A</b>	1617A.1.23	For non-structural component anchorage, when $I_p=1.5$ , $\Omega_o$ need not exceed $R_p$ .
<b>16 &amp; 16A</b>	1617.11.16, 1617.11.17, 1617.11.18 & 1617A.1.24, 1617A.1.25, and 1617A.1.26	Provides limitations on maximum support rod length and load for non-structural component anchorage.
<b>17A</b>	Tables 1705A.2.1 and 1705A.3	While the number of changes appears significant, no new testing or special inspection requirements occur; changes made merely reference existing requirements.
<b>17A</b>	1705A.2.5	Clarifies qualifications for NDT personnel performing such testing on steel connections to align with current industry standards.
<b>17A</b>	1705A.2.6	Clarifies qualifications for special inspectors of steel high strength fastener assemblies to align with current industry standards.
<b>17A</b>	1705A.3.4	Exception language provides clarification of reasonable actual field practice of special inspection requirements for prestress or posttensioned cables or tendons.
<b>17A</b>	1705A.17	Adds Risk Category II structures to those requiring special inspection since DSA project inspectors currently perform these special inspections.

<b>18A</b>	1810A.3.8.3.3	Amendment removes new exception added to 2018 IBC 1810.3.8.3.3 item 5 for SDC D, E and F regarding minimum transverse reinforcement precast non-prestressed concrete piles.
<b>18A</b>	1810A.3.8.3.4	Adds exception permitting an increase in the prestressed concrete pile axial load limit under $\Omega_0$ E forces.
<b>18A</b>	1811A.3, 1812A.2, and 1812A.4.1	Updates amendments regarding maximum duration for temporary shoring and required corrosion protection and test loads in response to/ in order to coordinate with latest issue of PTI DC35.1 Recommendations for Prestressed Rock and Soil Anchors.
<b>19A</b>	1903A.8	Clarifies allowance of and requirements associated with fusion welding with holding wire often used in reinforcing steel cages. Also, provides quality control requirements for reinforcing with fusion welded holding wires.
<b>19 &amp; 19A</b>	1909.4 and 1908A	For Shotcrete, most DSA-only amendments adopted in the 2016 CBC and the July 1, 2018 Supplement are being repealed and co-adopted with OSHPD. Recognizes current shotcrete references (ACI 506.2-13 and ACI 506R-16). <i>Previously adopted significant changes aligning with current industry standards include increasing from 3,000 psi to 4,000 psi minimum shotcrete compressive strength (1909.4.1 and 1908A.1), modifying surface roughening techniques based on environmental considerations (1909.4.4 and 1908A.1), and increasing the minimum curing temperature to be maintained from 40°F to 50°F (1909.4.6 and 1908A.9).</i>
<b>21 &amp; 21A</b>		Several DSA amendments were eliminated, resulting from inclusion of same or equivalent requirements in revised masonry reference standards, TMS 402-16 and TMS 602-16.
<b>21 &amp; 21A</b>	2115.2 & 2103A.4	Allows the sampling and testing of unidentified masonry reinforcing bars to match that used for concrete reinforcing bars.
<b>21 &amp; 21A</b>	2104A.1.3.1.2.2	Allows an increase in wall height for low-lift grout method for 10" nominal and larger CMU units.
<b>21 &amp; 21A</b>	2115.9.1 & 2106A.1.1	Relaxes horizontal reinforcing spacing requirements for non-bearing non-shear walls, whether interior or exterior.
<b>22 &amp; 22A</b>		Repeals multiple former DSA amendments where the 2018 steel standards for seismic design have adopted the same or equivalent.

<b>22 &amp; 22A</b>	2212 and 2211A	Multiple DSA amendments have been relocated and references updated to align with 2018 IBC and steel standards (AISC and AISI).
<b>23</b>	2304	Accepts new Cross-Laminated Timber (CLT) requirements for gravity and non-lateral resisting elements and systems.
<b>26</b>	2618	Adopts new 2018 IBC adopted provisions for attachment of insulated exterior finishes to wood framing; similar to provisions previously adopted for steel framing.
<b>31</b>		Amends several sections in Chapter 31 to align with the design and material chapter requirements for public schools.
<b>35</b>		Updates reference standards to current versions.

**Part 3 – California Electrical Code (Effective January 2020)**

CHAPTER	SECTION	NOTES
		Adopts the 2017 National Electric Code as the 2019 California Electrical Code. DSA carried over previous administrative amendments, and did not add any new amendments.

**Part 4 – California Mechanical Code (Effective January 2020)**

CHAPTER	SECTION	NOTES
		Adopts the 2018 Uniform Mechanical Code as the 2019 California Mechanical Code. DSA carried over previous administrative amendments, and did not add any new amendments.
<b>4</b>	401.2	Adopts the increase to the minimum efficiency reporting value (MERV) rating requirements for HVAC filters from 8 to 13 to align with the 2019 Energy Efficiency Standards found in Part 6 <i>California Energy Code</i> promulgated by the California Energy Commission.
<b>17</b>	Table 1701.2	This Table is new to the 2018 Uniform Mechanical Code and lists additional referenced standards, publications, practices and guides not referenced in other sections of the code, but are permitted to be referenced for the purpose of providing alternative materials and methods of construction.

**Part 5 – California Plumbing Code (Effective January 2020)**

CHAPTER	SECTION	NOTES
		Adopts the 2015 Uniform Plumbing Code as the 2016 California Mechanical Code. DSA carried over previous administrative amendments.

<b>17</b>	Table 1701.2	Similar to the UMC, this table is new to the 2018 Uniform Plumbing Code and lists additional referenced standards, publications, practices and guides not referenced in other sections of the code, but are permitted to be referenced for the purpose of providing alternative materials and methods of construction.
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**Part 10 – California Existing Building Code (CEBC, Effective January 2020)**

CHAPTER	SECTION	NOTES
		Adopts selected sections of 2018 IEBC and carries forward existing amendments from the 2016 CEBC with updates to corresponding section references in the 2019 California Building Code.
<b>3</b>		Adopts a new non-structural performance level N-D to align with ASCE 41-17 which is the updated version adopted into the 2018 IEBC. Clarifies the non-structural N-D performance level need not exceed that for new construction.
<b>5</b>		Relocates 2016 CEBC Chapter 4: Prescriptive Compliance method into Chapter 5 to align with the 2018 IEBC. The 2018 IEBC moved this chapter and created a new Chapter 4: Repairs, which DSA does not adopt since requirements for Repair are defined in Part 1, CA Admin Code.

**Part 11 – California Green Building Standards Code (CALGreen, Effective Jan. 2020)**

CHAPTER	SECTION	NOTES
<b>5.106</b>	5.106.5.3	Requires electric vehicle charging infrastructure for new parking areas and additions to existing parking.
<b>5.106</b>	5.106.12	Requires shade trees to provide shade to 50% of new surface parking areas and additions to surface parking areas within 15 years, and shade to 20% of landscape areas and hardscape areas within 15 years.

**Part 12 – California Reference Standards Code (CRSC, Effective January 2020)**

CHAPTER	SECTION	NOTES
<b>12-16-1</b>	12-16-101	Revises Chapter 12-16-1 to adopt current industry standards (ASCE) for earthquake-actuated automatic gas shutoff valves.
<b>12-16-2</b>	12-16-201	Revises Chapter 12-16-2 to adopt current industry standards (ASTM and ANSI) for excess flow actuated automatic gas shutoff valves.