# APPROVED BY THE CALIFORNIA BUILDING STANDARDS COMMISSION

# December 16, 2021

# FINAL EXPRESS TERMSFOR PROPOSED BUILDING STANDARDSOF THE DIVISION OF THE STATE ARCHITECTREGARDING THE 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE,

# CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 11

# (DSA SS/CC 03-21)

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

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

## LEGEND for EXPRESS TERMS (California only codes - Parts 1, 6, 8, 11, 12)

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* Repealed California language appears ~~upright and in strikeout~~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

# FINAL EXPRESS TERMS

# Item 1Chapter 2, DEFINITIONS, Section 202, DEFINITIONS

**AUTOMATIC LOAD MANAGEMENT SYSTEM (ALMS)**. A system designed to manage load across one or more electric vehicle supply equipment (EVSE) to share electrical capacity and/or automatically manage power at each connection point.

**Notation: DSA-SS**

Authority: Education Code section 17310 and 81142.

Reference(s): Education Code sections 17280-17317, 81130-81147.

**Notation: DSA-SS/CC**

Authority: Education Code section 81053.

Reference(s): Education Code sections 81052, 81053, and 81130-81147.

# Item 2Chapter 2, DEFINITIONS, Section 202, DEFINITIONS

**ELECTRIC VEHICLE (EV)** **CAPABLE SPACE.** A vehicle space with electrical panel space and load capacity to support a branch circuit and necessary raceways, both underground and/or surface mounted, to support EV charging.

**Notation: DSA-SS**

Authority: Education Code section 17310 and 81142.

Reference(s): Education Code sections 17280-17317, 81130-81147.

**Notation: DSA-SS/CC**

Authority: Education Code section 81053.

Reference(s): Education Code sections 81052, 81053, and 81130-81147.

# Item 2.1Chapter 2, DEFINITIONS, Section 202, DEFINITIONS

**~~LOW~~ ZERO-EMITTING AND ~~FUEL~~ HIGH EFFICIENT VEHICLES.**

Eligible vehicles are limited to the following:

1. Zero emission vehicle (ZEV), enhanced advanced technology PZEV (enhanced AT ZEV) or transitional zero emission vehicles (TZEV) regulated under CCR, Title 13, Section 1962~~. including neighborhood electric vehicles (NEV), partial zero emission vehicle (PZEV), advanced technology PZEV (AT ZEV) or CNG fueled (original equipment manufacturer only) regulated under~~ *~~Health and Safety Code~~* ~~Section 43800 and CCR, Title 13, Sections 1961 and 1962.~~
2. High-efficiency vehicles, regulated by U.S. EPA, bearing a fuel economy and greenhouse gas rating of 9 or 10 as regulated under 40 CFR Section 600 Subpart D. ~~High-occupancy Vehicle (HOV) carpool lane stickers issued by the Department of Motor Vehicles.~~

**Notation: DSA-SS**

Authority: Education Code section 17310 and 81142.

Reference(s): Education Code sections 17280-17317, 81130-81147.

**Notation: DSA-SS/CC**

Authority: Education Code section 81053.

Reference(s): Education Code sections 81052, 81053, and 81130-81147.

# Item 3Chapter 2, DEFINITIONS, Section 202, DEFINITIONS

**~~URINAL, HYBRID~~ NONWATER URINAL WITH DRAIN CLEANSING ACTION.** A nonwater urinal that conveys waste into the drainage system without the use of water for flushing and automatically performs a drain-cleansing action after a predetermined amount of time.

**Notation: DSA-SS**

Authority: Education Code section 17310 and 81142.

Reference(s): Education Code sections 17280-17317, 81130-81147.

**Notation: DSA-SS/CC**

Authority: Education Code section 81053.

Reference(s): Education Code sections 81052, 81053, and 81130-81147.

# Item 4Chapter 2, DEFINITIONS, Section 202, DEFINITIONS

**OFF-STREET LOADING SPACES.** An area, other than a public street, public way, or other property (and exclusive of off-street parking spaces), permanently reserved or set aside for the loading or unloading of motor vehicles, including ways of ingress and egress and maneuvering areas. Whenever the term "loading space" is used, it shall, unless the context clearly requires otherwise, be construed as meaning off-street loading space. This excludes designated passenger loading/unloading.

**Notation: DSA-SS**

Authority: Education Code section 17310 and 81142.

Reference(s): Education Code sections 17280-17317, 81130-81147.

**Notation: DSA-SS/CC**

Authority: Education Code section 81053.

Reference(s): Education Code sections 81052, 81053, and 81130-81147.

# Item 5

Withdrawn.

# Item 6Chapter 5, NONRESIDENTIAL MANDATORY MEASURES, Division 5.1, PLANNING AND DESIGN, Section 5.106, SITE DEVELOPMENT

**5.106.5.3 Electric vehicle (EV) charging. [N]** Construction to provide electric vehicle infrastructure and facilitate electric vehicle charging shall comply with Section 5.106.5.3 and shall be provided in accordance with regulations in the *California Building Code* andthe *California Electrical Code*. ~~or Section 5.106.5.3.2 to facilitate future installation of~~ ~~electric vehicle supply equipment (EVSE):~~ ~~When EVSE(s) is/are installed, it shall be~~ ~~in accordance with the~~ *~~California Building Code,~~* ~~the~~ *~~California Electrical Code~~* ~~and as follows:~~

**Exceptions:** *(Relocated from 2019 CALGreen Section 5.106.5.3.3 and edited)*

1**.** On a case-by-case basis where the local enforcing agency has determined ~~EV charging and infrastructure~~ compliance with this section is not feasible based upon one ~~or more~~ of the following conditions:

~~1~~a. Where there is ~~insufficient electrical supply~~.no local utility power supply.

b. Where the local utility is unable to supply adequate power.

~~2~~c. Where there is evidence suitable to the local ~~enforcing~~ enforcement agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 5.106.5.3, may adversely impact the construction cost of the project.

2. Parking spaces accessible only by automated mechanical car parking systems are not required to comply with this code section.

**~~5.106.5.3.1 Single charging space requirements. [~~**~~N] When only a single charging space is required per Table 5.106.5.3.3, a raceway is required to be installed at the time of construction and shall be installed in accordance with the California Electrical Code. Construction plans and specifications shall include, but are not limited to, the following:~~

1. ~~The type and location of the EVSE.~~
2. ~~A listed raceway capable of accommodating a 208/240-volt dedicated branch circuit.~~
3. ~~The raceway shall not be less than trade size 1.”~~
4. ~~The raceway shall originate at a service panel or a subpanel serving the area, and shall terminate in close proximity to the proposed location of the charging equipment and into a listed suitable cabinet, box, enclosure or equivalent.~~
5. ~~The service panel or subpanel shall have sufficient capacity to accommodate a minimum of 40- ampere dedicated branch circuit for the future installation of the EVSE.~~

**5.106.5.3.~~2~~ 1 ~~Multiple~~ ~~charging space requirements~~ EV capable spaces.**

**[N]** EV capable spaces shall be provided in accordance with Table 5.106.5.3.1 and the following requirements: ~~[N] When multiple charging spaces are required per Table 5.106.5.3.3 raceway(s) is/~~ ~~are required to be installed at the time of construction and shall be installed in accordance with the~~ *~~California Electrical Code~~*~~. Construction plans and specifications shall include, but are not limited to, the following:~~

~~1.The type and location of the EVSE.~~

~~2~~ 1. ~~The~~ ~~r~~ Raceways ~~(s)~~ complying with the *California Electrical Code* and no less than 1” diameter shall be provided and shall originate at a service panel or a subpanel(s) serving the area, and shall terminate in close proximity to the proposed location of the EV capable space ~~the charging equipment~~ and into a ~~listed~~ suitable listed cabinet ~~(s)~~, box~~(es)~~, enclosure~~(s)~~ or equivalent. A common raceway may be used to serve multiple EV capable spaces.

~~3~~ 2. A service panel or subpanel(s) shall be provided with panel space and electrical load capacity for a dedicated ~~Plan design shall be based upon~~ 208/240 volts, 40-ampere minimum branch circuit~~s~~ for each EV capable space, with delivery of 30-ampere minimum to an installed EVSE at each EVCS.

~~4~~ 3. ~~Electrical calculations shall substantiate the design of the electrical system, to include the rating of~~ The electrical system ~~equipment~~ and any on-site distribution transformers ~~and~~ shall have sufficient capacity to ~~simultaneously charge~~ supply ~~all required~~ ~~EVs~~ full rated amperage at each EV capable space. ~~its full rated amperage.~~

~~5. The service panel or subpanel(s) shall have sufficient capacity to accommodate the required number of dedicated branch circuit(s) for the future installation of the EVSE.~~

4*.(formerly 5.106.5.3.4 [N] Identification)* The service panel or subpanel~~(s)~~ circuit directory shall identify the reserved overcurrent protective device space(s) ~~for future EV charging~~ as “EV CAPABLE”. The raceway termination location shall be permanently and visibly marked as “EV CAPABLE”.

Note: *(Relocated from Section 5.106.5.3.5 and edited)*A parking ~~EV capable~~ space~~s~~  served by electric vehicle supply equipment or designed as a future EV charging space ~~and spaces with (EVSE) installed~~ shall count ~~toward the total parking spaces required by the local enforcing agencies.~~ as at least one standard automobile parking space only for the purpose of complying with any applicable minimum parking space requirements established by an enforcement agency. See Vehicle Code Section 22511.2 for further details.

**5.106.5.3.2 Electric vehicle charging stations (EVCS).** EV capable spaces shall be provided with EVSE to create EVCS in the number indicated in Table 5.106.5.3.1. The EVCS required by Table 5.106.5.3.1 may be provided with EVSE in any combination of Level 2 and direct current fast charging (DCFC), except that at least one Level 2 EVSE shall be provided.

One EV charger with multiple connectors capable of charging multiple EVs simultaneously shall be permitted if the electrical load capacity required by Section 5.106.5.3.1 for each EV capable space is accumulatively supplied to the EV charger.

The installation of each DCFC EVSE shall be permitted to reduce the minimum number of required EV capable spaces without EVSE by five and reduce proportionally the required electrical load capacity to the service panel or subpanel.

**5.106.5.3.3 Use of automatic load management systems (ALMS).** ALMS shall bepermitted for EVCS. When ALMS is installed, the required electrical load capacity specified in Section 5.106.5.3.1 for each EVCS may be reduced when serviced by an EVSE controlled by an ALMS. Each EVSE controlled by an ALMS shall deliver a minimum 30 amperes to an EV when charging one vehicle and shall deliver a minimum 3.3 kW while simultaneously charging multiple EVs.

**5.106.5.3.4 Accessible EVCS**. When EVSE is installed, accessible EVCS shall be provided in accordance with the *California Building Code Chapter 11B Section 11B-228.3.*

Note:For EVCS signs refer to Caltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its successor(s).

**TABLE 5.106.5.3.~~3~~ 1**

| TOTAL NUMBER OF ACTUAL PARKING SPACES | NUMBER OF REQUIRED EV CAPABLE ~~CHARGING~~ SPACES | NUMBER OF EVCS(EV CAPABLE SPACES PROVIDED WITH EVSE)2 |
| --- | --- | --- |
| 0-9 | 0 | 0 |
| 10-25 | ~~2~~ 4  | 0 |
|  26-50 |  ~~4~~  8  | 2 |
| 51-75 | ~~7~~ 13  | 3 |
| 76-100 | ~~9~~ 17  | 4 |
| 101-150 | ~~13~~ 25  | 6 |
| 151-200 |  ~~18~~ 35  | 9 |
| 201 and over | ~~10~~ 20 percent of total1 | 25 percent of EV capable spaces1 |

1. Calculation for spaces shall be rounded up to the nearest whole number.

2. The number of required EVCS (EV capable spaces provided with EVSE) in column 3 count toward the total number of required EV capable spaces shown in column 2.

**. . .**

**~~5.106.5.3.4 [N] Identification.~~** (Relocated language to Section 5.106.5.3, line item 4) The service panel…“EV CAPABLE.”

**~~5.106.5.3.5 [N] Future charging spaces.~~**

~~Future charging spaces qualify as~~ **~~. . .~~** ~~clean air vehicles.~~

Note: (Relocated to Section 5.106.5.3.1) Future electric…agencies.

**…**

**Notation: DSA-SS**

Authority: Education Code section 17310 and 81142.

Reference(s): Education Code sections 17280-17317, 81130-81147.

**Notation: DSA-SS/CC**

Authority: Education Code section 81053.

Reference(s): Education Code sections 81052, 81053, and 81130-81147.

# Item 7Chapter 5, NONRESIDENTIAL MANDATORY MEASURES, Division 5.1, PLANNING AND DESIGN, Section 5.106, SITE DEVELOPMENT

**5.106.12 Shade trees. [DSA-SS]** Shade trees shall be planted to comply with Sections 5.106.12.1, 5.106.12.2, and 5.106.12.3. Percentages shown shall be measured at noon on the summer solstice. Landscape irrigation necessary to establish and maintain tree health shall comply with Section 5.304.6.

**5.106.12.1 Surface parking areas.** Shade tree plantings, minimum #10 container size or equal, shall be installed to provide shade over 50% of the parking area within 15 years.

**~~Exception:~~** ~~Walks, hardscape areas covered by solar photovoltaic shade structures, and hardscape areas covered by shade structures with roofing materials that comply with Table A5.106.11.2.2 in Appendix A5, are not included in the total area calculation.~~

**Exceptions:** Surface parking area covered by solar photovoltaic shade structures or shade structures with roofing materials that comply with Table A5.106.11.2.2 in Appendix A5, shall be permitted in whole or in part in lieu of shade tree plantings.

**5.106.12.2 Landscape areas.** Shade trees plantings, minimum #10 container size or equal, shall be installed to provide shade over 20% of the landscape area within 15 years.

**Exception:** Playfields for organized sport activity are not included in the total area calculation.

**5.106.12.3 Hardscape areas.** Shade trees plantings, minimum #10 container size or equal, shall be installed to provide shade over 20% of the hardscape area within 15 years.

**~~Exception:~~** ~~Walks, and hardscape areas covered by solar photovoltaic shade structures, and hardscape areas covered by shade structures with roofing materials that comply with Table A5.106.11.2.2 in Appendix A5, are not included in the total area calculation.~~

**Exceptions:**

1. Walks and hardscape areas covered by solar photovoltaic shade structures or shade structures with roofing materials that comply with Table A5.106.11.2.2 in Appendix A5, shall be permitted in whole or in part in lieu of shade tree plantings.
2. Designated and marked play areas of organized sport activity are not included in the total area calculation.

**Notation: DSA-SS**

Authority: Education Code section 17310 and 81142.

Reference(s): Education Code sections 17280-17317, 81130-81147.

**Notation: DSA-SS/CC**

Authority: Education Code section 81053.

Reference(s): Education Code sections 81052, 81053, and 81130-81147.

# Item 8Chapter 5, NONRESIDENTIAL MANDATORY MEASURES, Division 5.5, ENVIRONMENTAL QUALITY, Section 5.504, POLLUTANT CONTROL

**5.504.4.7 Thermal insulation.** Comply with the requirements of the California Department of Public Health, “Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers,” Version 1.2, January 2017 (Emission testing method for California Specification 01350).

See [California Department of Public Health’s website](https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx#material) for certification programs and testing labs.

https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx#material

**5.504.4.7.1 Verification of compliance.** Documentation shall be provided verifying that thermal insulation materials meet the pollutant emission limits.

**Notation: DSA-SS**

Authority: Education Code section 17310 and 81142.

Reference(s): Education Code sections 17280-17317, 81130-81147.

**Notation: DSA-SS/CC**

Authority: Education Code section 81053.

Reference(s): Education Code sections 81052, 81053, and 81130-81147.

# Item 9Chapter 5, NONRESIDENTIAL MANDATORY MEASURES, Division 5.5, ENVIRONMENTAL QUALITY, Section 5.504, POLLUTANT CONTROL

**5.504.4.8 Acoustical ceilings and wall panels.** Comply with the requirements of the California Department of Public Health, “Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers,” Version 1.2, January 2017 (Emission testing method for California Specification 01350).

See [California Department of Public Health’s website](https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx#material) for certification programs and testing labs.

https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx#material

**5.504.4.8.1 Verification of compliance.** Documentation shall be provided verifying that acoustical finish materials meet the pollutant emission limits.

**Notation: DSA-SS**

Authority: Education Code section 17310 and 81142.

Reference(s): Education Code sections 17280-17317, 81130-81147.

**Notation: DSA-SS/CC**

Authority: Education Code section 81053.

Reference(s): Education Code sections 81052, 81053, and 81130-81147.

# Item 10Chapter 5, NONRESIDENTIAL MANDATORY MEASURES, Division 5.5, ENVIRONMENTAL QUALITY, Section 5.506, INDOOR AIR QUALITY

**5.506.3 Carbon dioxide (CO2) monitoring in classrooms. (DSA-SS)** Each public K-12 school classroom, as listed in Table 120.1-A of the California Energy Code, shall be equipped with a carbon dioxide monitor or sensor that meets the following requirements:

1. The monitor or sensor shall be permanently affixed in a tamper-proof manner in each classroom between three and six feet above the floor and at least five feet away from doors and operable windows.
2. When the monitor or sensor is not integral to an Energy Management Control System (EMCS) the monitor or sensor shall display the carbon dioxide readings on the device. When the sensor is integral to an EMCS the carbon dioxide readings shall be available to and regularly monitored by facility personnel.
3. A monitor shall provide notification through a visual indicator on the monitor when the carbon dioxide levels in the classroom have exceeded 1,100 ppm. A sensor integral to an EMCS shall provide notification to facility personnel through a visual and/or audible indicator when the carbon dioxide levels in the classroom have exceeded 1,100 ppm.
4. The monitor or sensor shall measure carbon dioxide levels at minimum 15-minute intervals and shall maintain a record of previous carbon dioxide measurements of not less than 30 days duration.
5. The monitor or sensor used to measure carbon dioxide levels shall have the capacity to measure carbon dioxide levels with a range of 400 ppm to 2000 ppm or greater.
6. The monitor or sensor shall be certified by the manufacturer to be accurate within 75 ppm at 1,000 ppm carbon dioxide concentration shall be certified by the manufacturer to require calibration no more frequently than once every five years.

**Notation: DSA-SS**

Authority: Education Code section 17310.

Reference(s): Education Code sections 17280-17317.