

REVISION RECORD FOR THE STATE OF CALIFORNIA

ERRATA

January 1, 2020

2019 Title 24, Part 11, California Green Building Standards Code

General Information:

1. The date of this erratum is for identification purposes only. See the History Note Appendix on the back side or accompanying page.
2. This erratum is issued by the California Building Standards Commission in order to correct nonsubstantive printing errors or omissions in California Code of Regulations, Title 24, Part 11, of the 2019 California Green Building Standards Code. Instructions are provided below
3. Health and Safety Code Section 18938.5 establishes that only building standards in effect at the time of the application for a building permit may be applied to the project plans and construction. This rule applies to both adoptions of building standards for Title 24 by the California Building Standards Commission, and local adoptions and ordinances imposing building standards. An erratum to Title 24 is a nonregulatory correction because of a printing error or omission that does not differ substantively from the official adoption by the California Building Standards Commission. Accordingly, the corrected code text provided by this erratum may be applied on and after the stated effective date.
4. You may wish to retain the superseded material with this revision record so that the prior wording of any section can be easily ascertained.

Title 24, Part 11

Remove Existing Pages

vii and viii
1 through 4
37 and 38
45 and 46
59 and 60
73 through 76
153 and 154
157 and 158
167 and 168
217 and 218

Insert Buff-Colored Pages

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CALIFORNIA GREEN BUILDING STANDARDS CODE – MATRIX ADOPTION TABLE

CHAPTER 1 – ADMINISTRATION

(Matrix Adoption Tables are nonregulatory, intended only as an aid to the code user.

See Chapter 1 for state agency authority and building applications.)

Adopting agency	BSC	BSC-CG	SFM	HCD			DSA		OSHDP						BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	1	1R	2	3	4	5								
Adopt entire CA chapter																						
Adopt entire chapter as amended (amended sections listed below)																						
Adopt only those sections that are listed below		X		X				X	X		X		X									
Chapter/Section																						
101		X		X				X	X		X		X									
102		X		X				X	X		X		X									
103		X																				
104				X																		
105								X														
106									X		X		X									

CHAPTER 1

ADMINISTRATION

SECTION 101 GENERAL

101.1 Title. These regulations shall be known as the *California Green Building Standards Code*, may be cited as such, and will be referred to herein as “this code.” It is intended that it shall also be known as the *CALGreen Code*. The *California Green Building Standards Code* is Part 11 of thirteen parts of the official compilation and publication of the adoption, amendment and repeal of building regulations to the *California Code of Regulations*, Title 24, also referred to as the *California Building Standards Code*.

101.2 Purpose. The purpose of this code is to improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in the following categories:

1. Planning and design.
2. Energy efficiency.
3. Water efficiency and conservation.
4. Material conservation and resource efficiency.
5. Environmental quality.

101.3 Scope. The provisions of this code shall apply to the planning, design, operation, construction, use and occupancy of every newly constructed building or structure, unless otherwise indicated in this code, throughout the State of California.

It is not the intent that this code substitute or be identified as meeting the certification requirements of any green building program.

101.3.1 State-regulated buildings, structures and applications. Provisions of this code shall apply to the following buildings, structures and applications regulated by state agencies as specified in Sections 103 through 106, except where modified by local ordinance pursuant to Section 101.7. When adopted by a state agency, the provisions of this code shall be enforced by the appropriate enforcing agency, but only to the extent of authority granted to such agency by statute.

1. State-owned buildings, including buildings constructed by the Trustees of the California State University, and to the extent permitted by California law, buildings designed and constructed by the Regents of the University of California and regulated by the Building Standards Commission. See Section 103 for additional scoping provisions.
2. Energy efficiency standards regulated by the California Energy Commission.
3. All residential buildings constructed throughout the State of California, including but not limited to, hotels, motels, lodging houses, apartments, dwellings, dormitories, condominiums, shelters for homeless persons, congregate residences, employee housing, factory-built housing and other types of dwellings containing sleeping accommodations with or without common toilets or cooking facilities reg-

ulated by the Department of Housing and Community Development. See Section 104 for additional scoping provisions.

4. Public elementary and secondary schools, and community college buildings regulated by the Division of the State Architect. See Section 105 for additional scoping provisions.
5. Qualified historical buildings and structures and their associated sites regulated by the State Historical Building Safety Board within the Division of the State Architect.
6. General acute care hospitals, acute psychiatric hospitals, skilled nursing and/or intermediate care facilities, clinics licensed by the Department of Public Health and correctional treatment centers regulated by the Office of Statewide Health Planning and Development. See Section 106 for additional scoping provisions.
7. Graywater systems regulated by the Department of Water Resources and the Department of Housing and Community Development.
8. Green building standards for occupancies where no state agency has authority or expertise, adopted by the California Building Standards Commission. See Section 103 for additional scoping provisions.

101.4 Appendices. Provisions contained in the appendices of this code are not mandatory unless specifically adopted by a city, county, or city and county in compliance with *Health and Safety Code* Sections 18930 and 18941.5, respectively, for Building Standards Law; *Health and Safety Code* Section 17950 for State Housing Law; and *Health and Safety Code* Section 13869.7 for Fire Protection Districts. See Section 101.7 of this code.

101.5 Referenced codes and standards. The codes and standards referenced elsewhere in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference.

101.5.1 Building. The provisions of the *California Building Code*, *California Residential Code*, and *California Existing Building Code*, as applicable, shall apply to the construction, alteration, movement, enlargement, replacement, repair, use and occupancy, location, maintenance, removal and demolition of every structure or any appurtenances connected or attached to such buildings or structures.

101.5.2 Electrical. The provisions of the *California Electrical Code* shall apply to the installation of electrical systems, including but not limited to, alterations, repair, replacement, equipment, appliances, fixtures, fittings and appurtenances thereto.

101.5.3 Mechanical. The provisions of the *California Mechanical Code* shall apply to the installation, alterations, repair and replacement of mechanical systems, including equipment, appliances, fixtures, fittings and/or appurtenances, including ventilating, heating, cooling, air-conditioning and refrigeration systems, incinerators and other energy-related systems.

101.5.4 Plumbing. The provisions of the *California Plumbing Code* shall apply to the installation, alteration, repair and replacement of plumbing systems, including equipment, appliances, fixtures, fittings and appurtenances where connected to a water or sewage system.

101.5.5 Fire prevention. The provisions of CCR, Title 19, Division 1 and CCR, Title 24, Part 2 and Part 9 relating to fire and panic safety as adopted by the Office of the State Fire Marshal shall apply to all structures, processes and premises for protection from the hazard of fire, panic and explosion.

101.5.6 Energy. The provisions of the *California Energy Code* shall apply to the minimum design and construction of buildings for energy efficiency.

101.6 Order of precedence and use.

101.6.1 Differences. In the event of any differences between these building standards and the standard reference documents, the text of these building standards shall govern. In the event a local amendment to this code results in differences between these building standards and the amendment, the text of the amendment shall govern.

101.6.2 Specific provision. Where a specific provision varies from a general provision, the specific provision shall apply.

101.6.3 Conflicts. When the requirements of this code conflict with the requirements of any other part of the *California Building Standards Code*, Title 24, the most restrictive requirement shall prevail.

101.6.4 Explanatory notes. Explanatory material, such as references to websites or other sources where additional information may be found, is included in this code in the form of notes. Notes are informational only and are not enforceable requirements of this code.

101.7 City, county, or city and county amendments, additions or deletions. This code is intended to set mandatory minimum Green Building Standards and includes optional tiers that may, at the discretion of any city, county, or city and county, be applied.

This code does not limit the authority of city, county, or city and county governments to make necessary changes to the provisions contained in this code pursuant to Section 101.7.1. The effective date of amendments, additions, or deletions to this code for cities, counties, or cities and counties filed pursuant to Section 101.7.1 shall be the date on which it is filed. However, in no case shall the amendments, additions or deletions to this code be effective any sooner than the effective date of this code.

Local modifications shall comply with *Health and Safety Code* Section 18941.5(b) for Building Standards Law, *Health and Safety Code* Section 17958.5 for State Housing Law or *Health and Safety Code* Section 13869.7 for Fire Protection Districts.

101.7.1 Findings and filings.

1. The city, county, or city and county shall make express findings for each amendment, addition or deletion based upon climatic, topographical or geo-

logical conditions. For the purpose of this section, climatic, topographical or geological conditions include local environmental conditions as established by the city, county, or city and county.

2. The city, county, or city and county shall file the amendments, additions or deletions expressly marked and identified as to the applicable findings. Cities, counties, cities and counties, and fire departments shall file the amendments, additions or deletions and the findings with the California Building Standards Commission at 2525 Natomas Park Drive, Suite 130, Sacramento, CA 95833.
3. Findings prepared by fire protection districts shall be ratified by the local city, county, or city and county and filed with the California Department of Housing and Community Development at 9342 Tech Center Drive, Suite 500, Sacramento, CA 95826.
4. The city, county, or city and county shall obtain California Energy Commission approval for any energy-related ordinances consistent with *Public Resources Code* Section 25402.1(h)(2) and Title 24, Part 1, Section 10-106. Local governmental agencies may adopt and enforce energy standards for newly constructed buildings, additions, alterations and repairs, provided the California Energy Commission finds that the standards will require buildings to be designed to consume no more energy than permitted by Part 6. Such local standards include, but are not limited to, adopting the requirements of Part 6 before their effective date, requiring additional energy conservation measures, or setting more stringent energy budgets.

101.8 Alternate materials, designs and methods of construction. The provisions of this code are not intended to prevent the use of any alternate material, appliance, installation, device, arrangement, method, design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternate shall be approved on a case-by-case basis where the enforcing agency finds that the proposed alternate is satisfactory and complies with the intent of the provisions of this code and is at least the equivalent of that prescribed in this code in planning and design, energy, water, material conservation and resource efficiency, environmental air quality, performance, safety and the protection of life and health. Consideration and compliance provisions for occupancies regulated by adopting state agencies are found in the sections listed below.

- | | |
|--|--|
| | 1. Section 1.2.3 in the <i>California Building Code</i> (CBC) for the California Building Standards Commission. |
| | 2. Section 104.11 of Chapter 1, Division II for the Division of the State Architect. |
| | 3. Section 1.8.7, Chapter 1, Division I, of the 2019 <i>California Building Code</i> ; and Section 1.8.7, Chapter 1, Division I, of the 2019 <i>California Residential Code</i> for the Department of Housing and Community Development. |
| | 4. Section 7-104, 2019 <i>California Administrative Code</i> for the Office of the Statewide Health Planning and Development. |

101.9 Effective date of this code. Only those standards approved by the California Building Standards Commission that are effective at the time an application for a building permit is submitted shall apply to the plans and specifications for, and to the construction performed under, that permit. For the effective dates of the provisions contained in this code, see the appropriate application checklist and the History Note page of this code.

101.10 Mandatory requirements. This code contains both mandatory and voluntary green building measures. Mandatory and voluntary measures are identified in the appropriate application checklist contained in this code.

101.11 Effective use of this code. The following steps shall be used to establish which provisions of this code are applicable to a specific occupancy:

1. Establish the type of occupancy.
2. Verify which state agency has authority for the established occupancy by reviewing the authorities list in Sections 103 through 106.
3. Once the appropriate agency has been identified, find the chapter which covers the established occupancy.
4. The Matrix Adoption Tables at the beginning of Chapters 4 and 5 identify the mandatory green building measures necessary to meet the minimum requirements of this code for the established occupancy.
5. Voluntary tier measures are contained in Appendix Chapters A4 and A5. A checklist containing each green building measure, both required and voluntary, is provided at the end of each appendix chapter. Each measure listed in the application checklist has a section number which correlates to a section where more information about the specific measure is available.
6. The application checklist identifies which measures are required by this code and allows users to check off which voluntary items have been selected to meet voluntary tier levels if desired or mandated by a city, county, or city and county.

SECTION 102 CONSTRUCTION DOCUMENTS AND INSTALLATION VERIFICATION

102.1 Submittal documents. Construction documents and other data shall be submitted in one or more sets with each application for a permit. Where special conditions exist, the enforcing agency is authorized to require additional construction documents to be prepared by a licensed design professional and may be submitted separately.

Exception: The enforcing agency is authorized to waive the submission of construction documents and other data not required to be prepared by a licensed design professional.

102.2 Information on construction documents. Construction documents shall be of sufficient clarity to indicate the location, nature and scope of the proposed green building feature and show that it will conform to the provisions of this code, the *California Building Standards Code* and other relevant laws, ordinances, rules and regulations as determined by the enforcing agency.

102.3 Verification. Documentation of conformance for applicable green building measures shall be provided to the enforcing agency. Alternate methods of documentation shall be acceptable when the enforcing agency finds that the proposed alternate documentation is satisfactory to demonstrate substantial conformance with the intent of the proposed green building measure.

(HCD) Documentation of conformance for applicable green building measures shall be provided to the enforcing agency. All projects shall submit a completed Residential Occupancies Application Checklist that includes Chapter 4 residential mandatory measures and Tier 1 or Tier 2, as applicable. References to the measure-specific documentation used to show compliance shall be included. Alternate methods of documentation shall be acceptable when the enforcing agency finds that the proposed alternate documentation is satisfactory to demonstrate substantial conformance with the intent of the proposed green building measure.

Note: HCD's Residential Occupancies Application Checklist that includes the minimum criteria for documentation is available at: <http://www.hcd.ca.gov/building-standards/cal-green/cal-green-forms.shtml>.

SECTION 103 BUILDING STANDARDS COMMISSION

103.1 BSC-CG. Specific scope of application of the agency responsible for enforcement, the enforcement agency, and the specific authority to adopt and enforce such provisions of this code, unless otherwise stated.

1. **Application**—All occupancies where no state agency has the authority to adopt green building standards applicable to those occupancies.

Enforcing agency—State or local agency specified by the applicable provisions of law.

Authority cited—*Health and Safety Code* Sections 18930.5(a), 18938, and 18940.5.

Reference—*Health and Safety Code*, Division 13, Part 2.5, commencing with Section 18901.

2. **Graywater systems.** The construction, installation, and alteration of graywater systems for indoor and outdoor uses in nonresidential occupancies.

Application—All occupancies where no state agency has the authority to adopt green building standards applicable to those occupancies.

Enforcing agency—State or local agency specified by the applicable provisions of law.

Authority cited—*Health and Safety Code* Section 18941.8.

Reference—*Health and Safety Code* Section 18941.8.

103.1.1 Adopting agency identification. The provisions of this code applicable to buildings identified in this section will be identified in the Matrix Adoption Tables under the acronym **BSC-CG**.

SECTION 104 DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

104.1 Scope. Specific scope of application of the agency responsible for enforcement, the enforcement agency and the specific authority to adopt and enforce such provisions of this code, unless otherwise stated.

1. Housing construction.

Application—Hotels, motels, lodging houses, apartments, dwellings, dormitories, condominiums, shelters for homeless persons, congregate residences, employee housing, factory-built housing and other types of dwellings containing sleeping accommodations with or without common toilet or cooking facilities including accessory buildings, facilities and uses thereto.

Enforcing agency—Local building department or the Department of Housing and Community Development.

Authority cited—*Health and Safety Code* Sections 17921, 17922 and 19990.

Reference—*Health and Safety Code* Sections 17000 through 17060, 17910 through 17990, and 19960 through 19997.

SECTION 105 DIVISION OF THE STATE ARCHITECT

105.1 Specific scope of application of the agency responsible for enforcement, the enforcement agency, and the specific authority to adopt and enforce such provisions of this code, unless otherwise stated.

105.1.1 Application—Public elementary and secondary schools and community colleges. New building construction and site work on a new or existing site.

Note: The Application of Standards outlined in Title 24, Part 6 supersedes the above application as it applies to the California Energy Code.

Enforcing agency—The Division of the State Architect-Structural Safety (DSA-SS) has been delegated the responsibility and authority by the Department of General Services to review and approve the design and observe the construction of public elementary and secondary schools, and community colleges.

Authority cited—*Education Code* Sections 17310 and 81142.

Reference—*Education Code* Sections 17280 through 17317, and 81130 through 81147.

105.1.2 Applicable administrative standards.

1. Title 24, Part 1, California Code of Regulations:

Sections 4-301 through 4-355, Group 1, Chapter 4, for public elementary and secondary schools, and community colleges.

2. Title 24, Part 2, California Code of Regulations:

2.1. Sections 1.1 and 1.9.2 of Chapter 1, Division I.

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 No. 10 container size or equal, shall be installed to provide shade over 50 percent of the parking area within 15 years.

Exceptions: The 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, are not included in the total area calculation.

5.106.12.2 Landscape areas. Shade tree plantings, minimum No. 10 container size or equal shall be installed to provide shade of 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 tree plantings, minimum No. 10 container size or equal shall be installed to provide shade over 20 percent of the hardscape 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.

CALIFORNIA GREEN BUILDING STANDARDS CODE – MATRIX ADOPTION TABLE
CHAPTER 5 – NONRESIDENTIAL MANDATORY MEASURES
DIVISION 5.4 – MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

(Matrix Adoption Tables are nonregulatory, intended only as an aid to the code user.

See Chapter 1 for state agency authority and building applications.)

Adopting agency	BSC	BSC-CG	SFM	HCD			DSA		OSHPD						BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	1	1R	2	3	4	5								
Adopt entire CA chapter		X																				
Adopt entire chapter as amended (amended sections listed below)																						
Adopt only those sections that are listed below								X														
Chapter/Section																						
5.401.1								X														
5.402.1 Definitions								X														
5.407 and subsections								X														
5.408.1 and subsections								X														
5.410.1								X														
5.410.1.2								X														

CHAPTER 5

NONRESIDENTIAL MANDATORY MEASURES

Division 5.4 – MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

**SECTION 5.401
GENERAL**

5.401.1 Scope. The provisions of this chapter shall outline means of achieving material conservation and resource efficiency through protection of buildings from exterior moisture, construction waste diversion, employment of techniques to reduce pollution through recycling of materials, and building commissioning or testing and adjusting.

**SECTION 5.402
DEFINITIONS**

5.402.1 Definitions. The following terms are defined in Chapter 2.

ADJUST.

BALANCE.

BUILDING COMMISSIONING.

ORGANIC WASTE.

TEST.

**SECTION 5.403
FOUNDATION SYSTEMS
(Reserved)**

**SECTION 5.404
EFFICIENT FRAMING TECHNIQUES
(Reserved)**

**SECTION 5.405
MATERIAL SOURCES
(Reserved)**

**SECTION 5.406
ENHANCED DURABILITY
AND REDUCED MAINTENANCE
(Reserved)**

**SECTION 5.407
WATER RESISTANCE AND
MOISTURE MANAGEMENT**

5.407.1 Weather protection. Provide a weather-resistant exterior wall and foundation envelope as required by *California Building Code* Section 1402.2 (Weather Protection), manufacturer's installation instructions or local ordinance, whichever is more stringent.

5.407.2 Moisture control. Employ moisture control measures by the following methods.

5.407.2.1 Sprinklers. Design and maintain landscape irrigation systems to prevent spray on structures.

5.407.2.2 Entries and openings. Design exterior entries and/or openings subject to foot traffic or wind-driven rain to prevent water intrusion into buildings as follows:

5.407.2.2.1 Exterior door protection. Primary exterior entries shall be covered to prevent water intrusion by using nonabsorbent floor and wall finishes within at

least 2 feet around and perpendicular to such openings plus at least one of the following:

1. An installed awning at least 4 feet in depth.
2. The door is protected by a roof overhang at least 4 feet in depth.
3. The door is recessed at least 4 feet.
4. Other methods which provide equivalent protection.

5.407.2.2.2 Flashing. Install flashings integrated with a drainage plane.

SECTION 5.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

5.408.1 Construction waste management. Recycle and/or salvage for reuse a minimum of 65 percent of the nonhazardous construction and demolition waste in accordance with Section 5.408.1.1, 5.408.1.2 or 5.408.1.3; or meet a local construction and demolition waste management ordinance, whichever is more stringent.

5.408.1.1 Construction waste management plan. Where a local jurisdiction does not have a construction and demolition waste management ordinance that is more stringent, submit a construction waste management plan that

1. Identifies the construction and demolition waste materials to be diverted from disposal by efficient usage, recycling, reuse on the project or salvage for future use or sale.
2. Determines if construction and demolition waste materials will be sorted on-site (source-separated) or bulk mixed (single stream).
3. Identifies diversion facilities where construction and demolition waste material collected will be taken.
4. Specifies that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both.

5.408.1.2 Waste management company. Utilize a waste management company that can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with this section.

Note: The owner or contractor shall make the determination if the construction and demolition waste material will be diverted by a waste management company.

Exceptions to Sections 5.408.1.1 and 5.408.1.2:

1. Excavated soil and land-clearing debris.
2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist.

3. Demolition waste meeting local ordinance or calculated in consideration of local recycling facilities and markets.

5.408.1.3 Waste stream reduction alternative. The combined weight of new construction disposal that does not exceed two pounds per square foot of building area may be deemed to meet the 65 percent minimum requirement as approved by the enforcing agency.

5.408.1.4 Documentation. Documentation shall be provided to the enforcing agency which demonstrates compliance with Sections 5.408.1.1 through 5.408.1.3. The waste management plan shall be updated as necessary and shall be accessible during construction for examination by the enforcing agency.

Notes:

1. Sample forms found in “A Guide to the California Green Building Standards Code (Nonresidential)” located at <https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen> may be used to assist in documenting compliance with the waste management plan.
2. Mixed construction and demolition debris (C&D) processors can be located at the California Department of Resources Recycling and Recovery (CalRecycle).

5.408.2 Universal waste. [A] Additions and alterations to a building or tenant space that meet the scoping provisions in Section 301.3 for nonresidential additions and alterations, shall require verification that Universal Waste items such as fluorescent lamps and ballast and mercury containing thermostats as well as other California prohibited Universal Waste materials are disposed of properly and are diverted from landfills. A list of prohibited Universal Waste materials shall be included in the construction documents.

Note: Refer to the Universal Waste Rule link at: <https://dtsc.ca.gov/universalwaste/>

5.408.3 Excavated soil and land clearing debris. 100 percent of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled. For a phased project, such material may be stockpiled on site until the storage site is developed.

Exception: Reuse, either on-or off-site, of vegetation or soil contaminated by disease or pest infestation.

Notes:

1. If contamination by disease or pest infestation is suspected, contact the County Agricultural Commissioner and follow its direction for recycling or disposal of the material. (www.cdffa.ca.gov/exec/county/county_contacts.html)
2. For a map of known pest and/or disease quarantine zones, consult with the California Department of Food and Agriculture. (www.cdffa.ca.gov)

CALIFORNIA GREEN BUILDING STANDARDS CODE – MATRIX ADOPTION TABLE

CHAPTER 8 – COMPLIANCE FORMS, WORKSHEETS AND REFERENCE MATERIAL

(Matrix Adoption Tables are nonregulatory, intended only as an aid to the code user.

See Chapter 1 for state agency authority and building applications.)

Adopting agency	BSC	BSC-CG	SFM	HCD			DSA		OSHPD						BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	1	1R	2	3	4	5								
Adopt entire CA chapter		X																				
Adopt entire chapter as amended (amended sections listed below)																						
Adopt only those sections that are listed below								X														
Chapter/Section																						
IES TM-15-11 Table A-1								X														
Table 130.2-A								X														
Table 1302.2-B								X														

CHAPTER 8

COMPLIANCE FORMS, WORKSHEETS AND REFERENCE MATERIAL

[BSC] Sample forms found in “A Guide to the California Green Building Standards Code (Nonresidential)” located at <https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen> may be used to assist in documenting compliance with the waste management plan and other provisions of this code.

[HCD 1] Sample forms located at www.hcd.ca.gov/building-standards/calgreen/cal-green-forms.shtml may be used to assist in documenting compliance with *CALGreen*.

WORKSHEET (WS-1) BASELINE WATER USE

BASELINE WATER USE CALCULATION TABLE									
FIXTURE TYPE	FLOW RATE		DURATION		DAILY USES		OCCUPANTS ¹		GALLONS PER DAY
Showerheads	2.0 gpm @ 80 psi	×	5 min.	×	1	×	Note 1a	=	
Lavatory faucets nonresidential	0.5 gpm @ 60 psi	×	.25 min.	×	3	×		=	
Kitchen faucets	1.8 gpm @ 60 psi	×	4 min.	×	1	×	Note 1b	=	
Replacement aerators	2.2 gpm	×		×		×		=	
Wash fountains	1.8 gpm/20 [rim space(in.)@ 60 psi]	×		×		×		=	
Metering faucets	0.20 gal/cycle	×		×	3	×		=	
Metering faucets for wash fountains	0.20 gal/cycle/20 [rim space(in.)@ 60 psi]	×	.25 min.	×		×		=	
Gravity tank-type water closets	1.28 gal/flush	×	1 flush	×	1 male ² 3 female	×		=	
Flushometer tank water closets	1.28 gal/flush	×	1 flush	×	1 male ² 3 female	×		=	
Flushometer valve water closets	1.28 gal/flush	×	1 flush	×	1 male ² 3 female	×		=	
Electromechanical hydraulic water closets	1.28 gal/flush	×	1 flush	×	1 male ² 3 female	×		=	
Urinals	0.5 or 0.125 ³ gal/flush	×	1 flush	×	2 male	×		=	
Total daily baseline water use (BWU)									=

1. For nonresidential occupancies, refer to Table A, Chapter 4, 2019 *California Plumbing Code*, for occupant load factors.

a. Shower use by occupants depends on the type of use of a building or portion of a building, e.g., total occupant load for a health club, but only a fraction of the occupants in an office building as determined by the anticipated number of users.

b. Kitchen faucet use is determined by the occupant load of the area served by the fixture.

2. The daily use number shall be increased to three if urinals are not installed in the room.

3. Floor-mounted urinals @ 0.5 GPF or wall-mounted urinals @ 0.125 GPF.

**WORKSHEET (WS-2)
WATER USE REDUCTION**

12-, 20- 25-PERCENT REDUCTION WATER USE CALCULATION TABLE									
FIXTURE TYPE	FLOW RATE		DURATION		DAILY USES		OCCUPANTS ¹		GALLONS PER DAY
Showerheads		×	5 min.	×	1	×	Note 1a	=	
Lavatory faucets nonresidential ⁴		×	.25 min.	×	3	×		=	
Kitchen faucets		×	4 min.	×	1	×	Note 1b	=	
Replacement aerators		×		×		×		=	
Wash fountains		×		×		×		=	
Metering faucets		×	.25 min.	×	3	×		=	
Metering faucets for wash fountains		×	.25 min.	×		×		=	
Gravity tank-type water closets		×	1 flush	×	1 male ³ 3 female	×		=	
Flushometer tank water closets		×	1 flush	×	1 male ³ 3 female	×		=	
Flushometer valve water closets		×	1 flush	×	1 male ³ 3 female	×		=	
Electromechanical hydraulic water closets		×	1 flush	×	1 male ³ 3 female	×		=	
Urinals		×	1 flush	×	2 male	×		=	
Urinals Nonwater supplied	0.0 gal/flush		1 flush		2 male	×			
Proposed water use								=	
12% Reduction _____ (BWU from WS-1) × .88 = _____ Allowable water use 20% Reduction _____ (BWU from WS-1) × .80 = _____ Allowable water use 25% Reduction _____ (BWU from WS-1) × .75 = _____ Allowable water use									

1. For occupancies, refer to Table A, Chapter 4, 2019 *California Plumbing Code*, for occupant load factors.

- a. Shower use by occupants depends on the type of use of a building or portion of a building, e.g., total occupant load for a health club, but only a fraction of the occupants in an office building as determined by the anticipated number of users.
- b. Kitchen faucet use is determined by the occupant load of the area served by the fixture.

2. Includes single and dual flush water closets with an effective flush of 1.28 gallons or less.

Single flush toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume is the average flush volume when tested in accordance with ASME A112.19.2.

Dual flush toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume is defined as the composite, average flush volume of two reduced flushes and one full flush. Flush volumes will be tested in accordance with ASME A112.19.2 and ASME A112.19.14.

3. The daily use number shall be increased to three if urinals are not installed in the room.

4. Where complying faucets are unavailable, aerators rated at 35 gpm or other means may be used to achieve reduction.

- iv. System alarm confirmations.
- e. Measurable criteria for acceptable performance - Include measurable criteria for acceptable performance of each system to be tested
- 4. Commissioning team information - Provide a contact list for all commissioning team members, including but not limited to:
 - i. Owner, owner's representative.
 - ii. Architect, engineers.
 - iii. Designated commissioning representative.
 - iv. General contractor, subcontractors, and construction manager.
- 5. Commissioning process activities, schedules and responsibilities
 - i. Establish prescribed commissioning process steps and activities to be accomplished by the Cx team throughout the design to occupancy.
 - ii. For each phase of the work, define the roles and responsibilities for each member of the Cx team.
 - iii. List the required Cx deliverables, reports, forms and verifications expected at each stage of the commissioning effort.
 - iv. Include the confirmation process for the O&M manual, systems manual, and the facility operator and maintenance staff training.

4.3 Enforcement:

At their discretion, the inspector confirms demonstrated compliance at Plan Intake by:

- a) Receipt of a copy of the commissioning plan, or
- b) Receipt of a form signed by the owner or owner's representative attesting that the Cx Plan has been completed.

Reference: 5 Functional performance testing

CALGreen Section 5.410.2.4, Functional performance testing.

5.1 Intent:

Develop and implement the functional performance tests to document, as set forth in the commissioning plan, that all components, equipment, systems and system-to-system interfaces were installed as specified, and operate according to the Owner's Project Requirements, Basis of Design, and plans and specifications.

The following systems to be functionally tested are listed in the Basis of Design (Section 5.410.2.2 of the code):

- 1. Renewable energy systems
- 2. Landscape irrigation systems
- 3. Water reuse systems

5.2 Compliance Method:

Compliance is demonstrated by developing and implementing test procedures for each piece of commissioned equipment and interfaces between equipment and systems according to the building-specific commissioning plan. Tests should include verification of proper operation of all equipment features, each part of the sequence of operation, overrides, lockouts, safeties, alarms, occupied and unoccupied modes, loss of normal power, exercising a shutdown, startup, low load through full load (as much as is possible) and back, staging and standby functions, scheduling, energy efficiency strategies and loop tuning.

Elements of acceptable test procedures include:

- 1. Date and party—Identification of the date of the test and the party conducting the test.
- 2. Signature block—Signature of the designated commissioning lead and the equipment installing contractor attesting that the recorded test results are accurate.
- 3. Prerequisites—Any conditions or related equipment checkout or testing that needs to be completed before conducting this test.
- 4. Precautions—Identification of the risks involved to the test team members and the equipment and how to mitigate them.
- 5. Instrumentation—Listing of the instrumentation and tools necessary to complete the test.
- 6. Reference—In each procedure item, identify the source for what is being confirmed (e.g., sequence of operation ID, operating feature, specification requirement, etc.).
- 7. Test instructions—Step-by-step instructions of how to complete the test, including functions to test and the conditions under which the tests should be performed.

8. Acceptance criteria—Measurable pass / fail criteria for each step of the test, as applicable.
9. Results—Expected system response and space to document the actual response, readings, results and adjustments.
10. Return to normal—Instructions that all systems and equipment are to be returned to their as-found state at the conclusion of the tests.
11. Deficiencies—A list of deficiencies and how they were mitigated.

5.3 Enforcement:

At their discretion, the inspector confirms demonstrated compliance during onsite enforcement by:

- a) Receipt of a copy of completed and signed functional performance tests and corrected deficiencies, or
- b) Receipt of a form signed by the owner, owner's representative or commissioning coordinator attesting that the functional performance tests have been completed and any deficiencies corrected.

Reference: 6.1 Documentation and training

CALGreen Section 5.410.2.5, Documentation and training.

Section 5.410.2.5.1, Systems manual.

6.1.1 Intent:

The Systems Manual documents information focusing on the operation of the building systems. This document provides information needed to understand, operate, and maintain the equipment and systems and informs those not involved in the design and construction of the building systems. This document is in addition to the record construction drawings, documents, and the Operation & Maintenance (O&M) manuals supplied by the contractor. The Systems Manual is assembled during the construction phase and available during the contractors' training of the facility staff.

|| 6.1.2 Compliance Method:

Compliance is demonstrated by providing the Systems Manual. The information in the Systems Manual includes the following:

1. Site information, including facility description, history and current requirements
 - a. Site information
 - i. Location of property - address
 - ii. Site acreage
 - iii. Local utility information
 - Water service provider
 - Natural/LPG gas service provider
 - Electrical service provider
 - Telecommunications service provider
 - Other service providers
 - b. Facility description
 - i. Use/function
 - ii. Square footage
 - iii. Occupancy type
 - iv. Construction type
 - v. Basis of Design
 - vi. Location of major systems and equipment
 - c. Project history
 - i. Project requirements
 - Owner's Project Requirements (OPR)
 - Basis of Design (BOD)
 - ii. Project undocumented events
 - iii. Record drawings and documents
 - iv. Final control drawings and schematics
 - v. Final control sequences

- vi. Construction documents - location or delivery information
 - Mechanical and electrical drawings
 - Specifications
 - Submittals
 - Project change orders and information
- d. Current requirements
 - i. Building operating schedules
 - ii. Space temperature, humidity, and pressure, CO₂ setpoints
 - iii. Summer and winter setback schedules
 - iv. Chilled and hot water temperatures
 - v. As-built control setpoints and parameters
- 2. Site contact information
 - a. Owner information
 - b. Emergency contacts
 - c. Design team: architect, mechanical engineer, electrical engineer, etc.
 - d. Prime contractor contact information
 - e. Subcontractor information
 - f. Equipment supplier contact information
- 3. Basic operation and maintenance, including general site operating procedures, basic trouble shooting, recommended maintenance requirements site events log
 - a. Basic operation
 - i. Written narratives of basic equipment operation
 - ii. Interfaces, interlocks and interaction with other equipment and systems
 - iii. Initial maintenance provided by contractor
 - b. General site operating procedures
 - i. Instructions for changes in major system operating schedules
 - ii. Instructions for changes in major system holiday and weekend schedules
 - c. Basic troubleshooting
 - i. Cite any recommended troubleshooting procedures specific to the major systems and equipment installed in the building.
 - ii. Manual operation procedures
 - iii. Standby/backup operation procedures
 - iv. Bypass operation procedures
 - v. Major system power fail resets and restarts
 - vi. Trend log listing
 - d. Recommended maintenance events log
 - e. Operation & Maintenance manuals - location or delivery information
- 4. Major systems
 - a. Renewable energy systems
 - i. Photovoltaic panels and inverters
 - ii. Wind-powered electrical generators and inverters
 - b. Landscape irrigation systems
 - i. Water distribution diagrams
 - ii. Control system
 - c. Water reuse systems
 - i. Reclaimed water system for indoor use
 - ii. Reclaimed water for irrigation use

5. Site equipment inventory and maintenance notes
 - a. Spare parts inventory
 - b. Frequently required parts and supplies
 - c. Special equipment required to operate or maintain systems
 - d. Special tools required to operate or maintain systems
6. A copy of all special inspection verifications required by the enforcing agency of this code
7. Other resources and documentation

6.1.3 Enforcement:

At their discretion, the inspector confirms demonstrated compliance during on-site enforcement by:

- a. Receipt of a copy of the Systems Manual, or
- b. Receipt of a form signed by the owner or owner's representative attesting that the systems manual has been completed.

Reference: 6.2 Documentation and training

CALGreen Section 5.410.2.5, Documentation and training.

Section 5.410.2.5.2, Systems operations training.

6.2.1 Intent:

The systems operation training verifies that a training program is developed to provide training to the appropriate maintenance staff for each equipment type and/or system and that this training program is documented in the commissioning report. The systems operations training program is specified in the project specifications for the major systems listed. The systems manual, Operation and Maintenance (O&M) documentation, and record drawings are prepared and available to the maintenance staff prior to implementation of any training or the development of a written training program. The training program is to be administered when the appropriate maintenance staff is made available to receive training.

6.2.2 Compliance Method:

The written training program includes: (a) learning goals and objectives for each session, (b) training agenda, topics, and length of instruction for each session, (c) instructor information and qualifications, (d) location of training sessions (on-site, off-site, manufacturer's or vendor's facility), (e) attendance forms, (f) training materials, and (g) description on how the training will be archived for future use.

1. Systems/equipment overview
 - a. Review OPR and BOD related to the major systems and equipment
 - b. Describe system type and configuration
 - c. Explain operation of all major systems and equipment and how it interfaces with other systems and equipment
 - d. Describe operation of critical devices, controls, and accessories
 - e. Review location of the major systems and equipment
 - f. Describe operation of control system for each system, location of critical control elements, and procedures to properly operate control system
 - g. Review recommendations for implementation to reduce energy and water use
2. Review and demonstration of servicing/preventive maintenance
 - a. Explain location or delivery contact of the Operation & Maintenance manuals
 - b. Review of all manufacturer's recommended maintenance activities to maintain warranty
 - c. Review and demonstrate frequent maintenance activities and suggested schedule
 - d. Review and demonstrate typical servicing procedures and techniques (electrical current, pressure, and flow readings, etc.; calibration procedures, point trending, power fail restart procedures, etc.)
 - e. Locate, observe, and identify major equipment, systems, accessories, and controls
 - f. Review emergency shut-offs and procedures
3. Review the information in the systems manual
 - a. Describe use of systems manual
 - b. Review elements of systems manual
 - c. Explain how to update and add revisions to systems manual

CALIFORNIA GREEN BUILDING STANDARDS CODE – MATRIX ADOPTION TABLE

APPENDIX A5 – NONRESIDENTIAL VOLUNTARY MEASURES

DIVISION A5.6 – VOLUNTARY TIERS

(Matrix Adoption Tables are nonregulatory, intended only as an aid to the code user.
See Chapter 1 for state agency authority and building applications.)

Adopting agency	BSC	BSC-CG	SFM	HCD			DSA		OSHDP						BSCC	DPH	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	1	1R	2	3	4	5								
Adopt entire CA chapter		X																				
Adopt entire chapter as amended (amended sections listed below)																						
Adopt only those sections that are listed below																						
Chapter/Section																						

APPENDIX A5

NONRESIDENTIAL VOLUNTARY MEASURES

Division A5.6 – VOLUNTARY TIERS

SECTION A5.601 CALGreen TIER 1 AND TIER 2

A5.601.1 Scope. The measures contained in this appendix are not mandatory unless adopted by local government as specified in Section 101.7. The provisions of this section outline means of achieving enhanced construction or reach levels by incorporating additional green building measures for newly constructed nonresidential buildings as well as additions and alterations. In order to meet one of the tier levels designers, builders or property owners are required to incorporate additional green building measures necessary to meet the threshold of each level. Refer to the provisions in Section 301.3 for nonresidential additions and alterations scope and application.

A5.601.2 CALGreen Tier 1

A5.601.2.1 Prerequisites. To achieve *CALGreen* tier status, a project must meet all of the mandatory measures in Chapter 5 and, in addition, meet the provisions of this section.

A5.601.2.2 Energy performance. For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory standards.

A5.601.2.3 Tier 1. Comply with the energy efficiency requirements in Section A5.203.1.1 and Section A5.203.1.2.1.

A5.601.2.4 Voluntary measures for Tier 1. In addition to the provisions of Sections A5.601.2.1 and A5.601.2.3 above, compliance with the following voluntary measures from Appendix A5 is required for Tier 1:

1. From Division A5.1,
 - a. Comply with the designated parking requirements for fuel efficient vehicles for a minimum of 10 percent of parking capacity per Section A5.106.5.1 and Table A5.106.5.1.1.
 - b. Comply with thermal emittance, solar reflectance or SRI values for cool roofs in Section A5.106.11.2 and Table A5.106.11.2.1.¹
 - c. Comply with one elective measure selected from this division.
2. From Division A5.2 comply with TWO of the following:
 1. Outdoor lighting as described in A5.203.1.1.1.
 2. Service water heating in restaurants as described in A5.203.1.1.2.
 3. Warehouse Dock Seal Doors A5.203.1.1.3.
 4. Daylight Design Power Adjustments 5.203.1.1.4.
 5. Exhaust Air Heat Recovery A5.203.1.1.5.
3. From Division A5.3,
 - a. Comply with the 12-percent reduction for indoor potable water use in Section A5.303.2.3.1.
 - b. Comply with one elective measure selected from this division.
4. From Division A5.4,²
 - a. Comply with recycled content of 10 percent of materials based on estimated total cost, or use two products from Table A5.405.4 for at least 75 percent by cost in Section A5.405.4.
 - b. Comply with the 65-percent reduction in construction and demolition waste in Section A5.408.3.1.

- c. Comply with one elective measure selected from this division.
- 5. From Division A5.5,
 - a. Comply with resilient flooring systems for 90 percent of resilient flooring in Section A5.504.4.7.
 - b. Comply with thermal insulation meeting 2009 CHPS low-emitting materials list in Section A5.504.4.8.
 - c. Comply with one elective measure selected from this division.
- 6. Comply with one additional elective measure selected from any division.

¹ Cool roof is required for compliance with Tiers 1 and 2 and may be used to meet energy standards in Part 6, exceed energy standards and to mitigate heat island effect.

² Life cycle assessment compliant with Section A5.409.4 in this code may be substituted for prescriptive measures from Division A5.4.

A5.601.3 CALGreen Tier 2.

A5.601.3.2 Energy performance. For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory standards.

A5.601.3.3 Tier 2. Comply with the energy efficiency requirements in Section A5.203.1.1 and Section A5.203.1.2.2.

A5.601.3.4 Voluntary measures for Tier 2. In addition to the provisions of Sections A5.601.3.1 and A5.601.3.3 above, compliance with the following voluntary measures from Appendix A5 and additional elective measures shown in Table A5.601.3.4 is required for Tier 2:

- 1. From Division A5.1,
 - a. Comply with the designated parking requirements for fuel efficient vehicles for a minimum of 12 percent of parking capacity per Section A5.106.5.1 and Table A5.106.5.1.2.
 - b. Comply with thermal emittance, solar reflectance or SRI values for cool roofs in Section A5.106.11.2 and Table A5.106.11.2.2.¹
 - c. Comply with three elective measures selected from this division.
- 2. From Division A5.2 comply with ONE of the following:
 - 1. Outdoor lighting as described in A5.203.1.1.1.
 - 2. Service water heating in restaurants as described in A5.203.1.1.2.
 - 3. Warehouse Dock Seal Doors A5.203.1.1.3.
 - 4. Daylight Design Power Adjustments 5.203.1.1.4.
 - 5. Exhaust Air Heat Recovery A5.203.1.1.5.
- 3. From Division A5.3,
 - a. Comply with the 20-percent reduction for indoor potable water use in Section A5.303.2.3.2.

- b. Comply with three elective measures selected from this division.
- 4. From Division A5.4,²
 - a. Comply with recycled content of 15 percent of materials based on estimated total cost, or use two products from Table A5.405.4 for at least 75 percent by cost in Section A5.405.4.1.
 - b. Comply with the 80-percent reduction in construction and demolition waste in Section A5.408.3.1.
 - c. Comply with three elective measures selected from this division.
- 5. From Division A5.5,
 - a. Comply with resilient flooring systems for 100 percent of resilient flooring in Section A5.504.4.7.1.

Exception: Allowance may be permitted in Tier 2 for up to 5-percent specialty purpose flooring.
 - b. Comply with thermal insulation meeting 2009 CHPS low-emitting materials list and no added formaldehyde in Section A5.504.4.8.1.
 - c. Comply with three elective measures selected from this division.
- 6. Comply with three additional elective measures selected from any division.

¹ Cool roof is required for compliance with Tiers 1 and 2 and may be used to meet energy standards in Part 6, exceed energy standards and to mitigate heat island effect.

² Life cycle assessment compliant with Section A5.409.4 in this code may be substituted for prescriptive measures from Division A5.4.

A5.601.4 Compliance verification. Compliance with Section A5.601.2 or A5.601.3 shall be as required in Chapter 7 of this code. Compliance documentation shall be made part of the project record as required in Section 5.410.2 or 5.410.3.

CHAPTER 5 DIVISIONS		SECTION TITLE	CODE SECTION	Y	N/A	O	PLAN SHEET, SPEC, OR ATTACH REFERENCE
(continued) DIVISION 5.3 Water Efficiency and Conservation	Mandatory	Wall-mounted urinals shall not exceed 0.125 gpf	5.303.3.2.1				
	Mandatory	Floor-mounted urinals shall not exceed 0.5 gpf	5.303.3.2.2				
	Mandatory	Single showerhead shall have maximum flow rate of 1.8 gpm (gallons per minute) at 80 psi	5.303.3.3.1				
	Mandatory	Multiple showerheads serving one shower shall have a combined flow rate of 1.8 gpm at 80 psi	5.303.3.3.2				
	Mandatory	Nonresidential lavatory faucets	5.303.3.4.1				
	Mandatory	Kitchen faucets	5.303.3.4.2				
	Mandatory	Wash fountains	5.303.3.4.3				
	Mandatory	Metering faucets	5.303.3.4.4				
	Mandatory	Metering faucets for wash fountains	5.303.3.4.5				
	Mandatory	Food waste disposers	5.303.4.1				
	Mandatory	Areas of additions or alterations	5.303.5				
	Mandatory	Standards for plumbing fixtures and fittings	5.303.6				
	Mandatory	Outdoor water use in landscape areas (with notes)	A5.304.2				
DIVISION 5.4 Material Conservation and Resource Efficiency (continued)	Mandatory	Weather protection	5.407.1				
	Mandatory	Moisture control: sprinklers	5.407.2.1				
	Mandatory	Moisture control: exterior door protection	5.407.2.2.1				
	Mandatory	Moisture control: flashing	5.407.2.2.2				
	Mandatory	Construction waste management—comply with either: Sections 5.408.1.1, 5.408.1.2, 5.408.1.3 or more stringent local ordinance	5.408.1.1, 5.408.1.2, 5.408.1.3				
	Mandatory	Construction waste management: documentation	5.408.1.4				
	Mandatory	Universal waste [A]	5.408.2				
	Mandatory	Excavated soil and land clearing debris (100% reuse or recycle)	5.408.3				
	Mandatory	Recycling by occupants (with exception)	5.410.1				
	Mandatory	Recycling by occupants: additions (with exception)	5.410.1.1				
	Mandatory	Recycling by occupants: sample ordinance	5.410.1.2				
	Mandatory	Commissioning new buildings (≥ 10,000 sf) [N]	5.410.2				
	Mandatory	Owner's or owner representative's Project Requirements (OPR) [N]	5.410.2.1				
	Mandatory	Basis of Design (BOD) [N]	5.410.2.2				

(continued)

NONRESIDENTIAL VOLUNTARY MEASURES

CHAPTER 5 DIVISIONS		SECTION TITLE	CODE SECTION	Y	N/A	O	PLAN SHEET, SPEC, OR ATTACH REFERENCE
(continued) DIVISION 5.4 Material Conservation and Resource Efficiency	Mandatory	Commissioning plan [N]	5.410.2.3				
	Mandatory	Functional performance testing [N]	5.410.2.4				
	Mandatory	Documentation and training [N]	5.410.2.5				
	Mandatory	Systems manual [N]	5.410.2.5.1				
	Mandatory	Systems operation training [N]	5.410.2.5.2				
	Mandatory	Commissioning report [N]	5.410.2.6				
	Mandatory	Testing and adjusting for new buildings < 10,000 sf or new systems that serve additions or alterations [A]	5.410.4				
	Mandatory	System testing plan for renewable energy, landscape irrigation and water reuse [A]	5.410.4.2				
	Mandatory	Procedures for testing and adjusting	5.410.4.3				
	Mandatory	Procedures for HVAC balancing	5.410.4.3.1				
	Mandatory	Reporting for testing and adjusting	5.410.4.4				
	Mandatory	Operation and maintenance (O&M) manual	5.410.4.5				
	Mandatory	Inspection and reports	5.410.4.5.1				
DIVISION 5.5 Environmental Quality (continued)	Mandatory	Fireplaces	5.503.1				
	Mandatory	Woodstoves	5.503.1.1				
	Mandatory	Temporary ventilation	5.504.1				
	Mandatory	Covering of ducts openings and protection of mechan- ical equipment during construction	5.504.3				
	Mandatory	Adhesives, sealants, and caulks	5.504.4.1				
	Mandatory	Paints and coatings	5.504.4.3				
	Mandatory	Aerosol paints and coatings	5.504.4.3.1				
	Mandatory	Aerosol paints and coatings: verification	5.504.4.3.2				
	Mandatory	Carpet systems	5.504.4.4				
	Mandatory	Carpet cushion	5.504.4.4.1				
	Mandatory	Carpet adhesives per Table 5.504.4.1	5.504.4.4.2				
	Mandatory	Composite wood products	5.504.4.5				
	Mandatory	Composite wood products: documentation	5.504.4.5.3				
	Mandatory	Resilient flooring systems	5.504.4.6				
	Mandatory	Resilient flooring: verification of compliance	5.504.4.6.1				
	Mandatory	Filters (with exceptions)	5.504.5.3				
	Mandatory	Filters: labeling	5.504.5.3.1				
	Mandatory	Environmental tobacco smoke (ETS) control	5.504.7				
	Mandatory	Indoor moisture control	5.505.1				

(continued)

CHAPTER 5 DIVISIONS			SECTION TITLE	CODE SECTION	Y	N	O	PLAN SHEET, SPEC OR ATTACH REFERENCE
(continued) DIVISION 5.1 Planning and Design	Select Three Electives	<i>Elective</i>	<i>Community connectivity</i>	A5.103.1				
		<i>Elective</i>	<i>Brownfield or greyfield site redevelopment or infill area development</i>	A5.103.2, A5.103.2.1				
		<i>Elective</i>	<i>Reduce development footprint and optimize open space</i>	A5.104.1, A5.104.1.1, A5.104.1.2, A5.104.1.3				
		<i>Elective</i>	<i>Disassemble and reuse existing building structure (75%) with exceptions</i>	A5.105.1.1				
		<i>Elective</i>	<i>Disassemble and reuse existing nonstructural elements (50%) with exceptions</i>	A5.105.1.2				
		<i>Elective</i>	<i>Salvage</i>	A5.105.1.3				
		<i>Elective</i>	<i>Storm water design</i>	A5.106.2, A5.106.2.1, A5.106.2.2,				
		<i>Elective</i>	<i>Low Impact Development (LID)</i>	A5.106.3, A5.106.3.1, A5.106.3.2				
		<i>Elective</i>	<i>Changing rooms w/ note</i>	A5.106.4.3				
		<i>Elective</i>	<i>Parking capacity w/ reduced parking capacity option</i>	A5.106.6, A5.106.6.1				
		<i>Elective</i>	<i>Exterior wall shading w/ fenestration and/or opaque wall area option</i>	A5.106.7, A5.106.7.1, A5.106.7.2				
		<i>Elective</i>	<i>Heat island effect</i>	A5.106.11				
DIVISION 5.2 Energy Efficiency	Mandatory	Meet the minimum energy efficiency standard	5.201.1					
	<i>Tier 2 Prerequisite</i>	<i>Energy Performance—outdoor lighting power 90% of Part 6</i>	A5.203.1.1.1					
	<i>Tier 2 Prerequisite</i>	<i>If applicable, service for water heating in restaurants of 8,000 sf or greater</i>	A5.203.1.1.2					
	<i>Tier 2 Prerequisite</i>	<i>Energy budget 90% or 85% of Part 6 calculated value of allowance</i>	A5.203.1.2.2					
	<i>Elective</i>	<i>On-site renewable energy (with documentation)</i>	A5.211.1, A5.211.1.1					
	<i>Elective</i>	<i>Green power</i>	A5.211.3					
	<i>Elective</i>	<i>Elevators with car lights and fan</i>	A5.212.1.1, A5.212.1.1.1					
	<i>Elective</i>	<i>Escalators</i>	A5.212.1.2					
	<i>Elective</i>	<i>Controls that reduce energy</i>	A5.212.1.4					
	<i>Elective</i>	<i>Steel framing</i>	A5.213.1					
DIVISION 5.3 Water Efficiency and Conservation (continued)	Mandatory	Separate meters (new buildings or additions > 50,000 sf that consume more than 100 gal/day)	5.303.1.1					
	Mandatory	Separate meters (for tenants in new buildings or additions that consume more than 1,000 gal/day)	5.303.1.2					
	<i>Tier 2 Prerequisite</i>	<i>Water reduction Tier 2—20% or 25% savings over the "water use baseline" in Table A5.303.2.2</i>	A5.303.2.3.2 or A5.303.2.3.3					
	Mandatory	Water closets shall not exceed 1.28 gallons per flush (gpf)	5.303.3.1					
	Mandatory	Wall-mounted urinals shall not exceed 0.125 gpf	5.303.3.2.1					
	Mandatory	Floor-mounted urinals shall not exceed 0.5 gpf	5.303.3.2.2					
	Mandatory	Single showerhead shall have maximum flow rate of 1.8 gpm (gallons per minute) at 80 psi	5.303.3.3.1					
	Mandatory	Multiple showerheads serving one shower shall have a combined flow rate of 1.8 gpm at 80 psi	5.303.3.3.2					

(continued)

NONRESIDENTIAL VOLUNTARY MEASURES

CHAPTER 5 DIVISIONS		SECTION TITLE	CODE SECTION	Y	N	O	PLAN SHEET, SPEC, OR ATTACH REFERENCE
(continued) DIVISION 5.3 Water Efficiency and Conservation	Mandatory	Nonresidential lavatory faucets	5.303.3.4.1				
	Mandatory	Kitchen faucets	5.303.3.4.2				
	Mandatory	Wash fountains	5.303.3.4.3				
	Mandatory	Metering faucets	5.303.3.4.4				
	Mandatory	Metering faucets for wash fountains	5.303.3.4.5				
	Mandatory	Food waste disposers	5.303.4.1				
	Mandatory	Areas of additions or alterations	5.303.5				
	Mandatory	Standards for plumbing fixtures and fittings	5.303.6				
	Mandatory	Outdoor water use in landscape areas (with notes)	A5.304.2				
	Select Three Electives	<i>Elective</i> Nonpotable water systems for indoor use	A5.303.2.3.4				
		<i>Elective</i> Appliances and fixtures for commercial application	A5.303.3				
		<i>Elective</i> Nonwater supplied urinals	A5.303.4.1				
		<i>Elective</i> Dual plumbing	A5.303.5				
		<i>Elective</i> Outdoor potable water use	A5.304.2				
		<i>Elective</i> Restoration of areas disturbed by construction	A5.304.6				
		<i>Elective</i> Previously developed sites (with exception)	A5.304.7				
		<i>Elective</i> Graywater irrigation system	A5.304.8				
		<i>Elective</i> Nonpotable water systems	A5.305.1				
		<i>Elective</i> Irrigation systems	A5.305.2				
DIVISION 5.4 Material Conservation and Resource Efficiency (continued)	<i>Tier 2 Prerequisite</i>	Recycled content for 15% of total material cost	A5.405.4, A5.405.4.1 through A5.405.4.5				
	Mandatory	Weather protection	5.407.1				
	Mandatory	Moisture control: sprinklers	5.407.2.1				
	Mandatory	Moisture control: exterior door protection	5.407.2.2.1				
	Mandatory	Moisture control: flashing	5.407.2.2.2				
	Mandatory	Construction waste management—comply with either: Sections 5.408.1.1, 5.408.1.2, 5.408.1.3 or more stringent local ordinance	5.408.1.1, 5.408.1.2, 5.408.1.3				
	Mandatory	Construction waste management: documentation	5.408.1.4				
	Mandatory	Universal waste [A]	5.408.2				
	Mandatory	Excavated soil and land clearing debris (100% reuse or recycle)	5.408.3				

(continued)

HISTORY NOTE APPENDIX

California Green Building Standards Code

California Code of Regulations, Title 24, Part 11

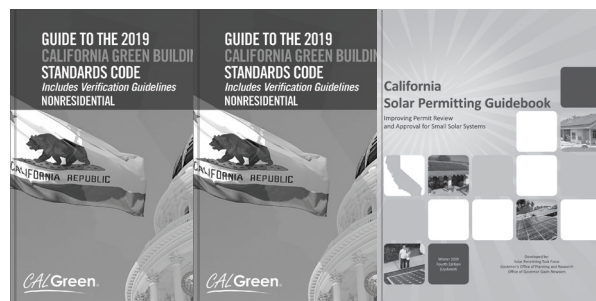
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For prior history, see the History Note Appendix to the *California Green Building Standards Code*, 2016 Edition, effective January 1, 2017.

1. (BSC 06/18, HCD 06/18, DSA-SS 07/18, CEC 01/18)
Repeal, amend and add provisions in the 2019 *California Green Building Standards Code* for residential, nonresidential and public school buildings. Effective on January 1, 2020.
2. (BSC 02/19 CWoRE and HCD 02/19 CWoRE)
Change without Regulatory Effect to delete specified recycled water building standards declared invalid as ordered by the Superior Court of California, County of Los Angeles (Case No. BS171958—see Building Standards Commission Information Bulletin 19-02: Invalidated AB 2282 Recycled Water Building Standards and HCD’s Information Bulletin 2019-02: Invalidated AB 2282 Recycled Water Building Standards). These rulemakings were approved by the California Building Standards Commission on July 17, 2019, filed with the Secretary of State on July 18, 2019, effective August 17, 2019.
3. Erratum to correct editorial errors throughout Chapters 1, 5, 8, and A5, effective January 1, 2020.

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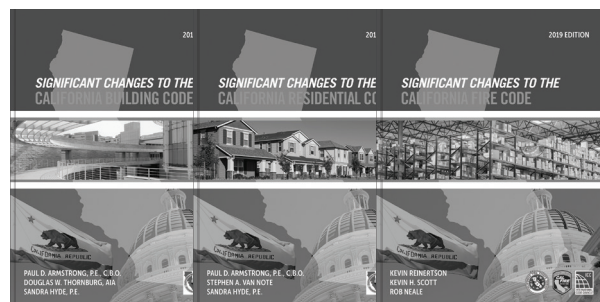
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