

Guide to the 2022 California Green Building Standards Code NONRESIDENTIAL



**Guide to the 2022 California
Green Building Standards Code
Nonresidential**

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Preface



This is the 5th edition of the *Guide to the California Green Building Standards Code Nonresidential* prepared by the California Building Standards Commission (CBSC).

This edition reflects regulatory changes that were made to the *California Green Building Standards Code*, Part 11, Title 24, during the 2019 Intervening and 2021 Triennial Code Adoption Cycles. The guide is intended to highlight and clarify both mandatory and voluntary nonresidential standards in the 2022 *California Green Building Standards Code (CALGreen)* for use by local building departments, builders and designers. The effective date of the *CALGreen* Code is January 1, 2023.

Comments and suggestions regarding the *Guide to the 2022 California Green Building Standards Code Nonresidential* are welcomed in order to make future editions more beneficial to code users. Written comments may be submitted via email to cbssc@dgs.ca.gov, or regular mail addressed to:

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About the California Building Standards Commission (CBSC)

Established in 1953 by California Building Standards Law, CBSC is a commission within the Department of General Services. Members of the commission are appointed by the governor and confirmed by the state senate, and serve four-year terms.

CBSC's mission is to produce sensible and usable state building standards and administrative regulations that implement or enforce those standards. Specifically, CBSC administers the adoption, approval and implementation processes for the *California Building Standards Code* as follows:

- Manages the regulatory triennial and intervening code adoption cycles, and respective Title 24 publications.
- Coordinates and collaborates with all code-proposing and code-adopting state agencies regarding the code cycles and model code revisions to ensure uniformity throughout California's building standards.
- Promotes transparency and public participation throughout the code development processes.
- Administers a public appeal process.
- Educates the public and stakeholders about the nonresidential green building code to ensure understanding and compliance.
- Develops building standards for state buildings and universities, and nonresidential green building standards where no other state agency has authority, and any other occupancies as directed by the legislature and/or executive order.

About the International Code Council® (ICC)

The International Code Council is the leading global source of model codes and standards and building safety solutions that include product evaluation, accreditation, technology, codification, training and certification. The Code Council's codes, standards and solutions are used to ensure safe, affordable and sustainable communities and buildings worldwide. The International Code Council family of solutions includes the ICC Evaluation Service, the International Accreditation Service, General Code, S. K. Ghosh Associates, NTA Inc., Progressive Engineering Inc., ICC Community Development Solutions and the Alliance for National & Community Resilience. The Code Council is the largest international association of building safety professionals and is the trusted source of model codes and standards, establishing the baseline for building safety globally and creating a level playing field for designers, builders and manufacturers.

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Title 24, California Code of Regulations

The 2022 *California Building Standards Code*, Title 24, California Code of Regulations consists of the following thirteen parts. *CALGreen* is Part 11 of Title 24.

Part 1 *California Administrative Code*

Part 2 *California Building Code* Volume 1 and Volume 2 are based on the 2021 *International Building Code*

Part 2.5 *California Residential Code* is based on the 2021 *International Residential Code*

Part 3 *California Electrical Code* is based on the 2020 *National Electrical Code*

Part 4 *California Mechanical Code* is based on the 2021 *Uniform Mechanical Code*

Part 5 *California Plumbing Code* is based on the 2021 *Uniform Plumbing Code*

Part 6 *California Energy Code*

Part 7 Vacant

Part 8 *California Historical Building Code*

Part 9 *California Fire Code* is based on the 2021 *International Fire Code*

Part 10 *California Existing Building Code* is based on the 2021 *International Existing Building Code*

Part 11 *California Green Building Standards Code (CALGreen)*

Part 12 *California Referenced Standards Code*

CBSC Education and Outreach

CBSC offers *CALGreen* nonresidential training along with a variety of resources and educational publications available on its website: www.dgs.ca.gov/BSC/Resources. For information on *CALGreen* training, contact the commission via email at cbsctraining@dgs.ca.gov, or complete the Education and Outreach contact form located on the website at dgs.ca.gov/BSC/Education-and-Outreach. The following industry organizations may also offer *CALGreen* educational programs:

- International Code Council—(iccsafe.org)
- Green Technology—(green-technology.org)
- California Building Officials—(calbo.org)

History of *CALGreen*

CALGreen is the first-in-the-nation mandatory green building standards code. In 2007, the California Building Standards Commission was directed to develop green building standards in an effort to meet the goals of California's landmark initiative Assembly Bill 32 (AB 32, Chapter 488, Statutes of 2006), which added Division 25.5 to the California Health and Safety Code. Known as the California Global Warming Solutions Act, AB 32 established a comprehensive program of cost-effective reductions of greenhouse gases (GHG) to 1990 levels by 2020, including mandatory emissions reporting and an ongoing market-based compliance program. Other green building legislation proposed in the 2007–2008 legislative session (AB 35 concerning state-owned buildings, AB 888 concerning commercial B-occupancy buildings, and AB 1035 concerning residential construction) was vetoed by the governor. In his veto messages, the governor expressed his support for development of green building standards, but that they should not be statutory, conflict with current safety standards or rely on private entities to set the standards.

In response to the above actions, CBSC worked closely with the Department of Housing and Community Development, the Division of the State Architect and the Office of Statewide Health Planning and Development to establish green building standards with the goals of (1) reducing greenhouse gas emissions (GHG) from buildings; (2) promoting environmentally responsible, cost-effective, healthier places to live and work; (3) reducing energy and water consumption; and (4) responding to the environmental directives of the administration. State agency representatives, industry stakeholders and interested parties were enthusiastic contributors to the initial code development process and remain active participants in the evolution of *CALGreen* measures today.

The first edition of *CALGreen* contained only voluntary measures and was published in 2008 with an effective date of August 2009. It established Administration, Definitions and Green Building chapters and created the code categories of planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, environmental air quality, referenced standards, installer and inspector qualifications, and appendices for residential, nonresidential and referenced standards. Mandatory measures were then adopted in the 2010 *CALGreen* edition, which went into effect in January 2011.

The California Air Resources Board announced in a California Greenhouse Gas Emissions report at (arb.ca.gov/ghg-inventory-data), released on July 28, 2021, that in 2019, emissions from statewide emitting activities were 418.2 million metric tons of CO₂ equivalent (MMTCO₂e, or milliontonnes CO₂e), 7.2 MMTCO₂e lower than 2018 levels and almost 13 MMTCO₂e below the 2020 GHG Limit of 431 MMTCO₂e. Since the peak level in 2004, California's GHG emissions have generally followed a decreasing trend. In 2016, statewide GHG emissions dropped below the 2020 GHG Limit and have remained below the limit since that time. The *CALGreen* Code continues to be an important element in California's efforts to expand more efficient and responsible building design, which has helped California significantly reduce greenhouse gas emissions.

Timeline

The 2010 *CALGreen* Code established chapters for residential and nonresidential mandatory measures. A 20 percent reduction of indoor water use, and a 50 percent construction waste reduction were required along with waste management plan requirements. Building commissioning for new buildings 10,000 square feet and over was also introduced along with requirements for temporary construction ventilation and finish materials.

The 2013 *CALGreen* Code clarified and expanded a number of requirements that included upgrade triggers for nonresidential additions and alterations. New sections were added in the areas of water efficiency and conservation, which included a 20 percent reduction of indoor water use. References to the California Energy and Plumbing Codes were also included. Demolition and recycling requirements were further defined.

The 2016 *CALGreen* Code addressed clean air vehicles and increased requirements for electric vehicle charging infrastructure. A new universal waste code section was incorporated for additions and alterations. Organic waste was defined and included an exception for rural jurisdictions. Clarification was added for commissioning 'I' and 'L' occupancies not currently regulated by the Office of Statewide Health Planning and Development or California Energy Commission. Water efficiency and conservation included a new section for food waste disposers, and outdoor water use remained subject to the Model Water Efficient Landscape Ordinance (MWELO) emergency standards of 2015. Pursuant to Executive Order No. B-29-15, addressing California's ongoing emergency drought conditions, state agencies proposed water-related emergency standards that were immediately enforceable in June 2015 and later adopted as amendments to the 2013 *CALGreen* Code. Those amendments were carried over into the 2016 *CALGreen* Code.

The 2019 *CALGreen* Code clarified and updated many previously implemented regulations, including: backlight, upright and glare reference standards; outdoor water use; Volatile Organic Compounds (VOC) testing standards for carpet systems and resilient flooring systems; and Minimum Efficiency Reporting Value (MERV) ratings for air filters.

The 2022 *CALGreen* nonresidential updates include significant changes to electric vehicle sections to support the implementation of California governors' executive orders (EO) to achieve the goals of having over 1.5 million zero-emission vehicles (ZEVs) on California roadways by 2025 (EO B-16-2012), 5 million ZEVs on California roadways by 2030 (EO B-48-2018), and in-state sales of passenger cars and trucks will be 100 percent ZEVs by 2035 (EO N-79-20). California is the first state in the country with a building code that requires electric vehicle charging stations to be installed in new construction. Other key 2022 *CALGreen* amendments include: updating clean air vehicle parking space percentages in the voluntary tiers; relocating regulations for thermal insulation, acoustical ceiling and wall panels from voluntary to mandatory; and moving thermal insulation Tier 2 regulations to Tier 1.

Effective Use of This Guide

This guide is intended to assist code users and local enforcement authorities with nonresidential applications in Chapters 5 (mandatory) and A5 (voluntary) of the 2022 edition of *CALGreen*. The intent of each code section is explained, and compliance and enforcement recommendations are provided. The guide is formatted as follows:

- **Code section:** Sections from the 2022 *CALGreen* Code are reprinted in green text.
- **Intent:** Most of the code sections are followed by an explanation of the intent of the requirement. In some instances, other laws or regulations that served as a catalyst for the regulation are described.
- **Change for 2022:** Identifies new code language or amendments made during the 2019 Intervening Code Adoption Cycle and/or the 2021 Triennial Code Adoption Cycle.
- **Compliance method:** Suggestions or examples for the design team to include in construction documents (plans and specifications and/or site plan) and/or information regarding how to comply with the regulation.

- **Enforcement:**
 - **Plan intake:** Recommendations for the plan reviewer concerning the construction documents; and
 - **On-site enforcement:** Recommendations for the local inspector during construction inspection.

Sections in *CALGreen* marked “Reserved” are not shown in this guide.

New in 2022 *CALGreen* Nonresidential

Chapter 2, Definitions

Several new terms have been added to support the revised Electric Vehicles (EV) charging space requirements and “Urinal, Hybrid” is renamed “Nonwater Urinal with Drain Cleansing Action.”

Electric Vehicles/Clean Air Vehicles

The objectives of 2022 *CALGreen* regulations relative to EVs are to further advance EV infrastructure and provide consistency in EV-related codes in all parts of Title 24, such as the *California Electrical Code*.

Sections 5.106.5.2, 5.106.5.2.1 and Table 5.106.5.2 were repealed because of updates to Section 5.106.5.3.

Section 5.106.5.3 and its subsections: Multiple sections were updated to increase the EV infrastructure percentages for mandatory and voluntary provisions and require Level 2 EV chargers for new construction. Updates expand EV infrastructure, further clarify EV charging site development requirements, require clean air vehicle space minimums, and reference California Building Code accessibility requirements in Chapter 11B for clean air vehicle parking. Tables have also been updated to reflect the changes in the regulations.

Section 5.106.5.4 and Table 5.106.5.4.1: Added requirements for electric vehicle supply equipment (EVSE) for medium- and heavy-duty vehicles for warehouses, grocery stores and retail stores with planned off-street loading spaces.

Section 5.504.4.7 Thermal insulation brings the formerly voluntary Section A5.504.4.8 into the mandatory requirements chapter. New Section 5.504.4.7.1 requires verification of compliance with California Department of Public Health (CDPH) pollutant emission limits for thermal insulation materials.

Section 5.504.4.8 Acoustical ceilings and wall panels moves formerly voluntary Section A5.504.9 into Chapter 5 to comply with CDPH regulations and adds a verification of compliance subsection.

The voluntary Tier 1 and Tier 2 definitions and regulations are also updated in accordance with the changes in the mandatory code to provide matching definitions or more restrictive requirements for EV charging and parking, and pollutant reductions.

Details regarding these updates, and all others made for the 2022 edition of *CALGreen*, can be found in Chapter 5 and Appendix A5 of this guide.