

ET Summit 2024

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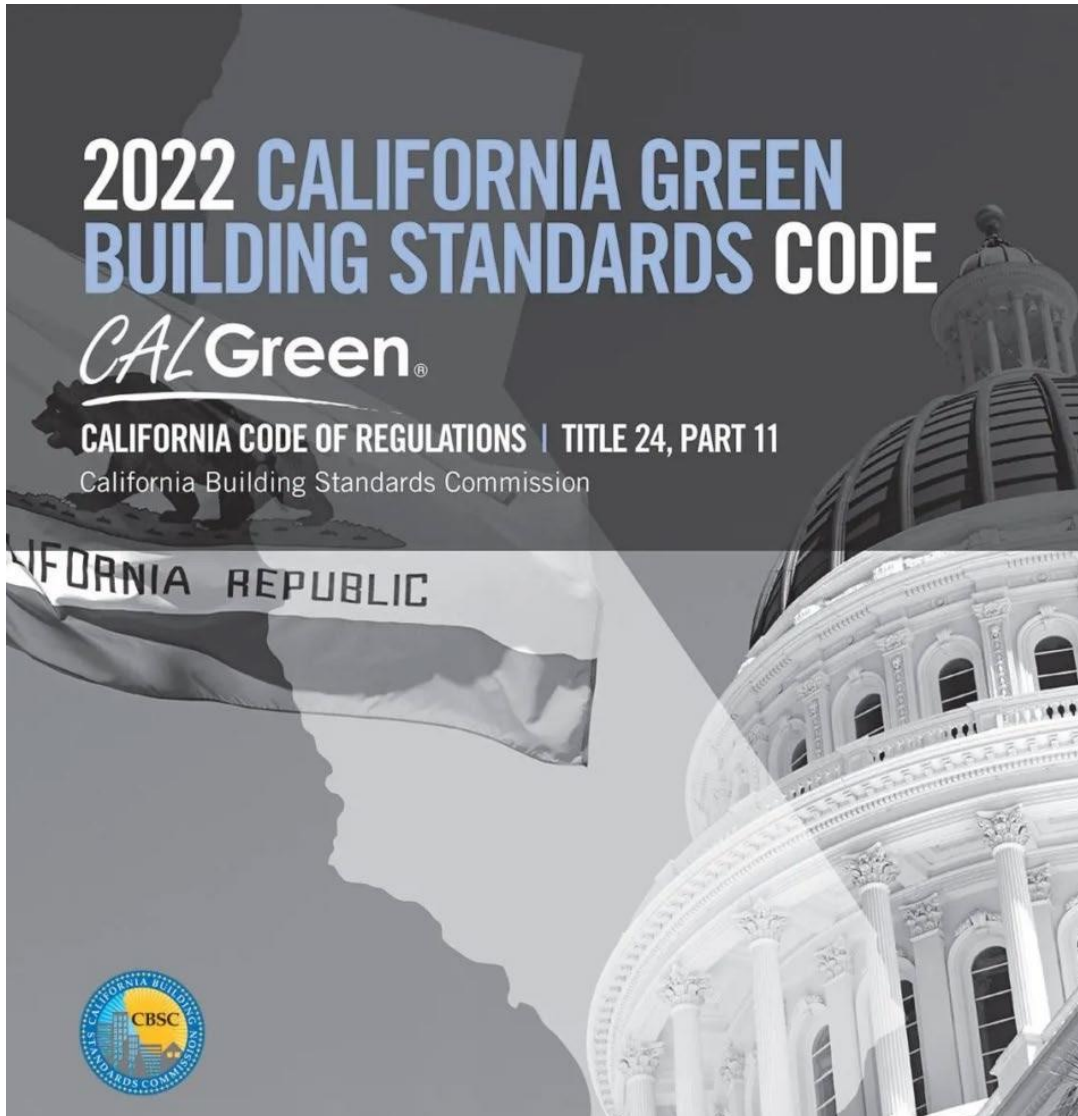
Non-residential CALGreen Embodied Carbon Reduction Regulations

The California Green Building Standards Code,
Title 24 of the California Code of Regulations



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California Building Standards Commission





2022 CALGreen

Supplement effective July 1, 2024



Why Carbon Reduction Regulations?

- ▶ **Executive Orders**
 - B-30-15, B-55-18 and N-19-19
- ▶ **Buy Clean California Act**
 - Effective 2018
 - Structural steel, concrete reinforcing steel, flat glass, and mineral wool board insulation
- ▶ **SB 596 – California Air Resources Board**
 - Coordinate and consult with other state agencies, evaluate market demand, financial incentives and other actions

Carbon Reduction Regulations Application

DSA-SS

Public schools K-12

Community colleges

Enforcement

50,000 sf and greater

BSC-CG

Nonresidential occupancies

State buildings, UCs and CSUs

Enforcement delegated to local jurisdictions

100,000 sf and greater

(50,000 sf in January 2026)

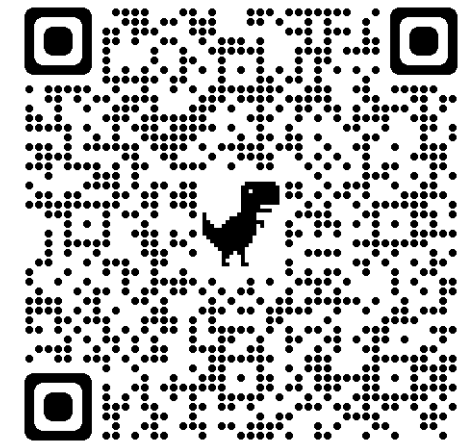
New CALGreen carbon reduction regulations
apply to new construction and renovation projects

New Carbon Reduction Regulations

Three compliance pathways available:

- ▶ Building Reuse
- ▶ WBLCA Performance Path
- ▶ Product GWP Compliance Prescriptive Path

Read a detailed article about the regulations in CBSC's summer 2023 CALCode Quarterly newsletter.



[CALCode Quarterly](#)
[Summer 2023](#)

Option 1: Building Reuse

- ▶ **Maintain a minimum 45% combined of:**
 - Primary structural elements:
foundations, columns, beams, walls, floors, lateral elements
 - Enclosure: roof framing, wall framing, exterior finishes
 - **Not included:** window assemblies, insulation, and portions of a building deemed structurally unsound or hazardous

- ▶ **Verification of compliance**
 - Documentation in the construction documents
 - Worksheet is provided in Chapter 8

Option 2: WBLCA – Performance Path

- ▶ **WBLCA** - Minimum 10% reduction in GWP compared to baseline
 - Operational energy is excluded
 - Reference study period – 60 years

- ▶ **Building Components**
 - Building enclosure: glazing assemblies, insulation and exterior finishes
 - Primary and secondary structural members: footings and foundations, structural columns, beams, walls, roofs and floors

- ▶ **Verification of compliance**
 - Copy of the WBLCA that includes the GWP analysis
 - Worksheet 4 signed by the design professional of record

Option 3: Product GWP Compliance – Prescriptive Path

- ▶ **Products installed and listed in Table 5.409.3**
 - Structural steel, flat glass, mineral wool board insulation and concrete
- ▶ **Shall have Type III Environmental Product Declaration (EPD)**
 - Product-specific or factory-specific
 - Exception – Concrete may be considered one product category and have industry-wide EPD.
- ▶ **Shall not exceed the maximum GWP limits**
- ▶ **Verification of compliance**
 - Type III EPDs
 - Worksheet 4 signed by the design professional of record

Option 3: Product GWP – Materials

Buy Clean California Materials Product Category ¹	Maximum acceptable GWP value (unfabricated) (GWP _{allowed})	Unit of Measurement
Hot-rolled structural steel sections	1.77	MT CO _{2e} /MT
Hollow structural sections	3.00	MT CO _{2e} /MT
Steel plate	2.61	MT CO _{2e} /MT
Concrete reinforcing steel	1.56	MT CO _{2e} /MT
Flat glass	2.50	MT CO _{2e} /MT
Light-density mineral wool board insulation	5.83	kg CO _{2e} /1 m ²
Heavy-density mineral wool board insulation	14.28	kg CO _{2e} /1 m ²

Concrete, Ready Mixed ^{2, 3}			Concrete, Lightweight Ready Mixed ²		
Concrete Product Category	Maximum GWP allowed value (GWP _{allowed})	Unit of Measurement	Concrete Product Category	Maximum GWP allowed value (GWP _{allowed})	Unit of Measurement
up to 2499 psi	450	kg CO _{2e} /m ³	up to 2499 psi	875	kg CO _{2e} /m ³
2500-3499 psi	489	kg CO _{2e} /m ³	2500-3499 psi	956	kg CO _{2e} /m ³
3500-4499 psi	566	kg CO _{2e} /m ³	3500-4499 psi	1,039	kg CO _{2e} /m ³
4500-5499 psi	661	kg CO _{2e} /m ³			
5500-6499 psi	701	kg CO _{2e} /m ³			
6500 psi and greater	799	kg CO _{2e} /m ³			

**Not part of the BCCA
Included in CALGreen**

GWP values are based on 175% of BCCA **except concrete products**
 For **concrete**, 175% of NRMCA 2022 Version 3 Pacific Southwest regional benchmark values is used for GWP allowed, **except High Early Strength High Early Strength** is calculated at 130% of the ready mixed concrete GWP allowed values for each product category

Voluntary Tiers: Carbon Reduction Regulations

Projects \geq 50,000 sf

TIER 1

REUSE – maintain 75% of the existing structure and enclosure

WBLCA – demonstrate 15% reduction in GWP

PRODUCT GWP – Table A5.409.3 (GWP limits for Tier 1)

TIER 2

REUSE – maintain 75% of the existing structure and enclosure, plus 30% of the interior non-structural elements

WBLCA – demonstrate 20% reduction in GWP

PRODUCT GWP – Table A5.409.3 (GWP limits for Tier 2)

Voluntary Tiers: Carbon Reduction Regulations

Projects < 50,000 sf

TIER 1

REUSE – maintain 45% of the existing structure and enclosure

WBLCA – demonstrate 10% reduction in GWP

PRODUCT GWP – Table 5.409.3

TIER 2

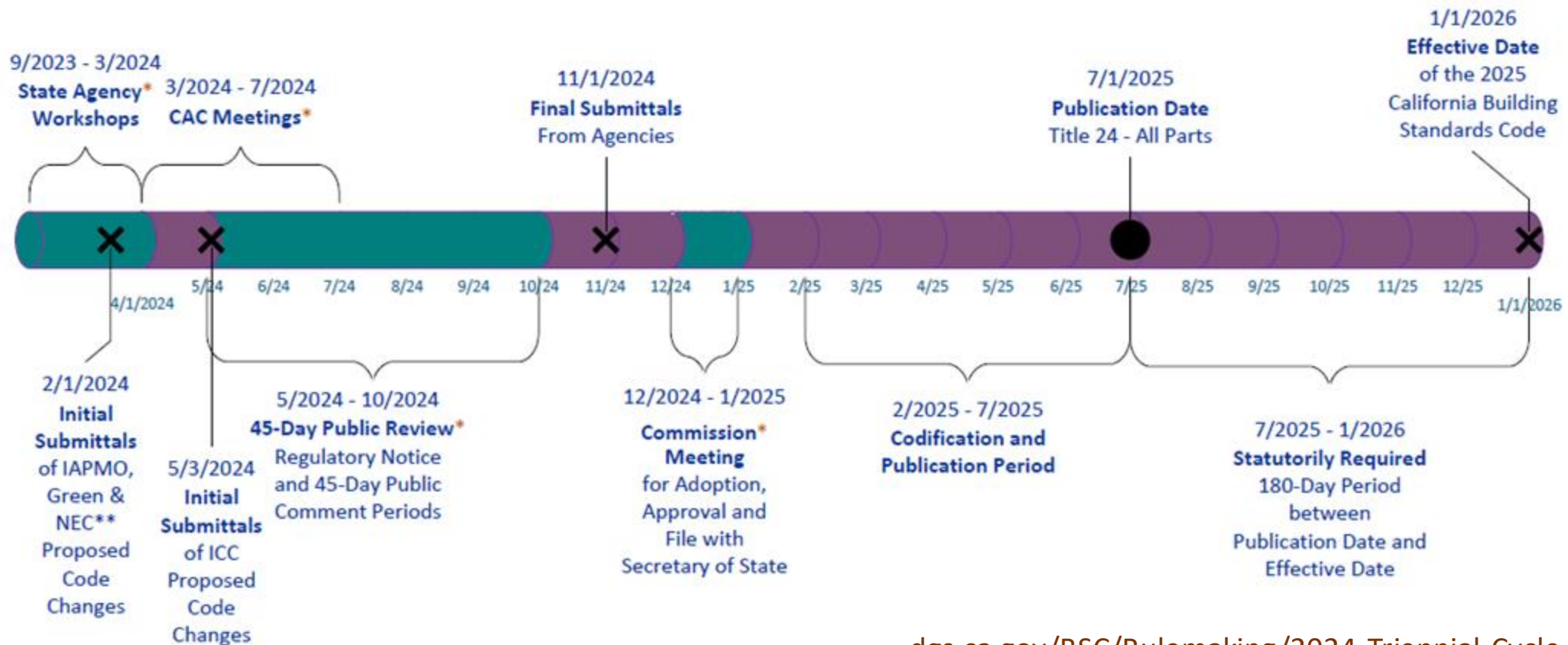
REUSE – maintain 75% of the existing structure and enclosure

WBLCA – demonstrate 15% reduction in GWP

PRODUCT GWP – Table A5.409.3 (GWP limits for Tier 1)

2024 Triennial Code Adoption Cycle Timeline

2025 California Building Standards Code, Title 24
 Publish by July 1, 2025. Effective January 1, 2026.



dgs.ca.gov/BSC/Rulemaking/2024-Triennial-Cycle

Future Carbon Reduction Regulations

▶ 2024 Triennial Code Adoption Cycle

- There will be no changes to these regulations
- $\geq 50,000$ sf effective January 1, 2026

▶ Future Code Adoption Cycles

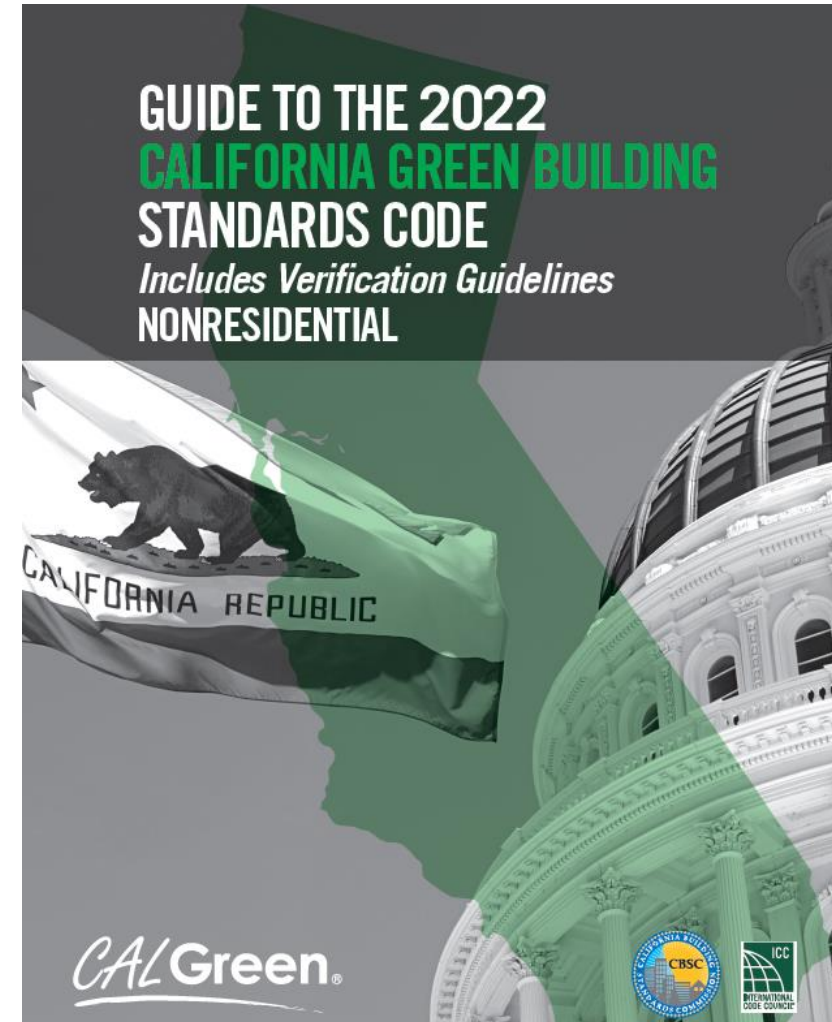
- SB 596 requirements
- Current levels are well above BCCA and NRMCA thresholds
- Voluntary tiers transition to mandatory
- Additional prescriptive materials

CALGreen Resources

- ▶ 2022 CALGreen Guide Supplement
- ▶ Checklists and Worksheets
- ▶ Videos
- ▶ CALGreen Resources Repository
calgreeninfo.com



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