REVISION RECORD
FOR THE STATE OF CALIFORNIA

SUPPLEMENT

July 1, 2024

2022 Title 24, Part 11, California Green Building Standards Code

General Information:

1. The date of this Supplement is for identification purposes only. See the History Note Appendix on the backside or accompanying page.
2. This supplement is issued by the California Building Standards Commission in order to provide new and/or replacement pages containing recently adopted provisions for the 2022 *California Green Building Standards Code* (CALGreen), California Code of Regulations, Title 24, Part 11. 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. The new building standards provided with the enclosed blue supplement pages must not be enforced before the effective date.
4. Not all code text on the enclosed blue supplement pages is a new building standard. New, amended, or repealed building standards are identified by margin symbols. An explanation of margin symbols is provided in the code before the Table of Contents.
5. You may wish to retain the superseded material with this revision record so that the prior wording of any section can be easily ascertained.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

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Item No. 5570S222

CALIFORNIA CODE OF REGULATIONS, TITLE 24

California Agency Information Contact List

The following state agencies may propose building standards for publication in Title 24. Request notice of such activity with each agency of interest. See Sections 102 through 106 of the California Green Building Standards Code (Part 11 of Title 24) for more detailed information on the regulatory jurisdiction of each state agency.

Board of State and Community Corrections

www.bscc.ca.gov ..... (916) 445-5073

Local Adult and Juvenile Detention Facility Standards

California Building Standards Commission

www.dgs.ca.gov/bsc ..... (916) 263-0916

State Buildings including UC and CSU Buildings, Parking Lot and Walkway Lighting, Green Building Standards for Non-residential Buildings

California Energy Commission

www.energy.ca.gov ..... ***Energy Hotline*** *(800) 772-3300*

Building Efficiency Standards
Appliance Efficiency Standards
Compliance Manual/Forms

California State Lands Commission

www.slc.ca.gov ..... (562) 499-6312

Marine Oil Terminal Standards

California State Library

www.library.ca.gov ..... (916) 323-9843

Department of Consumer Affairs:

Acupuncture Board
www.acupuncture.ca.gov ..... (916) 515-5200

Office Standards

Board of Pharmacy
www.pharmacy.ca.gov ..... (916) 518-3100

Pharmacy Standards

Bureau of Barbering and Cosmetology
www.barbercosmo.ca.gov ..... (800) 952-5210

Barber and Beauty Shop, and College Standards

Bureau of Household Goods and Services
www.bhgs.dca.ca.gov ..... (916) 999-2041

Insulation Testing Standards

Structural Pest Control Board
www.pestboard.ca.gov ..... (800) 737-8188

Structural Standards

Veterinary Medical Board
www.vmb.ca.gov ..... (916) 515-5220

Veterinary Hospital Standards

Department of Food and Agriculture

www.cdfa.ca.gov

Meat & Poultry Packing Plant Standards
Rendering & Collection Center Standards ..... (916) 900-5004
Dairy Standards ..... (916) 900-5008

Department of Housing and Community Development

www.hcd.ca.gov ..... Contact Center (800) 952-8356

Option 5 > Option 2
Residential—Hotels, Motels, Apartments, Single-Family Dwellings, and Permanent Structures in Mobilehome & Special Occupancy Parks

Option 5 > Option 3
Manufactured Housing & Commercial Modular

Option 5 > Option 4
Factory-Built Housing

Option 5 > Option 5
Employee Housing Standards

Northern CA—Option 2 > Option 2 or 3

Southern CA—Option 2 > Option 4 or 5
Mobilehome—Permits & Inspections

Department of Public Health

www.dph.ca.gov .....(916) 449-5661

Organized Camps Standards
Public Swimming Pools Standards

Department of Water Resources

www.water.ca.gov .....DWRwebComment@water.ca.gov

Recycled Water Building Standards

Division of the State Architect

www.dgs.ca.gov/dsa .....(916) 445-8100

Access Compliance

Fire and Life Safety

Structural Safety

Public Schools Standards
Essential Services Building Standards
Community College Standards

State Historical Building Safety Board

Historical Rehabilitation, Preservation, Restoration or Relocation Standards

Office of Statewide Health Planning and Development/ California Department of Health Care Access and Information (HCAI)

www.hcai.ca.gov .....(916) 440-8300

Hospital Standards
Skilled Nursing Facility Standards & Clinic Standards

Office of the State Fire Marshal

osfm.fire.ca.gov .....(916) 568-3800

Code Development and Analysis
Fire Safety Standards

HOW TO DETERMINE WHERE CHANGES HAVE BEEN MADE

Symbols in the margins indicate where changes have been made or language has been deleted.

|| This symbol indicates that a change has been made.

> This symbol indicates deletion of language.

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CALIFORNIA GREEN BUILDING STANDARDS CODE – MATRIX ADOPTION TABLE
CHAPTER 2 – DEFINITIONS

(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		X				X														
Adopt entire chapter as amended (amended sections listed below)									X		X		X									
Adopt only those sections that are listed below																						
Chapter/Section																						
201																						
CALIFORNIA RESIDENTIAL CODE									†		†		†									
LOW-RISE RESIDENTIAL BUILDING									†		†		†									
PLANTS									†		†		†									
RESIDENTIAL BUILDING									†		†		†									
RESILIENT FLOORING									†		†		†									

The state agency does not adopt sections identified by the following symbol: †.

CHAPTER 2
DEFINITIONS

SECTION 201
GENERAL

201.1 Scope. Unless otherwise stated, the following words and terms shall, for the purposes of this code, have the meanings shown in this chapter.

201.2 Interchangeability. Words used in the present tense include the future; words stated in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular.

201.3 Terms defined in other documents. Where terms are not defined in this code and are defined in the *California Building Standards Code* or other referenced documents, such terms shall have the meanings ascribed to them as in those publications.

201.4 Terms not defined. Where terms are not defined as specified in this section, such terms shall have ordinarily accepted meanings such as the context implies.

SECTION 202
DEFINITIONS

2 X 2 RULE. [BSC-CG] Visual markers are the most effective collision deterrents if spaced no more than 2 inches (5.1 cm) apart, a distance through which most birds cannot fly.

ACCESSORY DWELLING UNIT. [HCD] An attached or detached residential dwelling unit that provides complete independent living facilities for one or more persons and is located on a lot with a proposed or existing primary residence. Accessory dwelling units shall include permanent provisions for living, sleeping, eating, cooking and sanitation on the same parcel as the single-family or multifamily dwelling is or will be situated. (See Government Code Section 65852.2.)

ACCESSORY OCCUPANCIES. [HCD] Occupancies that are ancillary to the main occupancy of residential building(s) or portions thereof. Accessory occupancies shall include, but are not limited to, Group U occupancies. (See Section 312 of the *California Building Code.*)

ACCESSORY STRUCTURE. [HCD] A structure that is accessory to and incidental to that of the dwelling(s) and that is located on the same lot.

ADDITION. An extension or increase in floor area of an existing building or structure.

ADHESIVE MARKER. [BSC-CG] An individual marker(s) applied to the first surface of glass (surface 1) in a pattern or as a custom decal.

ADJUST. To regulate fluid flow rate and air patterns at the terminal equipment, such as to reduce fan speed or adjust a damper.

AGRIFIBER PRODUCTS. Agrifiber products include wheatboard, strawboard, panel substrates and door cores, not including furniture, fixtures and equipment (FF&E) not considered base building elements.

ALBEDO. Synonymous with solar reflectance, which is a ratio of the energy reflected back into the atmosphere to the energy absorbed by the surface, with 100 percent being total reflectance.

ALTERATION OR ALTER. Any construction or renovation to an existing structure other than repair for the purpose of maintenance or addition.

ARB (CARB). The California Air Resources Board.

ARTERIAL HIGHWAY. A general term denoting a highway primarily for through traffic usually on a continuous route.

ASSEMBLY (ASSEMBLY PRODUCT). An assembly (assembly product) includes or has been formulated using multiple materials.

AUTOMATIC. Automatic means capable of operating without human intervention.

AUTOMATIC LOAD MANAGEMENT SYSTEM (ALMS). [BSC-CG, DSA-SS and HCD] 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.

A-WEIGHTED SOUND LEVEL (dba). The sound pressure level in decibels as measured on a sound level meter using the internationally standardized A-weighting filter or as computed from sound spectral data to which A-weighting adjustments have been made.

BALANCE. To proportion flows within the distribution system, including submains, branches and terminals, according to design quantities.

BIORETENTION. A shallow depression that utilizes conditioned soil and vegetation for the storage, treatment or infiltration of storm water runoff.

BROWNFIELD SITE. Real property, the expansion, redevelopment or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant or contaminant, with certain legal exclusions and additions.

Note: See the full text at the EPA's website.

1 BTU/HOUR. British thermal units per hour, also referred to as Btu. The amount of heat required to raise one pound of water one degree Fahrenheit per hour, a common measure of heat transfer rate. A ton of refrigeration is 12,000 Btu, the amount of heat required to melt a ton (2,000 pounds) of ice at 32° Fahrenheit.

BUILDING COMMISSIONING. A systematic quality assurance process that spans the entire design and construction process, including verifying and documenting that building systems and components are planned, designed, installed, tested, operated and maintained to meet the owner's project requirements.

BUILDING ENVELOPE. The ensemble of exterior and demising partitions of a building that enclose conditioned space.

BUY CLEAN CALIFORNIA ACT. [BSC-CG, DSA-SS] The Buy Clean California Act (BCCA) (Public Contract Code Sections 3500-3505) targets carbon emissions associated with the production of structural steel (hot-rolled sections, hollow structural sections, and plate), concrete reinforcing steel, flat glass, and mineral wool board insulation. The maximum acceptable global warming potential (GWP) limits are established by the Department of General Services (DGS), in consultation with the California Air Resources Board (CARB).

CALIFORNIA BUILDING CODE. The current version of the *California Building Code.*

CALIFORNIA ELECTRICAL CODE. The current version of the *California Electrical Code.*

CALIFORNIA ENERGY CODE. The current version of the *California Energy Code*, unless otherwise specified.

CALIFORNIA MECHANICAL CODE. The current version of the *California Mechanical Code.*

CALIFORNIA PLUMBING CODE. The current version of the *California Plumbing Code.*

CALIFORNIA RESIDENTIAL CODE. The current version of the *California Residential Code.*

CHLOROFLUOROCARBON (CFC). A class of compounds primarily used as refrigerants, consisting of only chlorine, fluorine and carbon.

COMMUNITY NOISE EQUIVALENT LEVEL (CNEL) HIGHWAY. A metric similar to the day-night average sound level (Ldn), except that a 5 decibel (dB) adjustment is added to the equivalent continuous sound exposure level for evening hours (7 p.m. to 10 p.m.) in addition to the 10 dB nighttime adjustment used in the Ldn.

COMPACT DISHWASHER. A dishwasher that has a capacity of less than eight place settings plus six serving pieces as specified in ANSI/AHAM DW-1.

COMPOSITE WOOD PRODUCTS. Composite wood products include hardwood plywood, particleboard and medium density fiberboard. "Composite wood products" does not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber, prefabricated wood I-joists or finger-jointed lumber, all as specified in California Code of Regulations (CCR), Title 17, Section 93120.1(a).

Note: See CCR, Title 17, Section 93120.1.

CONDITIONED FLOOR AREA. The floor area (in square feet) of enclosed conditioned space on all floors of a building, as measured at the floor level of the exterior surfaces of exterior walls enclosing the conditioned space.

CONDITIONED SPACE. A space in a building that is either directly conditioned or indirectly conditioned.

CONDITIONED SPACE, DIRECTLY. An enclosed space that is provided with wood heating, is provided with mechanical heating that has a capacity exceeding 10 Btu/hr-ft^2, or is provided with mechanical cooling that has a capacity exceeding 5 Btu/hr-ft^2, unless the space-conditioning system is designed for a process space. (See Process Space.)

CONDITIONED SPACE, INDIRECTLY. Enclosed space, including but not limited to, unconditioned volume in atria, that (1) is not directly conditioned space; and (2) either (a) has a thermal transmittance area product (UA) to directly conditioned space exceeding that to the outdoors

or to unconditioned space and does not have fixed vents or openings to the outdoors or to unconditioned space, or (b) is a space through which air from directly conditioned spaces is transferred at a rate exceeding three air changes per hour.

COOL PAVEMENT(S). Includes, but is not limited to, high albedo pavements and coatings, vegetative surfaces, porous or pervious pavements that allow water infiltration, and pavements shaded by trees and other sources of shade.

COOLING EQUIPMENT. Equipment used to provide mechanical cooling for a room or rooms in a building.

CRADLE-TO-GATE. [BSC-CG, DSA-SS] Activities associated with a product or building's life cycle from the extraction stage through production stage, and covering modules A1 through A3 in accordance with ISO Standards 14025 and 21930.

CRADLE-TO-GRAVE. [BSC-CG, DSA-SS] Activities associated with a product or building's life cycle from the extraction stage through disposal stage, and covering modules A1 through C4 in accordance with ISO Standards 14025 and 21930.

CUTOFF LUMINAIRES. Luminaires whose light distribution is such that the candela per 1000 lamp lumens does not numerically exceed 25 (2.5 percent) at an angle of 90 degrees above nadir, and 100 (10 percent) at a vertical angle of 80 degrees above nadir. This applies to all lateral angles around the luminaire.

DAY-NIGHT AVERAGE SOUND LEVEL (L_{dn}). The A-weighted equivalent continuous sound exposure level for a 24-hour period with a 10 dB adjustment added to sound levels occurring during nighttime hours (10 p.m. to 7 a.m.).

DECIBEL (dB). A measure on a logarithmic scale of the magnitude of a particular quantity (such as sound pressure, sound power, sound intensity) with respect to a reference quantity.

DEMAND HOT WATER RECIRCULATION SYSTEM. A hot water recirculation system requiring manual activation and equipped with a thermostat that will automatically shut off the recirculation pump when the water temperature reaches a preset level at the point of use.

DEVELOPMENT FOOTPRINT. The total area of the building footprint, hardscape, access roads and parking.

DEWATERING. Pumping of uncontaminated or treated groundwater for construction activities.

DIRECT-VENT APPLIANCE. A fuel-burning appliance with a sealed combustion system that draws all air for combustion from the outside atmosphere and discharges all flue gases to the outside atmosphere.

DISPOSAL. The management of solid waste through landfilling or transformation at permitted solid waste facilities.

DIVERSION. Activities which reduce or eliminate the amount of solid waste from solid waste disposal for purposes of this code.

ELECTRIC VEHICLE (EV). [BSC-CG, HCD] An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, electric motorcycles and the like, primarily powered by an electric motor that draws current from a rechargeable storage battery, fuel cell, photovoltaic array or other source of electric current. Plug-in hybrid electric vehicles (PHEV) are considered electric vehicles. For purposes of the *California Electrical Code,* off-road, self-propelled electric vehicles, such as industrial trucks, hoists, lifts, transports, golf carts, airline ground support equipment, tractors, boats and the like, are not included.

ELECTRIC VEHICLE (EV) CAPABLE SPACE. [BSC-CG, DSA-SS and HCD] 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.

ELECTRIC VEHICLE (EV) CHARGER. [BSC-CG, HCD] Off-board charging equipment used to charge an electric vehicle.

ELECTRIC VEHICLE CHARGING SPACE (EV SPACE). [HCD] A space intended for future installation of EV charging equipment and charging of electric vehicles.

ELECTRIC VEHICLE CHARGING STATION (EVCS). [BSC-CG, DSA-SS, HCD] One or more electric vehicle charging spaces served by EVSE or receptacle(s).

ELECTRIC VEHICLE (EV) READY SPACE. [HCD] A vehicle space which is provided with a branch circuit; any necessary raceways, both underground and/or surface mounted; to accommodate EV charging, terminating in a receptacle or a charger.

ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE). [BSC-CG, DSA-SS and HCD] The conductors, including the ungrounded, grounded and equipment grounding conductors and the electric vehicle connectors, attachment plugs, personnel protection system, and all other fittings, devices, power outlets or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle.

EMBODIED ENERGY. The energy used for raw material extraction, transportation, manufacturing, assembly, installation and disposal during the life of a product, including the potential energy stored within the product.

ENERGY BUDGET. The sum of the annual TDV energy consumption for energy use components included in the performance compliance approach for the Standard Design Building, as established in the Alternative Calculation Method Reference Manual approved by the Energy Commission and calculated by Compliance Software certified by the Energy Commission.

ENERGY COMMISSION. The California State Energy Resources Conservation and Development Commission.

ENERGY DESIGN RATING. The sum of the annual TDV energy consumption for energy use components included in the performance compliance approach for the Standard Design Building (Energy Budget) and the annual time dependent valuation (TDV) energy consumption for lighting and components not regulated by Title 24, Part 6 (such as domestic appliances and consumer electronics) and accounting for the annual TDV energy offset by an on-site renewable energy

system. The Design Rating is calculated by Compliance Software certified by the Energy Commission.

ENERGY EQUIVALENT (NOISE) LEVEL (L_{eq}). The level of a steady noise which would have the same energy as the fluctuating noise level integrated over the time period of interest.

ENFORCING AGENCY. The designated department or agency as specified by statute or regulation.

EUTROPHICATION. The excessive growth of aquatic plants, especially algae, producing bacteria which consume nearly all of the oxygen required to sustain fauna and other flora.

EVAPOTRANSPIRATION ADJUSTMENT FACTOR (ETAF). [DSA-SS] An adjustment factor when applied to reference evapotranspiration that adjusts for plant factors and irrigation efficiency, which are two major influences on the amount of water that needs to be applied to the landscape.

EXFILTRATION. The uncontrolled outward air leakage from inside a building, including leakage through cracks and interstices, around windows and doors, and through any other exterior partition or duct penetration.

EXPRESSWAY. An arterial highway for through traffic which may have partial control of access, but which may or may not be divided or have grade separations at intersections.

FILM. [BSC-CG] A material adhered to the first surface of glass (surface 1), perforated or printed with patterns as visual markers.

FLOOR AREA RATIO. Gross square footage of all structures on a site divided by gross square footage of the site.

FOOTPRINT AREA. [DSA-SS] The total area of the furthest exterior wall of the structure projected to natural grade, not including exterior areas such as stairs, covered walkways, patios and decks.

FREEWAY. A divided arterial highway with full control of access and with grade separations at intersections.

FRENCH DRAIN. A trench, hole or other depressed area loosely filled with rock, gravel, fragments of brick or similar pervious material used to collect or channel drainage or runoff water.

GEOTHERMAL. Renewable energy generated by deep-earth water or steam.

GLASS, ACID ETCHED. [BSC-CG] Glass with hydrofluoric acid washed across the entire first surface (surface 1), which can result in a variety of patterns as visual markers.

GLASS, FRITTED. [BSC-CG] Glass manufactured with ceramic-based paint applied in various patterns as visual markers.

GLASS SURFACE. [BSC-CG] The exterior surface is the first surface (surface 1) where visual markers are usually applied, and subsequent interior surfaces are numbered in ascending order.

GLOBAL WARMING POTENTIAL (GWP). The radiative forcing impact of one mass-based unit of a given greenhouse gas relative to an equivalent unit of carbon dioxide over a given period of time. Carbon dioxide is the reference compound with a GWP of one.

GLOBAL WARMING POTENTIAL VALUE (GWP VALUE). The 100-year GWP value published by the Intergovernmental Panel on Climate Change (IPCC) in either its Second Assessment Report (SAR) (IPCC, 1995); or its Fourth Assessment A-3 Report (AR4) (IPCC, 2007). The SAR GWP values are found in column "SAR (100-yr)" of Table 2.14.; the AR4 GWP values are found in column "100 yr" of Table 2.14.

GRAYWATER. Pursuant to *Health and Safety Code* Section 17922.12, "graywater" means untreated wastewater that has not been contaminated by any toilet discharge, has not been affected by infectious, contaminated or unhealthy bodily wastes, and does not present a threat from contamination by unhealthful processing, manufacturing or operating wastes. "Graywater" includes, but is not limited to, wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines and laundry tubs, but does not include wastewater from kitchen sinks or dishwashers.

Note: For the purpose of applying the standards contained in this code, "Graywater," as defined above, has the same meaning as "gray water," "grey water," and "greywater."

GREEN BUILDING. A holistic approach to design, construction and demolition that minimizes the building's impact on the environment, the occupants and the community.

GREENFIELDS. Sites that are not previously developed or graded and remain in a natural state, able to support agriculture, open space or habitat.

Note: Previously developed sites are those that previously contained buildings, roadways or parking lots or were graded or altered by direct human activities.

GREYFIELD SITE. Any site previously developed with at least 50 percent of the surface area covered with impervious material.

HALON. Any of a class of chemical compounds derived from hydrocarbons by replacing one or more hydrogen atoms with bromine atoms, and other hydrogen atoms with other halogen atoms (chlorine, fluorine, iodine).

HAZARDOUS WASTE.

(a) A waste, defined as a "hazardous waste" in accordance with Section 25117 of the *Health and Safety Code*, or a combination of wastes, which because of its quantity, concentration or physical, chemical or infectious characteristics may do either of the following:

(1) Cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness.

(2) Pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of, or otherwise managed.

(b) Unless expressly provided otherwise, "hazardous waste" includes extremely hazardous waste and acutely hazardous waste.

HEAT ISLAND EFFECT. "Heat island effect" and "urban heat islands" refer to measurable elevated temperatures in

developed areas as compared to more rural surroundings. Temperatures in developed areas are affected by absorption of heat by hardscapes and radiation of heat into surrounding areas resulting in local climate changes. Heat islands are influenced by geographic location and by local weather patterns, with effects changing on a daily or seasonal basis.

HIGH-GWP REFRIGERANT. A compound used as a heat transfer fluid or gas that is: (A) a chlorofluorocarbon, a hydrochlorofluorocarbon, a hydrofluorocarbon, a perfluorocarbon, or any compound or blend of compounds, with a GWP value equal to or greater than 150, or (B) any ozone depleting substance as defined in Title 40 of the Code of Federal Regulations, Part 82, §82.3 (as amended March 10, 2009).

HIGH-RISE RESIDENTIAL BUILDING. For the purposes of *CALGreen*, any building that is of Occupancy Group R and is four stories or greater in height.

HOT WATER RECIRCULATION SYSTEM. A hot water distribution system that reduces the time needed to deliver hot water to fixtures that are distant from the water heater, boiler or other water heating equipment. The recirculation system is comprised of hot water supply and return piping with shutoff valves, balancing valves, circulating pumps and a method of controlling the circulating system.

HOTEL OR MOTEL. (HCD-1) Any building containing six or more guest rooms intended or designed to be used, or which are used, rented or hired out to be occupied or which are occupied for sleeping purposes by guests.

HYDROCHLOROFLUOROCARBON (HCFC). A class of compounds primarily used as refrigerants or foam expansion agents, consisting of only hydrogen, chlorine, fluorine and carbon.

HYDROFLUOROCARBON (HFC). A class of compounds primarily used as refrigerants or foam expansion agents, consisting of only hydrogen, fluorine and carbon.

IESNA. Illuminating Engineering Society of North America.

INERT SOLIDS OR INERT WASTE. A non-liquid solid waste including, but not limited to, soil and concrete, that does not contain hazardous waste or soluble pollutants at concentrations in excess of water-quality objectives established by a regional water board pursuant to Division 7 (commencing with Section 13000) of the *California Water Code* and does not contain significant quantities of decomposable solid waste.

INFILL SITE. A site in an urbanized area that meets criteria defined in *Public Resources Code* Section 21061.3.

INFILTRATION. An uncontrolled inward air leakage from outside a building or unconditioned space, including leakage through cracks and interstices, around windows and doors and through any other exterior or demising partition or pipe or duct penetration.

INTERIOR BUILDING. The inside of the weatherproofing system.

JUNIOR ACCESSORY DWELLING UNIT. [HCD] A unit that is no more than 500 square feet in size and contained entirely within an existing single-family structure. A junior accessory dwelling unit may include separate sanitation facilities, or may share sanitation facilities with the existing structure. (See Government Code Section 65852.22.)

KITCHEN. That portion in a residential dwelling unit that is a room or area used for cooking, food storage and preparation and washing dishes, including associated counter tops and cabinets, refrigerator, stove, ovens and floor area.

LANDSCAPE WATER METER. [HCD] An inline device installed at the irrigation supply point that measures the flow of water into the irrigation system and is connected to a totalizer to record water use.

LEVEL 1 ELECTRIC VEHICLE (EV) CHARGING RECEPTACLE. [DSA-SS] A 120-volt 20-ampere minimum branch circuit and a receptacle.

LEVEL 2 ELECTRIC VEHICLE (EV) CHARGER. [BSC-CG, HCD] A 208/240-volt 30-ampere minimum electric vehicle charger connected to the premises electrical system capable of charging electric vehicles.

LEVEL 2 ELECTRIC VEHICLE SUPPLY EQUIPMENT. [BSC-CG, DSA-SS, HCD] The 208/240-volt 40-ampere branch circuit, and the electric vehicle charging connectors, attachment plugs and all other fittings, devices, power outlets or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle.

LIFE CYCLE ASSESSMENT (LCA). A technique to evaluate the relevant energy and material consumed and environmental impacts associated with the entire life of a product, process, activity or service, including a whole building.

LIFE CYCLE INVENTORY (LCI). A process of quantifying energy and raw material requirements, atmospheric emissions, waterborne emissions, solid wastes and other releases for the entire life cycle of a product, process or activity, including a whole building.

LONG RADIUS ELBOW. Pipe fitting installed between two lengths of pipe or tubing to allow a change of direction, with a radius 1.5 times the pipe diameter.

LOW-GWP REFRIGERANT. A compound used as a heat transfer fluid or gas that: (A) has a GWP value less than 150, and (B) is not an ozone depleting substance as defined in Title 40 of the Code of Federal Regulations, Part 82, §82.3 (as amended March 10, 2009).

LOW IMPACT DEVELOPMENT (LID). Control of stormwater at its source to mimic drainage services provided by an undisturbed site.

LOW POWER LEVEL 2 ELECTRIC VEHICLE (EV) CHARGING RECEPTACLE. [BSC-CG, DSA-SS, HCD] A 208/240-volt 20-ampere minimum branch circuit and a receptacle.

LOW-RISE RESIDENTIAL BUILDING. For the purpose of *CALGreen*, any building that is of Occupancy Group R and is three stories or less.

MATURE TREE CANOPY. [BSC-CG] The top of the mature trees or vegetation typical of a region.

MAXIMUM INCREMENTAL REACTIVITY (MIR). The maximum change in weight of ozone formed by adding a

compound to the "Base Reactive Organic Gas (ROG) Mixture" per weight of compound added, expressed to hundredths of a gram (g $O^3/_g$ ROC).

Note: MIR values for individual compounds and hydrocarbon solvents are specified in CCR, Title 17, Sections 94700 and 94701.

MERV Filter minimum efficiency reporting value.

METERING FAUCET. A self-closing faucet that dispenses a specific volume of water for each actuation cycle. The volume or cycle duration can be fixed or adjustable.

MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (MWELO) [BSC-CG & DSA-SS] A California regulation commencing with Section 490 of Chapter 2.7, Division 2, Title 23, *California Code of Regulations*. The MWELO regulation establishes a structure for planning, designing, installing, maintaining and managing water efficient landscapes in new construction and rehabilitated projects.

MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (MWELO). [HCD] The California model ordinance (California Code of Regulations, Title 23, Division 2, Chapter 2.7), regulating landscape design, installation and maintenance practices. Local agencies are required to adopt the updated MWELO, or adopt a local ordinance at least as effective as the MWELO.

MOISTURE CONTENT. The weight of the water in wood expressed in percentage of the weight of the oven-dry wood.

MOUNTING HEIGHT (MH). The height of the photometric center of a luminaire above grade level.

MULTI-OCCUPANT SPACES. Indoor spaces used for presentations and training, including classrooms and conference rooms.

NEIGHBORHOOD ELECTRIC VEHICLE (NEV). [BSC-CG, DSA-SS] A motor vehicle that meets the definition of "low-speed vehicle" either in Section 385.5 of the Vehicle Code or in 49 CFR571.500 (as it existed on July 1, 2000), and is certified to zero-emission vehicle standards.

NEWLY CONSTRUCTED (or NEW CONSTRUCTION). A newly constructed building (or new construction) does not include additions, alterations or repairs.

NO ADDED FORMALDEHYDE (NAF) BASED RESINS. Resin formulated with no added formaldehyde as part of the resin cross linking structure for making hardwood plywood, particle board or medium density fiberboard. "No added formaldehyde resins" include, but are not limited to, resins made from soy, polyvinyl acetate or methylene diisocyanate. [BSC] See CCR, Title 17, Section 93120.1(a).

NON-STORMWATER DISCHARGES. Discharges that do not originate from precipitation events. Including, but not limited to, dewatering activities, washout area discharge, vehicle and equipment cleaning, street cleaning and irrigation runoff.

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.

OFF-STREET LOADING SPACES. [BSC-CG, DSA-SS] 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.

ORGANIC WASTE. Food waste, green waste, landscape and pruning waste, nonhazardous wood waste and food-soiled paper waste that is mixed in with food waste.

OUTDOOR AIR (Outside air). Air taken from outdoors and not previously circulated in the building.

OVE. [BSC-CG, DSA-SS] Optimal Value Engineering, another term for advanced wood framing techniques.

PERMEABLE PAVING. Permeable paving materials and techniques which allow the movement of water around the paving material and allow precipitation to percolate through the paving surface to the soil below.

PLANTS.

Adaptive plants. Adaptive plants are plants that grow well in a given habitat with minimal attention in the form of winter protection, pest protection, irrigation and fertilization once established.

Note: Adaptive plants are considered low in maintenance and are not invasive plants.

Invasive plants. Invasive plants are both indigenous and nonindigenous species with growth habits that are characteristically aggressive.

Note: Invasive plants typically have a high reproductive capacity and tendency to overrun the ecosystems they inhabit.

Native plants. Native plants are plants that have adapted to a given area and are not invasive.

POSTCONSUMER CONTENT. [BSC-CG, DSA-SS] Waste material generated by consumers after it is used and which would otherwise be discarded.

POSTCONSUMER CONTENT. [HCD] Any material which has been used by a consumer and then recycled for use in a new material or product.

POTABLE WATER. Water that is drinkable and meets the US Environmental Protection Agency (EPA) Drinking Water Standards. See definition in the *California Plumbing Code*, Part 5.

POTABLE WATER. [HCD] Water that is satisfactory for drinking, culinary and domestic purposes, and meets the US Environmental Protection Agency (EPA) Drinking Water Standards and the requirements of the Health Authority Having Jurisdiction.

PRECONSUMER (or POSTINDUSTRIAL) [BSC-CG, DSA-SS] Material diverted from the waste stream during one manufacturing process, including scraps, damaged goods and

excess production, that is used in another manufacturing process.

PRECONSUMER (OR POSTINDUSTRIAL) CONTENT. [HCD] Material diverted from the waste stream during one manufacturing process, including scraps, damaged goods and excess production that is reclaimed and used in another manufacturing process. Excluded is reutilization of materials such as rework, regrind or scrap generated in a process and capable of being reclaimed within the same process that generated those wastes.

PROCESS. An activity or treatment that is not related to the space conditioning, lighting, service water heating or ventilating of a building as it relates to human occupancy.

PROCESS SPACE. A space that is thermostatically controlled to maintain a process environment temperature less than 55°F or to maintain a process environment temperature greater than 90°F for the whole space that the system serves, or that is a space with a space-conditioning system designed and controlled to be incapable of operating at temperatures above 55°F or incapable of operating at temperatures below 90°F at design conditions.

PRODUCT-WEIGHTED MIR (PWMIR). The sum of all weighted-MIR for all ingredients in a product subject to this article. The PWMIR is the total product reactivity expressed to hundredths of a gram of ozone formed per gram of product (excluding container and packaging).

Note: PWMIR is calculated according to equations found in CCR, Title 17, Section 94521(a).

PROPORTIONAL RECYCLED CONTENT (PRCM). The amount of recycled content of a material in an assembly as related to the percentage of the material in an assembly product. PRCM is derived by multiplying the percentage of each material in an assembly by the percentage of recycled content in the material.

PSIG. Pounds per square inch, gauge.

RAINWATER. Precipitation on any public or private parcel that has not entered an offsite storm drain system or channel, a flood control channel, or any other stream channel, and has not previously been put to beneficial use.

RAINWATER CATCHMENT SYSTEM. A facility designed to capture, retain and store rainwater flowing off a building, parking lot, or any other manmade impervious surface for subsequent onsite use. Rainwater catchment system is also known as "Rainwater Harvesting System" or "Rainwater Capture System."

REACTIVE ORGANIC COMPOUND (ROC). Any compound that has the potential, once emitted, to contribute to ozone formation in the troposphere.

RECLAIMED (RECYCLED) WATER. Nonpotable water that meets California State Water Resources Control Board statewide uniform criteria for disinfected tertiary recycled water. Reclaimed (recycled) water is also known as "recycled water" or "reclaimed water."

RECYCLE or RECYCLING. The process of collecting, sorting, cleansing, treating and reconstituting materials that would otherwise become solid waste, and returning them to the economic mainstream in the form of raw material for new, reused or reconstituted products which meet the quality standards necessary to be used in the marketplace. "Recycling" does not include transformation, as defined in *Public Resources Code* Section 40201.

RECYCLED CONTENT. [BSC-CG, DSA-SS] Refer to International Organization for Standardization ISO 14021—Environmental labels and declarations—Self-declared environmental claims (Type II environmental labeling).

RECYCLED CONTENT (RC). [HCD] The amount of recycled material in an assembly product or material. Refer to International Organization for Standardization ISO 14021–Environmental labels and declarations–Self-declared environmental claims (Type II environmental labeling).

RECYCLED CONTENT VALUE (RCV). [BSC-CG, DSA-SS] Material cost multiplied by postconsumer content plus $^1/_2$ the preconsumer content, or RCV = $ X (postconsumer content + $^1/_2$ preconsumer content).

RECYCLED CONTENT VALUE (RCV). [HCD]

Assembly products (RCVA). Assembly product cost multiplied by the recycled content of the assembly based on all of the postconsumer content and 50 percent of the preconsumer content.

Materials (RCVM). Material cost multiplied by recycled content of the material based on all of the postconsumer content and 50 percent of the preconsumer content.

RECYCLED WATER. Water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur [Water Code Section 13050 (n)]. Simply put, recycled water is water treated to remove waste matter, attaining a quality that is suitable to use the water again.

REFERENCE STUDY PERIOD. [BSC-CG, DSA-SS] The period of use for the building, in years, that will be assumed for life cycle assessment.

RESIDENTIAL BUILDING. See "LOW-RISE RESIDENTIAL BUILDING" or "HIGH-RISE RESIDENTIAL BUILDING."

RESILIENT FLOORING. Refers to nontextile flooring materials which have a relatively firm surface, yet characteristically have "give" and "bounce back" to their original surface profile from the weight of objects that compress its surface. Resilient flooring materials are made in various shapes and sizes including both tile and roll form. Common types of resilient flooring include but are not limited to:

1. Vinyl composition tile.
2. Vinyl tile and sheet flooring.
3. Linoleum tile and sheet.
4. Cork tile and sheet flooring.
5. Rubber tile and sheet flooring.
6. Polymeric poured seamless flooring.
7. Other types of non-textile synthetic flooring.

RE-USE. The use, in the same form as it was produced, of a material which might otherwise be discarded.

SCHRADER ACCESS VALVES. Access fittings with a valve core installed.

SHORT RADIUS ELBOW. Pipe fitting installed between two lengths of pipe or tubing to allow a change of direction, with a radius 1.0 times the pipe diameter.

SINGLE OCCUPANT SPACES. Private offices, workstations in open offices, reception workstations and ticket booths.

SOLAR ACCESS. The ratio of solar insolation including shade to the solar insolation without shade. Shading from obstructions located on the roof or any other part of the building shall not be included in determination of annual solar access.

SOLAR REFLECTANCE. A measure of the fraction of solar energy that is reflected by a surface (measured on a scale of zero to one).

SOLAR REFLECTANCE INDEX (SRI). A measure of a material surface's ability to reflect solar heat, as shown by a small temperature rise. It includes both solar reflectance and thermal emittance and is quantified such that a standard black surface (solar reflectance 0.05, thermal emittance 0.90) is zero and a standard white surface (solar reflectance 0.80, thermal emittance 0.90) is 100.

SOLID WASTE.

(a) All putrescible and nonputrescible solid, semisolid and liquid wastes, including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, dewatered, treated or chemically fixed sewage sludge which is not hazardous waste, manure, vegetable or animal solid and semisolid wastes, and other discarded solid and semisolid wastes.

(b) "Solid waste" does not include any of the following wastes:

(1) Hazardous waste, as defined in *Public Resources Code* Section 40141.

(2) Radioactive waste regulated pursuant to the Radiation Control Law (Chapter 8, commencing with Section 114960, of Part 9 of Division 104 of the *Health and Safety Code*).

(3) Medical waste regulated pursuant to the Medical Waste Management Act (Part 14 commencing with Section 117600) of Division 104 of the *Health and Safety Code*). Untreated medical waste shall not be disposed of in a solid waste landfill, as defined in *Public Resources Code* Section 40195.1. Medical waste that has been treated and deemed to be solid waste shall be regulated pursuant to this division.

SPECIAL LANDSCAPE AREA (SLA). [DSA-SS] An area of the landscape dedicated solely to edible plants, planting areas used for educational purposes, recreational areas, areas irrigated with recycled water, water features using recycled water, and where turf provides a playing surface or gathering space.

STANDARD DISHWASHER. A dishwasher that has a capacity equal to or greater than eight place settings plus six serving pieces as specified in ANSI/AHAM DW-1.

SUBMETER. [HCD 1] A secondary device beyond a meter that measures water consumption of an individual rental unit within a multiunit residential structure or mixed-use residential and commercial structure. (See Civil Code Section 1954.202(g) and Water Code Section 517 for additional details.)

SUPERMARKET. For the purposes of Section 5.508.2, a supermarket is any retail food facility with 8,000 square feet or more conditioned area, and that utilizes either refrigerated display cases, or walk-in coolers or freezers connected to remote compressor units or condensing units.

TENANT-OCCUPANTS. Building occupants who inhabit a building during its normal hours of operation as permanent occupants, such as employees, as distinguished from customers and other transient visitors.

TEST. A procedure to determine quantitative performance of a system or equipment.

THERMAL EMITTANCE. The relative ability of a surface to radiate absorbed heat (measured on a scale of 0 to 1).

TIME DEPENDENT VALUATION (TDV) ENERGY. The time varying energy caused to be used by the building to provide space conditioning and water heating and for specified buildings lighting. TDV energy accounts for the energy used at the building site and consumed in producing and in delivering energy to a site, including, but not limited to, power generation, transmission and distribution losses.

TYPE III ENVIRONMENTAL PRODUCT DECLARATION (EPD). [BSC-CG, DSA-SS] A third-party verified report that summarizes how a product impacts the environment. Type III EPDs can be either product-specific, factory-specific, or industry-wide EPDs. See "Cradle-to-Gate."

FACTORY-SPECIFIC EPD. [BSC-CG, DSA-SS] A product-specific Type III EPD in which the environmental impacts can be attributed to a single manufacturer and manufacturing facility.

INDUSTRY-WIDE EPD (IW-EPD). [BSC-CG, DSA-SS] A Type III EPD in which the environmental impacts are an average of the typical manufacturing impacts for a range of products within the same product category for a group of manufacturers.

PRODUCT-SPECIFIC EPD. [BSC-CG, DSA-SS] A Type III EPD in which the environmental impacts can be attributed to a product design and manufacturer across multiple facilities.

ULTRA-LOW EMITTING FORMALDEHYDE (ULEF) RESINS. Resins formulated such that average formaldehyde emissions are consistently below the Phase 2 emission standards in Section 93120.2, as provided in Section 93120.3(d) of Title 17, California Code of Regulations. **[BSC]** See CCR, Title 17, Section 93120.1(a).

ULTRAVIOLET (UV). [BSC-CG] Electromagnetic radiation on the first surface of glass (surface 1), with wavelengths between 300 and 400 nanometers (optimum at 370) visible to birds.

UNIVERSAL WASTE. [BSC-CG, DSA-SS] The wastes listed below are subject to regulation pursuant to Chapter 23 of Title 22, *California Code of Regulations*, and shall be known as "universal wastes."

(1) Batteries, as described in Title 22 CCR, Section 66273.2, Subsection (a);

(2) Electronic devices, as described in Title 22 CCR, Section 66273.3, Subsection (a);

(3) Mercury-containing equipment, as described in Title 22 CCR, Section 66273.4, Subsection (a);

(4) Lamps, as described in Title 22 CCR, Section 66273.5, Subsection (a);

(5) Cathode ray tubes, as described in Title 22 CCR, Section 66273.6, Subsection (a);

(6) Cathode ray tube glass, as described in Title 22 CCR, Section 66273.7, Subsection (a); and

(7) Aerosol cans, as specified in Health and Safety Code, Section 25201.16.

VANPOOL VEHICLE. [BSC-CG and DSA-SS] Eligible vehicles are limited to any motor vehicle, other than a motortruck or truck tractor, designed for carrying more than 10 but not more than 15 persons including the driver, which is maintained and used primarily for the nonprofit work-related transportation of adults for the purposes of ridesharing.

Note: Source: Vehicle Code, Division 1, Section 668.

VAPOR BARRIER. Material that has a permeance of one perm or less and that provides resistance to the transmission of water vapor.

VEGETATED SPACE. Vegetated spaces include, but are not limited to, native, undisturbed areas; rehabilitation of previously disturbed areas with landscaping; green belts; and recreation facilities that include landscaping, such as golf courses.

VISUAL MARKER. [BSC-CG] Usually applied to the first surface of glass (surface 1), a pattern, solid shape, or treatment visible to birds. If markers are applied on an inside surface, surface 1 should have maximum 15-percent reflectivity.

VOC. A volatile organic compound (VOC) broadly defined as a chemical compound based on carbon chains or rings with vapor pressures greater than 0.1 millimeters of mercury at room temperature. These compounds typically contain hydrogen and may contain oxygen, nitrogen and other elements. See CCR Title 17, Section 94508(a).

Note: Where specific regulations are cited from different agencies, such as South Coast Air Quality Management District (SCAQMD), California Air Resources Board (ARB or CARB), etc., the VOC definition included in that specific regulation is the one that prevails for the specific measure in question.

WATTLES. Wattles are used to reduce sediment in runoff. Wattles are often constructed of natural plant materials such as hay, straw or similar material shaped in the form of tubes and placed on a downflow slope. Wattles are also used for perimeter and inlet controls.

ZEV. [BSC-CG, DSA-SS] Any vehicle certified to zero-emission standards.

ZERO-EMITTING AND HIGH-EFFICIENCY VEHICLES. [BSC-CG, DSA-SS] 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.
2. High-efficiency vehicles, regulated by US EPA, bearing a fuel economy and greenhouse gas rating of 9 or 10 as regulated under 40 CFR Section 600 Subpart D.

CALIFORNIA GREEN BUILDING STANDARDS CODE – MATRIX ADOPTION TABLE
CHAPTER 3 – GREEN BUILDING

(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																						
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																						
301		X		X					X				X									
301.1				X				X														
301.1.1				X																		
301.2				X																		
301.3		X																				
301.3.1		X																				
301.3.2		X																				
301.4								X														
301.5									X		X		X									
302		X		X				X	X		X		X									
303		X		X					X		X		X									
303.1		X																				
304		X		X					X		X		X									
305									X													
306								X														

CHAPTER 3
GREEN BUILDING

SECTION 301
GENERAL

301.1 Scope. Buildings shall be designed to include the green building measures specified as mandatory in the application checklists contained in this code. Voluntary green building measures are also included in the application checklists and may be included in the design and construction of structures covered by this code, but are not required unless adopted by a city, county, or city and county as specified in Section 101.7.

301.1.1 Additions and alterations. [HCD] The mandatory provisions of Chapter 4 shall be applied to additions or alterations of existing residential buildings where the addition or alteration increases the building's conditioned area, volume or size. The requirements shall apply only to and/or within the specific area of the addition or alteration.

The mandatory provisions of Section 4.106.4.2 may apply to additions or alterations of existing parking facilities or the addition of new parking facilities serving existing multifamily buildings. See Section 4.106.4.3 for application.

NOTE: Repairs including, but not limited to, resurfacing, restriping, and repairing or maintaining existing lighting fixtures are not considered alterations for the purpose of this section.

301.2 Low-rise and high-rise residential buildings. [HCD] The provisions of individual sections of *CALGreen* may apply to either low-rise residential buildings, high-rise residential buildings, or both. Individual sections will be designated by banners to indicate where the section applies specifically to low-rise only (LR) or high-rise only (HR). When the section applies to both low-rise and high-rise buildings, no banner will be used.

301.3 Nonresidential additions and alterations. [BSC-CG] The provisions of individual sections of Chapter 5 apply to newly constructed buildings, building additions of 1,000 square feet or greater, and/or building alterations with a permit valuation of $200,000 or above (for occupancies within

the authority of California Building Standards Commission). Code sections relevant to additions and alterations shall only apply to the portions of the building being added or altered within the scope of the permitted work.

A code section will be designated by a banner to indicate where the code section only applies to newly constructed buildings **[N]** or to additions and/or alterations **[A]**. When the code section applies to both, no banner will be used.

301.3.1 Nonresidential additions and alterations that cause updates to plumbing fixtures only:

Note: On and after January 1, 2014, certain commercial real property, as defined in Civil Code Section 1101.3, shall have its noncompliant plumbing fixtures replaced with appropriate water-conserving plumbing fixtures under specific circumstances. See Civil Code Section 1101.1 *et seq.* for definitions, types of commercial real property affected, effective dates, circumstances necessitating replacement of noncompliant plumbing fixtures, and duties and responsibilities for ensuring compliance.

301.3.2 Waste diversion. The requirements of Section 5.408 shall be required for additions and alterations whenever a permit is required for work.

301.4 Mandatory measures for public schools and community colleges. [DSA-SS] New building construction and site work on a new or existing site shall comply with Section 301.4.

301.4.1 Building and site construction on a new site shall comply with Chapter 5 as adopted by DSA-SS.

301.4.2 Work on an existing site shall comply with Section 301.4.2.

301.4.2.1 Newly constructed site work shall comply with Chapter 5 as adopted by DSA-SS.

301.4.2.2 Newly constructed buildings shall comply with Chapter 5 as adopted by DSA-SS and Section 301.4.3.

301.4.2.3 Additions to existing buildings shall comply with Section 301.4.3.

301.4.2.4 Rehabilitated landscape areas shall comply with Sections 5.304.6 and 5.106.12.

301.4.2.5 Alterations and additions to existing parking facilities shall comply with Section 5.106.5.6.4. Additions to existing parking facilities shall comply with Section 5.106.12.

301.4.2.6 Alterations and additions to existing buildings shall comply with Sections 5.105.1, 5.106.5.6.5, 5.409, and 5.506.3.

301.4.3 Minimum rehabilitated landscape area requirement. A minimum rehabilitated landscape area equal to 75 percent of the footprint area of the building shall comply with Section 5.304.6 and Section 5.106.12. New buildings or additions to existing buildings less than 1,600 square feet shall not be required to comply with Section 301.4.3.

301.5 Health Facilities. [OSHPD 1, 2 & 4] Health facilities under the jurisdiction of the Office of Statewide Health Planning and Development (OSHPD) are required to comply with the mandatory measures prescribed in Section 5.304, Outdoor Water Use. Compliance with Section 5.304, as adopted by the Building Standards Commission, is enforced by the local agency having jurisdiction. Evidence of local approval shall be submitted to OSHPD prior to issuance of plan approval or a building permit.

SECTION 302
MIXED OCCUPANCY BUILDINGS

302.1 Mixed occupancy buildings. In mixed occupancy buildings, each portion of a building shall comply with the specific green building measures applicable to each specific occupancy.

Exceptions:

1. **[HCD]** Accessory structures and accessory occupancies serving residential buildings shall comply with Chapter 4 and Appendix A4, as applicable.
2. **[HCD]** For the purposes of *CALGreen*, live/work units, complying with Section 508.5 of the *California Building Code*, shall not be considered mixed occupancies. Live/work units shall comply with Chapter 4 and Appendix A4, as applicable.

SECTION 303
PHASED PROJECTS

303.1 Phased projects. For shell buildings and others constructed for future tenant improvements, only those code measures relevant to the building components and systems considered to be new construction (or newly constructed) shall apply.

303.1.1 Initial tenant improvements. The provisions of this code shall apply only to the initial tenant improvements to a project. Subsequent tenant improvements shall comply with the scoping provisions in Section 301.3 nonresidential additions and alterations.

SECTION 304
VOLUNTARY TIERS

304.1 Purpose. Voluntary tiers are intended to further encourage building practices that improve public health, safety and general welfare by promoting the use of building concepts which minimize the building's impact on the environment and promote a more sustainable design.

304.1.1 Tiers. The provisions of Divisions A4.6 and A5.6 outline means, in the form of voluntary tiers, for achieving enhanced construction levels by incorporating additional measures for residential and nonresidential new construction. Voluntary tiers may be adopted by local governments and, when adopted, enforced by local enforcing agencies. Buildings complying with tiers specified for each occupancy contain additional prerequisite and elective green building measures necessary to meet the threshold of each tier. See Section 101.7 of this code for procedures and

requirements related to local amendments, additions or deletions, including changes to energy standards.

[BSC & HCD] Where there are practical difficulties involved in complying with the threshold levels of a tier, the enforcing agency may grant modifications for individual cases. The enforcing agency shall first find that a special individual reason makes the strict letter of the tier impractical and that modification is in conformance with the intent and purpose of the measure. The details of any action granting modification shall be recorded and entered in the files of the enforcing agency.

SECTION 305 [OSHPD 1]
CALGreen TIER 1 AND CALGreen TIER 2

305.1 *CALGreen Tier 1 and CALGreen Tier 2* buildings contain voluntary green building measures necessary to meet the threshold of each level.

305.1.1 *CALGreen* Tier 1. To achieve *CALGreen* Tier 1, buildings must comply with the latest edition of "Savings By Design, Healthcare Modeling Procedures" found online at http://www.energysoft.com/main/page_ downloads_ sbd_healthcare.html.

305.1.2 *CALGreen* Tier 2. To achieve *CALGreen* Tier 2, buildings must exceed the latest edition of "Savings By Design, Healthcare Modeling Procedures" by a minimum of 15 percent.

SECTION 306 [DSA-SS]
VOLUNTARY MEASURES

306.1 Purpose. For public schools and community colleges, voluntary measures further encourage building practices that improve public health, safety and general welfare by promoting the use of building concepts which minimize the building's impact on the environment and promote a more sustainable design.

306.1.1 Appendix A5, Divisions A5.1 through A5.5, outline means of achieving enhanced sustainable design and construction by incorporating voluntary measures that exceed the mandatory measures.

306.1.2 Chapter 5 Nonresidential Mandatory Measures that are not adopted as mandatory measures by DSA-SS are voluntary measures recommended and encouraged for the design, construction, verification and maintenance of non-energy systems.

Note: The building commissioning requirements for energy efficiency specified in the *California Energy Code* are required.

CALIFORNIA GREEN BUILDING STANDARDS CODE – MATRIX ADOPTION TABLE
CHAPTER 4 – RESIDENTIAL MANDATORY MEASURES

(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																						
Division 4.2				†																X		

The state agency does not adopt sections identified by the following symbol: †.

CHAPTER 4
RESIDENTIAL MANDATORY MEASURES

Division 4.1 – PLANNING AND DESIGN

SECTION 4.101
GENERAL

4.101.1 Scope. The provisions of this division outline planning, design and development methods that include environmentally responsible site selection, building design, building siting and development to protect, restore and enhance the environmental quality of the site and respect the integrity of adjacent properties.

SECTION 4.102
DEFINITIONS

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

FRENCH DRAIN.

WATTLES.

SECTION 4.103
SITE SELECTION
(Reserved)

SECTION 4.104
SITE PRESERVATION
(Reserved)

SECTION 4.105
DECONSTRUCTION AND REUSE OF EXISTING STRUCTURES
(Reserved)

SECTION 4.106
SITE DEVELOPMENT

4.106.1 General. Preservation and use of available natural resources shall be accomplished through evaluation and careful planning to minimize negative effects on the site and adjacent areas. Preservation of slopes, management of storm water drainage and erosion controls shall comply with this section.

4.106.2 Storm water drainage and retention during construction. Projects which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction. In order to manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site.

1. Retention basins of sufficient size shall be utilized to retain storm water on the site.
2. Where storm water is conveyed to a public drainage system, collection point, gutter or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency.
3. Compliance with a lawfully enacted storm water management ordinance.

Note: Refer to the State Water Resources Control Board for projects which disturb one acre or more of soil, or are part of a larger common plan of development which in total disturbs one acre or more of soil.

(Website: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html)

4.106.3 Grading and paving. Construction plans shall indicate how the site grading or drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following:

1. Swales
2. Water collection and disposal systems
3. French drains
4. Water retention gardens
5. Other water measures which keep surface water away from buildings and aid in groundwater recharge.

Exception: Additions and alterations not altering the drainage path.

4.106.4 Electric vehicle (EV) charging for new construction. New construction shall comply with Section 4.106.4.1 or 4.106.4.2. Electric vehicle supply equipment (EVSE) shall comply with the *California Electrical Code.*

Exceptions:

1. On a case-by-case basis, where the local enforcing agency has determined EV charging and infrastructure are not feasible based upon one or more of the following conditions:
   1.1. Where there is no local utility power supply or the local utility is unable to supply adequate power.
   1.2. Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 4.106.4, may adversely impact the construction cost of the project.
2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities.

4.106.4.1 New one- and two-family dwellings and townhouses with attached private garages. For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere 208/240-volt minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

Exception: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the proposed location of an EV charger at the time of original construction in accordance with the *California Electrical Code.*

4.106.4.1.1 Identification. The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging as "EV CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV CAPABLE".

4.106.4.2 New multifamily dwellings, hotels and motels and new residential parking facilities. When parking is provided, parking spaces for new multifamily dwellings, hotels and motels shall meet the requirements of Section 4.106.4.2.2. Calculations for spaces shall be rounded up to the nearest whole number. A parking space served by electric vehicle supply equipment or designed as an EV charging space shall count as at least one standard automobile parking space only for the purpose of complying with any applicable minimum parking space requirements established by a local jurisdiction. See Vehicle Code Section 22511.2 for further details.

4.106.4.2.1 Reserved.

4.106.4.2.2 Multifamily dwellings, hotels and motels.

1. **EV ready parking spaces with receptacles.**
   a. **Hotels and motels.** Forty (40) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles.
   b. **Multifamily parking facilities.** Forty (40) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. EV charging receptacles required by this section shall be located in at least one assigned parking space per dwelling unit where assigned parking is provided but need not exceed forty (40) percent of the total number of assigned parking spaces provided on the site.

      Exception: Areas of parking facilities served by parking lifts, including but not limited to automated mechanical-access open parking garages as defined in the *California Building Code*; or parking facilities otherwise incapable of supporting electric vehicle charging.

   c. **Receptacle power source.** EV charging receptacles in multifamily parking facilities shall be provided with a dedicated branch circuit connected to the dwelling unit's electrical panel, unless determined as infeasible by the project builder or designer and subject to concurrence of the local enforcing agency.

      Exception: Areas of parking facilities served by parking lifts, including but not limited to automated mechanical-access open parking garages as defined in the *California Building Code*; or parking facilities otherwise incapable of supporting electric vehicle charging.

d. **Receptacle configurations.** 208/240V EV charging receptacles shall comply with one of the following configurations:

1. For 20-ampere receptacles, NEMA 6-20R
2. For 30-ampere receptacles, NEMA 14-30R
3. For 50-ampere receptacles, NEMA 14-50R

2. **EV ready parking spaces with EV chargers.**

a. **Hotels and motels.** Ten (10) percent of the total number of parking spaces shall be equipped with Level 2 EV chargers. At least fifty (50) percent of the required EV chargers shall be equipped with J1772 connectors.

b. **Multifamily parking facilities.** Ten (10) percent of the total number of parking spaces shall be equipped with Level 2 EV chargers. At least fifty (50) percent of the required EV chargers shall be equipped with J1772 connectors. Where common use parking or unassigned parking is provided, EV chargers shall be located in common use or unassigned parking areas and shall be available for use by all residents or guests.

Where low power Level 2 EV charging receptacles or Level 2 EV chargers are installed beyond the minimum required, an automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes, and installed EV chargers shall have a capacity of not less than 30 amperes.

4.106.4.2.2.1 Electric vehicle charging stations (EVCS). Electric vehicle charging stations required by Section 4.106.4.2.2, Item 2, with EV chargers installed shall comply with Section 4.106.4.2.2.1.1.

Exception: Electric vehicle charging stations serving public accommodations, public housing, motels, and hotels shall not be required to comply with this section. See *California Building Code*, Chapter 11B, for applicable requirements.

4.106.4.2.2.1.1 Electric vehicle charging stations (EVCS) spaces with EV chargers installed; dimensions and location. EVCS spaces shall be designed to comply with the following:

1. The minimum length of each EVCS space shall be 18 feet (5486 mm).
2. The minimum width of each EVCS space shall be 9 feet (2743 mm).
3. One in every 25 EVCS spaces, but not less than one, shall also have an 8-foot (2438 mm) wide minimum aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the minimum width of the EVCS space is 12 feet (3658 mm). Surface slope for this EVCS space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction. These EVCS spaces shall also comply with at least one of the following:

a. The EVCS space shall be located adjacent to an accessible parking space meeting the requirements of the *California Building Code*, Chapter 11A, to allow use of the EV charger from the accessible parking space.

b. The EVCS space shall be located on an accessible route, as defined in the *California Building Code*, Chapter 2, to the building.

Exception: Electric vehicle charging stations designed and constructed in compliance with the *California Building Code*, Chapter 11B, are not required to comply with Section 4.106.4.2.2.1.1.

4.106.4.2.2.1.2 Accessible electric vehicle charging station spaces. In addition to the requirements in Section 4.106.4.2.2.1.1, all EV chargers, where installed, shall comply with the accessibility provisions for EV chargers in the *California Building Code*, Chapter 11B. EV ready spaces and EVCS in multifamily developments shall comply with *California Building Code*, Chapter 11A, Section 1109A.

4.106.4.2.3 Reserved.

4.106.4.2.4 Reserved.

4.106.4.2.5 Electric vehicle ready space signage. Electric vehicle ready spaces shall be identified by signage or pavement markings, in compliance with Caltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its successor(s).

4.106.4.3 Electric vehicle charging for additions and alterations of parking facilities serving existing multifamily buildings. Where new parking facilities are added, or electrical systems or lighting of existing parking facilities are added or altered and the work requires a building permit, ten (10) percent of the total number of parking spaces added or altered shall be EV capable spaces to support future Level 2 electric vehicle supply equipment. The service panel or subpanel circuit directory shall identify

the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE."

Notes:

1. Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging.
2. There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use.

CALIFORNIA GREEN BUILDING STANDARDS CODE – MATRIX ADOPTION TABLE
CHAPTER 5 – NONRESIDENTIAL MANDATORY MEASURES
DIVISION 5.1 – PLANNING AND DESIGN

(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																						
5.101								X														
5.102 Definitions								X														
5.105								X														
5.105.1 Scope								X														
5.106.4.2 and subsections		†						X														
5.106.5.6 and subsections		†						X														
5.106.8								X														
5.106.10								X														
5.106.12 and subsections		†						X														

The state agency does not adopt sections identified with the following symbol: †

CHAPTER 5

NONRESIDENTIAL MANDATORY MEASURES

Division 5.1 – PLANNING AND DESIGN

SECTION 5.101
GENERAL

5.101.1 Scope. The provisions of this chapter outline planning, design and development methods that include environmentally responsible site selection, building design, building siting and development to protect, restore and enhance the environmental quality of the site and respect the integrity of adjacent properties.

SECTION 5.102
DEFINITIONS

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

CUTOFF LUMINAIRES.

TENANT-OCCUPANTS.

ZEV.

SECTION 5.103
SITE SELECTION
(Reserved)

SECTION 5.104
SITE PRESERVATION
(Reserved)

SECTION 5.105
DECONSTRUCTION AND REUSE OF EXISTING STRUCTURES

5.105.1 Scope.

[BSC-CG] Effective July 1, 2024, alteration(s) to existing building(s) where the combined altered floor area is 100,000 square feet or greater shall comply with either Section 5.105.2, 5.409.2, or 5.409.3. Addition(s) to existing building(s) where the total floor area combined with the existing building(s) is 100,000 square feet or greater shall comply with either Section 5.105.2, Section 5.409.2, or Section 5.409.3. Effective January 1, 2026, the combined floor area shall be 50,000 square feet or greater.

[DSA-SS] Alteration(s) to existing building(s) where the combined altered floor area is 50,000 square feet or greater shall comply with either Section 5.105.2, 5.409.2, or 5.409.3. Addition(s) to existing building(s) where the total floor area combined with the existing building(s) is 50,000 square feet or greater shall comply with either Section 5.105.2, Section 5.409.2, or Section 5.409.3.

Exception [BSC-CG, DSA-SS]: Combined addition(s) to existing building(s) of two times the area or more of the existing building(s) is not eligible to meet compliance with Section 5.105.2.

5.105.2 Reuse of existing building. An alteration or addition to an existing building shall maintain at a minimum 45 percent combined of the existing building's primary structural elements (foundations; columns, beams, walls, and floors; and lateral ele-

ments) and existing building enclosure (roof framing, wall framing and exterior finishes). Window assemblies, insulation, portions of buildings deemed structurally unsound or hazardous, and hazardous materials that are remediated as part of the project shall not be included in the calculation.

5.105.2.1 Verification of compliance. Documentation shall be provided in the construction documents to demonstrate compliance with Section 5.105.2.

Note: Sample Worksheet WS-3 in Chapter 8 may be used to assist in documenting compliance with this section.

5.105.3 Deconstruction (Reserved).

SECTION 5.106
SITE DEVELOPMENT

5.106.1 Stormwater pollution prevention for projects that disturb less than one acre of land. Newly constructed projects and additions which disturb less than one acre of land and are not part of a larger common plan of development or sale shall prevent the pollution of stormwater runoff from the construction activities through one or more of the following measures:

5.106.1.1 Local ordinance. Comply with a lawfully enacted stormwater management and/or erosion control ordinance.

5.106.1.2 Best management practices (BMP's). Prevent the loss of soil through wind or water erosion by implementing an effective combination of erosion and sediment control and good housekeeping BMP's.

1. Soil loss BMP's that should be considered for implementation as appropriate for each project include, but are not limited to, the following:
    a. Scheduling construction activity during dry weather, when possible.
    b. Preservation of natural features, vegetation, soil and buffers around surface waters.
    c. Drainage swales or lined ditches to control stormwater flow.
    d. Mulching or hydroseeding to stabilize disturbed soils.
    e. Erosion control to protect slopes.
    f. Protection of storm drain inlets (gravel bags or catch basin inserts).
    g. Perimeter sediment control (perimeter silt fence, fiber rolls).
    h. Sediment trap or sediment basin to retain sediment on site.
    i. Stabilized construction exits.
    j. Wind erosion control.
    k. Other soil loss BMP's acceptable to the enforcing agency.
2. Good housekeeping BMP's to manage construction equipment, materials, non-stormwater discharges and wastes that should be considered for implementation as appropriate for each project include, but are not limited to, the following:
    a. Dewatering activities.
    b. Material handling and waste management.
    c. Building materials stockpile management.
    d. Management of washout areas (concrete, paints, stucco, etc.).
    e. Control of vehicle/equipment fueling to contractor's staging area.
    f. Vehicle and equipment cleaning performed off site.
    g. Spill prevention and control.
    h. Other housekeeping BMP's acceptable to the enforcing agency.

5.106.2 Stormwater pollution prevention for projects that disturb one or more acres of land. Comply with all lawfully enacted stormwater discharge regulations for projects that (1) disturb one acre or more of land, or (2) disturb less than one acre of land but are part of a larger common plan of development or sale.

Note: Projects that (1) disturb one acre or more of land, or (2) disturb less than one acre of land but are part of a larger common plan of development or sale must comply with the postconstruction requirements detailed in the applicable National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities issued by the State Water Resources Control Board or the Lahontan Regional Water Quality Control Board (for projects in the Lake Tahoe Hydrologic Unit).

The NPDES permits require postconstruction runoff (post-project hydrology) to match the preconstruction runoff (pre-project hydrology) with the installation of postconstruction stormwater management measures. The NPDES permits emphasize runoff reduction through on-site stormwater use, interception, evapotranspiration and infiltration through nonstructural controls, such as Low Impact Development (LID) practices and conservation design measures. Stormwater volume that cannot be addressed using nonstructural practices is required to be captured in structural practices and be approved by the enforcing agency.

Refer to the current applicable permits on the State Water Resources Control Board website at: www.waterboards.ca.gov/constructionstormwater. Consideration to the stormwater runoff management measures should be given during the initial design process for appropriate integration into site development.

5.106.4 Bicycle parking. For buildings within the authority of California Building Standards Commission as specified in Section 103, comply with Section 5.106.4.1. For buildings within the authority of the Division of the State Architect pursuant to Section 105, comply with Section 5.106.4.2.

5.106.4.1 Bicycle parking. [BSC-CG] Comply with Sections 5.106.4.1.1 and 5.106.4.1.2; or meet the applicable local ordinance, whichever is stricter.

5.106.4.1.1 Short-term bicycle parking. If the new project or an addition or alteration is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5 percent of new visitor motorized vehicle parking spaces being added, with a minimum of one two-bike capacity rack.

Exception: Additions or alterations which add nine or less visitor vehicular parking spaces.

5.106.4.1.2 Long-term bicycle parking. For new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility.

5.106.4.1.3. For additions or alterations that add 10 or more tenant-occupant vehicular parking spaces, provide secure bicycle parking for 5 percent of the tenant vehicular parking spaces being added, with a minimum of one bicycle parking facility.

5.106.4.1.4. For new shell buildings in phased projects provide secure bicycle parking for 5 percent of the anticipated tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility.

5.106.4.1.5. Acceptable bicycle parking facility for Sections 5.106.4.1.2, 5.106.4.1.3 and 5.106.4.1.4 shall be convenient from the street and shall meet one of the following:

1. Covered, lockable enclosures with permanently anchored racks for bicycles;
2. Lockable bicycle rooms with permanently anchored racks; or
3. Lockable, permanently anchored bicycle lockers.

Note: Additional information on recommended bicycle accommodations may be obtained from Sacramento Area Bicycle Advocates.

5.106.4.2 Bicycle parking. [DSA-SS] For public schools and community colleges, comply with Sections 5.106.4.2.1 and 5.106.4.2.2.

5.106.4.2.1 Student bicycle parking. Provide permanently anchored bicycle racks conveniently accessed with a minimum of four two-bike capacity racks per new building.

5.106.4.2.2 Staff bicycle parking. Provide permanent, secure bicycle parking conveniently accessed with a minimum of two staff bicycle parking spaces per new building. Acceptable bicycle parking facilities shall be convenient from the street or staff parking area and shall meet one of the following:

1. Covered, lockable enclosures with permanently anchored racks for bicycles;
2. Lockable bicycle rooms with permanently anchored racks; or
3. Lockable, permanently anchored bicycle lockers.

5.106.5.3 Electric vehicle (EV) charging. [N] [BSC-CG] Construction to provide electric vehicle infrastructure and facilitate electric vehicle charging shall comply with Section 5.106.5.3.1 EV capable spaces, Section 5.106.5.3.2 Electric vehicle charging stations and associated Table 5.106.5.3.1, or Section 5.106.5.3.6 Electric vehicle charging stations (EVCS)—Power allocation method and associated Table 5.106.5.3.6 and shall be provided in accordance with regulations in the *California Building Code* and the *California Electrical Code.*

Exceptions:

1. On a case-by-case basis where the local enforcing agency has determined compliance with this section is not feasible based upon one of the following conditions:
   a. Where there is no local utility power supply.
   b. Where the local utility is unable to supply adequate power.
   c. Where there is evidence suitable to the local 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 EV capable spaces. [N] EV capable spaces shall be provided in accordance with Table 5.106.5.3.1 and the following requirements:

1. Raceways complying with the *California Electrical Code* and no less than 1-inch (25 mm) 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 and into a suitable listed cabinet, box, enclosure or equivalent. A common raceway may be used to serve multiple EV capable spaces.
2. A service panel or subpanel(s) shall be provided with panel space and electrical load capacity for a dedicated 208/240 volt, 40-ampere minimum branch circuit for each EV capable space, with delivery of 30-ampere minimum to an installed EVSE at each EVCS.
3. The electrical system and any on-site distribution transformers shall have sufficient capacity to supply full rated amperage at each EV capable space.
4. The service panel or subpanel circuit directory shall identify the reserved overcurrent protective device space(s) as “EV CAPABLE”. The raceway termination location shall be permanently and visibly marked as “EV CAPABLE.”

Note: A parking space served by electric vehicle supply equipment or designed as a future EV charging space shall count 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 electric vehicle supply equipment (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 shall be provided with Level 2 EVSE or DCFC as permitted in Section 5.106.5.3.2.1. At least one Level 2 EVSE shall be provided.

One EV charger with multiple connectors capable of charging multiple EVs simultaneously shall be per-

mitted 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.

TABLE 5.106.5.3.1

TOTAL NUMBER OF ACTUAL PARKING SPACES	NUMBER OF REQUIRED EV CAPABLE SPACES	NUMBER OF EVCS (EV CAPABLE SPACES PROVIDED WITH EVSE)[2, 3]
0–9	0	0
10–25	4	0
26–50	8	2
51–75	13	3
76–100	17	4
101–150	25	6
151–200	35	9
201 and over	20 percent of actual parking spaces[1]	25 percent of EV capable spaces[1]

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.
3. At least one Level 2 EVSE shall be provided.

5.106.5.3.2.1 The installation of each DCFC EVSE shall be permitted to reduce the minimum number of required EV capable spaces without EVSE or EVCS with Level 2 EVSE by five and reduce proportionally the required electrical load capacity to the service panel or subpanel.

5.106.5.3.2.2 The installation of two low power Level 2 EV charging receptacles shall be permitted to reduce the minimum number of required EV capable spaces without EVSE in Table 5.106.5.3.1 by one.

5.106.5.3.3 Use of automatic load management systems (ALMS). ALMS shall be permitted 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 electric vehicle charging station (EVCS). When EVSE is installed, accessible EVCS shall be provided in accordance with the *California Building Code,* Chapter 11B, Section 11B-228.3.

5.106.5.3.5 Electric vehicle charging station signage. Electric vehicle charging stations shall be identified by signage or pavement markings in compliance with Caltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its successor(s).

5.106.5.3.6 Electric vehicle charging stations (EVCS)—power allocation method. The power allocation method may be used as an alternative to the requirements in Section 5.106.5.3.1, Section 5.106.5.3.2 and associated Table 5.106.5.3.1. Use Table 5.106.5.3.6 to determine the total power in kVA required based on the total number of actual parking spaces.

Power allocation method shall include the following:

1. Use any kVA combination of EV capable spaces, low power Level 2, Level 2 or DCFC EVSEs.
2. At least one Level 2 EVSE shall be provided.

TABLE 5.106.5.3.6

TOTAL NUMBER OF ACTUAL PARKING SPACES	MINIMUM TOTAL kVA @ 6.6 kVA	TOTAL kVA REQUIRED IN ANY COMBINATION OF EV CAPABLE,[3,4] LOW POWER LEVEL 2, LEVEL 2,[1, 2] OR DCFC
0–9	0	0
10–25	26.4	26.4
26–50	52.8	52.8
51–75	85.8	85.8
76–100	112.2	112.2
101–150	165	165
151–200	231	231
201 and over	20 percent of actual parking spaces × 6.6	Total required kVA = P × .20 × 6.6 Where P = Parking spaces in facility

1. Level 2 EVSE @ 6.6 kVA minimum.
2. At least one Level 2 EVSE shall be provided.
3. Maximum allowed kVA to be utilized for EV capable spaces is 75 percent.
4. If EV capable spaces are utilized, they shall meet the requirements of Section 5.106.5.3.1 EV capable spaces.

5.106.5.4 Additions or alterations to existing buildings or parking facilities [A]. [BSC-CG] Existing buildings or parking facilities being modified by one of the following shall comply with Section 5.106.5.4.1 or 5.106.5.4.2. When EVSE is installed, accessible EVCS shall be provided in accordance with the California Building Code, Chapter 11B, Section 11B-228.3.

1. When the scope of construction work includes an increase in power supply to an electric service panel as part of a parking facility addition or alteration.
2. When a new photovoltaic system is installed covering existing parking spaces.
3. When additions or alterations to existing buildings are triggered pursuant to code Section 301.3 and the scope of work includes an increase in power supply to an electric service panel.

Exceptions:

1. On a case-by-case basis where the local enforcing agency has determined compliance with this section is not feasible based upon one of the following conditions:
   a. Where there is no local utility power supply.
   b. Where the local utility is unable to supply adequate power.
   c. Where there is evidence suitable to the local 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.

d. Where demonstrated as impracticable excluding local utility service or utility infrastructure issues.

2. Remote parking facilities that do not have access to the building service panel.

3. Parking area lighting upgrades where no trenching is part of the scope of work.

4. Emergency repairs, including but not limited to water line break in parking facilities, natural disaster repairs, etc.

5.106.5.4.1 Existing buildings or parking areas without previously installed EV capable infrastructure [A]. When EV capable infrastructure does not exist at an existing parking facility or building, and the parking facility or building undergoes an addition or alteration listed in Section 5.106.5.4, construction shall include electric vehicle charging in compliance with either Section 5.106.5.3 and associated Table 5.106.5.3.1, or Section 5.106.5.3.6 and associated Table 5.106.5.3.6 for the total number of actual parking spaces being added or altered.

5.106.5.4.2 Existing buildings or parking areas with previously installed EV capable infrastructure [A]. When EV capable infrastructure is available at an existing parking facility or building, and the parking facility or building is undergoing an addition or alteration listed in Section 5.106.5.4, construction shall include electric vehicle charging in compliance with either Section 5.106.5.3 and associated Table 5.106.5.3.1, or Section 5.106.5.3.6 and associated Table 5.106.5.3.6 utilizing the existing EV capable allocated power and infrastructure for the total number of actual parking spaces being added or altered. If the area being added or altered exceeds the existing EV capable capacity, allocated power and infrastructure, provide additional EV charging as needed to comply with this section.

5.106.5.5 Electric vehicle (EV) charging: medium-duty and heavy-duty. [N] [BSG-CG] Construction shall comply with Section 5.106.5.5.1 to facilitate future installation of electric vehicle supply equipment (EVSE). Construction for warehouses, grocery stores and retail stores, office buildings, and manufacturing facilities with planned off-street loading spaces shall also comply with Section 5.106.5.5.1 for future installation of medium- and heavy-duty EVSE.

Exceptions:

1. On a case-by-case basis where the local enforcing agency has determined compliance with this section is not feasible based upon one of the following conditions:

   a. Where there is no local utility power supply.

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

   c. Where there is evidence suitable to the local enforcing 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.

When EVSE(s) is/are installed, it shall be in accordance with the *California Building Code,* the *California Electrical Code* and as follows:

5.106.5.5.1 Electric vehicle charging readiness requirements for warehouses, grocery stores, office buildings, and manufacturing facilities and retail stores with planned off-street loading spaces. [N]

In order to avoid future demolition when adding EV supply and distribution equipment, spare raceway(s) or busway(s) and adequate capacity for transformer(s), service panel(s) or subpanel(s) shall be installed at the time of construction in accordance with the *California Electrical Code*. Construction plans and specifications shall include, but are not limited to, the following:

1. The transformer, main service equipment and subpanels shall meet the minimum power requirement in Table 5.106.5.5.1 to accommodate the dedicated branch circuits for the future installation of EVSE.

2. The construction documents shall indicate one or more location(s) convenient to the planned off-street loading space(s) reserved for medium- and heavy-duty ZEV charging cabinets and charging dispensers, and a pathway reserved for routing of conduit from the termination of the raceway(s) or busway(s) to the charging cabinet(s) and dispenser(s), as shown in Table 5.106.5.5.1.

3. Raceway(s) or busway(s) originating at a main service panel or a subpanel(s) serving the area where potential future medium- and heavy-duty EVSE will be located and shall terminate in close proximity to the potential future location of the charging equipment for medium- and heavy-duty vehicles.

4. The raceway(s) or busway(s) shall be of sufficient size to carry the minimum additional system load to the future location of the charging for medium- and heavy-duty ZEVs as shown in Table 5.106.5.5.1.

5.106.5.6 Electric vehicle (EV) charging at public schools and community colleges. [DSA-SS] Electric vehicle infrastructure and electric vehicle charging stations shall comply with Section 5.106.5.6 and shall be provided in accordance with regulations in the *California Building Code* and the *California Electrical Code.*

Exceptions:

1. On a case-by-case basis where compliance with this section has been demonstrated to be not feasible based upon one of the following conditions, and with concurrence by the Division of the State

TABLE 5.106.5.5.1
RACEWAY CONDUIT AND PANEL POWER REQUIREMENTS FOR MEDIUM- AND HEAVY-DUTY EVSE [N]

BUILDING TYPE	BUILDING SIZE (SQ. FT.)	NUMBER OF OFF-STREET LOADING SPACES	ADDITIONAL CAPACITY REQUIRED (KVA) FOR RACEWAY & BUSWAY AND TRANSFORMER & PANEL
Grocery	10,000 to 90,000	1 or 2	200
		3 or Greater	400
	Greater than 90,000	1 or Greater	400
Manufacturing Facilities	10,000 to 50,000	1 or 2	200
	10,000 to 50,000	3 or Greater	400
	Greater than 50,000	1 or Greater	400
Office Buildings	10,000 to 135,000	1 or 2	200
	10,000 to 135,000	3 or Greater	400
	Greater than 135,000	1 or Greater	400
Retail	10,000 to 135,000	1 or 2	200
		3 or Greater	400
	Greater than 135,000	1 or Greater	400
Warehouse	20,000 to 256,000	1 or 2	200
		3 or Greater	400
	Greater than 256,000	1 or Greater	400

Architect (DSA), compliance with Section 5.106.5.6 shall not be required.

a. Where there is no local utility power supply.

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

c. The installation of EVCS is impracticable.

2. Parking spaces accessible only by automated mechanical car parking systems are not required to comply with Section 5.106.5.6.

5.106.5.6.1 EV capable spaces. EV capable spaces shall be provided in accordance with Table 5.106.5.6.1 and the following requirements:

1. Raceways complying with the *California Electrical Code* and no less than 1-inch (25 mm) 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 and into a suitable listed cabinet, box, enclosure or equivalent. A common raceway may be used to serve multiple EV capable spaces.
2. A service panel or subpanel(s) shall be provided with panel space and electrical load capacity for a dedicated 208/240 volt, 40-ampere minimum branch circuit for each EV capable space, with delivery of 30-ampere minimum to an installed EVSE at each EVCS.
3. The electrical system and any on-site distribution transformers shall have sufficient capacity to supply full rated amperage at each EV capable space.
4. The service panel or subpanel circuit directory shall identify the reserved overcurrent protective device space(s) as "EV CAPABLE." The raceway termination location shall be permanently and visibly marked as "EV CAPABLE."

TABLE 5.106.5.6.1

TOTAL NUMBER OF PARKING SPACES	NUMBER OF REQUIRED EV CAPABLE SPACES	NUMBER OF REQUIRED EVCS[2]
0–9	0	0
10–25	4	1
26–50	8	2
51–75	13	3
76–100	17	4
101–150	25	6
151–200	35	9
201 and over	20 percent of total[1]	25 percent of EV capable spaces[1]

1. Calculation for spaces shall be rounded up to the nearest whole number.
2. Each EVCS shall reduce the number of required EV capable spaces by the same number.

5.106.5.6.2 Electric vehicle charging stations (EVCS). EV capable spaces shall be provided with EVSE to create EVCS in the number indicated in Table 5.106.5.6.1 and shall comply with Section 5.106.5.6.2. EVCS shall be serviced by Level 2 or Direct Current Fast Charging (DCFC) EVSE, or with EVSE in any combination of Level 2 and DCFC. Accessible EVCS shall be provided in accordance with *California Building Code* Chapter 11B.

5.106.5.6.2.1 Reduced number of EV capable spaces. The installation of each DCFC EVSE shall be permitted to reduce the minimum number of required EV capable spaces indicated in Table 5.106.5.6.1 by five and reduce proportionally the required electrical load capacity to the service panel or subpanel.

5.106.5.6.2.2 Multiple connectors. EVSE with multiple vehicle connectors capable of charging multiple EVs simultaneously shall be permitted if the electrical load capacity required by Section 5.106.5.6.1 for each EV capable space is accumulatively supplied to the EVSE.

5.106.5.6.2.3 Use of automatic load management systems (ALMS). ALMS shall be permitted for EVCS installed in accordance with Section 5.106.5.6.2. When ALMS is installed, the required electrical load capacity specified in Section 5.106.5.6.1 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.

5.106.5.6.3 EVCS alternative compliance. In lieu of compliance with Section 5.106.5.6.2, EVCS shall be provided with Level 1, low power Level 2, or Level 2, or any combination of Level 1, low power Level 2 or Level 2 EVSE such that the total power supplied by the combination of EVSE meets the minimum power indicated in Table 5.106.5.6.3, based on the total number of actual parking spaces in each parking facility.

TABLE 5.106.5.6.3

NUMBER OF PARKING SPACES IN A PARKING FACILITY	MINIMUM TOTAL POWER (KVA) REQUIRED FOR EVCS
0–9	0
10–25	7
26–50	14
51–75	20
76–100	27
101–150	40
151–200	60
201 and over	Total required KVA = P × .05 × 6.6 Where P = Parking spaces in facility

5.106.5.6.4 EVCS for alterations of or additions to parking facilities. Alterations of or additions to parking facilities shall provide EVCS in compliance with Section 5.106.5.6.4. The installation of infrastructure for EV capable spaces required to be provided without EVSE shall not be required.

5.106.5.6.4.1 Alterations of and additions to parking facilities. EVCS shall be provided in accordance with the number indicated in Table 5.106.5.6.1 or minimum power indicated in Table 5.106.5.6.3 when the scope of work includes an increase in power supply to an electric panel serving light fixtures illuminating the parking area or when area containing parking spaces is added to a parking facility. The number of required EVCS shall be based on the total number of existing and new parking spaces in the parking facility.

5.106.5.6.4.2 Alterations consisting of the installation of photovoltaic systems. EVCS shall be provided in accordance with the number indicated in Table 5.106.5.6.1 or maximum power indicated in Table 5.106.5.6.3 when a new photovoltaic system is installed in an existing parking facility.

5.106.5.6.5 Requirement to install EVSE. Level 2 EVSE shall be provided in all existing EV capable spaces to create EVCS when a project is required by *California Administrative Code* Section 4-309 to be submitted for plan approval to the Division of the State Architect. When EVSE is installed in existing EV capable spaces, accessible EVCS shall be provided in accordance with *California Building Code* Chapter 11B.

Exception: Projects in which improvements in parking areas consist only of accessibility improvements are not required to comply with Section 5.106.5.6.5.

5.106.8 Light pollution reduction. [N] Outdoor lighting systems shall be designed and installed to comply with the following:

1. The minimum requirements in the *California Energy Code* for Lighting Zones 0-4 as defined in Chapter 10, Section 10-114 of the *California Administrative Code*; and
2. Backlight (B) ratings as defined in IES TM-15-11 (shown in Table A-1 in Chapter 8);
3. Uplight and Glare ratings as defined in *California Energy Code* (shown in Tables 130.2-A and 130.2-B in Chapter 8) and
4. Allowable BUG ratings not exceeding those shown in Table 5.106.8 [N], or

Comply with a local ordinance lawfully enacted pursuant to Section 101.7, whichever is more stringent.

Exceptions:

1. Luminaires that qualify as exceptions in Sections 130.2(b) and 140.7 of the *California Energy Code.*
2. Emergency lighting.
3. Building facade meeting the requirements in Table 140.7-B of the *California Energy Code,* Part 6.
4. Custom lighting features as allowed by the local enforcing agency, as permitted by Section 101.8 Alternate materials, designs and methods of construction.
5. Luminaires with less than 6,200 initial luminaire lumens.

5.106.8.1 Facing – Backlight. Luminaires within 2MH of a property line shall be oriented so that the nearest property line is behind the fixture, and shall comply with the backlight rating specified in Table 5.106.8 based on the lighting zone and distance to the nearest point of that property line.

Exception: Corners. If two property lines (or two segments of the same property line) have equidistant points to the luminaire, then the luminaire may be oriented so that the intersection of the two lines (the corner) is directly behind the luminaire. The luminaire shall still use the distance to the nearest point(s) on the property lines to determine the required backlight rating.

5.106.8.2 Facing – Glare. For luminaires covered by 5.106.8.1, if a property line also exists within or extends into the front hemisphere within 2MH of the luminaire then the luminaire shall comply with the more stringent glare rating specified in Table 5.106.8 based on the lighting zone and distance to the nearest point on the nearest property line within the front hemisphere.

Notes:

1. See also *California Building Code,* Chapter 12, Section 1205.7 for college campus lighting requirements for parking facilities and walkways.
2. Refer to Chapter 8 (Compliance Forms, Worksheets and Reference Material) for IES TM-15-11 Table A-1, *California Energy Code* Tables 130.2-A and 130.2-B.
3. Refer to the *California Energy Code* for requirements for additions and alterations.

5.106.10 Grading and paving. Construction plans shall indicate how site grading or a drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following:

1. Swales.
2. Water collection and disposal systems.
3. French drains.
4. Water retention gardens.
5. Other water measures which keep surface water away from buildings and aid in groundwater recharge.

Exception: Additions and alterations not altering the drainage path.

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: 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 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.

Exceptions:

1. Walks, 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.

TABLE 5.106.8 [N]
MAXIMUM ALLOWABLE BACKLIGHT, UPLIGHT AND GLARE (BUG) RATINGS[1,2]

ALLOWABLE RATING	LIGHTING ZONE LZ0	LIGHTING ZONE LZ1	LIGHTING ZONE LZ2	LIGHTING ZONE LZ3	LIGHTING ZONE LZ4
Maximum Allowable Backlight Rating (B)					
Luminaire greater than 2 mounting heights (MH) from property line	N/A	No Limit	No Limit	No Limit	No Limit
Luminaire back hemisphere is 1 – 2 MH from property line	N/A	B2	B3	B4	B4
Luminaire back hemisphere is 0.5 – 1 MH from property line	N/A	B1	B2	B3	B3
Luminaire back hemisphere is less than 0.5 MH from property line	N/A	B0	B0	B1	B2
Maximum Allowable Uplight Rating (U)					
For area lighting[3]	N/A	U0	U0	U0	U0
For all other outdoor lighting, including decorative luminaires	N/A	U1	U2	U3	U4
Maximum Allowable Glare Rating (G)					
Luminaire greater than 2 MH from property line	N/A	G1	G2	G3	G4
Luminaire front hemisphere is 1 – 2 MH from property line	N/A	G0	G1	G1	G2
Luminaire front hemisphere is 0.5 – 1 MH from property line	N/A	G0	G0	G1	G1
Luminaire front hemisphere is less than 0.5 MH from property line	N/A	G0	G0	G0	G1

1. IESNA Lighting Zones 0 are not applicable; refer to Lighting Zones as defined in the *California Energy Code* and Chapter 10 of the *California Administrative Code.*
2. For property lines that abut public walkways, bikeways, plazas and parking lots, the property line may be considered to be 5 feet beyond the actual property line for purpose of determining compliance with this section. For property lines that abut public roadways and public transit corridors, the property line may be considered to be the centerline of the public roadway or public transit corridor for the purpose of determining compliance with this section.
3. General lighting luminaires in areas such as outdoor parking, sales or storage lots shall meet these reduced ratings. Decorative luminaires located in these areas shall meet *U*-value limits for "all other outdoor lighting."

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														
5.409 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 specify the requirements of achieving material conservation, resource efficiency, and greenhouse gas (GHG) emission reduction through protection of buildings from exterior moisture, construction waste diversion, employment of techniques to reduce pollution through recycling of materials, the installation of products with lower GHG emissions 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.

BUY CLEAN CALIFORNIA ACT (BCCA).

CRADLE-TO-GRAVE.

ORGANIC WASTE.

REFERENCE STUDY PERIOD.

TEST.

TYPE III ENVIRONMENTAL PRODUCT DECLARATION (EPD).

FACTORY-SPECIFIC EPD.

INDUSTRY-WIDE EPD (IW-EPD).

PRODUCT-SPECIFIC EPD.

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.cdfa.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.cdfa.ca.gov)

SECTION 5.409
LIFE CYCLE ASSESSMENT

5.409.1 Scope.

[BSC-CG] Effective July 1, 2024, projects consisting of newly constructed building(s) with a combined floor area of 100,000 square feet or greater shall comply with either Section 5.409.2 or Section 5.409.3. Alteration(s) to existing building(s) where the combined altered floor area is 100,000 square feet or greater shall comply with either Section 5.105.2, 5.409.2, or 5.409.3. Addition(s) to existing building(s) where the total floor area combined with the existing building(s) is 100,000 square feet or greater shall comply with either Section 5.105.2, Section 5.409.2, or Section 5.409.3. Effective January 1, 2026, the combined floor area shall be 50,000 square feet or greater.

[DSA-SS] Projects consisting of newly constructed building(s) with a combined floor area of 50,000 square feet or greater shall comply with either Section 5.409.2 or Section 5.409.3. Alteration(s) to existing building(s) where the combined altered floor area is 50,000 square feet or greater shall comply with either Section 5.105.2, 5.409.2, or 5.409.3. Addition(s) to existing building(s) where the total floor area combined with the existing building(s) is 50,000 square feet or greater shall comply with either Section 5.105.2, Section 5.409.2, or Section 5.409.3.

5.409.2 Whole building life cycle assessment. Projects shall conduct a cradle-to-grave whole building life cycle assessment performed in accordance with ISO 14040 and ISO 14044, excluding operating energy, and demonstrating a minimum 10-percent reduction in global warming potential (GWP) as compared to a reference baseline building of similar size, function, complexity, type of construction, material specification, and location that meets the requirements of the *California Energy Code* currently in effect. Software used to conduct the whole building life cycle assessment, including reference baseline building, shall have a data set compliant with ISO 14044, and ISO 21930 or EN 15804, and the software shall conform to ISO 21931 and/or EN 15978. The software tools and data sets shall be the same for evaluation of both the baseline building and the proposed building.

Notes:

1. Software for calculating whole building life cycle assessment is available for free at Athena Sustainable Materials Institute (https://calculatelca.com/software/impact-estimator/) and OneClick LCA-Planetary (www.oneclicklca.com/planetary). Paid versions include, but are not limited to, Sphera GaBi Solutions (gabi.sphera.com), SimaPro (simapro.com), One-Click LCA (www.oneclicklca.com) and Tally for Revit (apps.autodesk.com).
2. ASTM E2921-22 "Standard Practice for Minimum Criteria for Comparing Whole Building Life Cycle Assessments for Use with Building Codes, Standards, and Rating Systems" may be consulted for the assessment.
3. In addition to the required documentation specified in Section 5.409.2.3, Worksheet WS-9 may be required by the enforcing entity to demonstrate compliance with the requirements.

5.409.2.1 Building components. Building enclosure components included in the assessment shall be limited to glazing assemblies, insulation, and exterior finishes. Primary and secondary structural members included in the assessment shall be limited to footings and foundations, and structural columns, beams, walls, roofs, and floors.

5.409.2.2 Reference study period. The reference study period of the proposed building shall be equal to the reference baseline building and shall be 60 years.

5.409.2.3 Verification of compliance. A summary of the GWP analysis produced by the software and Worksheet WS-4 signed by the design professional of record shall be provided in the construction documents as documentation of compliance. A copy of the whole building life cycle assessment which includes the GWP analysis produced by the software, in addition to maintenance and training information, shall be included in the operation and maintenance manual and shall be provided to the owner at the close of construction. The enforcing agency may require inspection and inspection reports in accordance with Sections 702.2 and 703.1 during and at completion of construction to demonstrate substantial conformance. Inspection shall be performed by the design professional of record or third party acceptable to the enforcing agency.

5.409.3 Product GWP compliance—prescriptive path. Each product that is permanently installed and listed in Table 5.409.3 shall have a Type III environmental product declaration (EPD), either product-specific or factory-specific.

5.409.3.1 Products shall not exceed the maximum GWP value specified in Table 5.409.3.

Exception: Concrete may be considered one product category to meet compliance with this section. A weighted average of the maximum GWP for all concrete mixes installed in the project shall be less than the weighted average maximum GWP allowed per Table 5.409.3 using Exception Equation 5.409.3.1. Calculations shall be performed with consistent units of measurement for the material quantity and the GWP value.

For the purposes of this exception, industry-wide EPDs are acceptable.

Exception EQUATION 5.409.3.1

$GWP_n < GWP_{allowed}$

where

$GWP_n = \Sigma (GWP_n)(v_n)$

and

$GWP_{allowed} = \Sigma (GWP_{allowed})(v_n)$

and

n = each concrete mix installed in the project

GWP_n = the GWP for concrete mix n per concrete mix EPD, in kg CO_2e/m^3

$GWP_{allowed}$ = the GWP potential allowed for concrete mix n per Table 5.409.3

v_n = the volume of concrete mix n installed in the project, in m^3

5.409.3.2 Verification of compliance. Calculations to demonstrate compliance, Type III EPDs for products required to comply, if included in the project, and Worksheet WS-5 signed by the design professional of record shall be provided on the construction documents. Updated EPDs for products used in construction shall be provided to the owner at the close of construction and to the enforcement entity upon request. The enforcing agency may require inspection and inspection reports in accordance with Sections 702.2 and 703.1 during and at completion of construction to demonstrate substantial conformance. Inspection shall be performed by the design professional of record or third party acceptable to the enforcing agency.

TABLE 5.409.3
PRODUCT GWP LIMITS

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	kg 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 PRODUCT CATEGORY	**MAXIMUM GWP ALLOWED VALUE ($GWP_{allowed}$)**	**UNIT OF MEASUREMENT**
up to 2499 psi	450	kg CO_2e/m^3
2500–3499 psi	489	kg CO_2e/m^3
3500–4499 psi	566	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
Concrete, Lightweight Ready-Mixed[2]		
CONCRETE PRODUCT CATEGORY	**MAXIMUM GWP ALLOWED VALUE ($GWP_{allowed}$)**	**UNIT OF MEASUREMENT**
up to 2499 psi	875	kg CO_2e/m^3
2500–3499 psi	956	kg CO_2e/m^3
3500–4499 psi	1039	kg CO_2e/m^3

1. The GWP values of the products listed in Table 5.409.3 are based on 175 percent of Buy Clean California Act (BCCA) GWP values, except for concrete products which are not included in the BCCA.
2. For concrete, 175 percent of the National Ready Mixed Concrete Association (NRMCA) 2022 version 3 Pacific Southwest regional benchmark values are used for the GWP allowed, except for High Early Strength.
3. Concrete High Early Strength ready-mixed shall be calculated at 130 percent of the ready-mixed concrete GWP allowed values for each product category.

SECTION 5.410
BUILDING MAINTENANCE AND OPERATION

5.410.1 Recycling by occupants. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waste and metals, or meet a lawfully enacted local recycling ordinance, if more restrictive.

Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code 42649.82 (a)(2)(A) et seq. shall also be exempt from the organic waste portion of this section.

5.410.1.1 Additions. All additions conducted within a 12-month period under single or multiple permits, resulting in an increase of 30 percent or more in floor area, shall provide recycling areas on site.

Exception: Additions within a tenant space resulting in less than a 30-percent increase in the tenant space floor area.

5.410.1.2 Sample ordinance. Space allocation for recycling areas shall comply with Chapter 18, Part 3, Division 30 of the *Public Resources Code.* Chapter 18 is known as the California Solid Waste Reuse and Recycling Access Act of 1991 (Act).

Note: A sample ordinance for use by local agencies may be found in Appendix A of the document at the CalRecycle's web site.

5.410.2 Commissioning. [N] New buildings 10,000 square feet and over. For new buildings 10,000 square feet and over, building commissioning shall be included in the design and construction processes of the building project to verify that the building systems and components meet the owner's or owner representative's project requirements. Commissioning shall be performed in accordance with this section by trained personnel with experience on projects of comparable size and complexity. For I-occupancies that are not regulated by OSHPD or for I-occupancies and L-occupancies that are not regulated by the

California Energy Code Section 100.0 Scope, all requirements in Sections 5.410.2 through 5.410.2.6 shall apply.

Note: For energy-related systems under the scope (Section 100) of the *California Energy Code*, including heating, ventilation, air conditioning (HVAC) systems and controls, indoor lighting systems and controls, as well as water heating systems and controls, refer to *California Energy Code* Section 120.8 for commissioning requirements.

Commissioning requirements shall include:

1. Owner's or owner representative's project requirements.
2. Basis of design.
3. Commissioning measures shown in the construction documents.
4. Commissioning plan.
5. Functional performance testing.
6. Documentation and training.
7. Commissioning report.

Exceptions:

1. Unconditioned warehouses of any size.
2. Areas less than 10,000 square feet used for offices or other conditioned accessory spaces within unconditioned warehouses.
3. Tenant improvements less than 10,000 square feet as described in Section 303.1.1.
4. Open parking garages of any size, or open parking garage areas, of any size, within a structure.

Note: For the purposes of this section, unconditioned shall mean a building, area or room which does not provide heating and/or air conditioning.

Informational Note:

1. Functional performance testing for heating, ventilation, air conditioning systems and lighting controls must be performed in compliance with the *California Energy Code.*

5.410.2.1 Owner's or Owner representative's Project Requirements (OPR). [N] The expectations and requirements of the building appropriate to its phase shall be documented before the design phase of the project begins. This documentation shall include the following:

1. Environmental and sustainability goals.
2. Building sustainable goals.
3. Indoor environmental quality requirements.
4. Project program, including facility functions and hours of operation, and need for after hours operation.
5. Equipment and systems expectations.
6. Building occupant and operation and maintenance (O&M) personnel expectations.

5.410.2.2 Basis of Design (BOD). [N] A written explanation of how the design of the building systems meets the OPR shall be completed at the design phase of the building project. The Basis of Design document shall cover the following systems:

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

5.410.2.3 Commissioning plan. [N] Prior to permit issuance a commissioning plan shall be completed to document how the project will be commissioned. The commissioning plan shall include the following:

1. General project information.
2. Commissioning goals.
3. Systems to be commissioned. Plans to test systems and components shall include:
   a. An explanation of the original design intent.
   b. Equipment and systems to be tested, including the extent of tests.
   c. Functions to be tested.
   d. Conditions under which the test shall be performed.
   e. Measurable criteria for acceptable performance.
4. Commissioning team information.
5. Commissioning process activities, schedules and responsibilities. Plans for the completion of commissioning shall be included.

5.410.2.4 Functional performance testing. [N] Functional performance tests shall demonstrate the correct installation and operation of each component, system and system- to-system interface in accordance with the approved plans and specifications. Functional performance testing reports shall contain information addressing each of the building components tested, the testing methods utilized, and include any readings and adjustments made.

5.410.2.5 Documentation and training. [N] A systems manual and systems operations training are required, including Occupational Safety and Health Act (OSHA) requirements in *California Code of Regulations* (CCR), Title 8, Section 5142, and other related regulations.

5.410.2.5.1 Systems manual. [N] Documentation of the operational aspects of the building shall be completed within the systems manual and delivered to the building owner or representative. The systems manual shall include the following:

1. Site information, including facility description, history and current requirements.
2. Site contact information.
3. Basic operations and maintenance, including general site operating procedures, basic troubleshooting, recommended maintenance requirements, site events log.
4. Major systems.
5. Site equipment inventory and maintenance notes.

6. A copy of verifications required by the enforcing agency or this code.
7. Other resources and documentation, if applicable.

5.410.2.5.2 Systems operations training. [N] A program for training of the appropriate maintenance staff for each equipment type and/or system shall be developed and documented in the commissioning report and shall include the following:

1. System/equipment overview (what it is, what it does and with what other systems and/or equipment it interfaces).
2. Review and demonstration of servicing/preventive maintenance.
3. Review of the information in the systems manual.
4. Review of the record drawings on the system/ equipment.

5.410.2.6 Commissioning report. [N] A report of commissioning process activities undertaken through the design and construction phases of the building project shall be completed and provided to the owner or representative.

5.410.4 Testing and adjusting. New buildings less than 10,000 square feet. Testing and adjusting of systems shall be required for new buildings less than 10,000 square feet or new systems to serve an addition or alteration subject to Section 303.1.

5.410.4.1 (Reserved)

Note: For energy-related systems under the scope (Section 100) of the *California Energy Code*, including heating, ventilation, air conditioning (HVAC) systems and controls, indoor lighting system and controls, as well as water heating systems and controls, refer to *California Energy Code* Section 120.8 for commissioning requirements and Sections 120.5, 120.6, 130.4 and 140.9(b)3 for additional testing requirements of specific systems.

5.410.4.2 Systems. Develop a written plan of procedures for testing and adjusting systems. Systems to be included for testing and adjusting shall include, as applicable to the project:

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

5.410.4.3 Procedures. Perform testing and adjusting procedures in accordance with manufacturer's specifications and applicable standards on each system.

5.410.4.3.1 HVAC balancing. In addition to testing and adjusting, before a new space-conditioning system serving a building or space is operated for normal use, balance the system in accordance with the procedures defined by the Testing Adjusting and Balancing Bureau National Standards; the National Environmental Balancing Bureau Procedural Standards; Associated Air Balance Council National Standards or as approved by the enforcing agency.

5.410.4.4 Reporting. After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services.

5.410.4.5 Operation and maintenance (O & M) manual. Provide the building owner or representative with detailed operating and maintenance instructions and copies of guaranties/warranties for each system. O & M instructions shall be consistent with OSHA requirements in CCR, Title 8, Section 5142, and other related regulations.

5.410.4.5.1 Inspections and reports. Include a copy of all inspection verifications and reports required by the enforcing agency.

CALIFORNIA GREEN BUILDING STANDARDS CODE – MATRIX ADOPTION TABLE
CHAPTER 6 – REFERENCED ORGANIZATIONS AND STANDARDS

(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		X				X	X		X		X									
Adopt entire chapter as amended (amended sections listed below)																						
Adopt only those sections that are listed below																						
Chapter/Section																						

CHAPTER 6

REFERENCED ORGANIZATIONS AND STANDARDS

SECTION 601
GENERAL

601.1 This chapter lists the organizations and standards that are referenced in various sections of this document. The standards are listed according the promulgating agency of the standard.

ORGANIZATION	STANDARD	REFERENCED SECTION
ACI American Concrete Institute		
American Concrete Institute www.concrete.org	ACI CT-21	A5.405.5.2.1.1
AHAM Association of Home Appliance Manufacturers		
1119 19th Street NW, Suite 402 Washington, D.C. 20026-3627 http://www.aham.org	ANSI/AHAM DW-1-2010	202
AABC Associated Air Balance Council		
1518 K St NW Washington, DC 20005 www.aabc.com	National Standards, 1989	5.410.4.3.1 A5.410.5.3.1
ACCA Air Conditioning Contractors of America		
2800 Shirlington Road, Suite 300 Arlington, VA 22206 www.acca.org	ANSI/ACCA 2 Manual J–2016 ANSI/ACCA 1 Manual D–2016 ANSI/ACCA 3 Manual S–2014	4.507.2 4.507.2 4.507.2
ANSI American National Standards Institute		
Operations Office 25 West 43rd Street, Fourth Floor New York, NY 10036 www.ansi.org	ANSI/AHAM DW-1-2010 NSF/ANSI 140-2014 ANSI/ACCA 2 Manual J–2016 ANSI/ACCA 1 Manual D–2016 ANSI/ACCA 3 Manual S–2014	202 4.504.3 4.507.2 4.507.2 4.507.2
ASHRAE American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.		
1791 Tullie Circle, NE Atlanta, GA 30329 www.ashrae.org	52.1-92 52.2-2007 62.2 90.1	A5.504.1 202 A5.504.1 5.108.8

continued

ASME American Society of Mechanical Engineers		
Three Park Avenue New York, NY 10016-5990 www.asme.org	ASME A112.18.1 ASME A112.19 ASME A112.19.2 ASME A112.19.14	5.303.6 5.303.6 5.303.2 5.303.6
ASTM ASTM International		
100 Barr Harbor Drive West Conshohocken, PA 19428-2859 www.astm.org	ASTM C31/C31M-19 ASTM C33 ASTM C150 ASTM C595 ASTM C618 ASTM C989 ASTM C1157 ASTM C1240 ASTM C1371-98 ASTM C1549-09(2014) ASTM C1602 ASTM C1697 ASTM C1798/C1798M-19 ASTM C1866/C1866M-20 ASTM D7612-2021 ASTM E90 ASTM E408-02 ASTM E413 ASTM E1332 ASTM E1333-14 ASTM E1903-11 ASTM E1918-06(2015) ASTM E1918-16 (2016) ASTM E1980-11 ASTM E2921-2022	A5.405.5.3.4 A5.405.5.3.2 A5.405.5.1 A5.405.5.1 A5.405.5.2.1 A5.405.5.2.1 A5.405.5.1 A5.405.5.2.1 A5.106.11.2.2 A4.106.7, A5.106.11.1 A5.405.5.3.2.3 A5.405.5.2.1 A5.405.5.3.5 A5.405.5.2.1 A5.405.2.1 5.507.4 A5.10, 6.11.2.2 5.507.4 5.507.4 Tables 4.504.5, 5.504.4.5, 5.504.8.5 A5.103.2.1 A4.106.7 A5.106.11.1 A4.106.5.3, A5.106.11.2.3 5.409.2, A5.409.2
CSA Canadian Standards Association		
5060 Spectrum Way, Suite 100 Mississauga, Ontario, Canada L4W 5N6 www.csa.ca	CSA B125.1, CSA O121, CSA O151, CSA O153, CSA O325	4.504.5.1
EN European Standards		
European and International standards online store - European Standards www.en-standard.eu	EN 15804-2012 + A2:2019 EN 15978:2011	5.409.2, A5.409.2.1, A5.409.2.2 5.409.2, A5.409.2.1, A5.409.2.2
IAPMO International Association of Plumbing and Mechanical Officials		
4755 E. Philadelphia St. Ontario, CA 91761 iapmo@iapmo.org	IAPMO Z124.9	5.303.6
IESNA Illuminating Engineering Society of North America		
170 Wall St., Floor 17 New York, NY 10005-4001 http://www.ies.org	IES TM-15-11	5.10 6.6 A4.106.10
ISO International Organization for Standardization		
ISO Central Secretariat Chemin de Blandonnet 8 CP 401 - 1214 Vernier, Geneva, Switzerland https://www.iso.org	ISO 14040-2006+A1:2020 ISO 14044-2006+A1:2020 ISO 21930-2017 ISO 21931-2017	5.409.2, A5.409.2.1, A5.409.2.2 5.409.2, A5.409.2.1, A5.409.2.2 5.409.2, A5.409.2.1, A5.409.2.2 5.409.2, A5.409.2.1, A5.409.2.2
NEBB National Environmental Balancing Bureau		
8575 Grovemont Cir Gaithersburg, MD 20877 http://nebb.org/index.php	Procedural Standards, 1983	5.410.4.3.1 A5.410.5.3.1
NSF International		
789 Dixboro Rd. Ann Arbor, MI 48113-0140 http://www.nsf.org/	NSF/ANSI 140-2014	4.504.3

TABB Testing, Adjusting and Balancing Bureau		
601 N Fairfax St, Ste 250 Alexandria, VA 22314 http://www.tabbcertified.org/contact.html	National Standards, 2003	5.410.3.3.1 A5.410.5.3.1
US EPA United States Environmental Protection Agency		
Office of Wastewater Management (4204M) 1200 Pennsylvania Avenue Washington, D.C. 20460 http://www.epa.gov/watersense/	WaterSense	4.303.1

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																						
WS-3								X														
WS-4								X														
WS-5								X														
WS-9								X														
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	1.8 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 4-1, Chapter 4, 2022 *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- OR 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 4-1, Chapter 4, 2022 *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.

WORKSHEET (WS-3)
5.105.2 BUILDING REUSE

DOCUMENTATION OF COMPLIANCE OF EXISTING BUILDING REUSE

Area of Existing Building(s) _____ **SF**

Area of Aggregate Addition(s) (if applicable) _____ **SF**

	EXISTING TOTAL AREA (A)	RETAINED TOTAL AREA (B)	% OF RETAINED STRUCTURE (B)/(A)
Primary Structural Elements of Existing Building(s) (foundations; columns, beams, walls, and floors; and lateral elements)	_____ SF	_____ SF	_____ SF
Building Enclosure of Existing Building(s) (roof framing, wall framing and exterior finishes only)	_____ SF	_____ SF	_____ SF

Total % Reuse of Required Elements ≥ 45% _____ **%**

WORKSHEET (WS-4)
Section 5.409.2 WHOLE BUILDING LIFE CYCLE ASSESSMENT

Responsible Designer's Declaration Statement:
I attest that the Whole Building Life Cycle Analysis has been performed according to the requirements of Section 5.409.2 and has met the minimum 10 percent reduction in global warming potential as compared to a reference baseline building of similar size, function, complexity, type of construction, material specification, and location that meets the requirements of the *California Energy Code* currently in effect. Furthermore, I will ensure during construction that the material specifications will be reviewed for substantial conformance with the life cycle assessment indicated on the approved plans so at the close of construction the minimum 10 percent reduction in global warming potential is thereby secured.

Signature:	
Company:	Date:
Address:	License:
City/State/Zip:	Phone:

WORKSHEET (WS-5)
Section 5.409.3 PRODUCT GWP COMPLIANCE—PRESCRIPTIVE PATH

Responsible Designer's Declaration Statement:
I attest that prescriptive compliance has been performed according to the requirements of Section 5.409.3 and products have met the minimum 10 percent reduction in global warming potential as specified in Table 5.409.3. Furthermore, I will ensure during construction that the material specifications will be reviewed for substantial conformance with the global warming potential limits indicated on the approved plans so at the close of construction the minimum 10 percent reduction in global warming potential is thereby secured.

Signature:	
Company:	Date:
Address:	License:
City/State/Zip:	Phone:

WORKSHEET (WS-6) [BSC-CG]
Section A5.105.2 BUILDING REUSE
TIER 1 AND TIER 2

DOCUMENTATION OF COMPLIANCE OF EXISTING BUILDING REUSE

Area of Existing Building(s) _____ **SF**

	EXISTING TOTAL AREA (A)	RETAINED TOTAL AREA (B)	% OF RETAINED STRUCTURE (B)/(A)
Primary Structural Elements of Existing Building(s) (foundations; columns, beams, walls, and floors; and lateral elements)	_____ SF	_____ SF	_____ %
Building Enclosure of Existing Building(s) (roof framing, wall framing and exterior finishes only)	_____ SF	_____ SF	_____ %
Interior Nonstructural Elements (interior walls, doors, floor coverings, ceiling systems applicable for voluntary Tier 2 compliance)	_____ SF	_____ SF	_____ %

Total % Reuse of Required Elements _____ **%**

WORKSHEET (WS-7) [BSC-CG]
Section A5.409.2 WHOLE BUILDING LIFE CYCLE ASSESSMENT

Responsible Designer's Declaration Statement:
I attest that the Whole Building Life Cycle Analysis has been performed according to the requirements of Section A5.409.2 and has met the minimum 15 percent (Tier 1) or 20 percent (Tier 2) reduction in global warming potential as compared to a reference baseline building of similar size, function, complexity, type of construction, material specification, and location that meets the requirements of the *California Energy Code* currently in effect. Furthermore, I will ensure during construction that the material specifications will be reviewed for substantial conformance with the life cycle assessment indicated on the approved plans so at the close of construction the minimum reduction in global warming potential is thereby secured.

Signature:	
Company:	Date:
Address:	License:
City/State/Zip:	Phone:

WORKSHEET (WS-8) [BSC-CG]
Section A5.409.3 PRODUCT GWP COMPLIANCE—PRESCRIPTIVE PATH

Designer's Declaration Statement:
I attest that prescriptive compliance has been performed according to the requirements of Section A5.409.3 and products have met the maximum acceptable GWP value for the products listed in Table A5.409.3 for either Tier 1 or Tier 2. Furthermore, I will ensure during construction that any material specification substitution will be reviewed for substantial conformance with the requirements of Section A5.409.3 so at the close of construction the minimum 15 percent reduction in global warming potential is thereby secured.

Signature:	
Company:	Date:
Address:	License:
City/State/Zip:	Phone:

WORKSHEET (WS-9)
Section 5.409.2 and Section A5.409.2 WHOLE BUILDING LIFE CYCLE ASSESSMENT

CALGreen Whole Building LCA Reporting Template

LCA model run	*User input*	*Units*	**Overall scope included (select all that apply)**	
LCA Modeler (company) *[private]*			Structure (required)	☐ UE
Date of Model Run (mm/yyyy)			Enclosure (required)	☐ UE
Project Phase at Model Run			Interiors (optional)	☐ UE
Reference Study Period (years)			MEP (optional)	☐ LSE
Software and Version Used*			Site/Landscaping (optional)	☐ LSE
Biogenic Carbon Included* (y/n)			FFE (optional)	☐ LSE
Model Floor Area		m2		

Mandatory Scope Items

Please break out the following in per element emissions by life cycle in kgCO2e. Leave blank any sections that were not calculated separately from Whole Building GWP

	Upfront Carbon			Use Phase	End of Life	Total
	A1-3	A4	A5	B1-5	C1-4	
Baseline Structure GWP (kgCO2e):						
Baseline Enclosure GWP (kgCO2e):						
Baseline Whole Building GWP (kgCO2e):						
Proposed Structure GWP (kgCO2e):						
Proposed Enclosure GWP (kgCO2e):						
Proposed Whole Building GWP (kgCO2e):						

Percent Reduction	
Mandatory	
Tier 1	
Tier 2	

A1-A3*
(A1) Raw Material Supply, (A2) Transport to Factory, and (A3) Manufacturing

A4*
(A4) Transportation to site

A5*
(A5) Construction Installation or "on-site energy use". Leave blank if unkown

C1-C4*
(C1) Deconstruction/Demolition, (C2) Transport to Waste Processing/Disposal, (C3) Waste Processing, (C4) Disposal of Waste

B1-B5*
(B1) Use, (B2) Maintenance, (B3) Repair, (B4) Replacement, (B5) Refurbishment

D*
(D) Reuse-Recovery & Recycling Potential

Optional Items - Proposed Design ONLY

Please break out the following in per element emissions by life cycle in kgCO2e. Leave blank any sections that were not calculated separately from Whole Building GWP

	Upfront Carbon			Use Phase	End of Life	Total
	A1-3	A4	A5	B1-5	C1-4	
Interiors GWP (kgCO2e):						
MEP GWP (kgCO2e):						
Site/Landscaping GWP (kgCO2e):						
FF&E GWP (kgCO2e):						

Construction Waste Management (CWM) Plan

Note: This sample form may be used to assist in documenting compliance with the waste management plan.

Project Name: _____
Job #: _____
Project Manager: _____
Waste Hauling Company: _____
Contact Name: _____

All Subcontractors shall comply with the project's Construction Waste Management Plan.
All Subcontractor foremen shall sign the CWM Plan Acknowledgment Sheet.

Subcontractors who fail to comply with the Waste Management Plan will be subject to backcharges or withholding of payment, as deemed appropriate. For instance, Subcontractors who contaminate debris boxes that have been designated for a single material type will be subject to backcharge or withheld payment, as deemed appropriate.

1. The project's overall rate of waste diversion will be ____ %.
2. This project shall generate the least amount of waste possible by planning and ordering carefully, following all proper storage and handling procedures to reduce broken and damaged materials and reusing materials whenever possible. The majority of the waste that is generated on this jobsite will be diverted from the landfill and recycled for other use.
3. Spreadsheet 1, enclosed, identifies the waste materials that will be generated on this project, the diversion strategy for each waste type and the anticipated diversion rate.
4. Waste prevention and recycling activities will be discussed at the beginning of weekly subcontractor meetings. As each new subcontractor comes on-site, the WMP Coordinator will present him/her with a copy of the CWM Plan and provide a tour of the jobsite to identify materials to be salvaged and the procedures for handling jobsite debris. All Subcontractor foremen will acknowledge in writing that they have read and will abide by the CWM Plan. Subcontractor Acknowledgment Sheet enclosed. The CWM Plan will be posted at the jobsite trailer.
5. Salvage: Excess materials that cannot be used in the project, nor returned to the vendor, will be offered to site workers, the owner or donated to charity if feasible.
6. [HAULING COMPANY] will provide a commingled drop box at the jobsite for most of the construction waste. These commingled drop boxes will be taken to [Sorting Facility Name and Location]. The average diversion rate for commingled waste will be ____%. As site conditions permit, additional drop boxes will be used for particular phases of construction (e.g., concrete and wood waste) to ensure the highest waste diversion rate possible.
7. In the event that the waste diversion rate achievable via the strategy described in (6) above, is projected to be lower than what is required, then a strategy of source-separated waste diversion and/or waste stream reduction will be implemented. Source separated waste refers to jobsite waste that is not commingled but is instead allocated to a debris box designated for a single material type, such as clean wood or metal.

   Notes:

   1. Waste stream reduction refers to efforts taken by the builder to reduce the amount of waste generated by the project to below four (4) pounds per square foot of building area.
   2. When using waste stream reduction measures, the gross weight of the product is subtracted from a base weight of four (4) pounds per square foot of building area. This reduction is considered additional diversion and can be used in the waste reduction percentage calculations.
8. [HAULING COMPANY] will track and calculate the quantity (in tons) of all waste leaving the project and calculate the waste diversion rate for the project. [HAULING COMPANY] will provide Project Manager with an updated monthly report on gross weight hauled and the waste diversion rate being achieved on the project. [HAULING COMPANY's] monthly report will track separately the gross weights and diversion rates for commingled debris and for each source-separated waste stream leaving the project. In the event that [HAULING COMPANY] does not service any or all of the debris boxes on the project, the [HAULING COMPANY] will work with the responsible parties to track the material type and weight (in tons) in such debris boxes in order to determine waste diversion rates for these materials.
9. In the event that Subcontractors furnish their own debris boxes as part of their scope of work, such Subcontractors shall not be excluded from complying with the CWM Plan and will provide [HAULING COMPANY] weight and waste diversion data for their debris boxes.
10. In the event that site use constraints (such as limited space) restrict the number of debris boxes that can be used for collection of designated waste the project Superintendent will, as deemed appropriate, allocate specific areas onsite where individual material types are to be consolidated. These collection points are not to be contaminated with non-designated waste types.
11. Debris from jobsite office and meeting rooms will be collected by [DISPOSAL SERVICE COMPANY]. [DISPOSAL SERVICE COMPANY] will, at a minimum, recycle office paper, plastic, metal and cardboard.

Construction Waste Management (CWM) Worksheet

Note: This sample form may be used to assist in documenting compliance with the waste management plan.

Project Name: _____

Job Number: _____

Project Manager:_____

Waste Hauling Company: _____

Construction Waste Management (CWM) Plan

WASTE MATERIAL TYPE	DIVERSION METHOD:		PROJECTED DIVERSION RATE
	COMMINGLED AND SORTED OFF SITE	SOURCE SEPARATED ON SITE	
Asphalt			
Concrete			
Shotcrete			
Metals			
Wood			
Rigid insulation			
Fiberglass insulation			
Acoustic ceiling tile			
Gypsum drywall			
Carpet/carpet pad			
Plastic pipe			
Plastic buckets			
Plastic			
Hardiplank siding and boards			
Glass			
Cardboard			
Pallets			
Job office trash, paper, glass & plastic bottles, cans, plastic			
Alkaline and rechargeable batteries, toner cartridges and electronic devices			
Other:			
Other:			
Other:			
Other:			

Construction Waste Management (CWM) Acknowledgment

Note: This sample form may be used to assist in documenting compliance with the waste management plan.

Project Name: _____

Job Number: _____

Project Manager:_____

Waste Hauling Company: _____

CWM Plan Acknowledgment

The Foreman for each new Subcontractor that comes on site is to receive a copy of the Construction Waste Management Plan and complete this Acknowledgment Form.

I have read the Waste Management Plan for the project; I understand the goals of this plan and agree to follow the procedures described in this plan.

DATE	SUBCONTRACTOR COMPANY NAME	FOREMAN NAME	SIGNATURE

Title 23, Waters, California Code of Regulations

MWELO and supporting documents, including a water budget calculator, are available at: https://www.water.ca.gov/.

A4.106.2.3 Topsoil protection. Topsoil shall be protected or saved for reuse as specified in this section.

Tier 1. Displaced topsoil shall be stockpiled for reuse in a designated area and covered or protected from erosion.

Note: Protection from erosion includes covering with tarps, straw, mulch, chipped wood, vegetative cover or other means acceptable to the enforcing agency to protect the topsoil for later use.

Tier 2. The construction area shall be identified and delineated by fencing or flagging to limit construction activity to the construction area. Heavy equipment or vehicle traffic and material storage outside the construction area shall be limited to areas that are planned to be paved.

A4.106.3 Landscape design. Postconstruction landscape designs shall accomplish one or more of the following:

1. Areas disrupted during construction are restored to be consistent with native vegetation species and patterns.
2. Utilize at least 75 percent native California or drought tolerant plant and tree species appropriate for the climate zone region.

A4.106.4 Water permeable surfaces. Permeable paving is utilized for the parking, walking or patio surfaces in compliance with the following.

Tier 1. Not less than 20 percent of the total parking, walking or patio surfaces shall be permeable.

Tier 2. Not less than 30 percent of the total parking, walking or patio surfaces shall be permeable.

Exceptions:

1. The primary driveway, primary entry walkway and entry porch or landing shall not be included when calculating the area required to be a permeable surface.
2. Required accessible routes for persons with disabilities as required by *California Code of Regulations,* Title 24, Part 2, Chapter 11A and/or Chapter 11B as applicable.

A4.106.5 Cool roof for reduction of heat island effect. Roofing materials for Tier 1 and Tier 2 buildings shall comply with this section:

Exceptions:

1. Roof constructions that have a thermal mass over the roof membrane including areas of vegetated (green) roofs, weighing at least 25 pounds per square foot.
2. Roof areas covered by building integrated solar photovoltaic panels and building integrated solar thermal panels.

A4.106.5.1 Solar reflectance. Roofing materials shall have a minimum 3-year aged solar reflectance equal to or greater than the values specified in Tables A4.106.5.1(1) and A4.106.5.1(3) for Tier 1 and Tables A4.106.5.1(2) and A4.105.5.1(4) for Tier 2.

If CRRC testing for aged solar reflectance is not available for any roofing products, the aged value shall be determined using the Cool Roof Rating Council (CRRC) certified initial value using the equation $\rho_{aged} = [0.2 + \beta[\rho_{initial}-0.2]$, where $\rho_{initial}$ = the initial Solar Reflectance and soiling resistance, β, is listed by product type in Table A4.106.5.1.

Solar reflectance may also be certified by other supervisory entities approved by the Energy Commission pursuant to Title 24, Part 1, Section 10-113.

TABLE A4.106.5.1
VALUES OF SOILING RESISTANCE (ß) BY PRODUCT TYPE

PRODUCT TYPE	CCRC PRODUCT CATEGORY	ß
Field-applied coating	Field-applied coating	0.65
Other	Not a field-applied coating	0.70

A4.106.5.2 Thermal emittance. Roofing materials shall have a CRRC initial or aged thermal emittance equal to or greater than those specified in Tables A4.106.5.1(1) and A4.106.5.1(3) for Tier 1 and Tables A4.106.5.1(2) and A4.106.5.1(4) for Tier 2.

Thermal emittance may also be certified by other supervisory entities approved by the Energy Commission pursuant to Title 24, Part 1, *California Administrative Code.*

A4.106.5.3 Solar reflectance index alternative. Solar Reflectance Index (SRI) equal to or greater than the values specified in Tables A4.106.5.1(1) and A4.106.5.1(3) for Tier 1 and Tables A4.106.5.1(2) and A4.106.5.1(4) for Tier 2 may be used as an alternative to compliance with the 3-year aged solar reflectance values and thermal emittance.

SRI values used to comply with this section shall be calculated using the Solar Reflectance Index (SRI) Calculation Worksheet (SRI-WS) developed by the California Energy Commission or in compliance with ASTM E1980-01 as specified in the 2022 *California Energy Code.* Solar reflectance values used in the SRI-WS shall be based on the aged reflectance value of the roofing product or the equation in Section A4.106.5.1 if the CRRC certified aged solar reflectance are not available. Certified thermal emittance used in the SRI-WS may be either the initial value or the aged value listed by the CRRC.

Solar reflectance and thermal emittance may also be certified by other supervisory entities approved by the Commission pursuant to Title 24, Part 1, *California Administrative Code.*

Note: The Solar Reflectance Index Calculation Worksheet (SRI-WS) is available by contacting the Energy Standards Hotline at 1-800-772-3300, website at www.energy.ca.gov or by email at Title24@energy.ca.gov.

TABLE A4.106.5.1(1)
TIER 1 – LOW-RISE RESIDENTIAL

ROOF SLOPE	CLIMATE ZONE	MINIMUM 3-YEAR AGED SOLAR REFLECTANCE	THERMAL EMITTANCE	SRI
≤ 2:12	13 & 15	0.63	0.75	75
> 2:12	10 – 15	0.20	0.75	16

TABLE A4.106.5.1(2)
TIER 2 – LOW-RISE RESIDENTIAL

ROOF SLOPE	CLIMATE ZONE	MINIMUM 3-YEAR AGED SOLAR REFLECTANCE	THERMAL EMITTANCE	SRI
≤ 2:12	2, 4, 6 – 15	0.65	0.85	78
> 2:12	2, 4, 6 – 15	0.23	0.85	20

TABLE A4.106.5.1(3)
TIER 1 – HIGH-RISE RESIDENTIAL BUILDINGS, HOTELS AND MOTELS

ROOF SLOPE	CLIMATE ZONE	MINIMUM 3-YEAR AGED SOLAR REFLECTANCE	THERMAL EMITTANCE	SRI
≤ 2:12	9, 10, 11, 13, 14, 15	0.55	0.75	64
> 2:12	2 – 15	0.20	0.75	16

TABLE A4.106.5.1(4)
TIER 2 – HIGH-RISE RESIDENTIAL BUILDINGS, HOTELS AND MOTELS

ROOF SLOPE	CLIMATE ZONE	MINIMUM 3-YEAR AGED SOLAR REFLECTANCE	THERMAL EMITTANCE	SRI
≤ 2:12	2 – 15	0.65	0.75	78
> 2:12	2 – 15	0.23	0.75	20

A4.106.5.4 Verification. Inspection shall be conducted to ensure roofing materials meet cool roof aged solar reflectance and thermal emittance or SRI values.

A4.106.6 Vegetated roof. Install a vegetated roof for at least 50 percent of the roof area. Vegetated roofs shall comply with requirements for roof gardens and landscaped roofs in the *California Building Code*, Chapter 15 and Chapter 16.

A4.106.7 Reduction of heat island effect for nonroof areas. Reduce nonroof heat islands for 50 percent of sidewalks, patios, driveways or other paved areas by using one or more of the methods listed.

1. Trees or other plantings to provide shade and that mature within 15 years of planting. Trees should be native or adaptive to the region and climate zones and noninvasive; hardy and resistant to drought, insects and disease; easy to maintain (no frequent shedding of twigs, branches, unwanted fruit or seed pods); and suitable in mature size and environmental requirements for the site. Tree selection and placement should consider location and size of areas to be shaded, location of utilities, views from the structure, distance to sidewalks and foundations, overhangs onto adjacent properties and streets; other infrastructure and adjacent to landscaping. In addition, shading shall not cast a shadow, as specified, on any neighboring solar collectors pursuant to *Public Resources Code* Section 25981, et seq. (Solar Shade Control Act).
2. Use high albedo materials with an initial solar reflectance value of at least 0.30 as determined in accordance with American Society for Testing and Materials (ASTM) Standards E1918 or C1549.
3. Use open grid pavement system or pervious or permeable pavement system.
4. Locate 50 percent of parking underground or use multilevel parking.
5. Other methods of reducing heat island effects acceptable to the enforcing agency.

Note: Local agencies may have ordinances requiring mitigation of heat island effects through building or parking lot shading, tree plantings, landscaping, use of pervious pavements and other approved methods.

A4.106.8 Electric vehicle (EV) charging for new construction. New construction shall comply with Section A4.106.8.1 or A4.106.8.2, to facilitate the installation and use of EV ready spaces. Electric vehicle supply equipment (EVSE) shall comply with the *California Electrical Code*.

A4.106.8.1 New one- and two-family dwellings and townhouses with attached private garages.

Tier 1 and Tier 2. For each dwelling unit, a dedicated 208/240-volt branch circuit shall be installed in the raceway required by Section 4.106.4.1. The branch circuit and associated overcurrent protective device shall be rated at 40 amperes minimum. Other electrical components, including a receptacle or blank cover, related to this section shall be installed in accordance with the *California Electrical Code.*

A4.106.8.1.1 Identification. The service panel or subpanel circuit directory shall identify the overcurrent protective device designated for future EV charging purposes as "EV READY" in accordance with the *California Electrical Code.* The receptacle or blank cover shall be identified as "EV READY."

A4.106.8.2 New multifamily dwellings, hotels and motels. New multifamily dwellings, hotels and motels shall meet the following requirements.

A4.106.8.2.1 Multifamily dwellings, hotels and motels.

Tier 1. Tier 1 consists of Option A and Option B. One or both may be adopted as voluntary measures.

Option A for new multifamily dwellings, hotels and motels.

1. **EV Ready parking spaces with receptacles.**
   a. **Hotels and motels.** Fifty (50) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles.
   b. **Multifamily parking facilities.** Fifty (50) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. EV charging receptacles required by this section shall be located in at least one assigned parking space per dwelling unit where assigned parking is provided but need not exceed fifty (50) percent of the total number of assigned parking spaces provided on the site.

Exceptions:

1. Areas of parking facilities served by parking lifts, including but not limited to automated mechanical-access open parking garages as

defined in the *California Building Code*; or parking facilities otherwise incapable of supporting electric vehicle charging.

2. Hotels and motels may substitute Level 2 EV chargers for some or all of the required EV charging receptacles. Where Level 2 EV chargers are installed in place of low power Level 2 receptacles, at least fifty (50) percent of the installed EV chargers shall be equipped with J1772 connectors.

2. EV Ready parking spaces with EV chargers.

a. **Hotels and motels.** Fifteen (15) percent of the total number of parking spaces for hotels and motels shall be equipped with Level 2 EV chargers. At least fifty (50) percent of the required EV chargers shall be equipped with J1772 connectors.

b. **Multifamily parking facilities.** Fifteen (15) percent of the total number of parking spaces shall be equipped with Level 2 EV chargers. At least fifty (50) percent of the required EV chargers shall be equipped with J1772 connectors. Where common use parking or unassigned parking is provided, EV chargers shall be located in common use or unassigned parking areas and shall be available for use by all residents or guests.

Exception: Areas of parking facilities served by parking lifts, including but not limited to automated mechanical-access open parking garages as defined in the *California Building Code*; or parking facilities otherwise incapable of supporting electric vehicle charging.

An automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes, and installed EV chargers shall have a capacity of not less than 30 amperes.

Option B Multifamily dwellings.

1. **EV Ready parking spaces with receptacles.** For multifamily parking facilities, install low power Level 2 EV charging receptacles in at least one parking space for each dwelling unit with assigned parking.

Exceptions:

1. Areas of parking facilities served by parking lifts, including but not limited to automated mechanical-access open parking garages as defined in the *California Building Code*; or parking facilities otherwise incapable of supporting electric vehicle charging.
2. Where the number of parking spaces available for residents is less than the total number of dwelling units.

2. **EV Ready parking spaces with EV chargers.** Ten (10) percent, but not less than one, of common use parking spaces shall be equipped with Level 2 EV chargers for use by all residents or guests. At least fifty (50) percent of the required EV chargers shall be equipped with J1772 connectors.

Exceptions:

1. Areas of parking facilities served by parking lifts, including but not limited to automated mechanical-access open parking garages as defined in the *California Building Code*; or parking facilities otherwise incapable of supporting electric vehicle charging.
2. Where no common use parking spaces are provided.

An automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes, and installed EV chargers shall have a capacity of not less than 30 amperes.

Tier 2. Tier 2 consists of Option A and Option B. One or both may be adopted as voluntary measures.

Option A for new multifamily dwellings, hotels and motels.

1. **EV Ready parking spaces with receptacles.**

a. **Hotels and motels.** Fifty-five (55) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles.

b. **Multifamily parking facilities.** Fifty-five (55) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. EV charging receptacles required by this section shall be located in at least one assigned parking space per dwelling unit where assigned parking is provided, but need not exceed fifty-five (55) percent of the total number of assigned parking spaces provided on the site.

Exceptions:

1. Areas of parking facilities served by parking lifts, including but not limited to automated mechanical-access open parking garages as defined in the *California Building Code*; or parking facilities otherwise incapable of supporting electric vehicle charging.

2. Hotels and motels may install Level 2 EV chargers instead of all or portions of the required percentage of low power Level 2 receptacles for EV charging. Where Level 2 EV chargers are installed in place of low power Level 2 receptacles, at least fifty (50) percent of the installed EV chargers shall be equipped with J1772 connectors.

2. **EV Ready parking spaces with EV chargers.**

   a. **Hotels and motels.** Twenty (20) percent of the total number of parking spaces for hotels and motels shall be equipped with Level 2 EV chargers. At least fifty (50) percent of the required EV chargers shall be equipped with J1772 connectors.

   b. **Multifamily parking facilities.** Twenty (20) percent of the total number of parking spaces shall be equipped with Level 2 EV chargers. At least fifty (50) percent of the required EV chargers shall be equipped with J1772 connectors. Where common use parking or unassigned parking is provided, EV chargers shall be located in the common use or unassigned parking areas and shall be available for use by all residents or guests.

   Exceptions:

   1. Areas of parking facilities served by parking lifts, including but not limited to automated mechanical-access open parking garages as defined in the *California Building Code*; or parking facilities otherwise incapable of supporting electric vehicle charging.
   2. Where no common use parking spaces are provided.

An automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes, and installed EV chargers shall have a capacity of not less than 30 amperes.

Option B Multifamily developments.

1. **EV Ready parking spaces with receptacles.** Install one low power Level 2 EV charging receptacle for each parking space available for use by residents.

   Exception: Areas of parking facilities served by parking lifts, including but not limited to automated mechanical-access open parking garages as defined in the *California Building Code*; or parking facilities otherwise incapable of supporting electric vehicle charging.

2. **EV Ready parking spaces with EV chargers.** Twenty (20) percent of parking available for nonresidents or guests shall be equipped with Level 2 EV chargers. At least fifty (50) percent of the required EV chargers shall be equipped with J1772 connectors. Where common use parking is provided, EV chargers shall be located in the common use parking area and shall be available for use by all residents or guests.

   Exceptions:

   1. Areas of parking facilities served by parking lifts, including but not limited to automated mechanical-access open parking garages as defined in the *California Building Code*; or parking facilities otherwise incapable of supporting electric vehicle charging.
   2. Where no common use parking spaces are provided.

An automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes, and installed EV chargers shall have a capacity of not less than 30 amperes.

EV Chargers for projects with 20 or more dwelling units, sleeping units or guest rooms. Ten (10) percent of the total number of parking spaces shall be equipped with Level 2 EVSE. Where common use parking is provided, at least one EV charger shall be located in the common use parking area and shall be available for use by all residents or guests.

Tier 2.

EV Ready. Forty (40) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit.

Exception: Areas of parking facilities served by parking lifts.

EV Chargers for projects with 20 or more dwelling units, sleeping units or guest rooms. Fifteen (15) percent of the total number of parking spaces shall be equipped with Level 2 EVSE. Where common use parking is provided, at least one EV charger shall be located in the common use parking area and shall be available for use by all residents or guests.

A4.106.8.2.2 Technical requirements. The EV spaces required by Section A4.106.8.2 shall be designed and constructed in accordance with Sections 4.106.4.2, 4.106.4.2.2.1.1, 4.106.4.2.2.1.2, and 4.106.4.2.5.

A4.106.9 Bicycle parking. Comply with Sections A4.106.9.1 through A4.106.9.3 or meet a local ordinance, whichever is more stringent.

Exception: Number of bicycle parking spaces shall be permitted to be reduced, as approved by the enforcing agency, due to building site characteristics, including but not limited to, isolation from other development.

A4.106.9.1 Short-term bicycle parking. Provide permanently anchored bicycle racks within 100 feet of the visitor's entrance, readily visible to passers-by, for 5 percent of visitor motorized vehicle parking capacity with a minimum of one two-bike capacity rack.

A4.106.9.2 Long-term bicycle parking for multifamily buildings. Provide on-site bicycle parking for at least one bicycle per every two dwelling units. Acceptable parking facilities shall be conveniently reached from the street and may include, but not be limited to:

1. Covered, lockable enclosures with permanently anchored racks for bicycles.
2. Lockable bicycle rooms with permanently anchored racks.
3. Lockable, permanently anchored bicycle lockers.

A4.106.9.3 Long-term bicycle parking for hotel and motel buildings. Provide one on-site bicycle parking space for every 25,000 square feet, but not less than two. Acceptable parking facilities shall be conveniently reached from the street and may include, but not be limited to:

1. Covered, lockable enclosures with permanently anchored racks for bicycles.
2. Lockable bicycle rooms with permanently anchored racks.
3. Lockable, permanently anchored bicycle lockers.

SECTION A4.107
(Reserved)

SECTION A4.108
INNOVATIVE CONCEPTS AND LOCAL ENVIRONMENTAL CONDITIONS

A4.108.1 Innovative concepts and local environmental conditions. 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. This code does not limit the authority of city, county, or city and county government to make necessary changes to the provisions contained in this code pursuant to Section 101.7.1.

APPENDIX A4

RESIDENTIAL VOLUNTARY MEASURES

Division A4.2 – ENERGY EFFICIENCY

SECTION A4.201
GENERAL

A4.201.1 Scope. For the purposes of mandatory energy efficiency standards in the *California Building Standards Code* (Title 24), the California Energy Commission will continue to adopt mandatory standards in the *California Energy Code* (Title 24, Part 6). It is the intent of these voluntary provisions to encourage local jurisdictions through codification to achieve exemplary performance in the area of building energy efficiency. Local jurisdictions adopting these voluntary provisions as mandatory local energy efficiency standards shall submit the required application and receive the required approval of the California Energy Commission in compliance with Title 24, Part 1, Section 10-106 prior to enforcement. Once the required filing has been verified and finding has been made by the Energy Commission, local jurisdictions shall file an ordinance expressly marking the local modification along with findings and receive the required acceptance from the California Building Standards Commission in compliance with Section 101.7 of this code, prior to enforcement. (Title 24, Part 1, Section 10-106 is available at http://www.energy.ca.gov/title24/2022standards/)

SECTION A4.202
DEFINITIONS

A4.202.1 Definitions. The following terms are defined in Chapter 2.

ENERGY BUDGET.

ENERGY DESIGN RATING (EDR).

ENERGY DESIGN RATING, ENERGY EFFICIENCY.

ENERGY DESIGN RATING, SOLAR ELECTRIC GENERATION AND DEMAND FLEXIBILITY.

ENERGY DESIGN RATING, TOTAL

TIME DEPENDENT VALUATION (TDV) ENERGY.

SECTION A4.203
PERFORMANCE APPROACH FOR NEWLY CONSTRUCTED BUILDINGS

A4.203.1 Energy efficiency. Newly constructed low-rise residential buildings shall comply with Sections A4.203.1.1 through A4.203.1.3.

A4.203.1.1 Hourly Source Energy Design Rating (EDR1). EDR1 rating for the building's Proposed Design shall be computed by Compliance Software certified by the Energy Commission as specified in Title 24, Part 6, Section 100.1 and 150.1(b), and shall reduce the EDR1 required in the Compliance Software for minimum performance-based compliance with the *California Energy Code* by the compliance margin specified in Table A4.203.1.1. The rating shall be included in the Certificate of Compliance documentation.

TABLE A4.203.1.1
RECOMMENDED EDR1 MARGINS BY CLIMATE ZONES

CALIFORNIA ENERGY CODE CLIMATE ZONE	EDR1 COMPLIANCE MARGIN
1	4.3
2	4.4
3	6.0
4	5.8
5	5.8
6	3.5
7	2.9
8	2.1
9	3.6
10	6.5
11	4.3
12	4.4
13	4.9
14	5.8
15	1.8
16	4.3

Note: Community shared options complying with Title 24, Part 1, Section 10-115 may be used to achieve EDR1 targets.

A4.203.1.2 Prerequisite options. In addition, a minimum of TWO of the efficiency measures specified in Sections A4.203.1.2.1 through A4.203.1.2.8 will be required to be met.

A4.203.1.2.1 Roof deck insulation, or ducts in conditioned space. Meet one of the three options for the location of ducts and air handlers as well as insulation *R*-values and installation of a radiant barrier as specified in Title 24, Part 6, Section 150.1(c)9A or B:

1. Below roof deck insulation with a minimum *R*-value of 19; or,
2. Continuous above deck insulation with a minimum R-8 and with an air space present between the roofing and the roof deck; or,
3. All ducts and air handlers in conditioned space as specified in the Title 24, Part 6, Reference Appendix RA3.1.

A4.203.1.2.2 High performance walls. Meet the climate zone dependent *U*-factor or insulation *R*-value for either 2x6 or 2x4 framing as specified in Title 24, Part 6, Section 150.1(c)1B: maximum *U*-factor of 0.048.

A4.203.1.2.3 Compact hot water distribution system. Meet the requirements for installation of Compact Hot Water Distribution Systems specified in the Title 24, Part 6, Reference Appendix RA3.6.5.

A4.203.1.2.4 Drain water heat recovery. Meet the requirements for installation of Drain Water Heat Recovery specified in Title 24, Part 6, Reference Appendix RA4.4.21.

A4.203.1.2.5 High performance vertical fenestration. Meet the climate zone dependent *U*-factor and Solar Heat Gain Co-efficient (SHGC) specified in Title 24, Part 6, Section 110.6, Maximum *U*-factor 0.21, SHGC 0.23.

A4.203.1.2.6 Heat pump water heater demand management. For buildings with heat pump water heating, meet the requirements for installation of controls specified by Title 24, Part 6, Reference Appendix JA13.3.3.

A4.203.1.2.7 Battery storage system controls. For buildings with battery storage systems, meet the requirements for installation of controls specified by Title 24, Part 6, Reference Appendix JA12 for either the Time-of-Use Control or Advanced Demand Flexibility Control option.

A4.203.1.2.8 Heat pump space and water heating. Meet the space heating and water heating loads using heat pump equipment.

A4.203.1.3 Consultation with local electric service provider. Local jurisdictions considering adoption of reduced EDR targets based on using solar photovoltaic (PV) systems larger than required by the *California Energy Code* shall consult with the local electric service provider to ensure that PV system sizing required to comply with the EDR targets will be acceptable to the local electric service provider. The local jurisdiction shall not require onsite PV systems that are larger than the local electric service provider will allow to be interconnected.

Note: Authority: Sections 25213, 25218, 25218.5, 25402 and 25402.1, Public Resources Code. Reference: Sections 25402, 25402.1, 25402.4 and 25402.8, Public Resources Code.

APPENDIX A4

RESIDENTIAL VOLUNTARY MEASURES

Division A4.3 – WATER EFFICIENCY AND CONSERVATION

SECTION A4.301
GENERAL
(Reserved)

SECTION A4.302
DEFINITIONS
(Reserved)

SECTION A4.303
INDOOR WATER USE

A4.303.1 Kitchen faucets. The maximum flow rate of kitchen faucets shall not exceed 1.5 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.5 gallons per minute at 60 psi.

Note: Where complying faucets are unavailable, aerators or other means may be used to achieve reduction.

A4.303.2 Alternate water sources for nonpotable applications. Alternate nonpotable water sources are used for indoor potable water reduction. Alternate nonpotable water sources shall be installed in accordance with the *California Plumbing Code.*

A4.303.3 Appliances. Install at least one qualified ENERGY STAR dishwasher or clothes washer.

Note: See Section A5.303.3 for nonresidential dishwashers and clothes washers.

A4.303.4 Nonwater urinals and waterless toilets. Nonwater urinals or composting toilets are installed.

Where approved, nonwater urinals with drain cleansing action (formerly hybrid urinals), as defined in Chapter 2, shall be considered nonwater urinals.

A4.303.5 Hot water recirculation systems. One- and two-family dwellings shall be equipped with a demand hot water recirculation system, as defined in Chapter 2. The demand hot water recirculation system shall be installed in accordance with the *California Plumbing Code, California Energy Code* and the manufacturer's installation instructions.

SECTION A4.304
OUTDOOR WATER USE

A4.304.1 Rainwater catchment systems. An approved rainwater catchment system is designed and installed to use rainwater generated by at least 65 percent of the available roof area. Rainwater catchment systems shall be designed and installed in accordance with the *California Plumbing Code.*

A4.304.2 Potable water elimination. When landscaping is provided and as allowed by local ordinance, a water efficient landscape irrigation design that eliminates the use of potable water beyond the initial requirements for plant installation and establishment shall be provided. Methods used to accomplish the requirements of this section shall comply with the requirements of the *California Building Standards Code* and shall include, but not be limited to, the following:

1. Use of captured rainwater.
2. Use of recycled water.
3. Water treated for irrigation purposes and conveyed by a water district or public entity.
4. Use of graywater.
5. Use of drought tolerant plants.

A4.304.3 Landscape water meters. For new water service connections, landscaped irrigated areas less than 5,000 square feet shall be provided with separate submeters or metering devices for outdoor potable water use.

SECTION A4.305
WATER REUSE SYSTEMS

A4.305.1 Graywater. Alternative plumbing piping is installed to permit the discharge from the clothes washer or other fixtures to be used for an irrigation system in compliance with the *California Plumbing Code.*

A4.305.2 Recycled water piping. Based on projected availability, dual water piping is installed for future use of recycled water at the following locations:

1. Interior piping for the use of recycled water is installed to serve all water closets, urinals and floor drains.
2. Exterior piping is installed to transport recycled water from the point of connection to the structure. Recycled water systems shall be designed and installed in accordance with the *California Plumbing Code.*

A4.305.3 Recycled water for landscape irrigation. Recycled water is used for landscape irrigation.

SECTION A4.306
INNOVATIVE CONCEPTS AND LOCAL ENVIRONMENTAL CONDITIONS

A4.306.1 Innovative concepts and local environmental conditions. 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. This code does not limit the authority of city, county, or city and county government to make necessary changes to the provisions contained in this code pursuant to Section 101.7.1.

DIVISION A4.6 – TIER 1 AND TIER 2—continued

SECTION A4.602
RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
		Prerequisites and electives[1]		Enforcing Agency	Installer or Designer	Third party
	Mandatory	Tier 1	Tier 2	☐ All	☐ All	☐ All
PLANNING AND DESIGN						
Site Selection						
A4.103.1 A site which complies with at least one of the following characteristics is selected: 1. An infill site is selected. 2. A greyfield site is selected. 3. An EPA-recognized Brownfield site is selected.		☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐
A4.103.2 Facilitate community connectivity by one of the following methods: 1. Locate project within a $^1/_4$-mile true walking distance of at least 4 basic services; 2. Locate project within $^1/_2$-mile true walking distance of at least 7 basic services; 3. Other methods increasing access to additional resources.		☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐
Site Preservation						
A4.104.1 An individual with oversight responsibility for the project has participated in an educational program promoting environmentally friendly design or development and has provided training or instruction to appropriate entities.		☐	☐	☐	☐	☐
Deconstruction and Reuse of Existing Materials						
A4.105.2 Existing buildings are disassembled for reuse or recycling of building materials. The proposed structure utilizes at least one of the following materials which can be easily reused: 1. Light fixtures 2. Plumbing fixtures 3. Doors and trim 4. Masonry 5. Electrical devices 6. Appliances 7. Foundations or portions of foundations		☐	☐	☐	☐	☐
Site Development						
4.106.2 A plan is developed and implemented to manage storm water drainage during construction.	☒			☐	☐	☐
4.106.3 Construction plans shall indicate how site grading or a drainage system will manage all surface water flows to keep water from entering buildings.	☒			☐	☐	☐
4.106.4.1 Provide capability for electric vehicle charging for one- and two-family dwellings; townhouses with attached private garages in accordance with Section 4.106.4.1.	☒	☐	☐	☐	☐	☐
4.106.4.2 Provide capability for electric vehicle charging for multifamily dwellings and hotels/motels in accordance with Section 4.106.4.2.2.	☒	☐	☐	☐	☐	☐
4.106.4.3 Provide capability for electric vehicle charging for existing parking lots or new parking lots for existing residential buildings in accordance with Section 4.106.4.3, as applicable.	☒	☐	☐	☐	☐	☐
A4.106.1 Reserved		☐	☐	☐	☐	☐

continued

SECTION A4.602
RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST—continued

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
		Prerequisites and electives[1]		Enforcing Agency	Installer or Designer	Third party
	Mandatory	Tier 1	Tier 2	☐ All	☐ All	☐ All
A4.106.2.1 Soil analysis is performed by a licensed design professional and the findings utilized in the structural design of the building.		☐	☐	☐	☐	☐
A4.106.2.2 Soil disturbance and erosion are minimized by at least one of the following:						
1. Natural drainage patterns are evaluated and erosion controls are implemented to minimize erosion during construction and after occupancy.		☐	☐	☐	☐	☐
2. Site access is accomplished by minimizing the amount of cut and fill needed to install access roads and driveways.		☐	☐	☐	☐	☐
3. Underground construction activities are coordinated to utilize the same trench, minimize the amount of time the disturbed soil is exposed and the soil is replaced using accepted compaction methods.		☐	☐	☐	☐	☐
A4.106.2.3 Topsoil shall be protected or saved for reuse as specified in this section.				☐	☐	☐
Tier 1. Displaced topsoil shall be stockpiled for reuse in a designated area and covered or protected from erosion.		☒[2]	☒[2]			
Tier 2. The construction area shall be identified and delineated by fencing or flagging to limit construction activity to the construction area.			☒[2]			
A4.106.3 Postconstruction landscape designs accomplish one or more of the following:						
1. Areas disrupted during construction are restored to be consistent with native vegetation species and patterns.		☐	☐	☐	☐	☐
2. Utilize at least 75 percent native California or drought tolerant plant and tree species appropriate for the climate zone region.		☐	☐	☐	☐	☐
A4.106.4 Permeable paving is utilized for the parking, walking or patio surfaces in compliance with the following:						
Tier 1. Not less than 20 percent of the total parking, walking or patio surfaces shall be permeable.		☒[2]		☐	☐	☐
Tier 2. Not less than 30 percent of the total parking, walking or patio surfaces shall be permeable.			☒[2]	☐	☐	☐
A4.106.5 Roofing materials shall have a minimum 3-year aged solar reflectance and thermal emittance or a minimum Solar Reflectance Index (SRI) equal to or greater than the values specified in the applicable tables.						
Low-rise Residential						
Tier 1 roof covering shall meet or exceed the values contained in Table A4.106.5.1(1).		☒[2]		☐	☐	☐
Tier 2 roof covering shall meet or exceed the values contained in Table A4.106.5.1(2).			☒[2]	☐	☐	☐
High-rise Residential, Hotels and Motels						
Tier 1 roof covering shall meet or exceed the values contained in Table A4.106.5.1(3).		☒[2]		☐	☐	☐
Tier 2 roof covering shall meet or exceed the values contained in Table A4.106.5.1(4).			☒[2]	☐	☐	☐

continued

SECTION A4.602
RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST—continued

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
		Prerequisites and electives[1]		Enforcing Agency	Installer or Designer	Third party
	Mandatory	Tier 1	Tier 2	☐ All	☐ All	☐ All
A4.106.6 Install a vegetated roof for at least 50 percent of the roof area. Vegetated roofs shall comply with requirements for roof gardens and landscaped roofs in the *California Building Code*, Chapters 15 and 16.		☐	☐	☐	☐	☐
A4.106.7 Reduce nonroof heat islands for 50 percent of sidewalks, patios, driveways or other paved areas by using one or more of the methods listed.		☐	☐	☐	☐	☐
A4.106.8.1 Tier 1 and Tier 2 for one- and two-family dwellings and townhouses with attached private garages. Install a dedicated 208/240-volt branch circuit, including an overcurrent protective device rated at 40 amperes minimum per dwelling unit.		☒[2]	☒[2]	☐	☐	☐
A4.106.8.2.1 Provide capability for electric vehicle charging in new multifamily dwellings, hotels and motels, as specified. **Tier 1. Choose Option A and/or Option B** **Option A.** New multifamily dwellings and hotels and motels. 50 percent of the total number of parking spaces shall be electric vehicle (EV ready) with low power Level 2 EV charging receptacles. 15 percent of the total number of parking spaces shall be equipped with Level 2 EVSE. **Option B.** New multifamily dwellings. Install one low power Level 2 EV charging receptacle for every dwelling unit's parking space. Provide receptacles with a dedicated branch circuit connected to a dwelling unit's electrical panel, unless determined as infeasible. Install EV chargers for at least 10 percent of common use parking spaces. **Tier 2. Choose Option A and/or Option B** **Option A.** New multifamily dwellings and hotels and motels. 55 percent of the total number of parking spaces shall be electric vehicle (EV ready) with low power Level 2 EV charging receptacles. 20 percent of the total number of parking spaces shall be equipped with Level 2 EVSE. **Option B.** New multifamily dwellings. Install a minimum of one low power Level 2 EV charging receptacle for each parking space available for residents. Provide receptacles with a dedicated branch circuit connected to a dwelling unit's electrical panel, unless determined as infeasible. Install EV chargers for at least 20 percent of common use parking spaces.		☒[2] ☒[2]	☒[2]	☐ ☐	☐ ☐	☐ ☐
A4.106.9 Provide bicycle parking facilities as noted below or meet a local ordinance, whichever is more stringent. Number of bicycle parking spaces may be reduced, as approved by the enforcing agency, due to building site characteristics, including but not limited to, isolation from other development. 1. Provide short-term bicycle parking, per Section A4.106.9.1. 2. Provide long-term bicycle parking for multifamily buildings, per Section A4.106.9.2. 3. Provide long-term bicycle parking for hotel and motel buildings, per Section A4.106.9.3.		☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐

continued

SECTION A4.602
RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST—continued

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
		Prerequisites and electives[1]		Enforcing Agency	Installer or Designer	Third party
	Mandatory	Tier 1	Tier 2	☐ All	☐ All	☐ All
Innovative Concepts and Local Environmental Conditions						
A4.108.1 Items in this section are necessary to address innovative concepts or local environmental conditions.						
Item 1	☐	☐	☐	☐	☐	☐
Item 2	☐	☐	☐	☐	☐	☐
Item 3	☐	☐	☐	☐	☐	☐
ENERGY EFFICIENCY						
General						
4.201.1 Building meets or exceeds the requirements of the *California Building Energy Efficiency Standards*[3].	☒	☒[2]	☒[2]	☐	☐	☐
Performance Approach for Newly Constructed Buildings						
A4.203.1.1 Hourly Source Energy Rating (EDR1). EDR1 ratings for building design shall be computed by Energy Compliant software and shall reduce the EDR1 required by the software by the compliance margins specified in Table A4.203.1.1.		☒[2]	☒[2]	☐	☐	☐
A4.203.1.2 Prerequisite options. In addition, a minimum of two of the efficiency measures specified in Sections A4.203.1.2.1 through A4.203.1.2.8 will be required to be met. ・ Roof Deck Insulation or Ducts in Conditioned Space. ・ High-performance Walls. ・ Compact Hot Water Distribution System. ・ Drain Water Heat Recovery. ・ High Performance Vertical Fenestration. ・ Heat Pump Water Heater Demand Management. ・ Battery Storage System Controls. ・ Heat Pump Space and Water Heating.		☒[2]	☒[2]	☐	☐	☐
A4.203.1.3 Consultation with local electric service provider. Local jurisdictions considering adoption of reduced EDR targets based on using solar photovoltaic (PV) systems larger than required by the *California Energy Code* shall consult with the local electric service provider to ensure that that PV system sizing required to comply with the EDR targets will be acceptable to the local electric service provider.		☒[2]	☒[2]	☐	☐	☐

continued

SECTION A4.602
RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST—continued

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
		Prerequisites and electives[1]		Enforcing Agency	Installer or Designer	Third party
	Mandatory	Tier 1	Tier 2	☐ All	☐ All	☐ All
4.504.3 Carpet and carpet systems shall be compliant with VOC limits.	☒			☐	☐	☐
4.504.4 80 percent of floor area receiving resilient flooring shall comply with specified VOC criteria.	☒			☐	☐	☐
4.504.5 Particleboard, medium density fiberboard (MDF) and hardwood plywood used in interior or exterior finish systems shall comply with low formaldehyde emission standards.	☒			☐	☐	☐
A4.504.1 Use composite wood products made with either California Air Resources Board approved no-added formaldehyde (NAF) resins or ultra-low emitting formaldehyde (ULEF) resins.		☐	☐	☐	☐	☐
A4.504.2 Install VOC compliant resilient flooring systems. **Tier 1.** At least 90 percent of the resilient flooring installed shall comply. **Tier 2.** 100 percent of the resilient flooring installed shall comply.		☒[2]	☒[2]	☐	☐	☐
A4.504.3 Thermal insulation installed in the building shall meet the following requirements: **Tier 1.** Install thermal insulation in compliance with VOC limits. **Tier 2.** Install insulation which contains no-added formaldehyde (NAF) and is in compliance with Tier 1.		☒[2]	☒[2]	☐	☐	☐
Interior Moisture Control						
4.505.2 Vapor retarder and capillary break is installed at slab-on-grade foundations.	☒			☐	☐	☐
4.505.3 Moisture content of building materials used in wall and floor framing is checked before enclosure.	☒			☐	☐	☐
Indoor Air Quality and Exhaust						
4.506.1 Each bathroom shall be provided with the following: 1. ENERGY STAR fans ducted to terminate outside the building. 2. Fans must be controlled by a humidity control (separate or built-in); OR functioning as a component of a whole-house ventilation system. 3. Humidity controls with manual or automatic means of adjustment, capable of adjustment between a relative humidity range of ≤ 50 percent to a maximum of 80 percent.	☒			☐	☐	☐
A4.506.1 Reserved.		☐	☐	☐	☐	☐
A4.506.2 [HR] Provide filters on return air openings rated MERV 8 or higher during construction when it is necessary to use HVAC equipment.		☐	☐	☐	☐	☐
A4.506.3 Direct-vent appliances shall be used when equipment is located in conditioned space; or the equipment must be installed in an isolated mechanical room.		☐	☐	☐	☐	☐

continued

SECTION A4.602
RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST—continued

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
		Prerequisites and electives[1]		Enforcing Agency	Installer or Designer	Third party
	Mandatory	Tier 1	Tier 2	☐ All	☐ All	☐ All
Environmental Comfort						
4.507.2 Duct systems are sized, designed and equipment is selected using the following methods: 1. Establish heat loss and heat gain values according to ANSI/ ACCA 2 Manual J-2016 or equivalent. 2. Size duct systems according to ANSI/ACCA 1 Manual D-2016 or equivalent. 3. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S-2014 or equivalent.	☒			☐	☐	☐
Outdoor Air Quality **Reserved**						
Innovative Concepts and Local Environmental Conditions						
A4.509.1 Items in this section are necessary to address innovative concepts or local environmental conditions.						
Item 1		☐	☐	☐	☐	☐
Item 2		☐	☐	☐	☐	☐
Item 3		☐	☐	☐	☐	☐
Installer and Special Inspector Qualifications						
Qualifications						
702.1 HVAC system installers are trained and certified in the proper installation of HVAC systems.	☒			☐	☐	☐
702.2 Special inspectors employed by the owner or owner's agent must be qualified and able to demonstrate competence in the discipline they are inspecting to the enforcing agency.						
Verifications						
703.1 Verification of compliance with this code may include construction documents, plans, specifications builder or installer certification, inspection reports or other methods acceptable to the enforcing agency which show substantial conformance.	☒			☐	☐	☐

1. Green building measures listed in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7.
2. Required prerequisite for this Tier.
3. These measures are currently required elsewhere in statute or in regulation.

CALIFORNIA GREEN BUILDING STANDARDS CODE – MATRIX ADOPTION TABLE
APPENDIX A5 – NONRESIDENTIAL VOLUNTARY MEASURES
DIVISION A5.1 – PLANNING AND DESIGN

(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																						
Chapter/Section																						

APPENDIX A5

NONRESIDENTIAL VOLUNTARY MEASURES

The measures contained in this appendix are not mandatory unless adopted by a city, county, or city and county as specified in Section 101.7 and provide additional measures that designers, builders and property owners may wish to consider during the planning, design and construction process.

Division A5.1 – PLANNING AND DESIGN

PREFACE

Given that land use and planning are largely regulated locally, cities, counties and cities and counties should consider reducing greenhouse gas emissions associated with development through local land-use practices in conjunction with enforcing the provisions of this code. Specific land use strategies a city, county or city and county may wish to consider include but are not limited to the following:

Site selection. Develop sites for buildings, hardscape, roads or parking areas consistent with the local general plan and regional transportation plan pursuant to SB 375 (Stats. 2008, Ch. 728).

Regional sustainable communities strategy. Site selection and building design and use shall conform the project with the prevailing regional sustainable communities strategy or alternative planning strategy, whichever meets the greenhouse gas target established by the California Air Resources Board pursuant to SB375 (Stats. 2008, Ch. 728), including the general location of uses, residential densities and building intensities.

Transit priority projects. To qualify as a transit priority project, the project shall meet three criteria:

(1) (a) contain at least 50 percent residential use, based on total building square footage and, if the project contains between 26 and 50 percent nonresidential uses, a floor area ratio of not less than 0.75; (b) provide a minimum net density of at least 20 dwelling units per acre; and (c) be within one-half mile of a major transit stop or high-quality transit corridor included in a regional transportation plan as described in Section 21155 of Stats. 2008, Ch. 728;

(2) be consistent with the prevailing sustainable communities strategy or alternative planning strategy, whichever meets the greenhouse gas target established by the California Air Resources Board, including the general location of uses, residential densities and building intensities; and

(3) have all necessary entitlements required by the applicable local government.

Note: For additional information, see Government Code Sections 65080, 65080.1 and 65400 and Public Resources Code Sections 21061.3 and 21155.

SECTION A5.101
GENERAL

A5.101.1 Scope. The provisions of this chapter outline planning, design and development methods that include environmentally responsible site selection, building design, building siting and development to protect, restore and enhance the environmental quality of the site and respect the integrity of adjacent properties.

SECTION A5.102
DEFINITIONS

A5.102.1 Definitions. The following terms are defined in Chapter 2.

2 X 2 RULE.

ADHESIVE MARKER.

BIORETENTION.

BROWNFIELD SITE.

CAV.

DEVELOPMENT FOOTPRINT.

FILM.

FLOOR AREA RATIO.

GLASS, ACID ETCHED.

GLASS, FRITTED.

GLASS SURFACE.

GREENFIELDS.

GREYFIELD SITE.

INFILL SITE.

LOW-EMITTING AND FUEL EFFICIENT VEHICLES.

LOW IMPACT DEVELOPMENT (LID).

MATURE TREE CANOPY.

PERMEABLE PAVING.

SOLAR REFLECTANCE.

SOLAR REFLECTANCE INDEX (SRI).

THERMAL EMITTANCE.

ULTRAVIOLET (UV).

VANPOOL VEHICLE.

VEGETATED SPACE.

VISUAL MARKER.

SECTION A5.103
SITE SELECTION

A5.103.1 Community connectivity. Where feasible, locate project on a previously developed site within a $^1/_2$ mile radius of at least ten basic services, readily accessible by pedestrians, including, but not limited, to one each of bank, place of worship, convenience grocery, day care, cleaners, fire station, barber shop, beauty shop, hardware store, laundry, library, medical clinic, dental clinic, senior care facility, park, pharmacy, post office, restaurant (two may be counted), school, supermarket, theater, community center, fitness center, museum or farmers market. Other services may be considered on a case-by-case basis.

A5.103.2 Brownfield or greyfield site redevelopment or infill area development. If feasible, select for development a brownfield in accordance with Section A5.103.2.1 or on a greyfield or infill site as defined in Section A5.102.

A5.103.2.1 Brownfield redevelopment. Develop a site documented as contaminated by means of an ASTM E1903-11 Phase II Environmental Site Assessment or on a site defined as a brownfield by a local, state or federal government agency. The site must be fully remediated in accordance with EPA regulations to the level required of the anticipated land use.

SECTION A5.104
SITE PRESERVATION

A5.104.1 Reduce development footprint and optimize open space. Optimize open space on the project site in accordance with Sections A5.104.1.1, A5.104.1.2 or A5.104.1.3.

A5.104.1.1 Local zoning requirement in place. Exceed the zoning's open space requirement for vegetated open space on the site by 25 percent.

A5.104.1.2 No local zoning requirement in place. Provide vegetated open space area adjacent to the building equal to the building footprint area.

A5.104.1.3 No open space required in zoning ordinance. Provide vegetated open space equal to 20 percent of the total project site area.

SECTION A5.105
DECONSTRUCTION AND REUSE OF EXISTING STRUCTURES

A5.105.1 Scope. Projects with the area limits specified shall comply with Section A5.105.2 to achieve Tier 1 or Tier 2 compliance.

1. Alteration(s) to existing building(s) where the combined altered floor area is 50,000 square feet or greater shall comply with either Section A5.105.2, Section A5.409.2, or Section A5.409.3.
2. Addition(s) to existing building(s) where the total floor area combined with the existing building(s) is 50,000 square feet or greater shall comply with either Section A5.105.2, Section A5.409.2, or Section A5.409.3.

   Exception: Combined addition(s) to existing building(s) of two times the area or more of the existing building(s) is not eligible to meet compliance with Section A5.105.2.
3. Alteration(s) to existing building(s) where the aggregate floor area is less than 50,000 square feet shall comply with either Section 5.105.2, Section 5.409.2 or Section 5.409.3 for Tier 1 compliance, and either Section A5.105.2.1, Section A5.409.2.1, or A5.409.3 Tier 1 requirements for Tier 2 compliance.
4. Addition(s) to an existing building where the total floor area combined with the existing building(s) is less than 50,000 square feet shall comply with either Section 5.105.2, Section 5.409.2 or Section 5.409.3 for Tier 1 compliance, and either Section A5.105.2.1, Section A5.409.2.1, or A5.409.3 Tier 1 requirements for Tier 2 compliance.

   Exception: Combined addition(s) to existing building(s) of two times the area or more of the existing building(s) is not eligible to meet compliance with Section 5.105.2 or Section A5.105.2.

A5.105.2 Reuse of existing building. Projects that include the reuse of an existing building shall meet the minimum requirements of Section A5.105.2.

A5.105.2.1 Tier 1: An alteration or addition to an existing building shall maintain at least 75 percent combined of the existing building's primary structural elements (foundations; columns, beams, walls, and floors; and lateral elements) and existing building enclosure (roof framing, wall framing and exterior finishes). Window assemblies, insulation, portions of buildings deemed structurally unsound or hazardous, and hazardous materials that are remediated as part of the project shall not be included in the calculation.

A5.105.2.2 Tier 2: An alteration or addition to an existing building shall maintain at least 75 percent combined of the existing building's primary structural elements (founda-

tions; columns, beams, walls, and floors; and lateral elements) and existing building enclosure (roof framing, wall framing and exterior finishes). In addition, an alteration to an existing building shall maintain 30 percent of existing interior nonstructural elements (interior walls, doors, floor coverings, ceiling systems). Window assemblies, insulation, portions of buildings deemed structurally unsound or hazardous, and hazardous materials that are remediated as part of the project shall not be included in the calculation.

A5.105.2.3 Verification of compliance. Documentation shall be provided in the construction documents to demonstrate compliance with Section A5.105.2.

Note: Sample Worksheet WS-6 in Chapter 8 may be used to assist in documenting compliance with this section.

A5.105.3 Deconstruction (Reserved).

SECTION A5.106
SITE DEVELOPMENT

A5.106.2 Storm water design. Design storm water runoff rate, quantity and quality in conformance with Section A5.106.3 Low Impact Development (LID) or by local requirements, whichever are stricter.

A5.106.3 Low Impact Development (LID). All newly constructed projects shall mitigate (infiltrate, filter or treat) stormwater runoff from the 85th percentile 24-hour runoff event (for volume-based BMPs) or the runoff produced by a rain event equal to two times the 85th percentile hourly intensity (for flow-based BMPs) through the application of LID strategies. Employ at least two of the following methods or other best management practices to allow rainwater to soak into the ground, evaporate into the air or collect in storage receptacles for irrigation or other beneficial uses. LID strategies include, but are not limited to:

1. Bioretention (rain gardens)/filtration planters;
2. Precipitation capture (Cisterns and rain barrels);
3. Green roofs meeting the structural requirements of the building code;
4. Roof leader or impervious area disconnection;
5. Permeable and porous paving;
6. Vegetative swales and filter strips; tree preservation; and
7. Tree preservation and tree plantings;
8. Landscaping soil quality;
9. Stream buffer; and
10. Volume retention suitable for previously developed sites.

A5.106.3.1 Implementation. If applicable, coordinate LID projects with the local Regional Water Quality Control Board, which may issue a permit or otherwise require LID.

Note: Further information on design of specific control measures may be found on US EPA's website, on SWRCB's website and from local boards that require LID.

A5.106.3.2 Greyfield or infill site. Manage 40 percent of the average annual rainfall on the site's impervious surfaces through infiltration, reuse or evapotranspiration.

A5.106.4 Reserved.

A5.106.4.1 Reserved.

A5.106.4.2 Reserved.

A5.106.4.3 Changing rooms. For buildings with over 10 tenant-occupants, provide changing/shower facilities for tenant-occupants only in accordance with Table A5.106.4.3 or document arrangements with nearby changing/shower facilities.

Note: Additional information on recommended bicycle accommodations may be obtained from Sacramento Area Bicycle Advocates at https://sacbike.org.

TABLE A5.106.4.3

NUMBER OF TENANT-OCCUPANTS	SHOWER/ CHANGING FACILITIES REQUIRED [2]	2-TIER (12" X 15" X 72") PERSONAL EFFECTS LOCKERS[1, 2] REQUIRED
0-10	0	0
11-50	1 unisex shower	2
51-100	1 unisex shower	3
101-200	1 shower stall per gender	4
Over 200	1 shower stall per gender for each 200 additional tenant-occupants	One 2-tier locker for each 50 additional tenant-occupants

1. One 2-tier locker serves two people. Lockers shall be lockable with either padlock or combination lock.
2. Tenant spaces housing more than 10 tenant-occupants within buildings sharing common toilet facilities need not comply; however, such common shower facilities shall accommodate the total number of tenant-occupants served by the toilets and include a minimum of one unisex shower and two 2-tier lockers.

A5.106.5.1 Designated parking for clean air vehicles. In new projects or additions or alterations that add 10 or more vehicular parking spaces, provide designated parking for any combination of zero-emitting, high-efficiency and carpool/vanpool vehicles as listed in code Sections A5.106.5.1.1 or A5.106.5.1.2.

A5.106.5.1.1 Tier 1. Provide 35 percent designated parking spaces of the total number of parking spaces, for any combination of zero-emitting, high-efficiency and carpool/vanpool vehicles. Calculation for spaces shall be rounded up to the nearest whole number.

Note: Designated parking for clean air vehicles shall count toward the total parking spaces required by the local enforcing agencies.

A5.106.5.1.2 Tier 2. Provide 50 percent designated parking spaces of the total number of parking spaces, for any combination of zero-emitting, high-efficiency and carpool/vanpool vehicles. Calculation for spaces shall be rounded up to the nearest whole number.

Note: Designated parking for clean air vehicles shall count toward the total parking spaces required by the local enforcing agencies.

A5.106.5.1.3 Future charging spaces. Future EV charging spaces qualify as designated parking as described in Section A5.106.5.1 Designated parking for clean air vehicles.

Note: Future EV charging spaces shall count toward the total parking spaces required by the local enforcing agencies.

A5.106.5.1.4 Parking stall marking. Paint, in the paint used for stall striping, the following characters such that the lower edge of the last word aligns with the end of the stall striping and is visible beneath a parked vehicle:

CLEAN AIR/
VANPOOL/EV

Note: Vehicles bearing Clean Air Vehicle stickers from expired HOV lane programs may be considered eligible for designated parking spaces.

A5.106.5.1.5 Vehicle designations. Building managers may consult with local community Transit Management Associations (TMAs) for methods of designating qualifying vehicles, such as issuing parking stickers.

Notes:

1. Information on qualifying vehicles, car labeling regulations and DMV CAV decals may be obtained from the following sources:
   a. California DriveClean.
   b. California Air Resources Board.
   c. US EPA fuel economy regulations and standards.
   d. DMV Registration Operations.
2. Purchasing policy and refueling sites for zero-emitting vehicles for state employees use can be found at the Department of General Services.

A5.106.5.3 Electric vehicle (EV) charging. [N] Construction shall comply with Section A5.106.5.3.1 Tier 1 or A5.106.5.3.3 Tier 2, and in accordance with regulations in the *California Building Code* and the *California Electrical Code.*

A5.106.5.3.1 Tier 1. Comply with Section 5.106.5.3.1 EV capable spaces, Section 5.106.5.3.2 Electric vehicle charging stations and associated Table A5.106.5.3.1 Tier 1, or comply with Section A5.106.5.3.2 Electric vehicle charging stations (EVCS)—Power allocation method and associated Table A5.106.5.3.2 Tier 1.

Refer to Section 5.106.5.3.2 for the permitted use of Level 2 or Direct Current Fast Charger (DCFC) to create EVCS. Refer to Section 5.106.3.2.1 for the allowed use of DCFC to comply with both EV capable spaces and Level 2 EVSE. Refer to Section 5.106.5.3.3 for the allowed use of Automatic Load Management System (ALMS).

A5.106.5.3.2 Electric vehicle charging stations (EVCS)—Power allocation method. The power allocation method may be used as an alternative to the requirements in Section 5.106.5.3.1, Section 5.106.5.3.2, and associated Table A5.106.5.3.1 Tier 1. Use Table A5.106.5.3.2 Tier 1 to determine the total power in kVA required based on the total number of actual parking spaces.

Power allocation method shall include the following:

1. Use any kVA combination of EV capable spaces, low power Level 2, Level 2 or DCFC EVSEs.
2. At least one Level 2 EVSE shall be provided.

TABLE A5.106.5.3.1 Tier 1

TOTAL NUMBER OF ACTUAL PARKING SPACES	TIER 1 NUMBER OF REQUIRED EV CAPABLE SPACES	TIER 1 NUMBER OF EVCS (EV CAPABLE SPACES PROVIDED WITH EVSE)[2, 3]
0–9	2	0
10–25	5	2
26–50	11	4
51–75	19	5
76–100	26	9
101–150	38	13
151–200	53	18
201 and over	30 percent of actual parking spaces[1]	33 percent of EV capable spaces[1]

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.
3. At least one Level 2 EVSE shall be provided.

TABLE A5.106.5.3.2 Tier 1

TOTAL NUMBER OF ACTUAL PARKING SPACES	MINIMUM TOTAL kVA @ 6.6 kVA	TOTAL kVA REQUIRED IN ANY COMBINATION OF EV CAPABLE[3,4], LOW POWER LEVEL 2 LEVEL 2[1, 2], OR DCFC
0–9	13.2	13.2
10–25	33	33
26–50	72.6	72.6
51–75	125.4	125.4
76–100	171.6	171.6
101–150	250.8	250.8
151–200	349.8	349.8
201 and over	30 percent of actual parking spaces × 6.6	Total required kVA = P × .30 × 6.6 Where P = Parking spaces in facility

1. Level 2 EVSE @ 6.6 kVA minimum.
2. At least one Level 2 EVSE shall be provided.
3. Maximum allowed kVA to be utilized for EV capable spaces is 67 percent.
4. If EV capable spaces are utilized, they shall meet the requirements of Section 5.106.5.3.1 EV capable spaces.

A5.106.5.3.3 Tier 2. Comply with Section 5.106.5.3.1 EV capable spaces, Section 5.106.5.3.2 Electric vehicle charging stations and associated Table A5.106.5.3.3 Tier 2, or Section A5.106.5.3.4 Electric vehicle charging stations (EVCS)—Power allocation method and associated Table A5.106.5.3.4 Tier 2.

Refer to Section 5.106.5.3.2 for the permitted use of Level 2 or Direct Current Fast Charger (DCFC) to create EVCS. Refer to Section 5.106.3.2.1 for the allowed use of DCFC to comply with both EV capable spaces and Level 2 EVSE. Refer to Section 5.106.5.3.3 for the allowed use of Automatic Load Management System (ALMS).

A5.106.5.3.4 Electric vehicle charging stations (EVCS)—Power allocation method. The power allocation method may be used as an alternative to the requirements in Section 5.106.5.3.1, Section 5.106.5.3.2 and associated Table A5.106.5.3.3 Tier 2. Use Table A5.106.5.3.4 Tier 2 to determine the total power in kVA

required based on the total number of actual parking spaces.

Power allocation method shall include the following:

1. Use any kVA combination of EV capable spaces, low power Level 2, Level 2 or DCFC EVSEs.
2. At least one Level 2 EVSE shall be provided.

TABLE A5.106.5.3.3 Tier 2

TOTAL NUMBER OF ACTUAL PARKING SPACES	TIER 2 NUMBER OF REQUIRED EV CAPABLE SPACES	TIER 2 NUMBER OF EVCS (EV CAPABLE SPACES PROVIDED WITH EVSE)[2, 3]
0–9	3	0
10–25	8	3
26–50	17	6
51–75	28	9
76–100	40	13
101–150	57	19
151–200	79	26
201 and over	45 percent of actual parking spaces[1]	33 percent of EV capable spaces[1]

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.
3. At least one Level 2 EVSE shall be provided.

TABLE A5.106.5.3.4 Tier 2

TOTAL NUMBER OF ACTUAL PARKING SPACES	MINIMUM TOTAL kVA @ 6.6 kVA	TOTAL kVA REQUIRED IN ANY COMBINATION OF EV CAPABLE[3,4], LOW POWER LEVEL 2 LEVEL 2[1, 2], OR DCFC
0–9	28.8	28.8
10–25	76.8	76.8
26–50	163.2	163.2
51–75	268.8	268.8
76–100	384	384
101–150	547.2	547.2
151–200	758.4	758.4
201 and over	45 percent of actual parking spaces × 6.6	Total required kVA = P × .45 × 6.6 Where P = Parking spaces in facility

1. Level 2 EVSE @ 6.6 kVA minimum.
2. At least one Level 2 EVSE shall be provided.
3. Maximum allowed kVA to be utilized for EV capable spaces is 75 percent.
4. If EV capable spaces are utilized, they shall meet the requirements of Section 5.106.5.3.1 EV capable spaces.

A5.106.6 Parking capacity. Design parking capacity to meet but not exceed minimum local zoning requirements.

A5.106.6.1 Reduce parking capacity. With the approval of the enforcement authority, employ strategies to reduce on-site parking area by

1. Use of on street parking or compact spaces, illustrated on the site plan or
2. Implementation and documentation of programs that encourage occupants to carpool, ride share or use alternate transportation.

Note: Strategies for programs may be obtained from local TMAs.

A5.106.7 Exterior wall shading. Meet requirements in the current edition of the *California Energy Code* and comply with either Section A5.106.7.1 or A5.106.7.2 for wall surfaces. If using vegetative shade, plant species documented to reach desired coverage within 5 years of building occupancy.

A5.106.7.1 Fenestration. Provide vegetative or man-made shading devices for all fenestration on east-, south- and west-facing walls.

A5.106.7.1.1 East and west walls. Shading devices shall have 30-percent coverage to a height of 20 feet or to the top of the exterior wall, whichever is less. Calculate shade coverage on the summer solstice at 10 AM for east-facing walls and at 3 PM for west-facing walls.

A5.106.7.1.2 South walls. Shading devices shall have 60-percent coverage to a height of 20 feet or to the top of the exterior wall, whichever is less.

A5.106.7.2 Opaque wall areas. Use wall surfacing with minimum SRI 25 (aged), for 75 percent of opaque wall areas.

Exception: Use of vegetated shade in Wildland-Urban Interface Areas as defined in Chapter 7A (Materials and Construction Methods for Exterior Wildfire Exposure) of the *California Building Code* shall meet the requirements of that chapter.

Note: If not available from the manufacturer, aged SRI value calculations may be found at the California Energy Commission's web site at www.energy.ca.gov.

A5.106.11 Reduction of heat island effect. Reduce heat islands by requiring Section A5.106.11.1 Hardscape alternatives, Section A5.106.11.2 Cool roofs, or Section A5.106.11.3 Shade trees.

A5.106.11.1 Hardscape alternatives. Use one or a combination of strategies 1 and 2 for 50 percent of site hardscape or put 50 percent of parking underground.

1. Use light colored materials with an initial solar reflectance value of at least 0.30 as determined in accordance with American Society for Testing and Materials (ASTM) Standards E1918 or C1549.
2. Use open-grid pavement system or pervious or permeable pavement system.

A5.106.11.2 Cool roof. Use roofing materials having a minimum aged solar reflectance and thermal emittance complying with Sections A5.106.11.2.1 and A5.106.11.2.2 or a minimum aged Solar Reflectance Index (SRI) complying with Section A5.106.11.2.3 and as shown in Table A5.106.11.2.2 for Tier 1 or Table A5.106.11.2.3 for Tier 2.

Exceptions:

1. Roof constructions that have a thermal mass over the roof membrane, including areas of vegetated (green) roofs, weighing at least 25 pounds per square foot.

2. Roof area covered by building integrated solar photovoltaic and building integrated solar thermal panels.

A5.106.11.2.1 Solar reflectance. Roofing materials shall have a minimum aged solar reflectance equal to or greater than the values specified in Table A5.106.11.2.2 for Tier 1 and Table A5.106.11.2.3 for Tier 2.

If Cool Roof Rating Council (CRRC) testing for aged reflectance is not available for any roofing products, the aged value shall be determined using the CRRC certified initial value using the equation $\rho_{aged} = [0.2 + ß\ [\rho_{initial} - 0.2]$, where $\rho_{initial}$ = the initial solar reflectance and soiling resistance, ß, listed by product type in Table A5.106.11.2.1.

Solar reflectance may also be certified by other supervisory entities approved by the Energy Commission pursuant to Title 24, Part 1, *California Administrative Code.*

A5.106.11.2.2 Thermal emittance. Roofing materials shall have a CRRC initial or aged thermal emittance as determined in accordance with ASTM E408 or C1371 equal to or greater than those specified in Table A5.106.11.2.2 for Tier 1 and Table A5.106.11.2.3 for Tier 2.

Thermal emittance may also be certified by other supervisory entities approved by the Energy Commission pursuant to Title 24, Part 1, *California Administrative Code.*

A5.106.11.2.3 Solar reflectance index alternative. Solar Reflectance Index (SRI) equal to or greater than the values specified in Table A5.106.11.2.2 for Tier 1 and Table A5.106.11.2.3 for Tier 2 may be used as an alternative to compliance with the aged solar reflectance values and thermal emittance.

SRI values used to comply with this section shall be calculated using the Solar Reflectance Index (SRI) Calculation Worksheet (SRI-WS) developed by the California Energy Commission or in compliance with ASTM E1980-11 as specified in the *California Energy Code,* Section 110.8(i)3. Solar reflectance values used in the SRI-WS shall be based on the aged reflectance value of the roofing product or the equation in section A5.106.11.2.1 if the CRRC certified aged solar reflectance are not available. Certified Thermal emittance used in the SRI-WS may be either the initial value or the aged value listed by the CRRC.

Solar reflectance and thermal emittance may also be certified by other supervisory entities approved by the Commission pursuant to Title 24, Part 1, *California Administrative Code.*

Note: The Solar Reflectance Index Calculation Worksheet (SRI-WS) is available by contacting the Energy Standard Hotline at 1-800-772-3300, website at www.energy.ca.gov or by email at Title24@energy.state.ca.us.

A5.106.11.2.4 Verification of compliance. If no documentation is available, an inspection shall be conducted to ensure roofing materials meet cool roof aged solar reflectance and thermal emittance or SRI values.

A5.106.11.3 Shade trees. In the absence of a local shade tree ordinance, comply with mandatory Section 5.106.12 Shade trees.

TABLE A5.106.11.2.1
VALUES OF SOILING RESISTANCE, ß, BY PRODUCT TYPE

PRODUCT TYPE	CRRC PRODUCT CATEGORY	ß
Field-applied coating	Field-applied coating	0.65
Other	Not a field-applied coating	0.70

TABLE A5.106.11.2.2 [BSC]
TIER 1

ROOF SLOPE	CLIMATE ZONE	MINIMUM AGED SOLAR REFLECTANCE	THERMAL EMITTANCE	SRI
≤ 2:12	1–16	0.63	0.75	75
> 2:12	1–16	0.20	0.75	16

TABLE A5.106.11.2.3 [BSC]
TIER 2

ROOF SLOPE	CLIMATE ZONE	MINIMUM AGED SOLAR REFLECTANCE	THERMAL EMITTANCE	SRI
≤ 2:12	1–16	0.68	0.85	82
> 2:12	1–16	0.28	0.85	27

SECTION A5.107
BIRD-FRIENDLY BUILDING DESIGN

A5.107 Bird-friendly building design. A newly constructed building, or an alteration of an existing building that includes the addition or replacement of 50 percent or more of the exterior glazing, shall comply with the bird-friendly building design elements and features in Sections A5.107.1 through A5.107.3 of the *California Energy Code* and the fire hazard severity zone regulations in Chapter 7A of the *California Building Code.*

Exception: Alteration to the glazing in historical buildings per the *California Historical Building Code*.

A5.107.1 Required elevation treatment. Building elevation treatment shall incorporate bird-friendly mitigation strategies. No less than 90 percent of a building elevation, measured from grade to a height of 40 feet (12 m) above grade, or from grade to the height of an adjacent mature tree canopy (whichever is greater), shall incorporate bird-friendly mitigation strategies. No less than 60 percent of building elevation, 40 feet (12 m) above grade to the top of the building elevation, shall incorporate bird-friendly mitigation strategies.

Strategies to minimize the risk of birds colliding with buildings:

1. **Glazing**

   Glazing with visual markers shall include, but is not limited to, the following:

   a. Etched or fritted glass with patterns of elements on the exterior having minimum dimensions of $^1/_4$" (.64 cm) diameter for dots or $^1/_8$"

(.32 cm) width for stripes in a density of 2 inches (5.1 cm) maximum horizontally and vertically (the "2 × 2 Rule").

Note: If the visual markers are on glass surface 2, they can be effective if visible behind an exterior surface with reflectivity of 15 percent or less.

b. Interior or exterior glazing film with 2 × 2 visual markers.

c. Laminated glass with 2 × 2 visual markers, patterned ultraviolet (UV) coating or use of contrasting patterned UV-absorbing and UV-reflecting films.

Note: Low-e coatings shall be behind the visual markers.

d. Glass block or channel glass.

e. Developed glazing technologies documented to reduce bird strikes, as tested by an independent third party and approved by the authority having jurisdiction; or

2. Slats, Screens, Netting, Louvers

Glazing protected by exterior features that create a visible barrier in front of the glazing, may include, but not be limited to:

a. Horizontal or vertical slats of $^1/_8$" (.32 cm) minimum face width with minimum 2" (5.1 cm) spacing that obscure 85 percent or more of glass when viewed from all feasible angles.

b. Grilles, screens or $^1/_8$" (.32 cm) dia. welded wire mesh with openings no more than 2" (5.1 cm) maximum horizontally and vertically installed parallel to and no more than $3^1/_4$ ft (1 m) from the first surface of glass (glass surface 1).

c. Netting with 1" (2.5 cm) maximum openings, installed taut at least 6" (15 cm) away from the first surface of glass; or

d. Sunshades or louvers 9" (22.5 cm) deep vertically spaced a maximum 9" (22.5 cm) or 6" (15 cm) deep horizontally at maximum 6" (15 cm) spacing and parallel or angled to the glass surfaces.

A5.107.2 Special conditions. The following special conditions shall comply with the provisions in Section A5.107.1 (as appropriate):

1. Glass facades adjacent to vegetated roof.
2. Glass railings and guardrails.
3. Transparent corners that extend 5.5 feet (1.68 m) on either side of a building.
4. Glass passageways less than 5.5 feet (1.68 m) wide.
5. Auxiliary glass building such as a glass pavilion or atrium exposed to the sky.
6. Auxiliary glass building such as a glass pavilion or atrium exposed to a courtyard with a water feature or plants.
7. Stained glass windows insulated on the exterior with clear glazing.

A5.107.3 Nighttime conditions. Nighttime lighting at the top of the building, and in the interiors of all areas visible through exterior glazing, including lobby and atrium, shall be controlled with time-switch control devices or occupancy sensors complying with the current *California Energy Code.* The control device shall be programmed so the lights are extinguished from 2 am to dawn.

Exception: Emergency lighting, lighting required for nighttime security and aeronautical beacon lighting required by the Federal Aviation Administration.

A5.107.3.1 Systems or operation and maintenance manual. Include written recommendations that lighting is extinguished pursuant to Section A5.107.3 and janitorial services to the building are scheduled between sunrise and sunset.

CALIFORNIA GREEN BUILDING STANDARDS CODE – MATRIX ADOPTION TABLE
APPENDIX A5 – NONRESIDENTIAL VOLUNTARY MEASURES
DIVISION A5.2 – ENERGY 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																						
Adopt entire chapter as amended (amended sections listed below)																						
Adopt only those sections that are listed below																			X			
Chapter/Section																						
Appendix A5.2																			X			

APPENDIX A5
NONRESIDENTIAL VOLUNTARY MEASURES

Division A5.2 – ENERGY EFFICIENCY

SECTION A5.201
GENERAL

A5.201.1 Scope. For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory standards. It is the intent of these voluntary provisions to encourage local jurisdictions through codification to achieve exemplary performance in the area of building energy efficiency. Local jurisdictions adopting these voluntary provisions as mandatory local energy efficiency standards shall submit the required application and receive the required findings of the California Energy Commission in compliance with Title 24, Part 1, Section 10-106, prior to enforcement. Once the required filing has been verified and finding has been made by the Energy Commission, local jurisdictions shall file an ordinance expressly marking the local modifications along with findings and receive the required acceptance from the California Building Standards Commission in compliance with Section 101.7 of this code, prior to enforcement (Title 24, Part 1, Section 10-106 is available at http://www.energy.ca.gov/title24/2022standards/).

SECTION A5.202
DEFINITIONS

A5.202.1 Definitions. The following terms are defined in Chapter 2.

ENERGY BUDGET.

GEOTHERMAL.

PROCESS.

SOLAR ACCESS.

TIME DEPENDENT VALUATION (TDV).

SECTION A5.203
PERFORMANCE APPROACH

A5.203.1 Energy efficiency. Nonresidential, high-rise residential and hotel/motel buildings that include lighting and/or mechanical systems shall comply with Sections A5.203.1.1 and A5.203.1.2. Newly constructed buildings and additions are included in the scope of these sections. Buildings permitted without lighting or mechanical systems shall comply with Section A5.203.1.1 but are not required to comply with Section A5.203.1.2.

A5.203.1.1 Tier 1 and Tier 2 prerequisites. To comply with Tier 1, ONE of the following efficiency measures is required for all applicable components of the building project. To comply with Tier 2, TWO of the following efficiency measures are required.

A5.203.1.1.1 Outdoor lighting. Newly installed outdoor lighting power shall be no greater than 90 percent of the Allowed Outdoor Lighting Power, and general hardscape lighting within the scope of Title 24, Part 6, Section 140.7(b)1 shall have a color temperature no higher than 3000K. The Allowed Outdoor Lighting Power calculation is specified in Title 24, Part 6, Section 140.7, Requirements For Outdoor Lighting.

Exception: The color temperature requirement is not applicable to the applications identified in the exceptions to Section 140.7(a) nor to the applications identified as "specific applications" in Section 140.7(b)2 and Table 140.7.

A5.203.1.1.2 Service water heating in restaurants. Newly constructed restaurants 8,000 square feet or greater and with service water heaters rated 75,000 Btu/h or greater shall install a solar water-heating system with a minimum solar savings fraction of 0.15.

Exceptions:

1. Buildings with a natural gas service water heater with a minimum of 95-percent thermal efficiency.

2. Buildings where greater than 75 percent of the total roof area has annual solar access that is less than 70 percent. Solar access is the ratio of solar insolation, including shade, to the solar insolation without shade. Shading from obstructions located on the roof or any other part of the building shall not be included in the determination of annual solar access.

A5.203.1.1.3 Warehouse dock seal doors. Exterior loading dock doors that are adjacent to conditioned or indirectly conditioned spaces shall have dock seals or dock shelters installed at the time of permitting. This requirement shall apply to newly constructed buildings and to loading dock doors added to existing buildings.

A5.203.1.1.4 Daylight Design Power Adjustments Factors (PAFs). Daylighting devices shall be installed as specified in Title 24, Part 6, Section 140.3(d).

A5.203.1.1.5 Exhaust air heat recovery. Heat recovery requirements based on ASHRAE 90.1, Section 6.5.6.1 are adapted and modified for California climate zones as described below.

1. Systems with minimum design outdoor air fraction of 80 percent or greater and supply air flow of 200 cfm or greater in climate zones 2, 9, 10, 11, 12, 13, 14, 15 shall have a heat recovery system.
2. Heat recovery systems required by this section shall result in a net sensible energy recovery ratio of at least 60 percent for both heating and cooling as tested using AHRI 1060-2014 or 1061-2014 and certified by AHRI. A 60 percent sensible energy recovery ratio shall mean a change in the dry-bulb of the outdoor air supply equal to 60 percent of the difference between the outdoor air and exhaust air dry-bulb at design conditions. Provisions shall be made to bypass or control the energy recovery system to permit air economizer operation as required by Title 24, Part 6, Section 140.4(e), Economizers.

Exceptions:

1. Systems serving spaces that are not cooled and that are heated to less than 60°F.
2. Where more than 60 percent of the outdoor air heating energy is provided from site-recovered energy.
3. Where the sum of the airflow rates exhausted and relieved within 20 feet of each other is less than 75 percent of the design outdoor airflow rate, excluding exhaust air that is:
    1. Used for another energy recovery system;
    2. Not allowed by ASHRAE Standard 170 for use in energy recovery systems with leakage potential; or
    3. Of Class 4 as defined in ASHRAE Standard 62.1.
4. Systems expected to operate less than 20 hours per week.

A5.203.1.2 Performance standard. Comply with one of the advanced efficiency levels indicated below.

A5.203.1.2.1 Tier 1. Buildings complying with the first level of advanced energy efficiency shall have an Energy Budget that is no greater than indicated below, depending on building type and the type of energy systems included in the building project. If the newly constructed building or addition does not include indoor lighting or mechanical systems, then no additional performance requirements above Title 24, Part 6 are required.

1. For nonresidential building projects that include indoor lighting or mechanical systems, but not both: No greater than 95 percent of the Title 24, Part 6, Energy Budget for the Standard Design Building as calculated by compliance software certified by the Energy Commission.
2. For nonresidential building projects that include indoor lighting and mechanical systems: No greater than 90 percent of the Title 24, Part 6 Energy Budget for the Standard Design Building as calculated by compliance software certified by the Energy Commission.
3. For high-rise residential and hotel/motel building projects: No greater than 95 percent of the Title 24, Part 6, Energy Budget for the Standard Design Building as calculated by compliance software certified by the Energy Commission.

A5.203.1.2.2 Tier 2. Buildings complying with the second level of advanced energy efficiency shall have an Energy Budget that is no greater than indicated below, depending on building type and the type of energy systems included in the building project. If the newly constructed building or addition does not include indoor lighting or mechanical systems, then no additional performance requirements above Title 24, Part 6 are required.

1. For nonresidential building projects that include indoor lighting or mechanical systems, but not both: No greater than 90 percent of the Title 24, Part 6, Energy Budget for the Standard Design Building as calculated by compliance software certified by the Energy Commission.
2. For nonresidential building projects that include indoor lighting and mechanical systems: No greater than 85 percent of the Title 24, Part 6, Energy Budget for the Standard Design Building as calculated by compliance software certified by the Energy Commission.
3. For high-rise residential and hotel/motel building projects: No greater than 95 percent of the Title 24, Part 6, Energy Budget for the Standard Design Building as calculated by compliance software certified by the Energy Commission.

Note: For Energy Budget calculations, high-rise residential and hotel/motel buildings are considered nonresidential buildings.

SECTION A5.211
RENEWABLE ENERGY

A5.211.1 On-site renewable energy. Use on-site renewable energy sources such as solar, wind, geothermal, low-impact hydro, biomass and bio-gas for at least 1 percent of the electric power calculated as the product of the building service voltage and the amperage specified by the electrical service overcurrent protection device rating or 1kW, (whichever is greater), in addition to the electrical demand required to meet 1 percent of the natural gas and propane use. The building project's electrical service overcurrent protection device rating shall be calculated in accordance with the *California Electrical Code.* Natural gas or propane use is calculated in accordance with the *California Plumbing Code.*

A5.211.1.1 Documentation. Using a calculation method approved by the California Energy Commission, calculate the renewable onsite energy system to meet the requirements of Section A5.211.1, expressed in kW. Factor in net-metering, if offered by local utility, on an annual basis.

A5.211.3 Green power. If offered by local utility provider, participate in a renewable energy portfolio program that provides a minimum of 50-percent electrical power from renewable sources. Maintain documentation through utility billings.

SECTION A5.212
ELEVATORS, ESCALATORS AND OTHER EQUIPMENT

A5.212.1 Elevators and escalators. In buildings with more than one elevator or two escalators, provide systems and controls to reduce the energy demand of elevators and escalators as follows. Document systems operation and controls in the project specifications and commissioning plan.

A5.212.1.1 Elevators. Traction elevators shall have a regenerative drive system that feeds electrical power back into the building grid when the elevator is in motion.

A5.212.1.1.1 Car lights and fan. A parked elevator shall turn off its car lights and fan automatically until the elevator is called for use.

A5.212.1.2 Escalators. An escalator shall have a VVVF motor drive system that is fully regenerative when the escalator is in motion.

A5.212.1.4 Controls. Controls that reduce energy demand shall meet requirements of CCR, Title 8, Chapter 4, Subchapter 6 and shall not interrupt emergency operations for elevators required in CCR, Title 24, Part 2, *California Building Code.*

SECTION A5.213
ENERGY EFFICIENT STEEL FRAMING

A5.213.1 Steel framing. Design steel framing for maximum energy efficiency. Techniques for avoiding thermal bridging in the envelope include:

1. Exterior rigid insulation;
2. Punching large holes in the stud web without affecting the structural integrity of the stud;
3. Spacing the studs as far as possible while maintaining the structural integrity of the structure; and
4. Detailed design of intersections of wall openings and building intersections of floors, walls and roofs.

CALIFORNIA GREEN BUILDING STANDARDS CODE – MATRIX ADOPTION TABLE
APPENDIX A5 – NONRESIDENTIAL VOLUNTARY MEASURES
DIVISION A5.3 – WATER EFFICIENCY AND CONSERVATION

(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																						
Chapter/Section																						

APPENDIX A5
NONRESIDENTIAL VOLUNTARY MEASURES

Division A5.3 – WATER EFFICIENCY AND CONSERVATION

SECTION A5.301
GENERAL

A5.301.1 Scope.

SECTION A5.302
DEFINITIONS

A5.302.1 Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

COMPACT DISHWASHER.

GRAYWATER.

MODEL WATER EFFICIENT LANDSCAPE ORDINANCE.

PLANTS.

POTABLE WATER.

RECYCLED WATER.

STANDARD DISHWASHER.

SUBMETER.

SECTION A5.303
INDOOR WATER USE

A5.303.2.3.1 Tier 1 – 12-percent savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 12 percent shall be provided. The reduction shall be based on the maximum allowable water use per plumbing fixture and fitting as required by the *California Building Standards Code.* The 12-percent reduction in potable water use shall be demonstrated by one of the following methods:

1. Prescriptive method. Each plumbing fixture and fitting shall not exceed the maximum flow rate at greater than or equal to 12-percent reduction as specified in Table A5.303.2.3.1; or
2. Performance method. A calculation demonstrating a 12-percent reduction in the building "water use baseline" as established in Table A5.303.2.2 shall be provided.

A5.303.2.3.2 Tier 2 – 20-percent savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 20 percent shall be provided. A calculation demonstrating a 20-percent reduction in the building "water use baseline" as established in Table A5.303.2.2 shall be provided.

A5.303.2.3.3 25-percent savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 25 percent shall be provided. A calculation demonstrating a 25-percent reduction in the building "water use baseline" as established in Table A5.303.2.2 shall be provided.

A5.303.2.3.4 Nonpotable water systems for indoor use. Utilizing nonpotable water systems (such as captured rainwater, treated graywater and recycled water) intended to supply water closets, urinals and other allowed uses, may be used in the calculations demonstrating the 12-, 20- or 25-percent reduction. The nonpotable water systems shall comply with the current edition of the *California Plumbing Code.*

TABLE A5.303.2.2
WATER USE BASELINE (PERFORMANCE METHOD)[3]

FIXTURE TYPE	BASELINE FLOW RATE	DURATION	DAILY USES	OCCUPANTS[2]
Showerheads	1.8 gpm @ 80 psi	5 min.	1	X[2a]
Lavatory faucets nonresidential	0.5 gpm @ 60 psi	.25 min.	3	X
Kitchen faucets	1.8 gpm @ 60 psi	4 min.	1	X[2b]
Replacement aerators	2 gpm @ 60 psi			X
Wash fountains	1.8 gpm/20 [rim space (in.) @ 60 psi]			X
Metering faucets	0.20 gallons/cycle	.25 min.	3	X
Metering faucets for wash fountains	0.20 gallons/cycle/20 [rim space (in.) @ 60 psi]	.25 min.	1 male[1] 3 female	X
Gravity tank type water closets	1.28 gallons/flush	1 flush	1 male[1] 3 female	X
Flushometer tank water closets	1.28 gallons/flush	1 flush	1 male[1] 3 female	X
Flushometer valve water closets	1.28 gallons/flush	1 flush	1 male[1] 3 female	X
Electromechanical hydraulic water closets	1.28 gallons/flush	1 flush	1 male[1] 3 female	X
Urinals	0.5 or 0.125[4] gallons/flush	1 flush	2 male	X

1. The daily use number shall be increased to three if urinals are not installed in the room.
2. Refer to Table 4-1, Chapter 4, 2022 *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.
3. Use worksheet WS-1 to calculate baseline water use.
4. Floor-mounted urinals @ 0.5 GPF or wall-mounted urinals @ 0.125 GPF.

TABLE A5.303.2.3.1
FIXTURE FLOW RATES (PRESCRIPTIVE METHOD)

FIXTURE TYPE	BASELINE FLOW RATE[2]	MAXIMUM FLOW RATE AT ≥ 12 PERCENT REDUCTION
Showerheads	1.8 gpm @ 80 psi	1.6 gpm @ 80 psi
Lavatory faucets nonresidential[3]	0.5 gpm @ 60 psi	0.35 gpm @ 60 psi
Kitchen faucets[3]	1.8 gpm @ 60 psi	1.6 gpm @ 60 psi
Wash fountains	1.8 gallons/cycle/20 [rim space (in.) @ 60 psi]	1.6 gpm/20 [rim space (in.) @ 60 psi]
Metering faucets	0.20 gallons/cycle	0.18 gallons/cycle
Metering faucets for wash fountains	0.20 gallons/cycle/20 [rim space (in.) @ 60 psi]	0.18 gallons/cycle 20 [rim space (in.) @ 60 psi]
Gravity tank type water closets	1.28 gallons/flush	1.12 gallons/flush[1]
Flushometer tank water closets	1.28 gallons/flush	1.12 gallons/flush[1]
Flushometer valve water closets	1.28 gallons/flush	1.12 gallons/flush[1]
Electromechanical hydraulic water closets	1.28 gallons/flush	1.12 gallons/flush[1]
Urinals	0.5 or 0.125[4] gallons/flush	0.44 or 0.11 gallons/flush

1. Includes water closets with an effective flush rate of 1.12 gallons or less when tested per ASME A 112.19.2 and ASME A 112.19.14.
2. See Table A5.503.2.2 for additional notes and references.
3. Where complying faucets are unavailable, aerators rated at 0.35 gpm or other means may be used to achieve reduction.
4. Floor-mounted urinals @ 0.5 GPF or wall-mounted urinals @ 0.125 GPF.

A5.303.3 Appliances and fixtures for commercial application. Appliances and fixtures shall meet the following:

1. Clothes washers shall have a maximum Water Factor (WF) that will reduce the use of water by 10 percent below the California Energy Commissions' WF standards for commercial clothes washers located in Title 20 of the *California Code of Regulations.*
2. Dishwashers shall meet the following water use standards:
   a. Residential—ENERGY STAR.
      i. Standard Dishwashers – 4.25 gallons per cycle.
      ii. Compact Dishwashers – 3.5 gallons per cycle.
   b. Commercial—Shall be in accordance with ENERGY STAR requirements. Refer to Table A5.303.3.
3. Ice makers shall be air cooled.
4. Food steamers shall be connectionless or boilerless – and shall consume no more than 2 gallons of water per pan per hour, including condensate water, for batch type steamers, and no more than 5 gallons of water per pan per hour, including condensate water, for cook to order steamers.
5. The use and installation of water softeners that discharge to the community sewer system may be limited or prohibited by local agencies if certain conditions are met.
6. Combination ovens shall use a maximum of 1.5 gallons of water per hour per pan, including condensate water.
7. Food waste pulping systems shall use no more than 2 gpm of potable water.
   7.1. Note: potable water excludes on-site graywater use, such as dishwasher discharge water.

A5.303.4 Water conserving plumbing fixtures and fittings.

A5.303.4.1 Nonwater urinals. Nonwater urinals with drain cleansing action are installed in accordance with the *California Plumbing Code*.

Where approved, nonwater urinals with drain cleansing action (formerly urinal, hybrids) as defined in Chapter 2, shall be considered waterless urinals.

A5.303.5 Dual plumbing. New buildings and facilities shall be dual plumbed for potable and recycled water systems for toilet flushing when recycled water is available as determined by the enforcement authority.

SECTION A5.304
OUTDOOR WATER USE

A5.304.1 Reserved.

A5.304.2 Outdoor water use. For new water service not subject to the provisions of *Water Code* Section 535, separate meters or submeters shall be installed for indoor and outdoor potable water use for landscaped areas of at least 500 square feet but not more than 1,000 square feet.

A5.304.6 Restoration of areas disturbed by construction. Restore all landscape areas disturbed during construction by planting with local adaptive and/or noninvasive vegetation.

A5.304.7 Previously developed sites. On previously developed or graded sites, restore or protect at least 50 percent of the site area with adaptive and/or noninvasive vegetation. Projects complying with Section A5.106.3, Item 3 may apply vegetated roof surface to this calculation if the roof plants meet the definition of adaptive and noninvasive.

Exception: Area of the building footprint is excluded from the calculation.

A5.304.8 Graywater irrigation system. Install a graywater collection system for onsite subsurface irrigation using graywater collected from bathtubs, showers, bathroom wash basins and laundry water. See *California Plumbing Code.*

TABLE A5.303.3
COMMERCIAL DISHWASHER WATER USE

TYPE	HIGH-TEMPERATURE— MAXIMUM GALLONS PER RACK	LOW-TEMPERATURE— MAXIMUM GALLONS PER RACK
Single Tank Conveyor	0.70 (2.6 L)	≤ 0.79 (3 L)
Multiple Tank Conveyor	≤ 0.54 (2 L)	≤ 0.54 (2 L)
Stationary Single Tank Door	≤ 0.89 (3.4 L)	≤ 1.18 (4.5 L)
Under Counter	≤ 0.86 (3.3 L)	≤ 1.19 (4.5 L)
Pot, Pan and Utensil	≤ 0.58 GPSF	≤ 0.58 GPSF
Single Tank Flight Type	GPH ≤ 2.975x + 55.00	GPH ≤ 2.975x + 55.00
Multiple Tank Flight Type	GPH ≤ 4.96x + 17.00	GPH ≤ 4.96x + 17.00

Note: GPSF = gallons per square foot of rack; GPH = gallons per hour;
X = square feet of conveyor belt/minute (max conveyor speed sf/min as tested and certified to NSF/ANSI Standard 3)

SECTION A5.305
WATER REUSE

A5.305.1 Nonpotable water systems. Nonpotable water systems for indoor and outdoor use shall comply with the current edition of the *California Plumbing Code.*

A5.305.2 Irrigation systems. Irrigation systems regulated by a local water efficient landscape ordinance or by the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELO) shall use recycled water.

CALIFORNIA GREEN BUILDING STANDARDS CODE – MATRIX ADOPTION TABLE
APPENDIX A5 – NONRESIDENTIAL VOLUNTARY MEASURES
DIVISION A5.4 – 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																						
Chapter/Section																						

APPENDIX A5

NONRESIDENTIAL VOLUNTARY MEASURES

Division A5.4 – MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

SECTION A5.401
GENERAL

A5.401.1 Scope. The provisions of this chapter specify the requirements of achieving enhanced compliance with material conservation, resource efficiency, and greenhouse gas (GHG) emissions reduction through reuse of existing building stock and materials; use of recycled, regional, rapidly renewable and certified wood materials; and employment of techniques to reduce pollution through recycling of materials.

SECTION A5.402
DEFINITIONS

A5.402.1 Definitions. The following terms are defined in Chapter 2.

BUILDING COMMISSIONING.

BUY CLEAN CALIFORNIA ACT (BCCA).

CRADLE-TO-GRAVE.

EMBODIED ENERGY.

EUTROPHICATION.

LIFE CYCLE ASSESSMENT (LCA).

LIFE CYCLE INVENTORY (LCI).

OVE.

POSTCONSUMER CONTENT.

PRECONSUMER (or POSTINDUSTRIAL) CONTENT.

RECYCLED CONTENT.

RECYCLED CONTENT VALUE (RCV).

REFERENCE STUDY PERIOD.

TYPE III ENVIRONMENTAL PRODUCT DECLARATION (EPD).

FACTORY-SPECIFIC EPD.

INDUSTRY-WIDE EPD (IW-EPD).

PRODUCT-SPECIFIC EPD.

SECTION A5.403
FOUNDATION SYSTEMS
(Reserved)

SECTION A5.404
EFFICIENT FRAMING TECHNIQUES

A5.404.1 Wood framing. Employ advanced wood framing techniques or OVE, as recommended by the US Department of Energy's Office of Building Technology, State and Community Programs and as permitted by the enforcing agency.

A5.404.1.1 Structural or fire-resistance integrity. The OVE selected shall not conflict with structural framing methods or fire-rated assemblies required by the *California Building Code.*

A5.404.1.2 Framing specifications. Advanced framing techniques include the following:

1. Building design using 2-foot modules;
2. Spacing wall studs up to 24 inches on center;
3. Spacing floor and roof framing members up to 24 inches on center;
4. Using 2-stud corner framing and drywall clips or scrap lumber for drywall backing;
5. Eliminating solid headers in non-load-bearing walls;
6. Using in-line framing, aligning floor, wall and roof framing members vertically for direct transfer of loads; and

7. Using single lumber headers and top plates where appropriate.

Note: Additional information can be obtained from the US DOE Energy Efficiency and Renewable Energy (EERE) website.

SECTION A5.405
MATERIAL SOURCES

A5.405.1 Regional materials. Compared to other products in a given product category, select building materials or products for permanent installation on the project that have been harvested or manufactured in California or within 500 miles of the project site.

1. For those materials locally manufactured, select materials manufactured using low embodied energy or those that will result in net energy savings over their useful life.
2. Regional materials shall make up at least 10 percent, based on cost, of total materials value.
3. If regional materials make up only part of a product, their values are calculated as percentages based on weight.
4. Provide documentation of the origin, net projected energy savings and value of regional materials.

A5.405.2 Bio-based materials. Select bio-based building materials and products made from solid wood, engineered wood, bamboo, wool, cotton, cork, straw, natural fibers, products made from crops (soy-based, corn-based) and other bio-based materials with at least 50-percent bio-based content.

A5.405.2.1 Certified wood components—sustainability standards. Provide wood products, for at least 50 percent of the project's permanently installed products, that have been certified by independent third parties and labeled as having been produced in compliance with the accepted principles of sustainable forest management. The use of recycled and/or recovered wood products does not need to be certified. Comply with one or more of the following certifications of wood sustainability:

1. Sustainable Forestry Initiative (SFI).
2. Forest Stewardship Council (FSC).
3. Program for the Endorsement of Forest Certification (PEFC).
4. American Forest Foundation's American Tree Farm System® (ATFS).
5. Canadian Standards Association's Sustainable Forest Management System Standards (CSA Z809).
6. Manufacturer's fiber procurement system that has been audited by an approved agency as compliant with the provisions of ASTM D7612 as a responsible or certified source.

A5.405.2.2 Rapidly renewable materials. Use materials made from plants harvested within a ten-year cycle for at least 2.5 percent of total materials value, based on estimated cost.

A5.405.3 Reused materials. Use salvaged, refurbished, refinished or reused materials for a minimum of 5 percent of the total value, based on estimated cost of materials on the project. Provide documentation as to the respective values.

Note: Sources of some reused materials can be found at CalRecycle's https://www.calrecycle.ca.gov/. See also Appendix A5, Division A5.1, Section A5.105.1 for on-site materials reuse.

A5.405.4 Recycled content. Use materials, equivalent in performance to virgin materials with a total (combined) recycled content value (RCV) of:

Tier 1. The RCV shall not be less than 10 percent of the total material cost of the project, or use two products which meet the minimum recycled content levels in Table A5.405.4 for at least 75%, by cost, of all products in that category in the project.

Required Total RCV (dollars) = Total Material Cost (dollars) × 10 percent **(Equation A5. 4-1)**

Tier 2. The RCV shall not be less than 15 percent of the total material cost of the project, or use three products which meet the minimum recycled content levels in Table A5.405.4 for at least 75%, by cost, of all products in that category in the project.

Required Total RCV (dollars) = Total Material Cost (dollars) × 15 percent **(Equation A5. 4-2)**

For the purposes of this section, materials used as components of the structural frame shall not be used to calculate recycled content. The structural frame includes the load bearing structural elements such as wall studs, plates, sills, columns, beams, girders, joists, rafters and trusses.

Notes:

1. Sample forms which allow user input and automatic calculation are located at www.hcd.ca.gov/CALGreen.html and may be used to simplify documenting compliance with this section and for calculating recycled content value of materials or assembly products.
2. Sources and recycled content of some recycled materials can be obtained from CalRecycle if not provided by the manufacturer.

TABLE A5.405.4
MINIMUM RECYCLED CONTENT LEVELS

MATERIAL/ PRODUCT TYPE	MINIMUM TOTAL RECYCLED CONTENT	MINIMUM POST-CONSUMER RECYCLED CONTENT
Insulation, fiberglass	30%	30%
Insulation, cellulose	75%	75%
Exterior Paint, latex	50%	50%
Carpet, nylon	10%	10%
Compost	80%	80%
Mulch	80%	80%
Acoustical ceiling panels	60%	—
Drywall, gypsum	4%	4%
Aggregate base	80%	80%

A5.405.4.1 Total material cost. Total material cost is the total estimated or actual cost of materials and assembly products used in the project. The required total recycled content value for the project (in dollars) shall be determined by Equation A5.4-1 or A5.4-2.

Total material cost shall be calculated by using one of the methods specified below:

1. **Simplified method.** To obtain the total cost of the project multiply the square footage of the structure by the square foot valuation established by the enforcing agency. The total material cost is 45 percent of the total cost of the project. Use Equations A5.4-3A or A5.4-3B to determine total material costs using the simplified method.

   Total material costs =
   Project square footage × square foot
   valuation × 45 percent**(Equation A5.4-3A)**

   Total estimated or actual cost of
   project × 45 percent **(Equation A5.4-3B)**

2. **Detailed method.** To obtain the total cost of the project, add the estimated and/or actual costs of materials used for the project including the structure (steel, concrete, wood or masonry); the enclosure (roof, windows, doors and exterior walls); the interior walls, ceilings and finishes (gypsum board, ceiling tiles, etc.). The total estimated and/or actual costs shall not include fees, labor and installation costs, overhead, appliances, equipment, furniture or furnishings.

A5.405.4.2 Determination of total recycled content value (RCV). Total RCV may be determined either by dollars or percentage as noted below.

1. **Total recycled content value for the project (in dollars).** This is the sum of the recycled content value of the materials and/or assemblies considered and shall be determined by Equation A5.4-4. The result of this calculation may be directly compared to Equations A5.4-1 and A5.4-2 to determine compliance with Tier 1 or Tier 2 prerequisites.

   Total Recycled Content Value (dollars) =
   ($RCV_M + RCV_A$)**(Equation A5.4-4)**

2. **Total recycled content value for the project (by percentage).** This is expressed as a percentage of the total material cost and shall be determined by Equations A5.4-4 and A5.4-5. The result of this calculation may be directly compared for compliance with Tier 1 (10 percent) or Tier 2 (15 percent) prerequisites.

   Total Recycled Content Value (percent) =
   [Total Recycled Content Value (dollars)
   ÷ Total Material Cost (dollars)] × 100
   (Equation A5.4-5)

A5.405.4.3 Determination of recycled content value of materials (RCV_M). The recycled content value of each material (RCV_M) is calculated by multiplying the cost of material, as defined by the recycled content. See Equations A5.4-6 and A5.4-7.

RCV_M (dollars) = Material
cost (dollars) × RC_M (percent) **(Equation A5.4-6)**

RC_M (percent) = Postconsumer content
percentage + ($^1/_2$) Preconsumer content percentage
(Equation A5.4-7)

Notes:

1. If the postconsumer and preconsumer recycled content is provided in pounds, Equation A5.4-7 may be used, but the final result (in pounds) must be multiplied by 100 to show RC_M as a percentage.
2. If the manufacturer does not separately identify the pre-consumer and post-consumer recycled content of a material but reports it as a total single percentage, the total amount shall be considered preconsumer recycled material.

A5.405.4.4 Determination of recycled content value of assemblies – (RCV_A). Recycled content value of assemblies is calculated by multiplying the total cost of assembly by the total recycled content of the assembly (RC_A), and shall be determined by Equation A5.4-8.

RCV_A (dollars) = Assembly cost
(dollars) × Total RC_A (percent) **(Equation A5.4-8)**

If not provided by the manufacturer, Total RC_A (percent) is the sum (Σ) of the Proportional Recycled Content (PRC_M) of each material in the assembly. RC_A shall be determined by Equation A4.4-9.

$RC_A = \Sigma\ PRC_M$ **(Equation A5.4-9)**

PRC_M of each material may be calculated by one of two methods using the following formulas:

Method 1: Recycled content (Postconsumer and Preconsumer) of each material provided in percentages

PRC_M (percent) = Weight of material
(percent) × RC_M (percent)**(Equation A5.4-10)**

Weight of material (percent) =
[Weight of material (lbs) ÷ Weight
of assembly (lbs)] × 100**(Equation A5.4-11)**

RC_M (percent) = Postconsumer
content percentage + ($^1/_2$) Preconsumer
content percentage**(See Equation A5.4-7)**

Method 2: Recycled content (Postconsumer and Preconsumer) provided in pounds

PRC_M (percent) = [RC_M (lbs)
Weight of material (lbs)] × 100**(Equation A5.4-12)**

RC_M (lbs) = Postconsumer content (lbs) +
($^1/_2$) Preconsumer content (lbs)**(Equation A5.4-13)**

Note: If the manufacturer does not separately identify the pre-consumer and post-consumer recycled content of a material but reports it as a total single percentage, the total amount shall be considered preconsumer recycled material.

A5.405.4.5 Alternate method for concrete. When Supplementary Cementitious Materials (SCMs), such as fly ash or ground blast furnace slag cement, are used in concrete, an alternate method of calculating and reporting recycled content in concrete products shall be permitted. When determining the recycled content value, the percent recycled content shall be multiplied by the cost of the cementitious materials only, not the total cost of the concrete.

A5.405.5 Cement and concrete. Cement and concrete made with recycled products shall comply with Section A5.405.

A5.405.5.1 Cement. Cement shall comply with one of the following standards:

1. Portland cement shall meet ASTM C150, *Standard Specification for Portland Cement.*
2. Blended cement shall meet ASTM C595, Standard Specification for Blended Hydraulic Cement or ASTM C1157, *Standard Performance Specification for Hydraulic Cement.*
3. Other Hydraulic Cements shall meet ASTM C1157, *Standard Performance Specification for Hydraulic Cement.*

A5.405.5.2 Concrete. Use concrete manufactured with cementitious materials in accordance with Section A5.405.2, as approved by the Engineer of Record.

A5.405.5.2.1 Supplementary cementitious materials (SCM). Use concrete made with one or more supplementary cementitious materials (SCM) conforming to the following standards:

1. Fly ash conforming to ASTM C618, *Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.*
2. Slag cement (GGBFS) conforming to ASTM C989, *Specification for Use in Concrete and Mortars.*
3. Silica fume conforming to ASTM C1240, *Specification for Silica Fume Used in Cementitious Mixtures.*
4. Natural pozzolan conforming to ASTM C618, *Specification for Coal Fly Ash* and Raw or Calcined Natural Pozzolan for Use in Concrete.
5. Blended supplementary cementitious materials conforming to ASTM C1697, Standard Specification for Blended Supplementary Cementitious Materials. The amount of each SCM in the blend will be used separately in calculating Equation A5.4-1. Class C fly ash, if used in the blend, will be considered *SL* for the purpose of satisfying the equation.
6. Ultra-fine fly ash (UFFA) conforming to ASTM C618, *Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete* and the following chemical and physical requirements:

Chemical Requirements	Percent
Sulfur Trioxide (SO_3)	1.5 max.
Loss on ignition	1.2 max.
Available Alkalines (as Na_2O) equivalent	1.5 max.
Physical Requirements	**Percent**
Particle size distribution Less than 3.5 microns Less than 9.0 microns	 50 90
Strength Activity Index with portland cement 7 days 28 days	 95 (minimum % of control) 110 (minimum % of control)
Expansion at 16 days when testing job materials in conformance with ASTM C1567*	0.10 max.

* In the test mix, cement shall be replaced with at least 12% UFFA by weight.

7. Metakaolin conforming to ASTM C618, *Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete, the following chemical and physical requirements:*

Chemical Requirements	Percent
Silicon Dioxide (SiO_2) + Aluminum Oxide (Al_2O_3)	92.0 min.
Calcium Oxide (CaO)	1.0 max.
Sulfur Trioxide (SO_3)	1.0 max.
Loss on ignition	1.2 max.
Available Alkalies (as Na_2O) equivalent	1.0 max.
Physical Requirements	**Percent**
Particle size distribution Less than 45 microns	 95
Strength Activity Index with portland cement 7 days 28 days	 100 (minimum % of control) 100 (minimum % of control)

8. Ground-glass pozzolan per ASTM C1866/C1866M.
9. Other materials with comparable or superior environmental benefits, as approved by the Engineer of Record.

A5.405.5.2.1.1 Mix design equation. Use any combination of one or more SCM, satisfying Equation A5.4-14. When ASTM C595 or ASTM C1157 cement is used, the amount of SCM in these cements shall be used in calculating Equation A5.4-14.

Exception: Minimums in mix designs approved by the Engineer of Record may be lower where high early strength is needed for concrete products or to meet an accelerated project schedule. High early strength shall be defined as outlined in ACI CT.

$$F/25 + SL/50 + UF/12 \geq 1 \quad \textbf{(Equation A5.4-14)}$$

where:

F = Fly ash, natural pozzolan or other approved SCM, or blended SCM, as a percent of total cementitious material for concrete on the project.

SL = GGBFS, as a percent of total cementitious material for concrete on the project.

UF = Silica fume, metakaolin or UFFA, as a percent of total cementitious material for concrete on the project.

A5.405.5.3 Concrete manufacture. The following measures shall be permitted in the manufacture of concrete, as approved by the Engineer of Record.

A5.405.5.3.1 Recycled aggregates. Concrete made with one or more of the following materials:

1. Blast furnace slag as a lightweight aggregate in unreinforced concrete.
2. Recycled concrete aggregate (RCA) or crushed concrete aggregate (CCA) that meets grading

requirements of ASTM C33, *Standard Specification for Concrete Aggregates.*

a. Recycled concrete aggregate (RCA) is created from existing concrete structures, including building foundations, parking areas, and sidewalks. It has been processed to create a recycled concrete aggregate usable in many applications.

b. Crushed concrete aggregate (CCA) is created by taking concrete that was batched but not used in initial construction and is returned in the mixer truck to the concrete batch plant. As a recent mix and unplaced, it is a clean product with known properties.

3. Other materials with comparable or superior environmental benefits.

A5.405.5.3.2 Mixing water. Water recycled by the local water purveyor or water reclaimed from manufacturing processes and conforming to ASTM C1602, Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete.

A5.405.5.3.3 High strength concrete. Concrete elements designed to reduce their total size compared to standard 3,000 psi concrete, thereby reducing the total volume of cement, aggregate and water used on the project.

A5.405.5.3.4 Later ages of maturity. An increase in the age of maturity of testing for determining compressive strength for acceptance of concrete from the current 28 days to 42 or 56 days, in compliance with ASTM C31/C31M.

A5.405.5.3.5 Returned fresh concrete. The use of returned fresh concrete in compliance with ASTM C1798/C1798M or Caltrans Section 90-9.

SECTION A5.406
ENHANCED DURABILITY AND REDUCED MAINTENANCE

A5.406.1 Choice of materials. Compared to other products in a given product category, choose materials proven to be characterized by one or more of the following.

A5.406.1.1 Service life. Select materials for longevity and minimal deterioration under conditions of use.

A5.406.1.2 Reduced maintenance. Select materials that require little, if any, finishing. For those with surface protection, choose materials that do not require frequent applications of toxic or malodorous finishes.

A5.406.1.3 Recyclability. Select materials that can be reused or recycled at the end of their service life in the project.

SECTION A5.408
CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

A5.408.3.1 Enhanced construction waste reduction – Tier 1. Divert to recycle or salvage at least 65 percent of nonhazardous construction and demolition waste generated at the site. Any mixed recyclables that are sent to mixed-waste recycling facilities shall include a qualified third party verified facility average diversion rate. Verification of diversion rates shall meet minimum certification eligibility guidelines, acceptable to the local enforcing agency.

A5.408.3.1.1 Enhanced construction waste reduction – Tier 2. Divert to recycle or salvage at least 80 percent of nonhazardous construction and demolition waste generated at the site.

A5.408.3.1.2 Verification of compliance. A copy of the completed waste management report or documentation of certification of the waste management company utilized shall be provided.

Exceptions:

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.

SECTION A5.409
LIFE CYCLE ASSESSMENT

A5.409.1 Scope. Projects with the area limits specified shall comply with Section A5.409.1 to achieve Tier 1 or Tier 2 compliance. Projects of any size shall comply with Section A5.409.5 to achieve Tier 2 compliance.

1. Projects consisting of newly constructed building(s) with a combined floor area of 50,000 square feet or greater shall comply with either Section A5.409.2 or Section A5.409.3.
2. Alteration(s) to existing building(s) where the combined altered floor area is 50,000 square feet or greater shall comply with either Section A5.105.2, Section A5.409.2 or Section A5.409.3.
3. Addition(s) to existing building(s) where the total floor area combined with the existing building(s) is 50,000 square feet or greater shall comply with either Section A5.105.2, Section A5.409.2 or Section A5.409.3.

   Exception: Combined addition(s) to existing building(s) of two times the area or more of the existing building(s) is not eligible to meet compliance with Section A5.105.2.
4. Projects consisting of newly constructed building(s) with a combined floor area of less than 50,000 square feet shall comply with either Section 5.409.2 or Section 5.409.3 for Tier 1 compliance, and either Section A5.409.2.1 or A5.409.3 Tier 1 requirements for Tier 2 compliance.
5. Alteration(s) to existing building(s) where the aggregate floor area is less than 50,000 square feet shall comply with either Section 5.105.2, Section 5.409.2, or Section 5.409.3 for Tier 1 compliance, and either Section A5.105.2.1, Section A5.409.2.1, or Section A5.409.3 Tier 1 requirements for Tier 2 compliance.

6. Addition(s) to an existing building where the total floor area combined with the existing building(s) is less than 50,000 square feet shall comply with either Section 5.105.2, Section 5.409.2, or Section 5.409.3 for Tier 1 compliance, and either Section A5.105.2.1, Section A5.409.2.1, or Section A5.409.3 Tier 1 requirements for Tier 2 compliance.

   Exception: Combined addition(s) to existing building(s) of two times the area or more of the existing building(s) is not eligible to meet compliance with Section 5.105.2 or Section A5.105.2.

A5.409.2 Whole building life cycle assessment. Projects shall meet the minimum requirements of Section A5.409.2 for Tier 1 or Tier 2 compliance.

A5.409.2.1 Tier 1. Projects shall conduct a cradle-to-grave whole building life cycle assessment meeting the requirements of Section 5.409.2 and performed in accordance with ISO 14040 and 14044, excluding operating energy, demonstrating a minimum 15-percent reduction in global warming potential (GWP) as compared to a reference baseline building of similar size, function, complexity, type of construction, material specification, and location that meets the requirements of all parts of the *California Building Standards Code* currently in effect. Software used to conduct the whole building life cycle assessment, including reference baseline building, shall have a data set compliant with ISO 14044, and ISO 21930 or EN 15804, and the software shall conform to ISO 21931 and/or EN 15978. The software tools and data sets shall be the same for evaluation of both the baseline building and the proposed building.

Exception: For projects that include building reuse, the reference baseline building shall exclude the reused elements. The percent reduction in GWP shall be achieved through the design and construction of new project elements.

A5.409.2.2 Tier 2. Projects shall conduct a cradle-to-grave whole building life cycle assessment meeting the requirements of Section 5.409.2 and performed in accordance with ISO 14040 and ISO 14044, excluding operating energy, demonstrating a minimum 20-percent reduction in GWP as compared to a reference baseline building of similar size, function, complexity, type of construction, material specification, and location that meets the requirements of all parts of the *California Building Standards Code* currently in effect. Software used to conduct the whole building life cycle assessment, including reference baseline building, shall have a data set compliant with ISO 14044, and ISO 21930 or EN 15804, and the software shall conform to ISO 21931 and/or EN 15978. The software tools and data sets shall be the same for evaluation of both the baseline building and the proposed building.

Exception: For projects that include building reuse, the reference baseline building shall not be of new construction and shall retain existing materials. The percent reduction in GWP shall be achieved through the design and construction of new project elements.

A5.409.2.3 Verification of compliance. A summary of the GWP analysis produced by the software and Worksheet WS-7 signed by the design professional of record shall be provided in the construction documents as documentation of compliance. A copy of the whole building life cycle assessment which includes the GWP analysis produced by the software, in addition to maintenance and training information, shall be included in the operation and maintenance manual and shall be provided to the owner at the close of construction. The enforcing agency may require inspection and inspection reports in accordance with Sections 702.2 and 703.1 during and at completion of construction to demonstrate substantial conformance. Inspection shall be performed by the design professional of record or third party acceptable to the enforcing agency.

A5.409.3 Product GWP compliance—prescriptive path. Each product that is permanently installed and listed in Table A5.409.3 shall have a Type III environmental product declaration (EPD), either product-specific or factory-specific.

A5.409.3.1. Products shall comply with the requirements for product GWP performance in accordance with Section A5.409.3 using for the maximum acceptable GWP value for the product category listed in Table A5.409.3 for Tier 1 or Tier 2 compliance for the verified reduction calculation resulting in a minimum 15-percent reduction in total GWP.

Exception: Concrete may be considered one product category to meet compliance with this section. A weighted average of the maximum GWP for all concrete mixes installed in the project shall be less than the weighted average maximum GWP allowed per Table A5.409.3 using Exception Equation A5.409.3.1. Calculations shall be performed with consistent units of measurement for the material quantity and the GWP value. For the purposes of this exception, industry-wide EPDs are acceptable.

Exception EQUATION A5.409.3.1

$GWP_n < GWP_{allowed}$

where

$GWP_n = \Sigma\,(GWP_n)(v_n)$ and $GWP_{allowed} = \Sigma\,(GWP_{allowed})(v_n)$

and

n = each concrete mix installed in the project

GWP_n = the GWP for concrete mix n per concrete mix EPD, in kg CO_2e/m^3

$GWP_{allowed}$ = the GWP potential allowed for concrete mix n per Table 5.409.3

v_n = the volume of concrete mix n installed in the project, in m^3

A5.409.3.2 Verification of compliance. Calculations to demonstrate compliance, Type III EPDs for products required to comply if included in the project, and Worksheet WS-8 signed by the design professional of record shall be provided on the construction documents. Updated EPDs for products used in construction shall be provided to the owner at the close of construction and to the enforcement entity

upon request. The enforcing agency may require inspection and inspection reports in accordance with Sections 702.2 and 703.1 during and at completion of construction to demonstrate substantial conformance. Inspection shall be performed by the design professional of record or third party acceptable to the enforcing agency.

A5.409.4 Whole building life cycle assessment of additional impacts. Maintaining compliance with the requirements of Section 5.409.2, conduct a cradle-to-grave whole building life cycle assessment performed in accordance with ISO 14044, including operating energy, and demonstrating a minimum 10-percent improvement for a minimum of two additional impacts listed in Section A5.409.4.1, as compared to a reference baseline building of similar size, function, complexity, type of construction, material specification, location and operating energy performance that meets the requirements of the *California Energy Code* currently in effect.

A5.409.4.1 Impacts to be considered. Select from the following impacts in the assessment:

1. Fossil fuel depletion.
2. Stratospheric ozone depletion.
3. Acidification of land and water sources.
4. Eutrophication.
5. Photochemical oxidants (smog).

TABLE A5.409.3
PRODUCT GWP LIMITS, TIER 1 AND TIER 2

BUY CLEAN CALIFORNIA PRODUCT CATEGORY[1]	TIER 1 MAXIMUM ACCEPTABLE GWP VALUE (unfabricated) ($GWP_{allowed}$)	TIER 2 MAXIMUM ACCEPTABLE GWP VALUE (unfabricated) ($GWP_{allowed}$)	UNIT OF MEASUREMENT
Hot-rolled structural steel sections	1.52	1.01	MT CO_2e/MT
Hollow structural sections	2.57	1.71	MT CO_2e/MT
Steel plate	2.24	1.49	MT CO_2e/MT
Concrete reinforcing steel	1.34	0.89	MT CO_2e/MT
Flat glass	2.15	1.43	kg CO_2e/MT
Light-density mineral wool board insulation	5.00	3.33	kg CO_2e/1 m^2
Heavy-density mineral wool board insulation	12.24	8.16	kg CO_2e/1 m^2
Concrete, Ready-Mixed[2, 3]			
CONCRETE PRODUCT CATEGORY	**TIER 1 MAXIMUM ACCEPTABLE GWP VALUE (unfabricated) ($GWP_{allowed}$)**	**TIER 2 MAXIMUM ACCEPTABLE GWP VALUE (unfabricated) ($GWP_{allowed}$)**	**UNIT OF MEASUREMENT**
up to 2499 psi	386	257	kg CO_2e/m^3
2500–3499 psi	419	279	kg CO_2e/m^3
3500–4499 psi	485	323	kg CO_2e/m^3
4500–5499 psi	567	378	kg CO_2e/m^3
5500–6499 psi	601	401	kg CO_2e/m^3
6500 psi and greater	685	456	kg CO_2e/m^3
Concrete, Lightweight Ready-Mixed[2]			
CONCRETE PRODUCT CATEGORY	**TIER 1 MAXIMUM ACCEPTABLE GWP VALUE (unfabricated) ($GWP_{allowed}$)**	**TIER 2 MAXIMUM ACCEPTABLE GWP VALUE (unfabricated) ($GWP_{allowed}$)**	**UNIT OF MEASUREMENT**
up to 2499 psi	750	500	kg CO_2e/m^3
2500–3499 psi	819	546	kg CO_2e/m^3
3500–4499 psi	891	594	kg CO_2e/m^3

1. The GWP values of the products listed in Table A5.409.3 are based on 150% of Buy Clean California Act (BCCA) GWP values, except for concrete products which are not included in BCCA.
2. For concrete, Tier 1 is 150%, Tier 2 is 100% of the National Ready Mixed Concrete Association (NRMCA) 2022 version 3 Pacific Southwest regional benchmark values are used for the GWP allowed, except for High Early Strength.
3. Concrete High Early Strength ready-mixed shall be calculated at 130% of the ready-mixed concrete GWP allowed values for each product category.

CALIFORNIA GREEN BUILDING STANDARDS CODE – MATRIX ADOPTION TABLE
APPENDIX A5 – NONRESIDENTIAL VOLUNTARY MEASURES
DIVISION A5.5 – ENVIRONMENTAL QUALITY

(Matrix Adoption Tables are nonregulatory, intended only as an aid to the 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																						
A5.507.5		†						X														

The state agency does not adopt sections identified by the following symbol: †.

APPENDIX A5

NONRESIDENTIAL VOLUNTARY MEASURES

Division A5.5 – ENVIRONMENTAL QUALITY

SECTION A5.501
GENERAL

A5.501.1 Scope. The provisions of this chapter shall outline means of reducing the quantity of air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of a building's installers, occupants and neighbors.

SECTION A5.502
DEFINITIONS

A5.502.1 Definitions. The following terms are defined in Chapter 2.

INTERIOR, BUILDING.

MERV. [BSC]

MULTI-OCCUPANT SPACES.

NO ADDED FORMALDEHYDE (NAF) BASED RESINS.

SINGLE OCCUPANT SPACES.

ULTRA-LOW EMITTING FORMALDEHYDE (ULEF) RESINS.

SECTION A5.504
POLLUTANT CONTROL

A5.504.1 Indoor air quality (IAQ) during construction. Maintain IAQ as provided in Sections A5.504.1.1 and A5.504.1.2.

A5.504.1.1 Temporary ventilation. Provide temporary ventilation during construction in accordance with Section 120.1 (Requirements for Ventilation) of the *California Energy Code,* CCR, Title 24, Part 6 and Chapter 4 of CCR, Title 8 and as follows:

1. Ventilation during construction shall be achieved through openings in the building shell using fans to produce a minimum of three air changes per hour.
2. If the building is occupied during demolition or construction, meet or exceed the recommended Control Measures of the Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) IAQ Guidelines for Occupied Buildings under Construction, 1995, Chapter 3.

A5.504.1.2 Additional IAQ measures. Employ additional measures as follows:

1. When using generators to generate temporary power, use generators meeting the requirements of CCR, Title 13, Chapter 9 or local ordinance, whichever is more stringent.
2. Protect on-site absorbent materials from moisture. Remove and replace any materials with evidence of mold, mildew or moisture infiltration.
3. Store odorous and high VOC-emitting materials off-site, without packaging, for a sufficient period to allow odors and VOCs to disperse.
4. When possible, once materials are on the jobsite, install odorous and high VOC-emitting materials prior to those that are porous or fibrous.
5. Clean oil and dust from ducts prior to use.

A5.504.2 IAQ postconstruction. After all interior finishes have been installed, flush out the building by supplying con-

tinuous ventilation with all air handling units at their maximum outdoor air rate and all supply fans at their maximum position and rate for at least 14 days.

1. During this time, maintain an internal temperature of at least 60°F and relative humidity no higher than 60 percent. If extenuating circumstances make these temperature and humidity limits unachievable, the flush-out may be conducted under conditions as close as possible to these limits, provided that documentation of the extenuating circumstances is provided in writing.
2. Occupancy may start after 4 days, provided flush-out continues for the full 14 days. During occupied times, the thermal comfort conditions of Title 24 must be met.
3. For buildings that rely on natural ventilation, exhaust fans and floor fans must be used to improve air mixing and removal during the 14-day flush-out and windows should remain open.
4. Do not "bake out" the building by increasing the temperature of the space.
5. If continuous ventilation is not possible, flush-out air must total the equivalent of 14 days of maximum outdoor air. The equivalent of 14 days of maximum outdoor air (the target air volume) shall be calculated by multiplying the maximum feasible air flow rate (in ft^3/m) by 14 days (20,160 minutes). The air volumes for each period of ventilation are then calculated and summed and the flush-out continues until the total equals the target air volume.

A5.504.2.1 IAQ testing. If the engineer determines that building flush-out pursuant to Section A5.504.2 is not feasible, a testing alternative may be employed after all interior finishes have been installed, using testing protocols recognized by the United States Environmental Protection Agency (US EPA).

A5.504.2.1.1 Maximum levels of contaminants. Allowable levels of contaminant concentrations measured by testing shall not exceed the following:

1. Carbon Monoxide (CO): 9 parts per million, not to exceed outdoor levels by 2 parts per million;
2. Formaldehyde: 27 parts per billion;
3. Particulates (PM10): 50 micrograms per cubic meter;
4. 4-Phenylcyclohexene (4-PCH), if fabrics and carpets with styrene butadiene rubber (SBR) latex backing, are installed: 6.5 micrograms per cubic meter; and
5. Total Volatile Organic Compounds (TVOC): 300 micrograms per cubic meter.

A5.504.2.1.2 Test protocols. Testing of indoor air quality should include the following elements:

1. The contaminant sampling and averaging times and the measurement methods should be sufficient to achieve a Limit of Detection that is below the maximum allowable concentrations.
2. Testing should be conducted with the HVAC system operated at the minimum design outdoor air ventilation rate.
3. Air samplers and monitors should be located near likely sources of formaldehyde and other volatile organic compounds, at a height of 3 to 6 feet from the floor and well away from walls and air diffusers.
4. The test protocols should be justified with documentation to show that appropriate sampling methods and times were used.

A5.504.2.1.3 Noncomplying building areas. For each sampling area of the building exceeding the maximum concentrations specified in Section A5.504.2.1.1, flush out with outside air and retest samples taken from the same area. Repeat the procedures until testing demonstrates compliance.

Note: US EPA-recognized testing protocols may be found on the Air Resources Board web site.

A5.504.4.5.1 No added formaldehyde Tier 1. Use composite wood products approved by the California Air Resources Board (ARB) as no-added formaldehyde (NAF) based resins or ultra-low emitting formaldehyde (ULEF) resins.

Notes:

1. See Title 17, Section 93120.3(c) and (d), respectively.
2. Documentation must be provided verifying that materials are certified to meet the pollutant emission limits. A list of manufacturers and their NAF and ULEF certified materials is provided at: http://www.arb.ca.gov/toxics/compwood/naf_ulef/listofnaf_ulef.htm.

A5.504.4.7 Resilient flooring systems, Tier 1. Where resilient flooring is installed, at least 90 percent of floor area receiving resilient flooring shall meet 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 for certification programs and testing labs.

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

A5.504.4.7.1 Resilient flooring systems, Tier 2. Where resilient flooring is installed, 100 percent of floor area receiving resilient flooring shall meet 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," Ver-

sion 1.2, January 2017 (Emission testing method for California Specification 01350).

See California Department of Public Health's website for certification programs and testing labs.

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

A5.504.4.7.2 Verification of compliance. Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.

A5.504.4.8 Thermal insulation, Tier 1. Thermal insulation, No-added Formaldehyde. Install thermal insulation which complies with Tier 1 plus does not contain any added formaldehyde.

A5.504.4.8.1 Verification of compliance. Documentation shall be provided verifying that thermal insulation materials meet the pollutant emission limits.

A5.504.5 Hazardous particulates and chemical pollutants. Minimize and control pollutant entry into buildings and cross-contamination of regularly occupied areas.

A5.504.5.1 Entryway systems. Install permanent entryway systems measuring at least six feet in the primary direction of travel to capture dirt and particulates at entryways directly connected to the outdoors.

1. Qualifying entryways are those that serve as regular entry points for building users.
2. Acceptable entryway systems include, but are not limited to, permanently installed grates, grilles or slotted systems that allow cleaning underneath.
3. Roll-out mats are acceptable only when maintained regularly by janitorial contractors as documented in service contract or by in-house staff as documented by written policies and procedures.

A5.504.5.2 Isolation of pollutant sources. In rooms where activities produce hazardous fumes or chemicals, such as garages, janitorial or laundry rooms and copy or printing rooms, exhaust them and isolate them from their adjacent rooms.

1. Exhaust each space with no air recirculation in accordance with ASHRAE 62.1, Table 6-4 to create negative pressure with respect to adjacent spaces with the doors to the room closed.
2. For each space, provide self-closing doors and deck to deck partitions or a hard ceiling.
3. Install low-noise, vented range hoods for all cooking appliances and in laboratory or other chemical mixing areas.

SECTION A5.507
ENVIRONMENTAL COMFORT

A5.507.1 Lighting and thermal comfort controls. Provide controls in the workplace as described in Sections A5.507.1.1 and A5.507.1.2.

A5.507.1.1 Single-occupant spaces. Provide individual controls that meet energy use requirements in the *California Energy Code* in accordance with Sections A5.507.1.1.1 and A5.507.1.1.2.

A5.507.1.1.1 Lighting. Provide individual task lighting and/or daylighting controls for at least 90 percent of the building occupants.

A5.507.1.1.2 Thermal comfort. Provide individual thermal comfort controls for at least 50 percent of the building occupants.

1. Occupants shall have control over at least one of the factors of air temperature, radiant temperature, air speed and humidity as described in ASHRAE 55-2004.
2. Occupants inside 20 feet of the plane of and within 10 feet either side of operable windows can substitute windows to control thermal comfort. The areas of operable window must meet the requirements of Section 120.1 (Requirement for Ventilation) of the *California Energy Code.*

A5.507.1.2 Multi-occupant spaces. Provide lighting and thermal comfort system controls for all shared multi-occupant spaces, such as classrooms and conference rooms.

A5.507.2 Daylight. Provide daylit spaces as required for toplighting and sidelighting in the *California Energy Code.* In constructing a design, consider the following:

1. Use of light shelves and reflective room surfaces to maximize daylight penetrating the rooms
2. Means to eliminate glare and direct sun light, including through skylights
3. Use of photosensors to turn off electric lighting when daylight is sufficient
4. Not using diffuse daylighting glazing where views are desired

A5.507.3 Views. Achieve direct line of sight to the outdoor environment via vision glazing between 2 feet 6 inches and 7 feet 6 inches above finish floor for building occupants in 90 percent of all regularly occupied areas as demonstrated by plan view and section cut diagrams.

A5.507.3.1 Interior office spaces. Entire areas of interior office spaces may be included in the calculation if at least 75 percent of each area has direct line of sight to perimeter vision glazing.

A5.507.3.2 Multi-occupant spaces. Include in the calculation the square footage with direct line of sight to perimeter vision glazing.

Exceptions to Sections A5.507.2 and A5.507.3. Copy/printing rooms, storage areas, mechanical spaces, restrooms, auditoria and other intermittently or infrequently occupied spaces or spaces where daylight would interfere with use of the space.

A5.507.5 Acoustical control [DSA-SS]. Public Schools and Community Colleges: Unoccupied, furnished classrooms must have a maximum background noise level of no more than 45 dBA LAeq and a maximum (unoccupied, furnished) reverberation of 0.6-second time for classrooms with less than 10,000 cubic feet and a maximum (unoccupied, fur-

nished) reverberation of 0.7-second time for classroom volumes with between 10,000 cubic feet and 20,000 cubic feet.

SECTION A5.508
OUTDOOR AIR QUALITY

A5.508.1.3 Hydrochlorofluorocarbons (HCFCs). Install HVAC and refrigeration equipment that do not contain HCFCs.

A5.508.1.4 Hydrofluorocarbons (HFCs). Install HVAC complying with either of the following:

1. Install HVAC, refrigeration and fire suppression equipment that do not contain HFCs or that do not contain HFCs with a global warming potential greater than 150.
2. Install HVAC and refrigeration equipment that limit the use of HFC refrigerant through the use of a secondary heat transfer fluid with a global warming potential no greater than 1.

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		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																						
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 high-efficiency vehicles for a minimum of 35 percent of parking capacity per Section A5.106.5.1.
   b. Electric vehicle (EV) charging [N] and Table A5.106.5.3.1 w/ footnotes.
   c. 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]
   d. Comply with one elective measure 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 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.

A5.601.3.1 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.

A5.601.3.2 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 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 50 percent of parking capacity per Section A5.106.5.1.
   b. Electric vehicle (EV) charging [N] and Table A5.106.5.3.2 with footnotes.
   c. Comply with thermal emittance, solar reflectance or SRI values for cool roofs in Section A5.106.11.2 and Table A5.106.11.2.3.[1]
   d. Comply with three elective measures 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 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.

TABLE A5.601 NONRESIDENTIAL BUILDINGS:
Green Building Standards Code Proposed Performance Approach

Note: This table is intended only as an aid in illustrating the nonresidential tier structure (Refer to Checklists A5.602, A5.602.1 and A5.602.2 for CALGreen verification guidelines for Mandatory Checklist, Tier 1 Checklist and Tier 2 Checklist.)

CATEGORY	ENVIRONMENTAL PERFORMANCE GOAL	TIER 1	TIER 2
All	Minimum Mandatory (See Mandatory Checklist)	Meet all of the provisions of Chapter 5 (See Tier 1 Checklist)	Meet all of the provisions of Chapter 5 (See Tier 2 Checklist)
DIVISION 5.1 Planning and Design	Designated Parking for Fuel Efficient Vehicles (Tier 1 and Tier 2 only)	Approx. 35% of total spaces	Approx. 50% of total spaces
	Electric Vehicle Charging	Approx. 30% of total spaces	Approx. 45% of total spaces
	Cool Roof to Reduce Heat Island Effect	Roof Slope < 2:12 SRI 75 Roof Slope > 2:12 SRI 16	Roof Slope < 2:12 SRI 82 Roof Slope > 2:12 SRI 27
		1 additional Elective from Division A5.1	3 additional Electives from Division A5.1
DIVISION 5.2 Energy Efficiency	Energy Performance[2a, 2b]	Outdoor lighting power 90% of Part 6 allowance	Outdoor lighting power 90% of Part 6 allowance
		If applicable, solar water-heating system with minimum solar savings fraction of 0.15	If applicable, solar water-heating system with minimum solar savings fraction of 0.15
		Warehouse door seals	Warehouse door seals
		Comply with day lighting requirements	Comply with day lighting requirements
		Exhaust heat recovery	Exhaust heat recovery
		Energy Budget 95% or 90% of Part 6 calculated value of allowance	Energy Budget 90% or 85% of Part 6 calculated value of allowance
DIVISION 5.3 Water Efficiency and Conservation	Indoor Water Use	12% Savings	20% Savings
		1 additional Elective from Division A5.3	3 additional Electives from Division A5.3
DIVISION 5.4 Material Conservation and Resource Efficiency[3]	Construction Waste Reduction	At least 65% reduction	At least 80% reduction
	Recycled Content	Utilize recycled content materials for 10% of total material cost	Utilize recycled content materials for 15% of total material cost
		1 additional Elective from Division A5.4	3 additional Electives from Division A5.4
DIVISION 5.5 Environmental Quality	Low-VOC Resilient Flooring	90% of flooring meets VOC limits	100% of flooring meets VOC limits[1]
	Low-VOC Thermal Insulation	Comply with VOC limits	Install no-added formaldehyde insulation and comply with VOC limits
		1 additional Elective from Division A5.5	3 additional Electives from Division A5.5
Additional Measures		1 additional Elective from any division	3 additional Electives from any division
Approximate Total Measures		15	25

1. Exception: Allowance may be permitted in Tier 2 for up to 5-percent specialty purpose flooring.
2. Solar water-heating system requirement for newly constructed restaurants as per A5.203.1.1.2.
   Exceptions:
   a. Buildings with a natural gas service water heater with a minimum of 95-percent thermal efficiency.
   b. Buildings where greater than 75 percent of the total roof area has annual solar access that is less than 70 percent. Solar access is the ratio of solar insolation including shade to the solar insolation without shade. Shading from obstructions located on the roof or any other part of the building shall not be included in the determination of annual solar access.
3. Life cycle assessment compliant with Section A5.409.4 in this code may be substituted for prescriptive measures from Division A5.4.

A5.602
CALGreen VERIFICATION GUIDELINES
MANDATORY MEASURES CHECKLIST

Application: This checklist shall be used for nonresidential projects that meet one of the following: new construction, building additions of 1,000 square feet or greater, or building alterations with a permit valuation of $200,000 or more pursuant to Section 301.3 AND do not trigger a Tier 1 or Tier 2 requirement:

Y = Yes (section has been selected and/or included)
N/A = Not Applicable (code section does not apply to the project—mainly used for additions and alterations)
O = Other (provide explanation)
[N] = New construction pursuant to Section 301.3
[A] = Additions and/or Alterations pursuant to Section 301.3

CHAPTER 5 DIVISIONS		SECTION TITLE	CODE SECTION	Y	N/A	O	PLAN SHEET, SPEC OR ATTACH REFERENCE
DIVISION 5.1 Planning and Design	Mandatory	Deconstruction and reuse of existing structures, Scope with Exception	5.105.1				
	Mandatory	Reuse of existing building & Verification of compliance with note	5.105.2 and 5.105.2.1				
	Mandatory	Storm water pollution prevention for projects that disturb less than 1 acre of land	5.106.1 through 5.106.2				
	Mandatory	Short-term bicycle parking (with exception)	5.106.4.1.1				
	Mandatory	Long-term bicycle parking	5.106.4.1.2 through 5.106.4.1.5				
	Mandatory	Electric vehicle (EV) charging [N] with Section 5.106.3.1, 5.106.5.3.2 and associated Table 5.106.5.3.1 OR Power Allocation Method: Section 5.106.5.3.6 and associated Table 5.106.5.3.6	5.106.5.3.1, 5.106.5.3.2, Table 5.106.5.3.1, 5.106.5.3.2.1, 5.106.5.3.2.2, 5.106.5.3.3, 5.106.5.3.4 and 5.106.5.3.5 OR 5.106.5.3.6, Table 5.106.5.3.6, 5.106.5.3.3, 5.106.5.3.4 and 5.106.5.3.5				
	Mandatory	Additions or Alterations to existing buildings or parking facilities [A] with Exceptions	5.106.5.4				
	Mandatory	Existing buildings or parking areas without previously installed EV capable infrastructure [A]	5.106.5.4.1				
	Mandatory	Existing buildings or parking areas without previously installed EV capable infrastructure [A]	5.106.5.4.2				
	Mandatory	Electric vehicle (EV) charging: medium-duty and heavy-duty [N]	5.106.5.5				
	Mandatory	Electric vehicle charging readiness requirements for warehouses, grocery stores and retail stores, office buildings, and manufacturing facilities with planned off-street loading spaces [N]	5.106.5.5.1				
	Mandatory	Table 5.106.5.5.1	5.106.5.5 and 5.106.5.5.1				
	Mandatory	Light pollution reduction [N] (with exceptions, notes and table)	5.106.8 through 5.106.8.2				
	Mandatory	Grading and paving (exception for additions and alterations not altering the drainage path)	5.106.10				
DIVISION 5.2 Energy Efficiency	Mandatory	Meet the minimum energy efficiency standard	5.201.1				

(continued)

CHAPTER 5 DIVISIONS		SECTION TITLE	CODE SECTION	Y	N/A	O	PLAN SHEET, SPEC OR ATTACH REFERENCE
DIVISION 5.3 Water Efficiency and Conservation	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				
	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				
	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	Pre-rinse spray valve	5.303.3.4.6				
	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 potable water use in landscape areas (with notes)	5.304.1				
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) with Exception and Notes	5.408.3				
	Mandatory	Life Cycle Assessment, Scope, Whole building life cycle assessment with Notes, Building components, Reference study period, and Verification of compliance	5.409.1, 5.409.2, 5.409.2.1, 5.409.2.2 and 5.409.2.3				
	Mandatory	Life Cycle Assessment, Scope, Product GWP compliance – prescriptive path, 5.409.3.1 with Exception and Exception EQUATION, Verification of compliance and Product GWP Limits Table with Footnotes	5.409.1, 5.409.3, 5.409.3.1, 5.409.3.2 and Table 5.409.3				
	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)

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 mechanical 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	Thermal insulation	5.504.4.7				
	Mandatory	Verification of compliance	5.504.4.7.1				
	Mandatory	Acoustical ceilings and wall panels	5.504.4.8				
	Mandatory	Verification of compliance	5.504.4.8.1				

(continued)

CHAPTER 5 DIVISIONS		SECTION TITLE	CODE SECTION	Y	N/A	O	PLAN SHEET, SPEC OR ATTACH REFERENCE
(continued) **DIVISION 5.5 Environmental Quality**	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				
	Mandatory	Outside air delivery	5.506.1				
	Mandatory	Carbon dioxide (CO_2) monitoring	5.506.2				
	Mandatory	Acoustical control (with exception)	5.507.4				
	Mandatory	Exterior noise transmission, prescriptive method (with exceptions)	5.507.4.1				
	Mandatory	Noise exposure where noise contours are not readily available	5.507.4.1.1				
	Mandatory	Performance method	5.507.4.2				
	Mandatory	Site features	5.507.4.2.1				
	Mandatory	Documentation of compliance	5.507.4.2.2				
	Mandatory	Interior sound transmission (with note)	5.507.4.3				
	Mandatory	Ozone depletion and greenhouse gas reductions	5.508.1				
	Mandatory	Chlorofluorocarbons (CFCs)	5.508.1.1				
	Mandatory	Halons	5.508.1.2				
	Mandatory	Supermarket refrigerant leak reduction for retail food stores 8,000 square feet or more Sections 5.508.2 through 5.508.2.6.3	5.508.2 through 5.508.2.6.3				
		END OF MANDATORY PROVISIONS					

Documentation Author's / Responsible Designer's Declaration Statement	
☐ **Mandatory:** I attest that this mandatory provisions checklist is accurate and complete.	
Signature:	
Company:	Date:
Address:	License:
City/State/Zip:	Phone:

A5.602.1
***CALGreen* VERIFICATION GUIDELINES**
TIER 1 CHECKLIST

Application: This checklist shall be used for nonresidential projects that meet the following: new construction, or building additions of 1,000 square feet or greater, or building alterations with a permit valuation of $200,000 or more pursuant to Section 301.3, AND are adopting Tier 1 voluntary measures.

Note: All applicable mandatory requirements in Chapter 5 shall be met prior to applying Tier 1 voluntary measures.

Instructions:

Comply with all Tier 1 prerequisite measures from the various categories shown on the table below.

Add a "**Y**" to all mandatory and Tier 1 prerequisite measures in the appropriate columns.

Select the required number of additional electives from those categories shown on the table below and add a "**Y**" on the selected elective and add an "**N**" on the rest.

Count the total number of Tier 1 prerequisite measures plus the additional electives and write down the total number at the end of the checklist. Determine if the required number of Tier 1 measures have been selected to achieve Tier 1 compliance.

Y = Yes (section has been selected and/or included)
N = No (section has not been selected and/or included)
O = Other (provide explanation)
[N] = New construction pursuant to Section 301.3
[A] = Additions and/or Alterations pursuant to Section 301.3

CHAPTER 5 DIVISIONS		SECTION TITLE	CODE SECTION	Y	N	O	PLAN SHEET, SPEC OR ATTACH REFERENCE
DIVISION 5.1 Planning and Design (continued)	Mandatory	Deconstruction and reuse of existing structures, Scope with Exception	5.105.1				
	Mandatory	Reuse of existing building & Verification of compliance with note	5.105.2 and 5.105.2.1				
	Mandatory	Storm water pollution prevention for projects that disturb less than 1 acre of land	5.106.1 through 5.106.2				
	Mandatory	Short-term bicycle parking	5.106.4.1.1				
	Mandatory	Long-term bicycle parking	5.106.4.1.2 through 5.106.4.1.5				
	Tier 1 Prerequisite	*Designated parking—35% of parking capacity with future charging spaces, parking stall markings and vehicle designation*	*A5.106.5.1, A5.106.5.1.1, A5.106.5.1.3, A5.106.5.1.4, A5.106.5.1.5*				
	Tier 1 Prerequisite	*Electric vehicle (EV) charging [N] with Section 5.106.3.1, Section 5.106.5.3.2 and associated Table A5.106.5.3.1 Tier 1* *OR* *Power Allocation Method: Section A5.106.5.3.2 and associated Table A5.106.5.3.2 Tier 1*	*5.106.5.3.1, 5.106.5.3.2, Table A5.106.5.3.1 Tier 1, 5.106.5.3.2.1, 5.106.5.3.2.2, 5.106.5.3.3, 5.106.5.3.4 and 5.106.5.3.5* *OR* *A5.106.5.3.2, Table A5.106.5.3.2 Tier 1, 5.106.5.3.3, 5.106.5.3.4 and 5.106.5.3.5*				
	Mandatory	Additions or Alterations to existing buildings or parking facilities [A] with Exceptions	5.106.5.4				
	Mandatory	Existing buildings or parking areas without previously installed EV capable infrastructure [A].	5.106.5.4.1				
	Mandatory	Existing buildings or parking areas with previously installed EV capable infrastructure [A].	5.106.5.4.2				
	Mandatory	Electric vehicle (EV) charging: medium-duty and heavy-duty [N]	5.106.5.5				
	Mandatory	Electric vehicle charging readiness requirements for warehouses, grocery stores and retail stores, office buildings, and manufacturing facilities with planned off-street loading spaces [N]	5.106.5.5.1				

(continued)

CHAPTER 5 DIVISIONS			SECTION TITLE	CODE SECTION	Y	N	O	PLAN SHEET, SPEC OR ATTACH REFERENCE
(continued) **DIVISION 5.1 Planning and Design**		Mandatory	Table 5.106.5.5.1	5.106.5.5 and 5.106.5.5.1				
		Mandatory	Light pollution reduction [N] (with exceptions, notes and table)	5.106.8 through 5.106.8.2				
		Mandatory	Grading and paving (exception for additions and alterations not altering the drainage path)	5.106.10				
		Tier 1 Prerequisite	*Cool roof (A5.106.11.2.2): SRI 75 when ≤ 2:12, SRI 16 when > 2:12*	*A5.106.11.2*				
	Select One Elective	*Elective*	*Community connectivity*	*A5.103.1*				
		Elective	*Brownfield or greyfield site redevelopment or infill area development*	*A5.103.2 A5.103.2.1*				
		Elective	*Reduce development footprint and optimize open space*	*A5.104.1, A5.104.1.1, A5.104.1.2, A5.104.1.3*				
		Elective	*Deconstruction and reuse of existing structures, Scope with Exceptions, Reuse of existing building, Tier 1 and Verification of compliance with Note*	*A5.105.1, A5.105.2 and A5.105.2.1 and A5.105.2.3*				
		Elective	*Storm water design*	*A5.106.2, A5.106.2.1, A5.106.2.2*				
		Elective	*Low Impact Development (LID)*	*A5.106.3, A5.106.3.1, A5.106.3.2*				
		Elective	*Changing rooms w/ note*	*A5.106.4.3*				
		Elective	*Parking capacity w/ reduced parking capacity option*	*A5.106.6, A5.106.6.1*				
		Elective	*Exterior wall shading w/ fenestration and/or opaque wall area option*	*A5.106.7, A5.106.7.1, A5.106.7.2*				
		Elective	*Reduction of heat island effect, Hardscape alternatives*	*A5.106.11, A5.106.11.1*				
		Elective	*Reduction of heat island effect, Cool roof with Exceptions, Solar reflectance, Thermal emittance, Solar reflectance index alternative, Verification of compliance*	*A5.106.11, A5.106.11.2, A5.106.11.2.1, A5.106.11.2.2, A5.106.11.2.3, A5.106.11.2.4*				
		Elective	*Reduction of heat island effect, Shade trees*	*A5.106.11, A5.106.11.3*				
		Elective	*Bird-friendly building design, Required elevation treatment, Special conditions, Nighttime conditions with Exception, Systems or operation and maintenance manual*	*A5.107, A5.107.1, A5.107.2, A5.107.3, A5.107.3.1*				
DIVISION 5.2 Energy Efficiency		Mandatory	Meet the minimum energy efficiency standard	5.201.1				
		Tier 1 Prerequisite	*Energy performance—outdoor lighting power 90% of Part 6*	*A5.203.1.1.1*				
		Tier 1 Prerequisite	*If applicable, service for water heating in restaurants of 8,000 sf or greater*	*A5.203.1.1.2*				
		Tier 1 Prerequisite	*Energy budget 95% or 90% of Part 6 calculated value of allowance*	*A5.203.1.2.1*				
		Elective	*On-site renewable energy (with documentation)*	*A5.211.1, A5.211.1.1*				
		Elective	*Green power*	*A5.211.3*				
		Elective	*Elevators with car lights and fan*	*A5.212.1.1, A5.212.1.1.1*				
		Elective	*Escalators*	*A5.212.1.2*				
		Elective	*Controls that reduce energy*	*A5.212.1.4*				
		Elective	*Steel framing*	*A5.213.1*				

(continued)

CHAPTER 5 DIVISIONS		SECTION TITLE	CODE SECTION	Y	N	O	PLAN SHEET, SPEC OR ATTACH REFERENCE
DIVISION 5.3 Water Efficiency and Conservation	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				
	Tier 1 Prerequisite	*Water reduction Tier 1—12% savings over the "water use baseline" in Table A5.303.2.2 or meet Table A5.303.2.3.1*	*A5.303.2.3.1*				
	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				
	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	Pre-rinse spray valve	5.303.3.4.6				
	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 potable water use in landscape areas (with notes)	5.304.1				
Select One Elective	*Elective*	*Nonpotable water systems for indoor use*	*A5.303.2.3.4*				
	Elective	*Appliances and fixtures for commercial application*	*A5.303.3*				
	Elective	*Nonwater urinals*	*A5.303.4.1*				
	Elective	*Dual plumbing*	*A5.303.5*				
	Elective	*Outdoor potable water use*	*A5.304.2*				
	Elective	*Restoration of areas disturbed by construction*	*A5.304.6*				
	Elective	*Previously developed sites (with exception)*	*A5.304.7*				
	Elective	*Graywater irrigation system*	*A5.304.8*				
	Elective	*Nonpotable water systems*	*A5.305.1*				
	Elective	*Irrigation systems*	*A5.305.2*				
DIVISION 5.4 Material Conservation and Resource Efficiency (continued)	*Tier 1 Prerequisite*	*Recycled content for 10% 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				

(continued)

CHAPTER 5 DIVISIONS			SECTION TITLE	CODE SECTION	Y	N	O	PLAN SHEET, SPEC OR ATTACH REFERENCE
(continued) **DIVISION 5.4 Material Conservation and Resource Efficiency**		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) with Exception and Notes	5.408.3				
		Mandatory	*Life Cycle Assessment, Scope, Whole building life cycle assessment with Notes, Building components, Reference study period, and Verification of compliance*	*5.409.1, 5.409.2, 5.409.2.1, 5.409.2.2 and 5.409.2.3*				
		Mandatory	*Life Cycle Assessment, Scope, Product GWP compliance – prescriptive path, 5.409.3.1 with Exception and Exception EQUATION, Verification of compliance and Product GWP Limits Table with Footnotes*	5.409.1, 5.409.3, 5.409.3.1, 5.409.3.2 and Table 5.409.3				
		Tier 1 Prerequisite	*Enhanced construction waste reduction (65%—Tier 1 with verification)*	*A5.408.3.1, A5.408.3.1.2*				
		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				
		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				
	Select One Elective	*Elective*	*Wood framing or OVE w/ note*	*A5.404.1, A5.404.1.1, A5.404.1.2*				
		Elective	*Regional materials*	*A5.405.1*				
		Elective	*Bio-based materials*	*A5.405.2*				
		Elective	*Certified wood components—sustainability standards*	*A5.405.2.1*				
		Elective	*Rapidly renewable materials*	*A5.405.2.2*				
		Elective	*Reused materials w/ note*	*A5.405.3*				
		Elective	*Cement and concrete: cement*	*A5.405.5.1*				
		Elective	*Cement and concrete: concrete with SCM & Mix design equation*	*A5.405.5.2, A5.405.5.2.1, A5.405.5.2.1.1*				

(continued)

CHAPTER 5 DIVISIONS			SECTION TITLE	CODE SECTION	Y	N	O	PLAN SHEET, SPEC OR ATTACH REFERENCE
(continued) **DIVISION 5.4 Material Conservation and Resource Efficiency**	**Select One Elective**	*Elective*	*Concrete manufacture, Recycled aggregates*	*A5.405.5.3, A5.405.5.3.1*				
		Elective	*Concrete manufacture, Mixing water*	*A5.405.5.3, A5.405.5.3.2*				
		Elective	*Concrete manufacture, High strength concrete*	*A5.405.5.3, A5.405.5.3.3*				
		Elective	*Concrete manufacture, Later ages of maturity*	*A5.405.5.3, A5.405.5.3.4*				
		Elective	*Concrete manufacture, Returned fresh concrete*	*A5.405.5.3, A5.405.5.3.5*				
		Elective	*Choice of materials*	*A5.406.1, A5.406.1.1, A5.406.1.2, A5.406.1.3*				
		Elective	*Life cycle assessment: Scope with exceptions, Whole building life cycle assessment, Tier 1 with Exception, Verification of compliance*	*A5.409.1, A5.409.2, A5.409.2.1, A5.409.2.3*				
		Elective	*Life cycle assessment: Scope with exceptions, Product GWP compliance – prescriptive path with Exception and Exception Equation, Verification of compliance, Product GWP Limits Tier 1 Table with footnotes*	*A5.409.1, A5.409.3, A5.409.3.1, A5.409.3.2, Table A5.409.3*				
		Elective	*Whole building life cycle assessment of additional impacts, Impacts to be considered*	*A5.409.4, A5.409.4.1*				
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 mechanical 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				
		Tier 1 Prerequisite	*Resilient flooring systems, Tier 1 (with verification of compliance)*	*A5.504.4.7, A5.504.4.7.2*				
		Mandatory	Thermal insulation	5.504.4.7				
		Mandatory	Verification of compliance	5.504.4.7.1				
		Tier 1 Prerequisite	*Thermal insulation, Tier 1 (with verification of compliance)*	*A5.504.4.8.1, A5.504.4.8.1*				

(continued)

CHAPTER 5 DIVISIONS			SECTION TITLE	CODE SECTION	Y	N	O	PLAN SHEET, SPEC OR ATTACH REFERENCE
DIVISION 5.5 Environmental Quality (continued)		Mandatory	Acoustical ceilings and wall panels	5.504.4.8				
		Mandatory	Verification of compliance	5.504.4.8.1				
		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				
		Mandatory	Outside air delivery	5.506.1				
		Mandatory	Carbon dioxide (CO_2) monitoring	5.506.2				
		Mandatory	Acoustical control (with exception)	5.507.4				
		Mandatory	Exterior noise transmission, prescriptive method (with exceptions)	5.507.4.1				
		Mandatory	Noise exposure where noise contours are not readily available	5.507.4.1.1				
		Mandatory	Performance method	5.507.4.2				
		Mandatory	Site features	5.507.4.2.1				
		Mandatory	Documentation of compliance	5.507.4.2.2				
		Mandatory	Interior sound transmission (with note)	5.507.4.3				
		Mandatory	Ozone depletion and greenhouse gas reductions	5.508.1				
		Mandatory	Chlorofluorocarbons (CFCs)	5.508.1.1				
		Mandatory	Halons	5.508.1.2				
		Mandatory	Supermarket refrigerant leak reduction for retail food stores 8,000 square feet or more Sections 5.508.2 through 5.508.2.6.3	5.508.2 through 5.508.2.6.3				
	Select One Elective	*Elective*	*Indoor air quality (IAQ) during construction*	*A5.504.1, A5.504.1.1, A5.504.1.2*				
		Elective	*IAQ postconstruction*	*A5.504.2*				
		Elective	*IAQ testing*	*A5.504.2.1, A5.504.2.1.1, A5.504.2.1.2, A5.504.2.1.3*				
		Elective	*No added formaldehyde Tier 1 (with notes)*	*A5.504.4.5.1*				
		Elective	*Hazardous particulates and chemical pollutants*	*A5.504.5*				
		Elective	*Entryway systems*	*A5.504.5.1*				
		Elective	*Isolation of pollutant sources*	*A5.504.5.2*				
		Elective	*Lighting and thermal comfort controls*	*A5.507.1, A5.507.1.1 through A5.507.1.2*				

(continued)

CHAPTER 5 DIVISIONS			SECTION TITLE	CODE SECTION	Y	N	O	PLAN SHEET, SPEC OR ATTACH REFERENCE
(continued) **DIVISION 5.5 Environmental Quality**	**Select One Elective**	*Elective*	*Daylight*	*A5.507.2*				
		Elective	*Views*	*A5.507.3*				
		Elective	*Interior office spaces*	*A5.507.3.1*				
		Elective	*Multi-occupant spaces (with exceptions)*	*A5.507.3.2*				
		Elective	*Hydrochlorofluorocarbons (HCFCs)*	*A5.508.1.3*				
		Elective	*Hydrofluorocarbons (HFCs)*	*A5.508.1.4*				
Additional Measures			*Select 1 additional measure from any division*	Add section #				
Total number of Measures required				15				
Total number of Measures selected								

Documentation Author's / Responsible Designer's Declaration Statement
Check the appropriate box(es) for the list below.

- ☐ **Mandatory:** I attest that the mandatory provisions checklist is accurate and complete.
- ☐ **Tier 1 compliant:** I attest that the total number of voluntary measures selected meet or exceed the total number required to achieve Tier 1 compliance.
- ☐ **Partial Tier 1 compliant:** I attest that the total number of voluntary measures selected do not meet the total number required to achieve Tier 1 compliance: however, partial Tier 1 compliance has been achieved.

Signature:	
Company:	Date:
Address:	License:
City/State/Zip:	Phone:

A5.602.2
CALGreen VERIFICATION GUIDELINES
TIER 2 CHECKLIST

Application: This checklist shall be used for nonresidential projects that meet the following: new construction, or building additions of 1,000 square feet or greater, or building alterations with a permit valuation of $200,000 or more pursuant to Section 301.3, AND are adopting Tier 2 voluntary measures.

Note: All applicable mandatory requirements in Chapter 5 shall be met prior to applying Tier 2 voluntary measures.

Instructions:

Comply with all Tier 2 prerequisite measures from the various categories shown on the table below.

Add a "**Y**" to all mandatory and Tier 2 prerequisite measures in the appropriate columns.

Select the required number of additional electives from those categories shown on the table below and add a "**Y**" on the selected elective and add an "**N**" on the rest.

Count the total number of Tier 2 prerequisite measures plus the additional electives and write down the total number at the end of the checklist. Determine if the required number of Tier 2 measures have been selected to achieve Tier 2 compliance.

Y = Yes (section has been selected and/or included)
N = No (section has not been selected and/or included)
O = Other (provide explanation)
[N] = New construction pursuant to Section 301.3
[A] = Additions and/or Alterations pursuant to Section 301.3

CHAPTER 5 DIVISIONS		SECTION TITLE	CODE SECTION	Y	N	O	PLAN SHEET, SPEC OR ATTACH
DIVISION 5.1 Planning and Design (continued)	Mandatory	Deconstruction and reuse of existing structures, Scope with Exception	5.105.1				
	Mandatory	Reuse of existing building & Verification of compliance with note	5.105.2 and 5.105.2.1				
	Mandatory	Storm water pollution prevention for projects that disturb less than 1 acre of land	5.106.1 through 5.106.2				
	Mandatory	Short-term bicycle parking	5.106.4.1.1				
	Mandatory	Long-term bicycle parking	5.106.4.1.2 through 5.106.4.1.5				
	Tier 2 Prerequisite	*Designated parking—50% of parking capacity with future charging spaces, parking stall markings and vehicle designation*	*A5.106.5.1, A5.106.5.1.2, A5.106.5.1.3, A5.106.5.1.4, A5.106.5.1.5*				
	Tier 2 Prerequisite	*Electric vehicle (EV) charging [N] with Section 5.106.3.1, Section 5.106.5.3.2 and associated Table A5.106.5.3.3 Tier 2* *OR* *Power Allocation Method: Section A5.106.5.3.4 and associated Table A5.106.5.3.4 Tier 2*	*5.106.5.3.1, 5.106.5.3.2, Table A5.106.5.3.3 Tier 2, 5.106.5.3.2.1, 5.106.5.3.2.2, 5.106.5.3.3, 5.106.5.3.4 and 5.106.5.3.5* *OR* *A5.106.5.3.4, Table A5.106.5.3.4 Tier 2, 5.106.5.3.3, 5.106.5.3.4 and 5.106.5.3.5*				
	Mandatory	Additions or Alterations to existing buildings or parking facilities [A] with Exceptions	5.106.5.4				
	Mandatory	Existing buildings or parking areas without previously installed EV capable infrastructure [A].	5.106.5.4.1				
	Mandatory	Existing buildings or parking areas with previously installed EV capable infrastructure [A].	5.106.5.4.2				

(continued)

CHAPTER 5 DIVISIONS			SECTION TITLE	CODE SECTION	Y	N	O	PLAN SHEET, SPEC OR ATTACH
(continued) **DIVISION 5.1 Planning and Design**		Mandatory	Electric vehicle (EV) charging: medium-duty and heavy-duty [N]	5.106.5.5				
		Mandatory	Electric vehicle charging readiness requirements for warehouses, grocery stores and retail stores, office buildings, and manufacturing facilities with planned off-street loading spaces [N]	5.106.5.5.1				
		Mandatory	Table 5.106.5.5.1	5.106.5.5 and 5.106.5.5.1				
		Mandatory	Light pollution reduction [N] (with exceptions, notes and table)	5.106.8 through 5.106.8.2				
		Mandatory	Grading and paving (exception for additions and alterations not altering the drainage path)	5.106.10				
		Tier 2 Prerequisite	*Cool roof (A5.106.11.2.2): SRI 82 when ≤ 2:12, SRI 27 when > 2:12*	*A5.106.11.2*				
	Select Three Electives	*Elective*	*Community connectivity*	*A5.103.1*				
		Elective	*Brownfield or greyfield site redevelopment or infill area development*	*A5.103.2, A5.103.2.1*				
		Elective	*Reduce development footprint and optimize open space*	*A5.104.1, A5.104.1.1, A5.104.1.2, A5.104.1.3*				
		Elective	*Deconstruction and reuse of existing structures, Scope with Exceptions, Reuse of existing building, Tier 2 and Verification of compliance with Note*	*A5.105.1, A5.105.2, A5.105.2.2 and A5.105.2.3*				
		Elective	*Storm water design*	*A5.106.2, A5.106.2.1, A5.106.2.2,*				
		Elective	*Low Impact Development (LID)*	*A5.106.3, A5.106.3.1, A5.106.3.2*				
		Elective	*Changing rooms w/ note*	*A5.106.4.3*				
		Elective	*Parking capacity w/ reduced parking capacity option*	*A5.106.6, A5.106.6.1*				
		Elective	*Exterior wall shading w/ fenestration and/or opaque wall area option*	*A5.106.7, A5.106.7.1, A5.106.7.2*				
		Elective	*Reduction of heat island effect, Hardscape alternatives*	*A5.106.11, A5.106.11.1*				
		Elective	*Reduction of heat island effect, Cool roof with Exceptions, Solar reflectance, Thermal emittance, Solar reflectance index alternative, Verification of compliance*	*A5.106.11, A5.106.11.2, A5.106.11.2.1, A5.106.11.2.2, A5.106.11.2.3, A5.106.11.2.4*				
		Elective	*Reduction of heat island effect, Shade trees*	*A5.106.11, A5.106.11.3*				
		Elective	*Bird-friendly building design, Required elevation treatment, Special conditions, Nighttime conditions with Exception, Systems or operation and maintenance manual*	*A5.107, A5.107.1, A5.107.2, A5.107.3, A5.107.3.1*				
DIVISION 5.2 Energy Efficiency		Mandatory	Meet the minimum energy efficiency standard	5.201.1				
		Tier 2 Prerequisite	*Energy Performance—outdoor lighting power 90% of Part 6*	*A5.203.1.1.1*				
		Tier 2 Prerequisite	*If applicable, service for water heating in restaurants of 8,000 sf or greater*	*A5.203.1.1.2*				

(continued)

CHAPTER 5 DIVISIONS			SECTION TITLE	CODE SECTION	Y	N	O	PLAN SHEET, SPEC OR ATTACH REFERENCE
(continued) **DIVISION 5.2 Energy Efficiency**		*Tier 2 Prerequisite*	*Energy budget 90% or 85% of Part 6 calculated value of allowance*	*A5.203.1.2.2*				
		Elective	*On-site renewable energy (with documentation)*	*A5.211.1, A5.211.1.1*				
		Elective	*Green power*	*A5.211.3*				
		Elective	*Elevators with car lights and fan*	*A5.212.1.1, A5.212.1.1.1*				
		Elective	*Escalators*	*A5.212.1.2*				
		Elective	*Controls that reduce energy*	*A5.212.1.4*				
		Elective	*Steel framing*	*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				
		Tier 2 Prerequisite	*Water reduction Tier 2—20% or 25% savings over the "water use baseline" in Table A5.303.2.2*	*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				
		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	Pre-rinse spray valve	5.303.3.4.6				
		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 potable water use in landscape areas (with notes)	5.304.1				
	Select Three Electives	*Elective*	*Nonpotable water systems for indoor use*	*A5.303.2.3.4*				
		Elective	*Appliances and fixtures for commercial application*	*A5.303.3*				
		Elective	*Nonwater urinals*	*A5.303.4.1*				
		Elective	*Dual plumbing*	*A5.303.5*				
		Elective	*Outdoor potable water use*	*A5.304.2*				
		Elective	*Restoration of areas disturbed by construction*	*A5.304.6*				
		Elective	*Previously developed sites (with exception)*	*A5.304.7*				
		Elective	*Graywater irrigation system*	*A5.304.8*				
		Elective	*Nonpotable water systems*	*A5.305.1*				
		Elective	*Irrigation systems*	*A5.305.2*				
DIVISION 5.4 Material Conservation and Resource Efficiency (continued)		*Tier 2 Prerequisite*	*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				

(continued)

CHAPTER 5 DIVISIONS			SECTION TITLE	CODE SECTION	Y	N	O	PLAN SHEET, SPEC OR ATTACH REFERENCE
(continued) **DIVISION 5.4 Material Conservation and Resource Efficiency**		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) with Exception and Notes	5.408.3				
		Mandatory	Life Cycle Assessment, Scope, Whole building life cycle assessment with Notes, Building components, Reference study period, and Verification of compliance	5.409.1, 5.409.2, 5.409.2.1, 5.409.2.2 and 5.409.2.3				
		Mandatory	Life Cycle Assessment, Scope, Product GWP compliance – prescriptive path, 5.409.3.1 with Exception and Exception EQUATION, Verification of compliance and Product GWP Limits Table with Footnotes	5.409.1, 5.409.3, 5.409.3.1, 5.409.3.2 and Table 5.409.3				
		Tier 2 Prerequisite	*Enhanced construction waste reduction (80%—Tier 2 with verification)*	*A5.408.3.1.1, A5.408.3.1.2*				
		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				
		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				
	Select Three Electives	*Elective*	*Wood framing or OVE (with note)*	*A5.404.1, A5.404.1.1, A5.404.1.2*				
		Elective	*Regional materials*	*A5.405.1*				
		Elective	*Bio-based materials*	*A5.405.2*				
		Elective	*Certified wood components—sustainability standards*	*A5.405.2.1*				
		Elective	*Rapidly renewable materials*	*A5.405.2.2*				
		Elective	*Reused materials (with note)*	*A5.405.3*				
		Elective	*Cement and concrete: cement*	*A5.405.5.1*				
	(cont'd)	*Elective*	*Cement and concrete: concrete with SCM & Mix design equation*	*A5.405.5.2, A5.405.5.2.1, A5.405.5.2.1.1*				

(continued)

CHAPTER 5 DIVISIONS			SECTION TITLE	CODE SECTION	Y	N	O	PLAN SHEET, SPEC OR ATTACH REFERENCE
(continued) **DIVISION 5.4 Material Conservation and Resource Efficiency**	**Select Three Electives** (cont'd)	*Elective*	*Concrete manufacture, Recycled aggregates*	*A5.405.5.3, A5.405.5.3.1*				
		Elective	*Concrete manufacture, Mixing water*	*A5.405.5.3, A5.405.5.3.2*				
		Elective	*Concrete manufacture, High strength concrete*	*A5.405.5.3, A5.405.5.3.3*				
		Elective	*Concrete manufacture, Later ages of maturity*	*A5.405.5.3, A5.405.5.3.4*				
		Elective	*Concrete manufacture, Returned fresh concrete*	*A5.405.5.3, A5.405.5.3.5*				
		Elective	*Choice of materials*	*A5.406.1, A5.406.1.1, A5.406.1.2, A5.406.1.3*				
		Elective	*Life cycle assessment: Scope with exceptions, Whole building life cycle assessment, Tier 2 with Exception, Verification of compliance*	*A5.409.1, A5.409.2, A5.409.2.2, A5.409.2.3*				
		Elective	*Life cycle assessment: Scope with exceptions, Product GWP compliance – prescriptive path with Exception and Exception Equation, Verification of compliance, Product GWP Limits Tier 2 Table with footnotes*	*A5.409.1, A5.409.3, A5.409.3.1, A5.409.3.2, Table A5.409.3*				
		Elective	*Whole building life cycle assessment of additional impacts, Impacts to be considered*	*A5.409.4, A5.409.4.1*				
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 mechanical 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				
		Tier 2 Prerequisite	*Resilient flooring systems, Tier 2 (with verification of compliance)*	*A5.504.4.7.1, A5.504.4.7.2*				
		Mandatory	Thermal insulation	5.504.4.7				
		Mandatory	Verification of compliance	5.504.4.7.1				
		Mandatory	Acoustical ceilings and wall panels	5.504.4.8				
		Mandatory	Verification of compliance	5.504.4.8.1				
		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				
		Mandatory	Outside air delivery	5.506.1				

(continued)

CHAPTER 5 DIVISIONS		SECTION TITLE	CODE SECTION	Y	N	O	PLAN SHEET, SPEC OR ATTACH REFERENCE
(continued) **DIVISION 5.5 Environmental Quality**	Mandatory	Carbon dioxide (CO_2) monitoring	5.506.2				
	Mandatory	Acoustical control (with exception)	5.507.4				
	Mandatory	Exterior noise transmission, prescriptive method (with exceptions)	5.507.4.1				
	Mandatory	Noise exposure where noise contours are not readily available	5.507.4.1.1				
	Mandatory	Performance method	5.507.4.2				
	Mandatory	Site features	5.507.4.2.1				
	Mandatory	Documentation of compliance	5.507.4.2.2				
	Mandatory	Interior sound transmission (with note)	5.507.4.3				
Select Three Electives	Mandatory	Ozone depletion and greenhouse gas reductions	5.508.1				
	Mandatory	Chlorofluorocarbons (CFCs)	5.508.1.1				
	Mandatory	Halons	5.508.1.2				
	Mandatory	Supermarket refrigerant leak reduction for retail food stores 8,000 square feet or more Sections 5.508.2 through 5.508.2.6.3	5.508.2 through 5.508.2.6.3				
	Elective	*Indoor air quality (IAQ) during construction*	*A5.504.1, A5.504.1.1, A5.504.1.2*				
	Elective	*IAQ postconstruction*	*A5.504.2*				
	Elective	*IAQ testing*	*A5.504.2.1, A5.504.2.1.1, A5.504.2.1.2, A5.504.2.1.3*				
	Elective	*No added formaldehyde Tier 1 (with notes)*	*A5.504.4.5.1*				
	Elective	*Hazardous particulates and chemical pollutants*	*A5.504.5*				
	Elective	*Entryway systems*	*A5.504.5.1*				
	Elective	*Isolation of pollutant sources*	*A5.504.5.2*				
	Elective	*Lighting and thermal comfort controls*	*A5.507.1, A5.507.1.1 through A5.507.1.2*				
	Elective	*Daylight*	*A5.507.2*				
	Elective	*Views*	*A5.507.3*				
	Elective	*Interior office spaces*	*A5.507.3.1*				
	Elective	*Multi-occupant spaces (with exceptions)*	*A5.507.3.2*				
	Elective	*Hydrochlorofluorocarbons (HCFCs)*	*A5.508.1.3*				
	Elective	*Hydrofluorocarbons (HFCs)*	*A5.508.1.4*				
Additional Measures		Select three additional measures from any division	Additional measures: 1. 2. 3.				
Total number of Measures required for Tier 2			25				
Total number of Measures selected							

Documentation Author's / Responsible Designer's Declaration Statement ***Check the appropriate box(es) for the list below.*** ☐ **Mandatory:** I attest that the mandatory provisions checklist is accurate and complete. ☐ **Tier 2 compliant:** I attest that the total number of voluntary measures selected meet or exceed the total number required to achieve Tier 2 compliance. □ **Partial Tier 2 compliant:** I attest that the total number of voluntary measures selected do not meet the total number required to achieve Tier 2 compliance; however, partial Tier 2 compliance has been achieved.	
Signature:	
Company:	Date:
Address:	License:
City/State/Zip:	Phone:

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HISTORY NOTE APPENDIX

2022 California Green Building Standards Code
California Code of Regulations, Title 24, Part 11

HISTORY:

For prior history, see the History Note Appendix to the *California Green Building Standards Code*, 2019 Edition, effective January 1, 2020.

1. (BSC 03/21, HCD 03/21, DSA-SS 03/21, CEC 04/21) Repeal, amend and add provisions in the 2022 *California Green Building Standards Code* for residential, nonresidential and public-school buildings. Effective on January 1, 2023.
2. Erratum to correct editorial errors throughout Chapters 2, 4, 5, A4 and A5, effective January 1, 2023.
3. 2022 Intervening Cycle update (BSC 04/22, HCD 04/22, DSA-SS 01/22) – Adoption of amendments to the 2022 *California Green Building Standards Code*. Effective on July 1, 2024.

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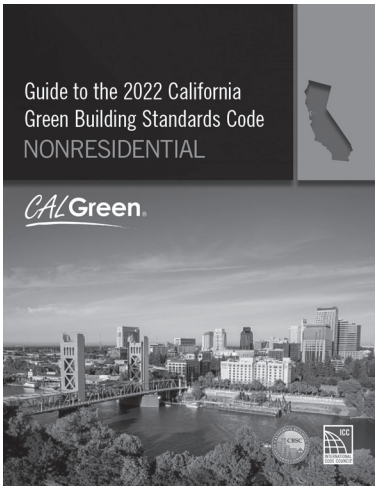

GUIDE TO THE 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE: NONRESIDENTIAL

This guide was developed by the California Building Standards Commission for the purpose of assisting code users with application verification and enforcement of the 2022 California Green Building Standards Code, Part 11, Title 24, California Code of Regulations otherwise known as CALGreen.

SOFT COVER **#4570S22**

GUIDE TO THE 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE: RESIDENTIAL

Includes commentary, background, questions and answers, and helpful tools for the code user to better understand the mandatory and voluntary measures developed by the California Department of Housing and Community Development for residential structures.

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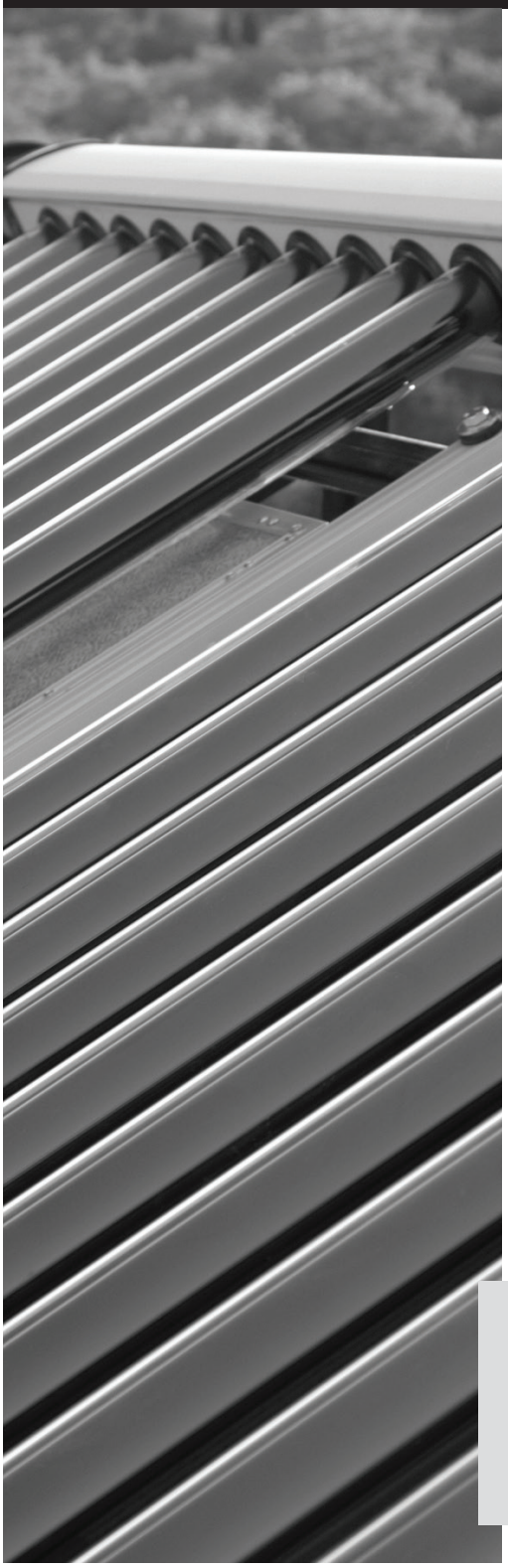

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