

**INITIAL EXPRESS TERMS
FOR
PROPOSED BUILDING STANDARDS
OF THE
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
REGARDING THE 2016 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN)
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 11

(HCD XX/XX)**

The Department of Housing and Community Development (HCD) proposes to make necessary changes to be included in the 2016 edition of the California Green Building Standards Code (CGBC), also known as CALGreen, as presented on the following pages:

LEGEND FOR EXPRESS TERMS:

1. **Existing California text or language being modified:** All language is shown in normal Arial 9 point; modified language is underlined or shown in ~~strikeout~~.
 2. **Existing text not being modified:** All language not displayed in full is shown as “...” (i.e., ellipsis).
 3. **Repealed text:** All language appears in ~~strikeout~~.
 4. **Amended, adopted or repealed language after public hearing:** All language is shown in double underline or ~~double strikeout~~.
 5. **Notation:** Authority and Reference citations are provided at the end of each section.
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1. HCD proposes to continue adoption of Chapter 1 from the 2013 CALGreen Code into the 2016 CALGreen Code with new modifications as follows:

**CHAPTER 1
ADMINISTRATION**

**SECTION 101
GENERAL**

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

101.7.1 Findings and filings.

1. ... (No Change)
2. ... (No Change)
3. Findings prepared by fire protection districts shall be ratified by the local city, county, or city and county and filed with the California Department of Housing and Community Development at ~~4800 3rd Street, Room 260, Sacramento, CA 95811~~ 2020 W. El Camino Avenue, Suite 250, Sacramento, CA 95833-1829.

**SECTION 104
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT**

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

1. **Housing construction.**

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

2. HCD proposes to continue adoption of Chapter 2 from the 2013 CALGreen Code into the 2016 CALGreen Code with new modifications as follows:

**CHAPTER 2
DEFINITIONS**

**SECTION 202
DEFINITIONS**

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.

ELECTRIC VEHICLE (EV) CHARGER. Off-board charging equipment used to charge an electric vehicle.

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

ELECTRIC VEHICLE CHARGING STATION(S) (EVCS). ~~One or more spaces intended for charging electric vehicles.~~ One or more electric vehicle charging spaces served by electric vehicle charger(s) or other charging equipment allowing charging of electric vehicles. EVCS are not considered parking spaces.

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.

HYBRID URINAL. A urinal that conveys waste into the drainage system without the use of water for flushing, and automatically performs a drain-cleaning action after a predetermined amount of time.

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.

3. HCD proposes to continue adoption of Chapter 4 from the 2013 CALGreen Code into the 2016 CALGreen Code with new modifications as follows:

**CHAPTER 4
RESIDENTIAL MANDATORY MEASURES**

Division 4.1 – PLANNING AND DESIGN

**SECTION 4.106
SITE DEVELOPMENT**

4.106.4.2 New multifamily dwellings. Where 17 or more multifamily dwelling units are constructed on a building site, 3 percent of the total number of parking spaces provided for all types of parking facilities, but in no case less than one, shall be electric vehicle charging ~~stations~~ spaces (EVCS EV spaces) capable of supporting future EVSE and shall be identified on construction documents. Calculations for the required number of EVCS spaces shall be rounded up to the nearest whole number.

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

4.106.4.2.1 Electric vehicle charging station (EVCS) space (EV space) locations. Construction documents shall indicate the location of proposed EVCS EV spaces. At least one EVCS EV space shall be located in common use areas and available for use by all residents.

When EV chargers are installed, EVCS EV spaces required by Section 4.106.4.2.2, Item 3, shall comply with at least one of the following options:

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

4.106.4.2.2 Electric vehicle charging station (EVCS) space (EV space) dimensions and slope. The EVCS EV spaces shall be designed to comply with the following:

1. The minimum length of each EVCS EV space shall be 18 feet (5486 mm).
2. The minimum width of each EVCS EV space shall be 9 feet (2743 mm).
3. One in every 25 EVCS EV spaces, but not less than one EVCS, 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 EV space is 12 feet (3658 mm).
 - a. Surface slope for this EVCS EV space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction.

4.106.4.2.3 Single EVCS EV space required. Install a listed raceway capable of accommodating a 208/240-volt dedicated 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 enclosure in close proximity to the proposed location of the EVCS EV spaces. Construction documents shall identify the raceway termination point. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

4.106.4.2.4 Multiple EVCS EV spaces required. Construction documents shall indicate the raceway termination point and proposed location of future EVCS EV spaces and EV chargers. Construction documents shall also provide information on amperage of future EVSE, raceway method(s), wiring schematics and electrical load calculations to verify that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EVCS EV spaces at the full rated amperage of the EVSE. Plan design shall be based upon a 40-ampere minimum branch circuit. Raceways and related components that are planned to be installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the time of original construction.

4.106.4.2.5 Identification. The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the *California Electrical Code*.

Notes:

1. The California Department of Transportation adopts and publishes the "California Manual on Uniform Traffic Control Devices (California MUTCD)" to provide uniform standards and specifications for all official traffic control devices in California. Zero Emission Vehicle Signs and Pavement Markings can be found in the New Policies & Directives Number 13-01. Website: www.dot.ca.gov/hq/traffops/signtech/signdel/policy.htm
<http://www.dot.ca.gov/hq/traffops/policy/13-01.pdf>
2. See Vehicle Code Section 22511 for EV charging space signage in off-street parking facilities and for use of EV charging spaces.
3. The Governor's Office of Planning and Research (OPR) published a "Zero-Emission Vehicle Community Readiness Guidebook" which provides helpful information for local governments, residents and businesses. Website: http://opr.ca.gov/docs/ZEV_Guidebook.pdf

4. ~~The Governor's Office of Planning and Research (OPR) has developed draft guidelines, "Plug-In Electric Vehicles: Universal Charging Access Guidelines and Best Practices", addressing physical accessibility standards and design guidelines for EVs. Website: http://opr.ca.gov/docs/PEV_Access_Guidelines.pdf~~

Division 4.3 – WATER EFFICIENCY AND CONSERVATION

SECTION 4.303 INDOOR WATER USE

~~4.303.1.2 Urinals. On or after January 1, 2016, the~~ The effective flush volume of wall mounted urinals shall not exceed 0.125 gallons per flush. The effective flush volume of all other urinals shall not exceed 0.5 gallons per flush.

~~4.303.1.4.1 Residential lavatory faucets. . On or after January 1, 2016, the~~ The maximum flow rate of residential lavatory faucets shall not exceed 1.2 gallons per minute at 60 psi. The minimum flow rate of residential lavatory faucets shall not be less than 0.8 gallons per minute at 20 psi.

~~4.303.2 Standards for plumbing fixtures and fittings.~~ Plumbing fixtures and fittings shall be installed in accordance with the *California Plumbing Code*, and shall meet the applicable standards referenced in Table ~~4404.4~~ 1701.1 of the *California Plumbing Code*.

SECTION 4.304 OUTDOOR WATER USE

~~4.304.2 Irrigation controllers.~~ Automatic irrigation system controllers for landscaping ~~provided by the builder and~~ installed at the time of final inspection shall comply with the following:

1. Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change.
2. Weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-based controllers are not required to have rain sensor input.

~~Note: More information regarding irrigation controller function and specifications is available from the Irrigation Association.~~

~~More information regarding irrigation controllers may be obtained from "A Guide to the California Green Building Standards Code" located at www.hcd.ca.gov/CALGreen.html.~~

Division 4.4 – MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

SECTION 4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

~~4.408.1 Construction waste management.~~ Recycle and/or salvage for reuse a minimum of ~~50~~ 65 percent of the nonhazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4, or meet a more stringent local construction and demolition waste management ordinance.

Exceptions: (....No Change)

~~4.408.4 Waste stream reduction alternative.~~ Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed ~~four (4)~~ 3.4 lbs./sq. ft. of the building area shall meet the minimum 50 percent construction waste reduction requirement in Section 4.408.1.

SECTION 4.410 BUILDING MAINTENANCE AND OPERATION

4.410.1 Operation and maintenance manual. At the time of final inspection, a manual, compact disc, web-based reference or other media acceptable to the enforcing agency which includes all of the following shall be placed in the building:

1. Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.
2. Operation and maintenance instructions for the following:
 - a. Equipment and appliances, including water-saving devices and systems, HVAC systems, photovoltaic systems, electric vehicle chargers, water-heating systems and other major appliances and equipment.
 - b. Roof and yard drainage, including gutters and downspouts.
 - c. Space conditioning systems, including condensers and air filters.
 - d. Landscape irrigation systems.
 - e. Water reuse systems.
3. Information from local utility, water and waste recovery providers on methods to further reduce resource consumption, including recycle programs and locations.
4. Public transportation and/or carpool options available in the area.
5. Educational material on the positive impacts of an interior relative humidity between 30–60 percent and what methods an occupant may use to maintain the relative humidity level in that range.
6. Information about water-conserving landscape and irrigation design and controllers which conserve water.
7. Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 feet away from the foundation.
8. Information on required routine maintenance measures, including, but not limited to, caulking, painting, grading around the building, etc.
9. Information about state solar energy and incentive programs available.
10. A copy of all special inspection verifications required by the enforcing agency or this code.

4.410.2 Recycling by occupants. Where 5 or more multifamily dwelling units are constructed on a building site, provide readily accessible area(s) that serves all buildings on the site and is 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 of Public Resources Code 42649.82 (a)(2)(A) et seq. are not required to comply with the organics waste portion of this section.

Division 4.5 – ENVIRONMENTAL QUALITY

SECTION 4.503 FIREPLACES

4.503.1 General. Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed woodstove or pellet stove shall comply with U.S. EPA ~~Phase II~~ New Source Performance Standards (NSPS) emission limits where as applicable, and shall have a permanent label indicating they are certified to meet the emission limits. Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances.

SECTION 4.504 POLLUTANT CONTROL

4.504.2.3 Aerosol paints and coatings. Aerosol paints and coatings shall meet the Product-weighted MIR Limits for ROC in Section 94522(a)(3 2) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Section 94522(e)(2) (e)(1) and (d)(2) (f)(1) of California Code of Regulations, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8, Rule 49.

**TABLE 4.504.1
ADHESIVE VOC LIMIT
Less Water and Less Exempt Compounds in Grams per Liter**

ARCHITECTURAL APPLICATIONS	CURRENT VOC LIMIT
No changes to table content	

(No Change to Table footnotes)

**TABLE 4.504.2
SEALANT VOC LIMIT
Less Water and Less Exempt Compounds in Grams per Liter**

SEALANTS	CURRENT VOC LIMIT
No changes to table content	

**TABLE 4.504.3
VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS^{2, 3}
Grams of VOC per Liter of Coating,
Less Water and Less Exempt Compounds**

COATING CATEGORY	VOC LIMIT
No changes to table content	

(No Change to Table footnotes)

4.504.5 Composite wood products. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.), by or before the dates specified in those sections, as shown in Table 4.504.5.

4.504.5.1 Documentation. Verification of compliance with this section shall be provided as requested by the enforcing agency. Documentation shall include at least one of the following:

1. Product certifications and specifications.
2. Chain of custody certifications.
3. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, *et seq.*).
4. Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269, ~~or~~ European 636 3S₂ and Canadian CSA O121, CSA O151, CSA O153 and CSA O325 standards.
5. Other methods acceptable to the enforcing agency.

**SECTION 4.507
ENVIRONMENTAL COMFORT**

4.507.2 Heating and air-conditioning system design. Heating and air-conditioning systems shall be sized, designed and have their equipment selected using the following methods:

1. The heat loss and heat gain is established according to ANSI/ACCA 2 Manual J - ~~2004~~ 2011 (Residential Load Calculation), ASHRAE handbooks or other equivalent design software or methods.
2. Duct systems are sized according to ANSI/ACCA 1 Manual D - ~~2009~~ 2014 (*Residential Duct Systems*), ASHRAE handbooks or other equivalent design software or methods.
3. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S - ~~2004~~ 2014 (*Residential Equipment Selection*) or other equivalent design software or methods.

Exception: Use of alternate design temperatures necessary to ensure the systems function are acceptable.

4. HCD proposes to continue adoption of Chapter 6 from the 2013 CALGreen Code into the 2016 CALGreen Code with new modifications as follows:

**CHAPTER 6
REFERENCED ORGANIZATIONS AND STANDARDS**

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

ORGANIZATION	STANDARD	REFERENCED SECTION
AHAM Association of Home Appliance Manufacturers 1111 19 th 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 Street NW Washington, D.C. 20005 http://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 http://www.acca.org	ANSI/ACCA 2 Manual J–2004 2011 ANSI/ACCA 1 Manual D–2009 2014 ANSI/ACCA 3 Manual S–2004 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 http://www.ansi.org	ANSI/AHAM DW-1-2010 NSF/ANSI 140-2007 2014 ANSI/ACCA 2 Manual J–2004 2011 ANSI/ACCA 1 Manual D–2009 2014 ANSI/ACCA 3 Manual S–2004 2014	202 4.504.3, 5.504.4.4 4.507.2 4.507.2 4.507.2
ASTM ASTM International		

ORGANIZATION	STANDARD	REFERENCED SECTION
100 Barr Harbor Drive West Conshohocken, PA 19428-2859 http://www.astm.org	ASTM C 33 ASTM C 150 ASTM C 595 ASTM C 618 ASTM C 989 ASTM C 1157 ASTM C 1240 ASTM C 1371-98 ASTM C 1549 – 09(2014) ASTM C 1602 ASTM C 1697 ASTM E 90 ASTM E 408-02 ASTM E 413 ASTM E 1332 ASTM E 1333 - 14 ASTM E 1903-07 11 ASTM E 1918 - 06(2015) ASTM E 1980-04 11	A 5.405.5.3.2 A 5.405.5.1 A 5.405.5.1 A 5.405.5.2.1 A 5.405.5.2.1 A 5.405.5.1 A 5.405.5.2.1 A5.106.11.2.2 A4.106.7, A5.106.11.1 A5.405.5.3.2.3 A5.405.5.2.1 5.507.4 A5.10, 6.11.2.2 5.507.4 5.507.4 Table 4.504.5, 5.504.4.5 A5.103.4 A4.106.7, A5.106.11.1 A4.106.5.3, A5.106.11.2.3
CSA Canadian Standards Association 5060 Spectrum Way, Suite 100 Mississauga, Ontario, Canada L4W 5N6 http://www.csa.ca	CSA B125.1, <u>CSA O121</u> , <u>CSA O151</u> , <u>CSA O153</u> , <u>CSA O325</u>	<u>4.504.5.1</u>

5. HCD proposes to continue adoption of Chapter A4 from the 2013 CALGreen Code into the 2016 CALGreen Code with new modifications as follows:

**APPENDIX A4
RESIDENTIAL VOLUNTARY MEASURES**

Division A4.1 – PLANNING AND DESIGN

**SECTION A4.106
SITE DEVELOPMENT**

**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	0.55 0.63	0.75	64 75
> 2 : 12	10-15	0.20	0.75	16

**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	10 & 11, 13-15 9, 10, 11, 13, 14, 15	0.55	0.75	64
>2 : 12	2-15	0.20	0.75	16

A4.106.8.2 New multifamily dwellings.

Tier 1 and Tier 2. Where 17 or more multifamily dwelling units are constructed on a building site, 5 percent of the total number of parking spaces provided for all types of parking facilities, but in no case less than one, shall be electric vehicle charging stations spaces (EVCS EV spaces) capable of supporting future EVSE ~~and shall be identified on construction documents~~. Calculations for the required number of EVCS EV spaces shall be rounded up to the nearest whole number.

See Section 4.106.4.2 for additional requirements related to EVCS for multifamily dwellings.

Notes:

- 1 The California Department of Transportation adopts and publishes the “California Manual on Uniform Traffic Control Devices (California MUTCD)” to provide uniform standards and specifications for all official traffic control devices in California. Zero Emission Vehicle Signs and Pavement Markings can be found in the New Policies & Directives Number 13-01. Website: www.dot.ca.gov/hq/traffops/signtech/signdel/policy.htm
<http://www.dot.ca.gov/hq/traffops/policy.htm>
- 2 See Vehicle Code Section 22511 for EV charging space signage in off-street parking facilities and for use of EV charging spaces.
- 3 The Governor’s Office of Planning and Research (OPR) published a “Zero-Emission Vehicle Community Readiness Guidebook” which provides helpful information for local governments, residents and businesses. Website: http://opr.ca.gov/docs/ZEV_Guidebook.pdf
- 4 ~~The Governor’s Office of Planning and Research (OPR) has developed draft guidelines, “Plug In Electric Vehicles: Universal Charging Access Guidelines and Best Practices”, addressing physical accessibility standards and design guidelines for EVs. Website: http://opr.ca.gov/docs/PEV_Access_Guidelines.~~

Division A4.3 – WATER EFFICIENCY AND CONSERVATION

SECTION A4.303 INDOOR WATER USE

A4.303.3 Appliances. ~~Dishwashers and clothes washers in residential buildings shall comply with the following:~~

~~Install at least one qualified ENERGY STAR appliance with maximum water use as follows: dishwasher or clothes washer.~~

1. ~~Standard Dishwashers — 4.25 gallons per cycle.~~
2. ~~Compact Dishwashers — 3.5 gallons per cycle.~~
3. ~~Clothes Washers — water factor of 6 gallons per cubic feet of drum capacity.~~

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

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

Hybrid urinals, as defined in Chapter 2, shall be considered waterless 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

A4.304.2 Potable water elimination. When landscaping is provided ~~by the builder~~ 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. Methods used to accomplish the requirements of this section must be designed to the requirements of the *California Building Standards Code* and shall include, but not be limited to, the following:

1. – 6. (...No change)

Division A4.4 – MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

**SECTION A4.404
EFFICIENT FRAMING TECHNIQUES**

A4.404.1 Lumber size. Beams, and headers and trimmers are sized and installed as specified in ~~CRC Tables R502.5(1) and R502.5(2)~~ Chapter 23 of the *California Building Code*, or Chapter 6 of the *California Residential Code*, as applicable. Other calculations acceptable to the enforcing agency which use the minimum size member for the tributary load shall be acceptable.

A4.404.2 Dimensions and layouts. Building dimensions and layouts are designed to minimize waste by one or more of the following measures in at least 80 percent of the structure:

1. Building design dimensions in 2-foot increments are used.
2. Windows and doors are located at regular 16" or 24" stud positions.
3. Other methods acceptable to the enforcing agency.

**SECTION A4.405
MATERIAL SOURCES**

A4.405.3.1.1 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 A4.4-1 or Equation A4.4-2.

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 residential structure by the square foot valuation established pursuant to ~~Table A4.405.3~~ the *ICC Building Valuation Data (BVD)* or other valuation data as approved and/or established by the enforcing agency. The total material cost is 45 percent of the total cost of the project. Use Equations A4.4-3A or A4.4-3B to determine total material costs using the simplified method.

**TABLE A4.405.3
SQUARE FOOT VALUATION**

TYPE OF STRUCTURE	SQUARE FOOT CONSTRUCTION COSTS
Residential, one and two family	\$101.90
Residential, multiple family	\$92.94

~~**Note:** Minimum square foot construction costs for residential one- and two-family, and multiple family dwellings are from the International Code Council's (ICC) *Building Valuation Data (BVD)* – February 2011.~~

A4.405.3.1.3 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 A4.4-6 and A4.4-7. (No Changes proposed to equations)

Notes:

1. If the postconsumer and preconsumer recycled content is provided in pounds, Equation A4.4-7 may be used, but the final result (in pounds) must be multiplied by 100 to show RCM as a percentage.
2. If the manufacturer reports total recycled content of a material as one percentage in lieu of separately reporting preconsumer and postconsumer values, ~~one-half of the total shall be considered preconsumer recycled material and one-half of the total shall be considered postconsumer recycled material.~~

A4.405.3.1.4 Determination of recycled content value of assemblies – (RCV_A). Recycled content value of assemblies is calculated by multiplying the total cost of the assembly by the total recycled content of the assembly (RCA), and shall be determined by Equation A4.4-8.

(No Changes proposed to equations)

Note: If the manufacturer reports total recycled content of a material as one percentage in lieu of separately reporting preconsumer and postconsumer values, ~~one-half of the total shall be considered preconsumer recycled material and one-half of the total shall be considered postconsumer recycled material.~~

SECTION A4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

A4.408.1 Enhanced construction waste reduction. Nonhazardous construction and demolition debris generated at the site is diverted to recycle or salvage in compliance with one of the following:

Tier 1. At least a 65 percent reduction with a third party verification of the waste management plan. 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.

Tier 2. At least a 75 percent reduction with a third party verification as required for Tier 1.

Exceptions: (...No Change)

Division A4.6 – TIER I AND TIER 2

SECTION A4.601 GENERAL

A4.601.4.2 Prerequisite and elective measures for Tier 1. In addition to the mandatory measures, compliance with the following prerequisite and elective measures from Appendix A4 is also required to achieve Tier 1 status:

1. From Division A4.1, Planning and Design. (No change to text)
2. From Division A4.2, Energy Efficiency. (No change to text)
3. From Division A4.3, Water Efficiency and Conservation.
- 3.1. Comply with at least ~~two~~ three elective measures selected from Division A4.3.
4. From Division A4.4, Material Conservation and Resource Efficiency. (No change to text)
5. From Division A4.5, Environmental Quality. (No change to text)

A4.601.5.2 Prerequisite and elective measures for Tier 2. In addition to the mandatory measures, compliance with the following prerequisite and elective measures from Appendix A4 is also required to achieve Tier 2 status.

1. From Division A4.1, Planning and Design. (No change to text)
2. From Division A4.2, Energy Efficiency. (No change to text)
3. From Division A4.3, Water Efficiency and Conservation.
- 3.1 Comply with at least ~~three~~ four elective measures selected from Division A4.3.
4. From Division A4.4, Material Conservation and Resource Efficiency. (No change to text)
5. From Division A4.5, Environmental Quality. (No change to text)

SECTION A4.602

RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives ¹		Enforcing Agency <input type="checkbox"/> All	Installer or Designer <input type="checkbox"/> All	Third party <input type="checkbox"/> All
		Tier 1	Tier 2			
WATER EFFICIENCY AND CONSERVATION						
Indoor water use						
<p>A4.303.3 Appliances. Dishwashers and clothes washers in residential buildings shall comply with the following: Install at least one qualified ENERGY STAR appliance with maximum water use as follows:</p> <p>1. Standard Dishwashers—4.25 gallons per cycle. 2. Compact Dishwashers—3.5 gallons per cycle. 3. Clothes Washers—water factor of 6 gallons per cubic feet of drum capacity.</p> <p>A4.303.3. Install at least one qualified ENERGY STAR dishwasher or clothes washer.</p>		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				
A4.303.5. One- and two-family dwellings shall be equipped with a demand hot water recirculation system.		<input type="checkbox"/>				
MATERIAL CONSERVATION AND RESOURCE EFFICIENCY						
Construction Waste Reduction, Disposal and Recycling						
<p>4.408.1 Recycle and/or salvage for reuse a minimum of 50 65 percent of the nonhazardous construction and demolition waste in accordance with one of the following:</p> <p>1. Comply with a more stringent local construction and demolition waste management ordinance; or 2. A construction waste management plan, per Section 4.408.2; or 3. A waste management company, per Section 4.408.3; or 4. The waste stream reduction alternative, per Section 4.408.4.</p>	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives ¹		Enforcing Agency	Installer or Designer	Third party
		Tier 1	Tier 2	<input type="checkbox"/> All	<input type="checkbox"/> All	<input type="checkbox"/> All
<p>A4.408.1 Construction waste generated at the site is diverted to recycle or salvage in compliance with one of the following:</p> <p>1. Tier 1 at least a 65 percent reduction <u>with a third party verification.</u></p> <p>2. Tier 2 at least a 75 percent reduction <u>with a third party verification.</u></p> <p>Exception: Equivalent waste reduction methods are developed by working with local agencies.</p>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
Building Maintenance and Operation						
<p>4.410.2 Where 5 or more multifamily dwelling units are constructed on a building site, 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.</p> <p>Exception: Rural jurisdictions that meet and apply for the exemption of Public Resources Code 42649.82 (a)(2)(A) et seq. will also be exempt from the organics waste portion of this section.</p>	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ENVIRONMENTAL QUALITY						
Fireplaces						
<p>4.503.1 Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed woodstove or pellet stove shall comply with U.S. EPA Phase II <u>New Source Performance Standards (NSPS) emission limits where as applicable, and shall have a permanent label indicating they are certified to meet the emission limits.</u> Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances.</p>	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>