

GREEN BUILDING CODE MANDATORY RESIDENTIAL REQUIREMENTS

All new residential buildings that are three stories or less in height that are submitted after December 31, 2010 for building plan check must comply with the mandatory requirements of the 2010 California Green Building Standards Code. The following notes and tables will be required to be on plans for these types of buildings:

1. Indoor water use.

- A. A schedule of plumbing fixtures and fixtures that will reduce the overall use of potable water within the building by 20 percent shall be provided by one of the following methods:
 - (1). Each plumbing fixture and fitting shall meet reduced flow rates specified in Table 4.303.2 (attached); or
 - (2.) A calculation demonstrating a 20 percent reduction in the building “water use” baseline as established in Table 4.303.1 (attached) shall be provided. The calculation shall be limited to the following plumbing fixture and fitting types: water closets, urinals, lavatory faucets and showerheads.
- B. When single shower fixtures are served by more than one showerhead, the combined flow rate of all the showerheads shall not exceed the maximum flow rates specified in the 20 percent reduction column contained in Table 4.303.2 or the shower shall be designed to only allow one showerhead to be in operation at a time.
 - Exception:** The maximum flow rate for showerheads when using the calculation Method specified in Item A(2.) above is 2.5 gpm @ 80 psi.
- C. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall meet the standards in Table 4.303.3 (attached).

2. Outdoor water use. Automatic irrigation system controllers for landscaping provided by the builder and installed at the time of final inspection shall comply with the following:

- A. Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants’ needs as weather conditions change.
- B. 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.

3. Joints and openings. Openings in the building envelope separating conditioned space from unconditioned space must be sealed per the California Energy Code. Annular space around pipes, electrical conduits, and other openings in the exterior shall be protected against the passage of rodents.

4. Operational and Maintenance Manual. At the time of final inspection, a manual, compact disc, web-based reference or other media which includes all of the following shall be placed in the building:

- A. Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.
- B. Operational and maintenance instructions for the following:

- (1) Equipment and appliances.
 - (2) Roof and yard drainage, including gutters and downspouts.
 - (3) Space conditioning systems, including condensers and air filters.
 - (4) Landscaping irrigation systems.
 - (5) Water reuse systems.
 - C. Information from local utility, water and waste recovery providers on methods to further reduce resource consumption, including recycle programs and locations.
 - D. Public transportation and/or carpool options available in the area.
 - E. 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 in that range.
 - F. Information about water-conserving landscape and irrigation design and controllers which conserve water.
 - G. Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 feet away from the foundation.
 - H. Information on required routine maintenance measures, including, but not limited to, caulking, painting, grading around the building, etc.
 - I. Information about state solar energy and incentive programs available.
 - J. A copy of all special inspection verifications required.
- 5. Fireplaces.** 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 emission limits.
- 6. Covering of duct openings and protection of mechanical equipment during construction.** At the time of rough installation or during storage on the construction site and until final startup of the heating and cooling equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheetmetal or other methods.
- 7. Adhesives, sealants and caulks.** Adhesives, sealants and caulks used on the project shall meet the requirements of the following standards:
- A. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, and caulks shall comply with SCAQMD Rule 1168 VOC limits, as shown in Table 4.504.1 (attached) or 4.504.2 (attached), as applicable. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and trichloroethylene), except for aerosol products, as specified in Subsection B below.
 - B. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than 1 pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of California Code of Regulations, Title 17, commencing with Section 94507.

- 8. Paints and coatings.** Architectural paints and coatings shall comply with VOC limits in Table 1 of the ARB Architectural Suggested Control Measure, as shown in Table 4.504.3, unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 4.504.3 (attached) shall be determined by classifying the coating as a Flat, Nonflat or Nonflat-High Gloss coating, based on its gloss as defined in subsections 4.21, 4.36, and 4.37 of the 2007 California Air Resources Board, Suggested Control Measure, and corresponding Flat, Nonflat, or Nonflat-High Gloss VOC limit in Table 4.504.3 shall apply.
- 9. Aerosol paints and coatings.** Aerosol paints and coatings shall meet the Product-Weighted MIR Limits for ROC in Section 94522(a)(3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(c)(2) and (d)(2) of California Code of Regulations, Title 17, commencing with Section 94520.
- 10. Carpet systems.** All carpet installed in the building interior shall meet the testing and product requirements of one of the following:
- A. Carpet and Rug Institute's Green Label Plus Program.
 - B. California Department of Public Health Standard Practice for the testing of VOCs (Specification 01350).
 - C. NSF/ANSI 140 at the Gold Level.
 - D. Scientific Certifications Systems Indoor Advantage Gold.
- All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program.
- All carpet adhesive shall meet the requirements of Table 4.504.1(attached).
- 11. Resilient flooring systems.** Where resilient flooring is installed, at least 50 percent of floor area receiving resilient flooring shall comply with the VOC emission limits defined in Collaborative for High Performance Schools (CHPS) Low-emitting Materials List or certified under the Resilient Floor Covering Institute (RCFI) Floor Score program.
- 12. 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 (attached).
- 13. Capillary break at concrete building slabs.** A capillary break shall be installed and shall consist of the following: a 4-inch thick base of ½ inch or larger clean aggregate shall be provided with a vapor barrier in direct contact with concrete and a concrete mix design, which will address bleeding, shrinkage, and curling, shall be used. For additional information, see American Concrete Institute ACI 302.2R-06. An equivalent slab design by a design professional is acceptable.

14. Moisture content of building materials. Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19 percent moisture content. Moisture content shall be verified in compliance with the following:

- A. Moisture content shall be determined with either a probe-type or contact-type moisture meter.
- B. Moisture readings shall be taken at a point 2 feet to 4 feet from the grade stamped end of each piece to be verified.
- C. At least three random moisture readings shall be performed on wall and floor framing with documentation provided immediately prior to enclosure of the wall and floor framing.

Insulation products which are visibly wet or have a high moisture content shall be replaced or allowed to dry prior to enclosure in wall or floor cavities. Wet-applied insulation products shall follow the manufacturers' drying recommendations prior to enclosure.

15. Bathroom exhaust fans. For bathrooms containing a bathtub, shower, or tub/shower combination, a mechanical exhaust fan which exhausts directly from the bathroom must be installed. Fans must be ENERGY STAR compliant and be ducted to terminate outside the building. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidistat which shall be readily accessible. Humidistat controls shall be capable of adjustment between a relative humidity range of 50 to 80 percent.

16. Whole house exhaust fans. Whole house exhaust fans shall have insulated louvers or covers which close when the fan is off. Covers or louvers shall have a minimum insulation value of R-4.2.

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

- A. The heat loss and heat gain is established according to ACCA Manual J, ASHRAE handbooks or other equivalent design software methods.
- B. Duct systems are sized according to ACCA 29-D Manual D, ASHRAE handbooks or other equivalent design software or methods.
- C. Select heating and cooling equipment according to ACCA 36-S Manual S or other equivalent design software or methods.

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