



City of Oroville Building Inspection Division

Non-Residential Mandatory Measures for New Buildings

2010 CALGreen Green Building Code



50. Systems operations training. The training of the appropriate maintenance staff for each equipment type and/or system shall include items listed in Section 5.410.2.5.2.
51. Commissioning report. A complete report of commissioning process activities undertaken through the design, construction and reporting recommendations for post-construction phases of the building project shall be completed and provided to the owner or representative.
52. Testing and adjusting. Testing and adjusting of systems shall be required for buildings less than 10,000 square feet.
53. 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, the systems listed in Section 5.410.3.2.
54. Procedures. Perform testing and adjusting procedures in accordance with industry best practices and applicable national standards on each system.
55. HVAC balancing. Before a new space-conditioning system serving a building or space is operated for normal use, the system should be balanced in accordance with the procedures defined by national standards listed in Section 5.410.3.3.1.
56. Reporting. After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services.
57. Operation and maintenance manual. Provide the building owner with detailed operating and maintenance instructions and copies of warranties/warranties for each system prior to final inspection.
58. Inspections and reports. Include a copy of all inspection verifications and reports required by the enforcing agency.

Environmental Quality:

59. Install only a direct-vent sealed-combustion gas or sealed wood-burning fireplace or a sealed woodstove and refer to residential requirements in the *California Energy Code*, Title 24, Part 6, Subchapter 7, Section 150.
60. Woodstoves. Woodstoves shall comply with US EPA Phase II emission limits.
61. 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 acceptable to the enforcing agency to reduce the amount of dust or debris which may collect in the system.

62. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable or SCAQMD Rule 1168 VOC limits, as shown in Tables 5.504.4.1 and 5.504.4.2.
63. 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 one 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.
64. Paints and coatings. Architectural paints and coatings shall comply with Table 5.504.4.3 unless more stringent local limits apply.
65. 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 (CCR, Title 17, Section 94520 et seq).
66. Verification. Verification of compliance with this section shall be provided at the request of the enforcing agency.
67. Carpet systems. All carpet installed in the building interior shall meet the testing and product requirements of one of the standards listed in Section 5.504.4.4.
68. Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program.
69. Carpet adhesive. All carpet adhesive shall meet the requirements of Table 804.4.1.
70. 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 Table 5.504.4.
71. 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.
72. Product certifications and specifications.
73. Chain of custody certifications.
74. Other methods acceptable to the enforcing agency.
75. Resilient flooring systems. Comply with the VOC-emission limits defined in the 2009 CHPS criteria and listed on its Low-emitting Materials List (or Product Registry) or certified under the FloorScore program of the Resilient Floor Covering Institute.
76. Verification of compliance. Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.
77. Filters. In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air prior to occupancy that provides at least a MERV of 8.

78. Indoor moisture control. Buildings shall meet or exceed the provisions of *California Building Code*, CCR, Title 24, Part 2, Sections 1203 and Chapter 14.1.1
79. Outside air delivery. For mechanically or naturally ventilated spaces in buildings, meet the minimum requirements of Section 121 of the *California Energy Code*, CCR, Title 24, Part 6 and Chapter 4 of CCR, Title 8 or the applicable local code, whichever is more stringent.
80. Carbon dioxide (CO₂) monitoring. For buildings equipped with demand control ventilation, CO₂ sensors and ventilation controls shall be specified and installed in accordance with the requirements of the latest edition of the *California Energy Code*, CCR, Title 24, Part 6, Section 121(c). Ozone depletion and global warming reductions. Installations of HVAC, refrigeration and fire suppression equipment shall comply with Sections 5.508.1.1 and 5.508.1.2.
81. CFCs. Install HVAC and refrigeration equipment that does not contain CFCs.1
82. Halons. Install fire suppression equipment that does not contain Halons.

Non-residential voluntary measures contained in the appendix are not mandatory unless adopted by the county. CALGreen Tier I and Tier II are intended for adoption by cities or counties, to help California meet its goal for greenhouse gas emission reduction. Appendix provisions may also be used voluntarily by designers, builders, and property owners.

To achieve CALGreen Tier I and Tier II, one must comply with the following:

- Meet all mandatory requirements.
- Exceed 2008 Energy Efficiency Standards by 15% or 30%.
- Employ additional voluntary measures in all the following areas:
 - ⇒ Parking for clean air vehicles.
 - ⇒ Cool roofs.
 - ⇒ Reduction of indoor and outdoor water use.
 - ⇒ Construction waste diversion.
 - ⇒ Use of materials with recycled content.
 - ⇒ Installation of low-emitting resilient flooring and thermal insulation.
- Comply with additional elective measures as follows:
 - ⇒ 5 electives for Tier I
 - ⇒ 15 electives for Tier II
- Application checklist
 - ⇒ Mandatory provisions
 - ⇒ Provisions required for compliance with Tiers.

1735 Montgomery Street
Oroville, CA 95965

(530) 538-2425

(530) 538-2426 (fax)

www.cityoforoville.org

The purpose of the Green Building Code is to improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in the following categories:

1. Planning and design
2. Energy efficiency
3. Water efficiency and conservation
4. Material conservation and resource efficiency
5. Environmental quality

The Green Building Code is intended to set mandatory minimum Green Building Standards and includes optional Tiers that may, at the discretion of the city, be applied. There are eighty-two (82) mandatory measures for new residential buildings. These mandatory measures will become effective January 1, 2011.

Listed below is an outline of the 82 mandatory measures for each division/ category for new nonresidential buildings:

Planning and design

1. Storm water pollution prevention plan. For projects of one acre or less, develop a Storm Water Pollution Prevention Plan (SWPPP) that has been designed, specific to its site, conforming to the State Storm water NPDES Construction Permit or local ordinance, whichever is stricter, as is required for projects over one acre. The plan should cover prevention of soil loss by storm water run-off and/or wind erosion, of sedimentation and/or of dust/particulate matter air pollution.

Storm water design. Design storm water run off rate and quantity in conformance with Section A5.106.3.1 and storm water runoff quality by Section A5.106.3.2 or by local requirements, whichever are stricter.

a. Storm water runoff rate and quantity. Implement a storm water management plan resulting in no net increase in rate and quantity of storm water runoff from existing to developed conditions.

Exception: If the site is already greater than 50% impervious, implement a storm water management plan resulting in a 25 percent decrease in rate and quantity.

b. Storm water runoff quality. Use post construction treatment control best management practices (BMPs) to mitigate (infiltrate, filter or treat) storm water 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).

2. Bicycle parking and changing rooms. Comply with Sections 5.106.4.1 and 5.106.4.2; or meet local ordinance, whichever is stricter.

3. Short-Term bicycle parking. If the project 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 visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack.

4. Long-Term bicycle parking. For buildings with over 10 tenant-occupants, provide secure bicycle parking for 5 percent of tenant-occupied motorized vehicle parking capacity, with a minimum of one space.
5. Designated parking. Provide designated parking for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.6.2.
6. Light pollution reduction. Comply with lighting power requirements in the *California Energy Code* and design interior and exterior lighting such that zero direct-beam illumination leaves the building site. Meet or exceed exterior light levels and uniformity ratios for lighting zones 1 – 4 as defined in Chapter 10 of the *California Administrative Code*, using the following strategies:
7. Shield all exterior luminaires or use cutoff luminaires.
8. Contain interior lighting within each source.
9. Allow no more than .01 horizontal foot candle 15 ft beyond the site.
10. Contain all exterior lighting within property boundaries.

Exception: See Part 2, Chapter 12, Section 1205.6 for campus lighting requirements for parking facilities and walkways.

11. Grading and paving. The site shall be planned and developed to keep surface water away from buildings. Construction plans shall indicate how site grading or a drainage system will manage all surface water flows.

Energy efficiency:

12. Scope. The California Energy Commission will continue to adopt mandatory building standards.

Water efficiency and conservation:

Buildings in excess of 50,000 square feet. Separate sub-meters shall be installed as follows:

13. For each individual leased, rented or other tenant space within the building projected to consume more than 100 gal/day.
14. For spaces used for laundry or cleaners, restaurant or food service, medical or dental office, laboratory or beauty salon or barber shop projected to consume more than 100 gal/day.
15. Excess consumption. Any building within a project or space within a building that is projected to consume more than 1,000 gal/day.
16. 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. (Calculate savings by Water Use Worksheets).
17. Multiple showerheads serving one shower. 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 5.303.2.3 or the shower shall be designed to only allow one showerhead to be in operation at a time.

18. Wastewater reduction. Each building shall reduce the generation of wastewater by one of the following methods:

- a. The installation of water-conserving fixtures or
- b. Utilizing non-potable water systems.

19. Plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the requirements listed for each type in Items listed in Table 5.303.6.
20. Water closets (toilets) – flushometer type.
21. Water closets (toilets) – tank type.
22. Urinals.
23. Public lavatory faucets.
24. Public metering self-closing faucets.
25. Residential bathroom lavatory sink faucets.
26. Residential kitchen faucets.
27. Residential shower heads.
28. Single shower fixtures served by more than one showerhead.
29. Water budget. A water budget shall be developed for landscape irrigation use.
30. Outdoor potable water use. For new water service, separate meters or sub-meters shall be installed for indoor and outdoor potable water use for landscaped areas between 1,000 square feet and 5,000 square feet.

Irrigation controllers. Automatic irrigation system controllers installed at the time of final inspection shall comply with the following:

31. Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change.
32. 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.

Material conservation and resource efficiency:

33. Weather protection. Provide a weather-resistant exterior wall and foundation envelope as required by *California Building Code* Section 1403.2 and *California Energy Code* Section 150, manufacturer's installation instructions or local ordinance, whichever is more stringent.

Moisture control. Employ moisture control measures by the following methods;

34. Prevent irrigation spray on structures.
35. Entries and openings. Design exterior entries and openings to prevent water intrusion into buildings.
36. Construction waste diversion. Establish a construction waste management plan or meet local ordinance, whichever is more stringent.
37. Construction waste management plan. Submit plan per this section to enforcement authority.
38. Documentation. Provide documentation of the waste management plan that meets the requirements listed in Section 5.408.2 Items 1 thru 4 and the plan is accessible to the enforcement authority.

39. Construction waste. Recycle and/or salvage for reuse a minimum of 50 percent of nonhazardous construction and demolition debris or meet local ordinance, whichever is more stringent.

Exceptions:

a. Excavated soil and land-clearing debris.

b. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist.

40. Verification of compliance. A copy of the completed waste management report shall be provided.

Exceptions:

a. Excavated soil and land-clearing debris

b. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist.

41. Excavated soil and land clearing debris. 100 per cent of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled.

42. Recycling by occupants. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of nonhazardous materials for recycling.

43. Commissioning. For new buildings 10,000 square feet and over, building commissioning for all building systems covered by T24, Part 6, process systems and renewable energy systems shall be included in the design and construction processes of the building project. Commissioning requirements shall include items listed in Section 5.410.2.

44. Owner's Project Requirements (OPR). Documented before the design phase of the project begins the OPR shall include items listed in Section 5.410.4.

45. Basis of Design (BOD). 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 and updated periodically to cover the systems listed in Section 5.410.2.2.

46. Commissioning plan. A commissioning plan describing how the project will be commissioned shall be started during the design phase of the building project and shall include items listed in Section 5.410.2.3.

47. Functional performance testing shall demonstrate the correct installation and operation of each component, system and system-to-system interface in accordance with the approved plans and specifications.

48. Documentation and training. A Systems manual and systems operations training are required.

49. Systems manual. The systems manual shall be delivered to the building owner or representative and facilities operator and shall include the items listed in Section 5.410.2.5.1.