



CALGREEN MANDATORY CHECKLIST

NON-RESIDENTIAL PROJECTS

THESE REQUIREMENTS APPLY TO BUILDING PERMITS SUBMITTED ON OR AFTER JULY 1, 2012

Following is a standardized checklist of the 2010 California Green Building Standards Code (CALGreen) requirements that may be used for new non-residential projects to comply with the CALGreen Mandatory Measures (chapter 5).

CALGreen Reference	Description	Designer's Comments with Plan Sheet Reference	City Use Only Field Insp. Verification
5.1 Planning and Design	5.106.1 Storm water soil loss prevention plan. Newly constructed projects which disturb less than one acre of land shall prevent the pollution of storm water runoff from the construction activities through local ordinance in Section 5.106.1.1 or Best management practices (BMP) in Section 5.106.1.2	Sheet:	Initials: _____ Date: _____
5.1 Planning and Design	5.106.4 Bicycle parking. Comply with Sections 5.106.4.1 and 5.106.4.2; or meet local ordinance, whichever is stricter. 5.106.4.1 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. 5.106.4.2 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.	Sheet:	Initials: _____ Date: _____
5.1 Planning and Design	5.106.5.2 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.	Sheet:	Initials: _____ Date: _____
5.1 Planning and Design	5.106.8 Light pollution reduction. 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 1-4 as defined in Chapter 10 of the California Administrative Code; and 2. Backlight, Uplight and Glare (BUG) ratings as defined in IESNA TM-15-11; and 3. Allowable BUG ratings not exceeding those shown in Table 5.106.8, 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 Section 147 of the California Energy Code 2. Emergency lighting	Sheet:	Initials: _____ Date: _____

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5.1 Planning and Design	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.	Sheet:	Initials: _____ Date: _____
5.2 Energy Efficiency	5.201.1 Scope The California Energy Commission will continue to adopt mandatory building standards.	Sheet:	Initials: _____ Date: _____
5.3 Water Efficiency and Conservation	<p>5.303.1 Meters. Separate meters shall be installed for the uses described in Sections 5.303.1.1 through 5.303.1.3.</p> <p>5.303.1.1 Buildings in excess of 50,000 square feet. Separate submeters shall be installed as follows:</p> <ol style="list-style-type: none"> 1. For each individual leased, rented, or other tenant space within the building projected to consume more than 100 gal/day. 2. Where separate submeters for individual building tenants are unfeasible, for water supplied to the following subsystems: <ol style="list-style-type: none"> a. Makeup water for cooling towers where flow through is greater than 500 gpm. b. Makeup water for evaporative coolers greater than 6 gpm. c. Steam and hot-water boilers with energy input more than 500,000 Btu/h. <p>5.303.1.2 Excess consumption. Any building or a space within a building that is projected to consume more than 1,000 gal/day.</p>	Sheet:	Initials: _____ Date: _____
5.3 Water Efficiency and Conservation	<p>5.303.2 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. (Calculate savings by Water Use Worksheets.)</p> <p>5.303.2.1 Multiple showerheads serving one shower. When a shower is served by more than one showerhead, the combined flow rate of all the showerheads controlled by a single valve shall not exceed the maximum flow rate at ≥ 20 percent reduction 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.</p>	Sheet:	Initials: _____ Date: _____
5.3 Water Efficiency and Conservation	<p>5.303.4 Wastewater reduction. Each building shall reduce the generation of wastewater by one of the following methods:</p> <ol style="list-style-type: none"> 1. The installation of water-conserving fixtures or 2. Utilizing non-potable water systems 	Sheet:	Initials: _____ Date: _____

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5.3 Water Efficiency and Conservation	<p>5.303.6 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.</p> <ol style="list-style-type: none"> 1. Water closets (toilets) - flushometer type 2. Water closets (toilets) - tank type 3. Urinals 4. Public lavatory faucets 5. Public metering self-closing faucets 6. Residential bathroom lavatory sink faucets 7. Residential kitchen faucets 8. Residential shower heads 9. Single shower fixtures served by more than one showerhead 	Sheet:	Initials: _____ Date: _____
5.3 Water Efficiency and Conservation	5.304.1 Water budget. A water budget shall be developed for landscape irrigation use.	Sheet:	Initials: _____ Date: _____
5.3 Water Efficiency and Conservation	5.304.2 Outdoor potable water use. For new water service, separate meters or submeters shall be installed for indoor and outdoor potable water use for landscaped areas between 1,000 square feet and 5,000 square feet.	Sheet:	Initials: _____ Date: _____
5.3 Water Efficiency and Conservation	<p>5.304.3 Irrigation design. In new nonresidential projects with at least 1,000 square feet but not more than 2,500 square feet of landscaped area (the level at which the MLO applies), install irrigation controllers and sensors which include the following criteria, and meet manufacturer's recommendations.</p> <p>5.304.3.1 Irrigation controllers. Automatic irrigation system controllers installed at the time of final inspection shall comply with the following:</p> <ol style="list-style-type: none"> 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. 	Sheet:	Initials: _____ Date: _____
5.4 Material Conservation and Resource Efficiency	5.407.1 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.	Sheet:	Initials: _____ Date: _____

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5.4 Material Conservation and Resource Efficiency	<p>5.407.2 Moisture control. Employ moisture control measures by the following methods;</p> <p>5.407.2.1 Sprinklers. Prevent irrigation spray on structures.</p> <p>5.407.2.2 Entries and openings. Design exterior entries and openings to prevent water intrusion into buildings.</p>	Sheet:	Initials: _____ Date: _____
5.4 Material Conservation and Resource Efficiency	<p>5.408.1 Construction waste management. Recycle and/or salvage for reuse a minimum of 50% of the nonhazardous construction 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.</p> <p>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 complies with Items 1 through 4 of this section.</p> <p>5.408.1.2 Waste management company. Utilize a waste management company that can provide verifiable documentation that the percentage of construction waste material diverted from the landfill complies with this section.</p> <p>Exceptions to Sections 5.408.1.1 and 5.408.1.2:</p> <ol style="list-style-type: none"> 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 <p>5.408.1.4 Documentation. Provide documentation of the waste management plan that meets the requirements listed in Sections 5.408.1.1 through 5.408.1.3, and the plan is accessible to the enforcement authority.</p>	Sheet:	Initials: _____ Date: _____
5.4 Material Conservation and Resource Efficiency	5.408.2 Isolated jobsites. The enforcing agency may make exceptions to the requirements of this section when jobsites are located in areas beyond the haul boundaries of the diversion facility.	Sheet:	Initials: _____ Date: _____
5.4 Material Conservation and Resource Efficiency	<p>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.</p> <p>Exception: Reuse, either on-or off-site, of vegetation or soil contaminated by disease or pest infestation.</p>	Sheet:	Initials: _____ Date: _____
5.4 Material Conservation and Resource Efficiency	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.	Sheet:	Initials: _____ Date: _____

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5.4 Material Conservation and Resource Efficiency	<p>5.410.2 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 5.410.2.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Dry storage warehouses of any size 2. Areas under 10,000 square feet used for offices or other conditioned accessory spaces within dry storage warehouses 3. Tenant improvements under 10,000 square feet as described in Section 303.1.1. <p>5.410.2.1 Owner's Project Requirements (OPR). Documented before the design phase of the project begins the OPR shall include items listed in 5.410.4.</p> <p>5.410.2.2 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 to cover the systems listed in 5.410.2.2.</p> <p>5.410.2.3 Commissioning plan. A commissioning plan describing how the project will be commissioned shall include items listed in 5.410.2.3.</p> <p>5.410.2.4 Functional performance testing. 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.</p> <p>5.410.2.5 Documentation and training. A Systems Manual and Systems Operations Training are required.</p> <p>5.410.2.5.1 Systems manual. The Systems Manual shall be delivered to the building owner or representative and facilities operator and shall include the items listed in 5.410.2.5.1.</p> <p>5.410.2.5.2 Systems operations training. A program for training of the appropriate maintenance staff for each equipment type and/or system shall be developed and shall include items listed in 5.410.2.5.2.</p> <p>5.410.2.6 Commissioning report. 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.</p>	Sheet:	Initials: _____ Date: _____

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5.4 Material Conservation and Resource Efficiency	<p>5.410.4 Testing and adjusting. Testing and adjusting of systems shall be required for buildings less than 10,000 square feet.</p> <p>5.410.3.2 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, the systems listed in 5.410.4.2.</p> <p>5.410.3.3 Procedures. Perform testing and adjusting procedures in accordance with applicable standards on each system as determined by enforcing agency.</p> <p>5.410.3.3.1 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 5.410.3.3.1.</p> <p>5.410.3.4 Reporting. After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services.</p> <p>5.410.3.5 Operation and maintenance manual. Provide the building owner with detailed operating and maintenance instructions and copies of guaranties/warranties for each system prior to final inspection.</p> <p>5.410.3.5.1 Inspections and reports. Include a copy of all inspection verifications and reports required by the enforcing agency.</p>	Sheet:	Initials: _____ Date: _____
5.5 Environmental Quality	<p>5.503.1 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.</p> <p>5.503.1.1 Woodstoves. Woodstoves shall comply with US EPA Phase II emission limits.</p>	Sheet:	Initials: _____ Date: _____
5.5 Environmental Quality	<p>5.504.1.3 Temporary ventilation. If the HVAC system is used during construction, use return air filters with a MERV of 8, based on ASHRAE 52.2-1999, or an average efficiency of 30% based on ASHRAE 52.1-1992. Replace all filters immediately prior to occupancy.</p>	Sheet:	Initials: _____ Date: _____
5.5 Environmental Quality	<p>5.504.3 Covering of duct openings and protection of mechanical equipment during construction. At the time of rough installation and during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheet-metal or other methods acceptable to the enforcing agency to reduce the amount of dust, water and debris which may enter the system.</p>	Sheet:	Initials: _____ Date: _____

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5.5 Environmental Quality	<p>5.504.4 Finish material pollutant control. Finish materials shall comply with Sections 5.504.4.1 through 5.504.4.4.</p> <p>5.504.4.1 Adhesives, sealants, caulks. Adhesives and sealants used on the project shall meet the requirements of the following standards.</p> <ol style="list-style-type: none"> 1. 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. 2. 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. <p>5.504.4.3 Paints and coatings. Architectural paints and coatings shall comply with Table 5.504.4.2 unless more stringent local limits apply.</p> <p>5.504.4.3.1 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).</p> <p>5.504.4.3.2 Verification. Verification of compliance with this section shall be provided at the request of the enforcing agency.</p> <p>5.504.4.4 Carpet systems. All carpet installed in the building interior shall meet the testing and product requirements of one of the standards listed in 5.504.4.4.</p> <p>5.504.4.4.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program.</p> <p>5.504.4.4.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 804.4.1.</p> <p>5.504.4.5 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 Table 5.504.4.</p> <p>5.504.4.5.3 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.</p> <ol style="list-style-type: none"> 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 3S standards. 5. Other methods acceptable to the enforcing agency. 	Sheet:	Initials: _____ Date: _____

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5.5 Environmental Quality	<p>5.504.4.6 Resilient flooring systems. Comply with the VOC-emission limits defined in the 2009 CHPS criteria and listed on its High Performance Products Database; products compliant with CHPS criteria certified under the Greenguard Children & Schools program; certified under the FloorScore program of the Resilient Floor Covering Institute; or meet California Department of Public Health 2010 Specification 01350.</p> <p>5.504.4.6.1 Verification of compliance. Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.</p>	Sheet:	Initials: _____ Date: _____
5.5 Environmental Quality	<p>5.504.5.3 Filters. In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air that provides at least a MERV of 8. MERV 8 filters shall be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.</p> <p>Exception: A MERV-1 filter shall be allowed for return air only or return with prefiltered outside air, if the filter is of a re-usable, nondisposable type, and the fan energy use of that air delivery system is 0.4W/cfm or less at design airflow.</p>	Sheet:	Initials: _____ Date: _____
5.5 Environmental Quality	<p>5.504.7 Environmental tobacco smoke (ETS) control. Prohibit smoking within 25 feet of building entries, outdoor air intakes and operable windows where outdoor areas are provided for smoking and within the building as already prohibited by other laws or regulations; or as enforced by ordinances, regulations or policies of any city, county, city and county, California Community College, campus of the California State University or campus of the University of California, whichever are more stringent.</p>	Sheet:	Initials: _____ Date: _____
5.5 Environmental Quality	<p>5.505.1 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</p>	Sheet:	Initials: _____ Date: _____
5.5 Environmental Quality	<p>5.506.1 Outside air delivery. For mechanically or naturally ventilated spaces in buildings, meet the minimum requirements of Section 121 of the California Energy Code and Chapter 4 of CCR, Title 8 or the applicable local code, whichever is more stringent.</p>	Sheet:	Initials: _____ Date: _____
5.5 Environmental Quality	<p>5.506.2 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 California Energy Code, CCR, Section 121(c).</p>	Sheet:	Initials: _____ Date: _____

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5.5 Environmental Quality	<p>5.507.4 Acoustical control. Employ building assemblies and components with STC values determined in accordance with ASTM E 90 and ASTM E 413 or OITC determined in accordance with ASTM E 1332, using either the prescriptive or performance method in Section 5.507.4.1 or 5.507.4.2.</p> <p>5.507.4.1 Exterior noise transmission, prescriptive method. Wall and floor-ceiling assemblies exposed to the noise source making up the building envelope shall have exterior wall and roof ceiling assemblies meeting a composite STC rating of at least 50 or a composite OITC rating of no less than 40 with exterior windows of a minimum STC of 40 or OITC of 30 in the locations described in Items 1 and 2.</p> <p>5.507.4.1.1 Noise exposure where noise contours are not readily available. Buildings exposed to a noise level of 65 dB Leq-1Hr during any hour of operation shall have exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite STC rating of at least 45 (or OITC 35), with exterior windows of a minimum STC of 40 (or OITC 30).</p> <p>5.507.4.2 Performance method. For buildings located as defined in Sections A5.507.4.1 or A5.507.4.1.1, wall and roof-ceiling assemblies making up the building envelope shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed an hourly equivalent noise level (Leq-1Hr) of 50 dBA in occupied areas during any hour of operation.</p> <p>5.507.4.2.1 Site features. Exterior features such as sound walls or earth berms may be utilized as appropriate to the project to mitigate sound migration to the interior.</p> <p>5.507.4.2.1 Documentation of compliance. An acoustical analysis documenting complying interior sound levels shall be prepared by personnel approved by the architect or engineer of record.</p> <p>5.507.4.3 Interior sound transmission. Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40.</p>	Sheet:	Initials: _____ Date: _____
5.5 Environmental Quality	<p>5.508.1 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.</p> <p>5.508.1.1 CFCs. Install HVAC and refrigeration equipment that does not contain CFCs.</p> <p>5.508.1.2 Halons. Install fire suppression equipment that does not contain Halons.</p>	Sheet:	Initials: _____ Date: _____