



**NEW NON-RESIDENTIAL BUILDINGS
MANDATORY MEASURES
2016 CALGREEN CODE
Effective January 1, 2017**

PROJECT INFORMATION

Plan Check Number:		Owner's Name:	
Project Address:			
Description of Work:			
Designer Responsible for CalGreen Compliance:		Phone:	
Signature of Designer Responsible for CalGreen Compliance:		Date:	

INSTRUCTIONS

The Owner or the Owner's Agent shall employ a Design Professional experienced with the 2016 California Green Building Standards Code to assure that all required work described herein is properly planned and implemented in the project.

The Design Professional shall complete this checklist and in the Plan Reference column provide the applicable plan Sheet number and detail/note where CalGreen compliance is detailed. The completed and signed checklist shall be printed on all final sets of plans.

MANDATORY FEATURE OR MEASURE	Plan Reference
Chapter 1 - ADMINISTRATION	
101.3 Scope. Applies to ALL newly constructed buildings or structures.	
Section 5.106 - SITE DEVELOPMENT	
5.106.1 Storm water pollution prevention. Projects which disturb less than 1 acre of soil and are not part of a larger common plan of development shall manage storm water drainage during construction. Provide an erosion control plan.	
5.106.1.2 Best management practices (BMP). Prevent the loss of soil through wind or water erosion by implementing an effective combination of erosion and sediment control and good housekeeping BMP. Provide a signed BMP list on the plans.	
Section 5.106.4 – BICYCLE PARKING	
5.106.4.1.1 Short-term bicycle parking. If the new 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 new visitor motorized vehicle parking spaces being added, with a minimum of one two-bike capacity rack.	
5.106.4.1.2 Long-term bicycle parking. For new buildings with 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of the tenant vehicular parking spaces being added, with a minimum of one space. Acceptable parking facilities shall be convenient from the street and shall meet one of the following: <ul style="list-style-type: none"> • Covered, lockable enclosures with permanently anchored racks for bicycles; or • Lockable bicycle rooms with permanently anchored racks; or • Lockable, permanently anchored bicycle lockers. 	

MANDATORY FEATURE OR MEASURE	Plan Reference
Section 5.106.5.2 – DESIGNATED PARKING FOR CLEAN AIR VEHICLES	
<p>5.016.5.2 Designated parking for clean air vehicles. In new projects that add 10 or more vehicular parking spaces, provide designated parking for any combination of low-emitting, fuel efficient and carpool/van pool vehicles as shown in Table 5.106.5.2.</p>	
<p>5.106.5.2.1 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</p> <p>Note: Vehicles bearing Clean Air Vehicle stickers from expired HOV land programs may be considered eligible for designated parking spaces.</p>	
Section 5.106.5.3 – ELECTRIC VEHICLE (EV) CHARGING	
<p>5.016.5.3 Electric vehicle (EV) charging. [N] Construction shall comply with Section 5.106.5.3.1 or Section 5.106.5.3.2 to facilitate future installation of electric vehicle supply equipment (EVSE). When EVSE(s) is/are installed, it shall be in accordance with the California Building Code, the California Electrical Code as follows below.</p>	
<p>5.106.5.3.1 Single charging space requirements. [N] When only a single charging space is required per Table 5.106.5.3.3, a raceway is required to be installed at the time of construction and shall be installed in accordance with the <i>California Electrical Code</i>. Construction plans and specifications shall include, but are not limited to, the following:</p> <ul style="list-style-type: none"> • The type and location of the EVSE • A listed raceway capable of accommodating a 208/240-volt dedicated branch circuit • The raceway shall not be less than trade size 1.” • The raceway shall originate at a service panel or a subpanel serving the area, and shall terminate in close proximity to the proposed location of the charging equipment and into a listed suitable cabinet, box, enclosure or equivalent. 	
<p>5.106.5.3.2 Multiple charging space requirements. [N] When multiple charging spaces are required per Table 5.106.5.3.3, raceway(s) is/are required to be installed at the time of construction and shall be installed in accordance with the <i>California Electrical Code</i>. Construction plans and specifications shall include, but are not limited to, the following:</p> <ul style="list-style-type: none"> • The type and location of the EVSE • The raceway(s) 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 charging equipment and into a listed suitable cabinet(s), box(es), enclosure(s) or equivalent. • Plan design shall be based upon 40-ampere minimum branch circuits. • Electrical calculations shall substantiate the design of the electrical system, to include the rating of equipment and any on-site distribution transformers and have sufficient capacity to simultaneously charge all required EVs at its full rated amperage. • The service panel or subpanel(s) shall have sufficient capacity to accommodate the required number of dedicated branch circuits(s) for the future installation of the EVSE. 	
<p>5.106.5.3.3 EV charging space calculation. [N] Table 5.106.5.3.3 shall be used to determine if single or multiple charging space requirements apply for the future installation of EVSE.</p>	
<p>5.106.5.3.4 [N] Identification. The service panel or subpanel(s) circuit directory shall identify the reserved overcurrent protective device space3(s) for future EV charging as “EV CAPABLE”. The raceway termination location shall be permanently and visibly marked as “EV CAPABLE.”</p>	
<p>5.106.5.3.5 [N] Future charging spaces qualify as designated parking as described in Section 5.106.5.2 Designated parking for clean air vehicles.</p>	

MANDATORY FEATURE OR MEASURE	Plan Reference
Section 5.106.8 – LIGHT POLLUTION REDUCTION	
<p>5.106.8 Light pollution reduction. [N] Outdoor lighting systems shall be designed and installed to comply with the following:</p> <ul style="list-style-type: none"> The minimum requirements in the California Energy Code for Lighting Zones 1–4 as defined in Chapter 10 of the California Administrative Code; and Backlight, Uplight and Glare (BUG) ratings as defined in IESNA TM-15-11; and Allowable BUG ratings not exceeding those shown in Table 5.106.8 <p>Exceptions: [N]</p> <ul style="list-style-type: none"> Luminaires that qualify as exceptions in Section 140.7 of the California Energy Code Emergency lighting Building facade meeting the requirements in Table 140.7-B of the California Energy Code, Part 6. Custom lighting features as allowed by the local enforcing agency, as permitted by Section 101.8 Alternate materials, designs and methods of construction 	
Section 5.106.10 – GRADING AND PAVING	
<p>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.</p>	
Division 5.201.1- ENERGY EFFICIENCY	
<p>5.201.1 Scope. Building meets or exceeds the requirements of the 2016 California Energy Code.</p>	
Section 5.303 – INDOOR WATER USE	
<p>5.303.1.1 Meters. Separate submeters or metering devices shall be installed for the uses described in Sections 5.303.1.1 and 5.303.1.2 below.</p> <p>5.303.1.1 New buildings in excess of 50,000 square feet.</p> <ul style="list-style-type: none"> For each individual leased, rented or other tenant space within the building projected to consume more than 100 gal/day, including but not limited to, spaces used for laundry or cleaner, restaurant for food service, medical or dental office, laboratory or beauty salon or barber shop. Where separate submeters for individual building tenants are unfeasible, for water supplied to the following subsystems: Makeup water for cooling towers where flow through is greater than 500 gpm (30 L/s); Makeup water for evaporative coolers greater than 6 gpm (0.04 L/s)/ Steam and hot water boilers with energy input more than 500,000 Btu/h (147 kW). <p>5.303.1.2 Excess consumption. A separate submeter or metering device shall be provided for any tenant within a new building or an addition that is projected to consume more than 1,000 gal/day.</p>	
<p>5.303.3 Water conserving plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the prescriptive requirements of 5.303.1 through 5.303.3.3.2.</p>	
<p>5.303.3.1 Water Closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank-type water closets shall be certified to the performance criteria of the US EPA WaterSense Specification for Tank-type Toilets.</p>	
<p>5.303.3.2.1 Wall-mounted urinals. The effective flush volume of urinals shall not exceed 0.125 gallons per flush.</p>	
<p>5.303.3.2.2 Floor-mounted urinals. The effective flush volume of floor-mounted or other urinals shall not exceed 0.5 gallons per flush. The effective flush volume of all other urinals shall not exceed 0.5 gallons per flush.</p>	
<p>5.303.3.3.1 Single showerhead. Showerheads shall have a maximum flow rate of not more than 2.0 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the US EPA WaterSense Specification for Showerheads.</p>	
<p>5.303.3.3.2 Multiple showerheads serving one shower. When a shower is served by more than one showerhead, the combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 2.0 gallons per minute at 80 psi, or the shower shall be designed to allow only one shower outlet to be in operation at a time. Note: a hand-held shower shall be considered a showerhead.</p>	

MANDATORY FEATURE OR MEASURE	Plan Reference
5.303.4.1 Nonresidential lavatory faucets. Lavatory faucets shall have a maximum flow rate of not more than 0.5 gallons per minute at 60 psi.	
5.303.3.4.2 Kitchen faucets. Kitchen faucets shall have a maximum flow rate of not more than 1.8 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 1.8 gallons per minute at 60 psi.	
5.303.3.4.3 Wash fountains. Wash fountains shall have a maximum flow rate of not more than 1.8 gallons per minute/20 [rim space (inches) at 60 psi].	
5.303.3.4.4 Metering faucets. Metering faucets shall not deliver more than 0.20 gallons per cycle.	
5.303.3.4.5 Metering faucets for wash fountains. Metering faucets for wash fountains shall have a maximum flow rate of not more than 0.20 gallons per cycle/20 [rim space (inches) at 60 psi].	
5.303.4 Commercial kitchen equipment. 5.303.4.1 Food waste disposers. Disposers shall either modulate the use of water to no more than 1 gpm when the disposer is not in use (not actively grinding food waster/no-load) or shall automatically shut off after no more than 10 minutes of inactivity. Disposers shall use no more than 8 gpm of water.	
5.303.6 Standards for plumbing fixtures and fittings. Plumbing fixtures and fittings shall be installed in accordance with the <i>California Plumbing Code</i> , and shall meet the applicable referenced standards.	
Section 5.304 – OUTDOOR WATER USE	
5.304.1 Outdoor Water Use. For new projects, projects over 50% in building valuation, or as required by the current California Model Water Efficient Ordinance, planting and hardscape areas, including all patios, decks, and walkways shall be installed following Manhattan Beach ordinance 10.60.070	
5.304.2 Outdoor potable water use for parcels 7,500 square feet or less. Where potable water is used for irrigation, a maximum of 20% of the total planting and hardscape areas on private property, parkways, and encroachment areas may be plants of high water use per Region 3 of WUCOLS. Please comply with Manhattan Beach ordinance 10.60.70	
5.304.3 Outdoor potable water use for parcels 7,500 square feet or more. Submittal of design and calculations Region 3 of WUCOLS standards prepared by a qualified professional as defined in Manhattan Beach ordinance section 10.60.070(A)(1)	
5.304.5 Graywater or rainwater use in landscape areas. For projects using treated or untreated graywater or rainwater captured on site, any lot or parcel within the project that has less than 2,500 square feet of landscape and meets the lot or parcel’s landscape water requirement (Estimated Total Water Use) entirely with treated or untreated graywater or through stored rainwater captured on site is subject only to Appendix D Section (5).	
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 1403.2 and California Energy Code, Section 150 or manufacturer’s installation instructions whichever is more stringent.	
5.407.2.1 Sprinklers. Design and maintain landscape irrigation systems to prevent irrigation spray on structures.	
5.407.2.2 Entries and openings. Design exterior entries and openings 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: <ul style="list-style-type: none"> • An installed awning at least 4 feet in depth. • The door is protected by a roof overhang at least 4 feet in depth. • The door is recessed at least 4 feet. • Other methods which provide equivalent protection. 	

MANDATORY FEATURE OR MEASURE	Plan Reference
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% of the nonhazardous construction and demolition waste in accordance with either Section 5.408.1.1, 5.408.1.2 or 5.408.1.3.	
5.408.1.1 Construction waste management plan. Submit a construction waste management plan meeting Items 1 through 4 of Section 5.408.1.1.	
5.408.1.2 Waste management company. Utilize a waste management company, approved by the enforcing agency, which can provide verifiable documentation that diverted construction and demolition waste materials meet the requirements in Section 5.408.1.2.	
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 50 percent minimum requirement as approved by the enforcing agency.	
5.408.1.4 Documentation. Documentation shall be provided to the inspector which demonstrates compliance with Sections 5.408.1.1 through 5.408.1.3.	
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.	
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 minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals.	
<p>5.410.2 Commissioning. [N] For new buildings 10,000 square feet and over, building commissioning for all building systems covered by Title 24, Part 6, process systems and renewable energy systems shall be included in the design and construction processes of the building project.</p> <p>All occupancies other than I-occupancies and L-occupancies shall comply with the California Energy Code as prescribed in California Energy Code Section 120.8. For I- occupancies which are not regulated by OSHPD or for I-occupancies and L- occupancies which 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. Commissioning requirements shall include items listed in Section 5.410.2.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> • Unconditioned warehouses of any size • Areas less than 10,000 square feet used for offices or other conditioned accessory spaces within unconditioned warehouses • Tenant improvements less than 10,000 square feet as described in Section 303.1.1. • Open parking garages of any size, or open parking garage areas of any size, within a structure. 	
5.410.2.1 Owner’s Project Requirements (OPR). [N] Documented before the design phase of the project begins the OPR shall include items listed in Section 5.410.2.1.	
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 to cover the systems listed in Section 5.410.2.2.	
5.410.2.3 Commissioning plan. [N] A commissioning plan describing how the project will be commissioned shall include items listed in Section 5.410.2.3.	
5.410.2.4 Functional performance testing [N]. 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.	
5.410.2.5 Documentation and training. [N] A Systems manual and systems operations training are required.	

MANDATORY FEATURE OR MEASURE	Plan Reference
<p>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:</p> <ul style="list-style-type: none"> • Site information, including facility description, history and current requirements. • Site contact information. • Basic operations and maintenance, including general site operating procedures, basic troubleshooting, recommended maintenance requirements, site events log. • Major systems. • Site equipment inventory and maintenance notes. • A copy of verifications required by the enforcing agency or this code • Other resources and documentation, if applicable. 	
<p>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:</p> <ul style="list-style-type: none"> • System/equipment overview (what it is, what it does and with what other systems and/or equipment it interfaces). • Review and demonstration of servicing/preventative maintenance. • Review of the information in the syte4ms manual. • Review of the record drawings on the system/equipment. 	
<p>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.</p>	
<p>5.410.4 Testing and adjusting. Testing and adjusting of systems shall be required for buildings less than 10,000 square feet. Applies to new systems serving additions or alterations.</p>	
<p>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, the systems listed in Section 5.410.4.2.</p>	
<p>5.410.4.3 Procedures. Perform testing and adjusting procedures in accordance with applicable standards on each system as determined by the enforcing agency.</p>	
<p>5.410.4.3.1 HVAC balancing. Before a new space-conditioning system serving a building or space is operated for normal use, balance in accordance with the procedures defined by national standards listed in Section 5.410.4.3.1 or as approved by the enforcing agency.</p>	
<p>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.</p>	
<p>5.410.4.5 Operation and maintenance (O & M) 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>5.410.4.5.1 Inspections and reports. Include a copy of all inspection verifications and reports required by the enforcing agency.</p>	
Section 5.503 – FIREPLACES	
<p>5.503.1 Fireplaces. 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 New Source Performance Standards (NSPS) emission limits, where applicable, and shall have a permanent label indicating they are certified to meet the emission limits.</p>	
Section 5.504 POLLUTANT CONTROL	
<p>5.504.1 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>	

MANDATORY FEATURE OR MEASURE	Plan Reference
<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>	
<p>5.504.4 Finish material pollutant control. Finish materials shall comply with Sections 5.504.4.1 through 5.504.4.6.</p>	
<p>5.504.4.1 Adhesives, sealants and caulks. Adhesives, sealants, and caulks used on the project shall meet the requirements of the following standards:</p> <ul style="list-style-type: none"> • 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. • 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 5.504.4.3 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 Section 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's Green Label program.</p>	
<p>5.504.4.4.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 5.504.4.1.</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 5.504.4.5.</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> <ul style="list-style-type: none"> • Product certifications and specifications. • Chain of custody certifications. • Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.). • 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. • Other methods acceptable to the enforcing agency. 	
<p>5.504.4.6 Resilient flooring systems. For 80 percent of floor area receiving resilient flooring, install resilient flooring which meets one of the following:</p> <ul style="list-style-type: none"> • Certified under the Resilient Floor Covering Institute (RFCI) FloorScore program; • Compliant with the VOC-emission limits and testing requirements specified in the California Department of Public Health's 2010 Standard Method for the Testing and Evaluation Chambers, Version 1.1, February 2010; • Compliant with the Collaborative for High Performance Schools California (CA-CHPS) Criteria Interpretation for EQ 7.0 and 7.1 (formerly EQ. 2.2) dated July 2012 and listed in the CHPS High Performance Product Database; or • Products certified under UL GREENGUARD Gold (formerly the Greenguard Children's & Schools Program). 	

MANDATORY FEATURE OR MEASURE	Plan Reference
<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>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>	
<p>Section 5.505 INDOOR MOISTURE CONTROL</p>	
<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>	
<p>Section 5.506 INDOOR AIR QUALITY</p>	
<p>5.506.1 Outside air delivery. For mechanically or naturally ventilated spaces in buildings, meet the minimum requirements of Section 120.1 of the California Energy Code and Chapter 4 of CCR, Title 8 or the applicable local code, whichever is more stringent.</p>	
<p>5.506.2 Carbon dioxide (CO₂) monitoring. For buildings or additions 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 120(c)(4).</p>	
<p>Section 5.507 – ENVIRONMENTAL COMFORT</p>	
<p>5.507.4 Acoustical control. Employ building assemblies and components with STC values determined in accordance with ASTM E90 and ASTM E413 or OITC determined in accordance with ASTM E1332, 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 roof-ceiling assemblies exposed to the noise source making up the building envelope shall meet 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 following locations:</p> <ul style="list-style-type: none"> • Within the 65 CNEL noise contour of an airport • Within the 65 CNEL or L_{dn} noise contour of a freeway or expressway, railroad, industrial source or fixed-guideway source as determined by the Noise Element of the General Plan. 	
<p>5.507.4.2 Performance method. For buildings located as defined in Section 5.507.4.1 or 5.507.4.1.1, wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed an hourly equivalent noise level (L_{eq}-1-hr) 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>	
<p>Section 5.508 – OUTDOOR AIR QUALITY</p>	
<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>	

MANDATORY FEATURE OR MEASURE

**Plan
Reference**

5.508.2 Supermarket refrigerant leak reduction. New commercial refrigeration systems shall comply with the provisions of this section when installed in retail food stores 8,000 square feet or more conditioned area, and that utilize either refrigerated display cases, or walk-in coolers or freezers connected to remote compressor units or condensing units. The leak reduction measures apply to refrigeration systems containing high-global-warming potential (high-GWP) refrigerants with a GWP of 150 or greater. New refrigeration systems include both new facilities and the replacement of existing refrigeration systems in existing facilities.

Exception: Refrigeration systems containing low-global warming potential (low-GWP) refrigerant with a GWP value less than 150 are not subject to this section. Low-GWP refrigerants are non-ozone-depleting refrigerants that include ammonia, carbon dioxide (CO₂), and potentially other refrigerants.

**TABLE 5.504.4.1
ADHESIVE VOC LIMIT²
Less Water and Less Exempt Compounds in Grams Per Liter**

ARCHITECTURAL APPLICATIONS	CURRENT VOC LIMIT
Indoor carpet adhesives	50
Carpet pad adhesives	50
Outdoor carpet adhesives	150
Wood flooring adhesive	100
Rubber floor adhesives	60
Subfloor adhesives	50
Ceramic tile adhesives	65
VCT and asphalt tile adhesives	50
Drywall and panel adhesives	50
Cove base adhesives	50
Multipurpose construction adhesives	70
Structural glazing adhesives	100
Single-ply roof membrane adhesives	250
Other adhesive not specifically listed	50
SPECIALTY APPLICATIONS	
PVC welding	510
CPVC welding	490
ABS welding	325
Plastic cement welding	250
Adhesive primer for plastic	550
Contact adhesive	80
Special purpose contact adhesive	250
Structural wood member adhesive	140
Top and trim adhesive	250
SUBSTRATE SPECIFIC APPLICATIONS	
Metal to metal	30
Plastic foams	50
Porous material (except wood)	50
Wood	30
Fiberglass	80

1. If an adhesive is used to bond dissimilar substrates together the adhesive with the highest VOC content shall be allowed.
2. For additional information regarding methods to measure the VOC content specified in this table, see South Coast Air Quality Management District Rule 1168, <http://www.arb.ca.gov/DRDB/SC/CURHTML/R1168.PDF>.

**TABLE 5.504.4.5
FORMALDEHYDE LIMITS¹
Maximum Formaldehyde Emissions in Parts per Million**

PRODUCT	CURRENT LIMIT
Hardwood plywood veneer core	0.05
Hardwood plywood composite core	0.05
Particleboard	0.09
Medium density fiberboard	0.11
Thin medium density fiberboard ²	0.13

1. Values in this table are derived from those specified by the California Air Resources Board, Air Toxics Control Measure for Composite Wood as tested in accordance with ASTM E1333. For additional information, see *California Code of Regulations*, Title 17, Sections 93120 through 93120.12
2. Thin medium density fiberboard has a maximum thickness of ³/₁₆ inch (8 mm)

**TABLE 5.504.4.2
SEALANT VOC LIMIT
Less Water and Less Exempt Compounds in Grams per Liter**

SEALANTS	CURRENT VOC LIMIT
Architectural	250
Marine deck	760
Nonmembrane roof	300
Roadway	250
Single-ply roof membrane	450
Other	420
SEALANT PRIMERS	
Architectural	
Nonporous	250
Porous	775
Modified bituminous	500
Marine deck	760
Other	750

Note: For additional information regarding methods to measure the VOC content specified in these tables, see South Coast Air Quality Management District Rule 1168.

**TABLE 5.504.4.3
VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS^{2,3}
Grams of VOC per Liter of Coating,
Less Water and Less Exempt Compounds**

COATING CATEGORY	CURRENT LIMIT
Flat coatings	50
Nonflat coatings	100
Nonflat-high gloss coatings	150
SPECIALTY COATINGS	
Aluminum roof coatings	400
Basement specialty coatings	400
Bituminous roof coatings	50
Bituminous roof primers	350
Bond breakers	350
Concrete curing compounds	350
Concrete/masonry sealers	100
Driveway sealers	50
Dry fog coatings	150
Faux finishing coatings	350
Fire resistive coatings	350
Floor coatings	100
Form-release compounds	250
Graphic arts coatings (sign paints)	500
High temperature coatings	420
Industrial maintenance coatings	250
Low solids coatings ¹	120
Magnesite cement coatings	450
Mastic texture coatings	100
Metallic pigmented coatings	500
Multicolor coatings	250
Pretreatment wash primers	420
Primers, sealers, and undercoaters	100
Reactive penetrating sealers	350
Recycled coatings	250
Roof coatings	50
Rust preventative coatings	250
Shellacs	
Clear	730
Opaque	550
Specialty primers, sealers and undercoaters	100
Stains	250
Stone consolidants	450
Swimming pool coatings	340
Traffic marking coatings	100
Tub and tile refinish coatings	420
Waterproofing membranes	250
Wood coatings	275
Wood preservatives	350
Zinc-rich primers	340

1. Grams of VOC per liter of coating, including water and including exempt compounds.
2. The specified limits remain in effect unless revised limits are listed in subsequent columns in the table.
3. Values in this table are derived from those specified by the California Air Resources Board, Architectural Coatings Suggested Control Measure, February 1, 2008. More information is available from the Air Resources Board.