

# California Green Building Code Non- Residential Requirements

The application you have submitted is required to comply with the requirements of the California Green Building Code Mandatory Non-Residential Requirements. (Chapt.5).

The City of Campbell has provided a “Compliance Report” which lists product VOC (Volatile Organic Compound) Limits on products that are commonly used in commercial construction. Your project will use many of the products listed with VOC limits.

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

- 1. Product certification and specifications.*
- 2. Chain of custody certifications*
- 3. Product labeled and invoiced as meeting the Composite Wood Products regulation.*
- 4. Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineering Wood Association.*
- 5. Other methods acceptable to the enforcing agency.*

Campbell Building Division has created a form for you to use to identify the applicable products for your project. You are requested to identify the product by name and manufacturer and list the VOC amounts for the product. The form also provides the ability to identify Plumbing Fixtures to show the GPM to comply with State requirements. Again, you identify the product and manufacturer.

Forms not filled out or forms that are incomplete will be unaccepted! To insure your project is approved in the fastest time possible, please make sure your Documents are complete! You are able to make changes to the products by submitting revised forms at any time during construction.

Manufacture Websites are good source of VOC information on Product specifications sheets.

- LONG RADIUS ELBOW.
- LOW-GWP REFRIGERANT.
- MERV.
- MAXIMUM INCREMENTAL REACTIVITY (MIR).
- PRODUCT-WEIGHTED MIR (PWMIR).
- PSIG.
- REACTIVE ORGANIC COMPOUND (ROC).
- SCHRADER ACCESS VALVES.
- SHORT RADIUS ELBOW.
- SUPERMARKET.
- VOC.

**SECTION 5.503  
FIREPLACES**

**5.503.1 Fireplaces.** Install only a direct-vent sealed-combustion gas or sealed wood-burning fireplace, or a sealed wood-stove or pellet stove, and refer to residential requirements in the *California Energy Code*, Title 24, Part 6, Subchapter 7, Section 150. Woodstoves, pellet stoves and fireplaces shall comply with applicable local ordinances.

**5.503.1.1 Woodstoves.** Woodstove and pellet stoves shall comply with U.S. EPA New Source Performance Standards (NSPS) emission limits as applicable, and shall have a permanent label indicating they are certified to meet the emission limits.

**SECTION 5.504  
POLLUTANT CONTROL**

**5.504.1 Temporary ventilation.** The permanent HVAC system shall only be used during construction if necessary to condition the building or areas of addition or alteration within the required temperature range for material and equipment installation. If the HVAC system is used during construction, use return air filters with a Minimum Efficiency Reporting Value (MERV) of 8, based on ASHRAE 52.2-1999, or an average efficiency of 30 percent based on ASHRAE 52.1-1992. Replace all filters immediately prior to occupancy, or, if the building is occupied during alteration, at the conclusion of construction.

**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 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, sheetmetal or other methods acceptable to the enforcing agency to reduce the amount of dust, water and debris which may enter the system.

**5.504.4 Finish material pollutant control.** Finish materials shall comply with Sections 5.504.4.1 through 5.504.4.6.

**5.504.4.1 Adhesives, sealants and caulks.** Adhesives, sealants, and caulks used on the project shall meet the requirements of the following standards:

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. 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 2, below.

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.

**TABLE 5.504.4.1  
ADHESIVE VOC LIMIT<sup>1,2</sup>  
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 5.504.4.2  
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
<b>SEALANT PRIMERS</b>	
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.

**5.504.4.3 Paints and coatings.** Architectural paints and coatings shall comply with VOC limits in Table 1 of the ARB Architectural Coatings Suggested Control Measure, as shown in Table 5.504.4.3, 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 5.504.4.3 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 the corresponding Flat, Nonflat or Nonflat-High Gloss VOC limit in Table 5.504.4.3 shall apply.

**5.504.4.3.1 Aerosol paints and coatings.** Aerosol paints and coatings shall meet the PWMIR 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; 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.

**5.504.4.3.2 Verification.** Verification of compliance with this section shall be provided at the request of the enforcing agency. Documentation may include, but is not limited to, the following:

1. Manufacturer's product specification
2. Field verification of on-site product containers

TABLE 5.504.4.3  
VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS<sup>2,3</sup>  
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
<b>SPECIALTY COATINGS</b>	
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 <sup>1</sup>	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.

**5.504.4.4 Carpet systems.** All carpet installed in the building interior shall meet at least one of the following testing and product requirements:

1. Carpet and Rug Institute’s Green Label Plus Program;
2. Compliant with the VOC-emission limits and testing requirements specified in the California Department of Public Health Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, Version 1.1, February 2010 (also known as CDPH Standard Method VI.1 or *Specification 01350*);
3. NSF/ANSI 140 at the Gold level or higher;
4. Scientific Certifications Systems Sustainable Choice; or
5. Compliant with the Collaborative for High Performance Schools California (CA-CHPS) Criteria Interpretation for EQ 7.0 and EQ 7.1 (formerly EQ 2.2) dated July 2012 and listed in the CHPS High Performance Product Database.

**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.

**5.504.4.4.2 Carpet adhesive.** All carpet adhesive shall meet the requirements of Table 5.504.4.1.

**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 ARB’s Air Toxics Control Measure (ATCM) for Composite Wood (17 CCR 93120 et seq.) Those materials not exempted under the ATCM must meet the specified emission limits, as shown in Table 5.504.4.5.

**5.504.4.5.1 Early compliance.** Reserved.

**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:

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.

**TABLE 5.504.4.5  
FORMALDEHYDE LIMITS<sup>1</sup>  
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 <sup>2</sup>	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  $\frac{3}{16}$  inch (8 mm).

**5.504.4.6 Resilient flooring systems.** For 80 percent of floor area receiving resilient flooring, installed resilient flooring shall meet at least one of the following:

1. Certified under the Resilient Floor Covering Institute (RFCI) FloorScore program;
2. 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;
3. Compliant with the Collaborative for High Performance Schools California (CA-CHPS) Criteria Interpretation for EQ 7.0 and EQ 7.1 (formerly EQ 2.2) dated July 2012 and listed in the CHPS High Performance Product Database; or
4. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children’s & Schools Program).

**5.504.4.6.1 Verification of compliance.** Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.

**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 Minimum Efficiency Reporting Value (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.

**Exceptions:**

1. An ASHRAE 10-percent to 15-percent efficiency filter shall be permitted for an HVAC unit meeting the 2013 *California Energy Code* having 60,000 Btu/h or less capacity per fan coil, if the energy use of the air delivery system is 0.4 W/cfm or less at design air flow.
2. Existing mechanical equipment.

**5.504.5.3.1 Labeling.** Installed filters shall be clearly labeled by the manufacturer indicating the MERV rating.



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# Non-Residential VOC Compliance Certification

Address: \_\_\_\_\_

Permit No.: \_\_\_\_\_

ADHESIVE	MANUFACTURER	CALGreen Limit <sup>1</sup>	ACTUAL VOCs

SEALANT	MANUFACTURER	CALGreen Limit <sup>1</sup>	ACTUAL VOCs

ARCHITECTURAL COATINGS (Paints & Coatings)	MANUFACTURER	CALGreen Limit <sup>1</sup>	ACTUAL VOCs

RESILIENT FLOORING	MANUFACTURER	CALGreen Limit <sup>1</sup>	ACTUAL VOCs

## FORMALDEHYDE COMPLIANCE CERTIFICATION

PRODUCT	MANUFACTURER	CURRENT LIMIT	ACTUAL
Hardwood plywood veneer core		0.05	
Hardwood plywood composite core		0.05	
Particleboard		0.09	
Medium density fiberboard		0.11	
Thin medium density fiberboard <sup>2</sup>		0.13	

<sup>1</sup> See other side of page for VOC limits

<sup>2</sup> Thin medium density fiberboard has a maximum thickness of 5/16 inch

<b>Division 5.3 - Water Efficiency and Conservation</b>			
	<b>Brand</b>	<b>Model</b>	<b>GPM</b>
1. Water Closet(s)			
2. Shower Head(s)			
3. Faucet(s) (NOT KITCHEN)			
4. Kitchen Faucet(s)			
5. Urinals			
<b>Division 5.4 – Material Conservation &amp; Resource Efficiency</b>			
This Project Has A Construction Waste Management Plan YES_____ NO_____			
<b>Division 5.5 Environmental Quality</b>			
1. Fireplace is Direct Vent Gas _____			
2. Fireplace is Wood Burning EPA Phase II _____			

All **carpet** installed in the building interior meets the testing and product requirements of the following: (check one)

- Carpet and Rug Institute’s Green Label
- California Department of Public Health “Standard Method for the Testing of VOCs”
- NSF/ANSI 140 at the Gold level
- Scientific Certifications Systems Indoor Advantage™ Gold
- No carpet installed on this project

I certify that the information provided on this form is accurate and that the materials used on this project comply with Section 4.504 (Residential) or 5.504 (Non-Residential) of the 2016 California Green Building Standards Code.

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Print Name
Signature
Date