CITY OF NEWPORT BEACH

COMMUNITY DEVELOPMENT DEPARTMENT
BUILDING DIVISION
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2019 CAL GREEN
NEW BUILDINGS - NONRESIDENTIAL
MINIMUM REQUIREMENTS

The 2019 California Green Building Standards Code (CG) is applicable to new Nonresidential Buildings. (NBMC 15.11.010, CG Section 101.3.1)

DIVISION 5.1-PLANNING AND DESIGN

1. Outdoor lighting systems shall be designed and installed to comply with the following: (**5.106.8**)
   - A. The minimum requirements in the California Energy Code for Lighting Zones 0-4; and
   - B. Backlight (B) ratings as defined in IES TM-15-11 (shown in Table A-1 in Chapter 8);
   - C. Uplight (U) and Glare (G) ratings as defined in California Energy Code (shown in Tables 130.2-A and 130.2-B in Chapter 8); and
   - D. Allowable BUG ratings not exceeding those shown in Table 5.106.8,

DIVISION 5.3-WATER EFFICIENCY AND CONSERVATION:

2. **Meters**: Provide separate submeters or metering devices for uses described below (**5.303.1**):
   - A. Separate submitters shall be installed as follows (**5.303.1.1**):
     1. For each tenant consuming more than 100 gal/day
     2. Where separate submeters for individual building tenants are unfeasible, for water supplied to the following subsystems:
        - 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
   - B Any tenant within a new building that is projected to consume more than 1,000 gal/day (**5.303.1.2**)
3. Plumbing fixtures and fittings shall comply with the following (**5.303.3**):

FIXTURE TYPE	MAXIMUM FLOW RATE
Single Showerheads	1.8 gpm @ 80 psi
Multiple Showerheads	Combine flow rate of 1.8 gpm @ 80 psi
Nonresidential Lavatory Faucets	0.5 gpm @ 60 psi
Kitchen Faucets	1.8 gpm @ 60 psi
Metering Faucets	0.20 gallons per cycle maximum
Wash Fountains	1.8 gal per minute/20{rim space (inches) @ 60 psi
Metering Faucets for Wash Fountains	0.20 gal per minute/20{rim space (inches) @ 60 psi
Water Closets	1.28 gallons/flush
Wall Mounted Urinal	0.125 gallons/flush
All Other Types of Urinal	0.5 gallons/flush

4. Tank-type water closets and showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification. (**5.303.3.1**)
5. Combined flow rate of all showerheads controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi. (**5.303.3.3.2**)

6. Food waste disposers shall either modulate the use of water to no more than 1 gpm when not in use or shall automatically shut off after no more than 10 minutes of inactivity. Disposers shall use no more than 8 gpm of water. (5.303.4.1)
7. Projects with an aggregate landscape area equal to or greater than 500 square feet shall comply with City's water efficient landscape ordinance in accordance with NBMC 14.17. (**NBMC 14.17**)

DIVISION 5.4-MATERIAL CONSERVATION AND RESOURCE EFFICIENCY:

8. **Moisture control**. Employ moisture control measures by the following methods (**5.407.2**):
    A. Prevent irrigation spray on structures. (**5.407.2.1**)
    B. Install flashings integrated with a drainage plane. (**5.407.2.2**)
9. Construction waste shall be collected using City Franchise Hauler. Recycle and/or salvage for reuse a minimum of 65 percent of the nonhazardous construction and demolition waste. (**5.408.1**)
10. **Excavated soil and land clearing debris.** 100% of trees, stumps, rocks and associated vegetation and soils resulting from land clearing shall be recycled. **(5.408.3)**
11. For new building 10,000 square foot and over, building commissioning for all building systems covered by T-24, part 6, process systems and renewable shall be provided. (**5.410.2**)
    A. Functional performance testing shall be conducted. (**5.410.2.4**)
    B. A systems manual and systems operations training are required. (**5.410.2.5**)
    C. The systems manuals shall be delivered to the building owner or representative and facilities operator and shall include the following (**5.410.2.5.1):**
        1. Site information including facility description, history and current requirements
        2. Site contract information
        3. Basic operations and maintenance including general site operating procedures, basic troubleshooting, recommended maintenance requirements, site events log
        4. Major systems
        5. Site equipment inventory and maintenance notes
        6. A copy of all special inspection verifications
    D. A program for training of the appropriate maintenance of staff for each equipment type and/or system shall be developed and documented in the commissioning report and shall include the following:
        1. Systems/equipment overview.
        2. Review and demonstration of servicing/preventive maintenance.
        3. Review of the information in the systems manual.
        4. Review of the record drawings on the system/equipment.
    E. A report of commissioning process activities from design, construction and post construction phase shall be provided to the owner. (**5.410.2.6**)
12. For new building less than 10,000 square feet, testing and adjusting of the systems shall be required. (**5.410.4**):
    A. **Systems**. Develop a written plan of procedures for testing and adjusting systems for the following systems. (**5.410.4.2**):
        1. HVAC systems and controls.
        2. Indoor and outdoor lighting and controls.
        3. Water heating systems.
        4. Renewable energy systems.
        5. Landscape irrigation systems.
        6. Water reuse systems.
    B. **Procedures**. Perform testing and adjusting procedures in accordance with applicable standards on each system. (**5.410.4.3**)
    C. **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 other method approved by Building Official. (**5.410.4.3.1**)

D. **Reporting**. After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services. (**5.410.4.4**)

E. **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. (**5.410.4.5**)

F. **Inspections and reports**. Include a copy of all inspection verifications and reports required for commissioning building. (**5.410.4.5.1**)

DIVISION 5.5-ENVIRONMENTAL QUALITY

13. **Temporary ventilation**. 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 if the HVAC system is used during the construction. Replace all filters immediately prior to occupancy. (**5.504.1**)

14. **Protection of ducts and equipment.** All duct and other related air distribution component openings shall be covered with tape, plastic, or sheetmetal or other approved material to reduce the amount of dust or debris which may collect in the system at the time of rough installation or during storage on the construction site and until final startup of the heating, cooling, and ventilating equipment. (**5.504.3**)

15. Finish material pollutant control. (5.504.4)

A. **Adhesives, sealants, or caulks**. Adhesives and sealants used on the project shall meet the requirements of the following standards. (**5.504.4.1**)

1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and caulks shall comply with SCAQMD Rule 1168 VOC limits as shown in Tables 5.504.1 and 5.504.4.2.
2. Aerosol adhesives and smaller unit size of adhesives and sealant or caulking compounds (which do not weigh more than one pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards

B. **Paints and coatings**. Architectural paints and coatings shall comply with Table 5.504.4.3. (**5.504.4.3**)

1. 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 (**5.504.4.3.1**)

C. **Carpet systems.** All carpet installed in the building interior shall meet the testing and product requirements of one of the following standards (**5.504.4.4**):

1. Carpet and Rug Institute's Green Label Plus Program
2. NSF/ANSI 140 at the Gold level or higher;
3. Scientific Certifications Systems Sustainable Choice;
4. Compliant with VOC emission limits and testing requirements specified in CDPH Standard Method V1.1 or Specification 01350; or
5. Compliant with the Collaborative for High Performance Schools California (2014 CA-CHPS) Criteria and listed in the CHPS High Performance Product Database.

D. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program. (**5.504.4.4.1)**

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

F. **Composite wood products**. Hardwood plywood, particleboard and medium density fiberboard composite wood products used 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 specificed emission limits, as shown in Table 5.504.4. (**5.504.4.5**)

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

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 Testing and Evaluation Chambers, Version 1.1, February 2010;
3. Compliant with the Collaborative for High Performance Schools California (2014 CA-CHPS) Criteria and listed in the CHPS High Performance Product Database;
4. Products certified under UL GREENGUARD Gold.

H. **Filters.** In mechanically ventilated buildings, provide regularly occupied area of the building with air filtration media for outside and return air that provides at least a MERV of 13. MERV 13 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. (**5.504.5.3**)

16. **Carbon dioxide (CO_2) monitoring**. For buildings equipped with demand control ventilation, CO_2 sensors and ventilation controls shall be specified and installed in accordance with the requirements of the California Energy Code, CCR, Section 120.1(c)(4). (**5.506.2**)
17. Install HVAC, refrigeration, and fire suppression equipment that does not contain CFCs. (**5.508.1.1**)
18. Install HVAC, refrigeration, and fire suppression equipment that does not contain Halons. (**5.508.1.2**)

Installer and Special Inspector Qualifications

19. HVAC system installers shall be trained and certified or work under direct supervision of trained and certified installers in the proper installation of HVAC systems. (**702.1**)
20. HVAC special inspectors must be qualified and able to demonstrate competence in the discipline they are inspecting. (**702.2**)

DOCUMENTATIONS

21. A report of commission process activities undertaken through the design and construction phases of the building project shall be completed and provided to the owner or representative. (**5.410.2.6**)
22. An operation and maintenance manual, CD, web-based reference or other approved media shall be provided by the builder to the building occupant or owner at the final inspection. It shall include operation and maintenance instruction of the equipment and appliances. (**5.410.5**)
23. Documentations of compliance with VOC limits in architectural paintings and coatings as specified in the Table 5.504.4.3 shall be provided at the request of the Building Inspector. (**5.504.4.3.2**)
24. Documentations of compliance with formaldehyde limits as specified in the Table 5.504.4.5 shall be provided when requested by building official by one of the methods (**5.504.4.5.3**)
    A. Product certification and specifications
    B. Chain of custody certifications
    C. Product, labeled and invoiced as meeting the Composite Wood Products regulation
    D. 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
    E. Other methods approved by the building official.
25. Documentations verifying that resilient flooring materials meet the pollutant emission limits shall be provided. (**5.504.4.6.1**)
26. Documentations of acoustical analysis demonstrating compliance with interior sound levels shall be prepared by personnel approved by the architect or engineer of record. (**5.507.4.2.2**)
27. Documentation which shows compliance with CAL Green code including construction documents, plans, specifications, builder or installer certification, and inspection reports and verification shall be available at the final inspection. (**703.1**)
28. CAL Green Documentation Compliance Certification form (City form) is required to be submitted to the Building Inspector prior to final building inspection. (**Section 703.1**)

2019 CALIFORNIA GREEN BUILDING STANDARDS CODE

VOC & FORMALDEHYDE LIMITS

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	**VOC 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 Opaque	 730 550
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

TABLE 5.504.4.1 ADHESIVE VOC LIMIT [1,2] (Less Water and Less Exempt Compounds in Grams per Liter)	
ARCHITECTURAL APPLICATIONS	**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 adhesives 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

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

TABLE 5.504.4.5 FORMALDEHYDE LIMITS[1] (Maximum formaldehyde Emissions in Parts per Million)	
PRODUCT	**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 E 1333-96(2002). 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 8 millimeters