2022 CALIFORNIA GREEN BUILDING STANDARDS CODE

	RESIDENTIAL	M	IAI	NDATORY MEASURES, SHE
/ N/A RES		Y N	RESPON. PARTY	4.303.1.4 Faucets. 4.303.1.4.1 Residential Lavatory Faucets. The maximum flow rate of residential lavatory faucets shall not exceed 1.2 gallons per minute at 60 psi. The minimum flow rate of residential lavatory faucets shall
	SECTION 301 GENERAL			not be less than 0.8 gallons per minute at 20 psi.
	301.1 SCOPE. Buildings shall be designed to include the green building measures specified as mandatory in the application checklists contained in this code. Voluntary green building measures are also included in the			4.303.1.4.2 Lavatory Faucets in Common and Public Use Areas NOT USED 4.303.1.4.3 Metering Faucets NOT USED
	application checklists and may be included in the design and construction of structures covered by this code, but are not required unless adopted by a city, county, or city and county as specified in Section 101.7.			4.303.1.4.4 Kitchen Faucets. The maximum flow rate of kitchen faucets shall not exceed 1.8 gallons
	301.1.1 Additions and alterations. [HCD] The mandatory provisions of Chapter 4 shall be applied to additions or alterations of existing residential buildings where the addition or alteration increases the building's conditioned area, volume, or size. The requirements shall apply only to and/or within the specific area of the addition or alteration.			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.
	The mandatory provision of Section 4.106.4.2 may apply to additions or alterations of existing parking			Note : Where complying faucets are unavailable, aerators or other means may be used to achieve reduction.
	facilities or the addition of new parking facilities serving existing multifamily buildings. See Section 4.106.4.3 for application.			4.303.1.4.5 Pre-rinse spray valves NOT USED
	Note: Repairs including, but not limited to, resurfacing, restriping and repairing or maintaining existing lighting fixtures are not considered alterations for the purpose of this section.			4.303.2 Submeters for multifamily buildings and dwelling units in mixed-used residential/commercial buildings NOT USED 4.303.3 Standards for plumbing fixtures and fittings. Plumbing fixtures and fittings shall be installed in
	Note: On and after January 1, 2014, residential buildings undergoing permitted alterations, additions, or improvements shall replace noncompliant plumbing fixtures with water-conserving plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate of occupancy or final permit approval by the local building department. See Civil Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates.			accordance with the California Plumbing Code, and shall meet the applicable standards referenced in Table 1701.1 of the California Plumbing Code. NOTE: THIS TABLE COMPILES THE DATA IN SECTION 4.303.1, AND IS INCLUDED AS A CONVENIENCE FOR THE USER.
				TABLE - MAXIMUM FIXTURE WATER USE
	301.2 LOW-RISE AND HIGH-RISE RESIDENTIAL BUILDINGS. [HCD] - NOT USED SECTION 302 MIXED OCCUPANCY BUILDINGS			FIXTURE TYPE FLOW RATE
	302.1 MIXED OCCUPANCY BUILDINGS NOT USED			SHOWER HEADS (RESIDENTIAL) 1.8 GMP @ 80 PSI
	DIVISION 4.1 PLANNING AND DESIGN			LAVATORY FAUCETS (RESIDENTIAL) MAX. 1.2 GPM @ 60 PSI MIN. 0.8 GPM @ 20 PSI
	ABBREVIATION DEFINITIONS:			LAVATORY FAUCETS IN COMMON & PUBLIC 0.5 GPM @ 60 PSI
	HCD Department of Housing and Community Development BSC California Building Standards Commission DSA-SS Division of the State Architect, Structural Safety			USE AREAS KITCHEN FAUCETS 1.8 GPM @ 60 PSI
	OSHPD Office of Statewide Health Planning and Development LR Low Rise			METERING FAUCETS 0.2 GAL/CYCLE
	HR High Rise AA Additions and Alterations			WATER CLOSET 1.28 GAL/FLUSH
	N New			URINALS 0.125 GAL/FLUSH
	CHAPTER 4 RESIDENTIAL MANDATORY MEASURES SECTION 4.102 DEFINITIONS 4.102.1 DEFINITIONS			4.304 OUTDOOR WATER USE 4.304.1 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS. Residential developments shall comply with a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent.
	The following terms are defined in Chapter 2 (and are included here for reference)			NOTES:
	FRENCH DRAIN. A trench, hole or other depressed area loosely filled with rock, gravel, fragments of brick or similar pervious material used to collect or channel drainage or runoff water. WATTLES. Wattles are used to reduce sediment in runoff. Wattles are often constructed of natural plant materials			The Model Water Efficient Landscape Ordinance (MWELO) is located in the California Code Regulations, Title 23, Chapter 2.7, Division 2. MWELO and supporting documents, including water budget calculator, are available at: https://www.water.ca.gov/
	such as hay, straw or similar material shaped in the form of tubes and placed on a downflow slope. Wattles are also used for perimeter and inlet controls. 4.106 SITE DEVELOPMENT			DIVISION 4.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY
	4.106.1 GENERAL. Preservation and use of available natural resources shall be accomplished through evaluation and careful planning to minimize negative effects on the site and adjacent areas. Preservation of slopes, management of storm water drainage and erosion controls shall comply with this section.			4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE 4.406.1 RODENT PROOFING. Annular spaces around pipes, electric cables, conduits or other openings in
	4.106.2 STORM WATER DRAINAGE AND RETENTION DURING CONSTRUCTION. Projects which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction. In order to manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site.			sole/bottom plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or a similar method acceptable to the enforcing agency. 4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING
	 Retention basins of sufficient size shall be utilized to retain storm water on the site. Where storm water is conveyed to a public drainage system, collection point, gutter or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency. Compliance with a lawfully enacted storm water management ordinance. 			4.408.1 CONSTRUCTION WASTE MANAGEMENT. Recycle and/or salvage for reuse a minimum of 65 percent of the non-hazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4, or meet a more stringent local construction and demolition waste management ordinance. Exceptions:
	Note: Refer to the State Water Resources Control Board for projects which disturb one acre or more of soil, or			Excavated soil and land-clearing debris.
	are part of a larger common plan of development which in total disturbs one acre or more of soil.			Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist or are not located reasonably
	(Website: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html)			close to the jobsite. 3. The enforcing agency may make exceptions to the requirements of this section when isolated jobsites are located in areas beyond the haul boundaries of the diversion facility.
	4.106.3 GRADING AND PAVING. Construction plans shall indicate how the site grading or drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following:			4.408.2 CONSTRUCTION WASTE MANAGEMENT PLAN. Submit a construction waste management plan
	Swales Water collection and disposal systems			in conformance with Items 1 through 5. The construction waste management plan shall be updated as necessary and shall be available during construction for examination by the enforcing agency. 1. Identify the construction and demolition waste materials to be diverted from disposal by recycling,
	 French drains Water retention gardens Other water measures which keep surface water away from buildings and aid in groundwater recharge. 			reuse on the project or salvage for future use or sale. 2. Specify if construction and demolition waste materials will be sorted on-site (source separated) or bulk mixed (single stream).
	Exception: Additions and alterations not altering the drainage path.			 3. Identify diversion facilities where the construction and demolition waste material collected will be taken. 4. Identify construction methods employed to reduce the amount of construction and demolition waste
	4.106.4 Electric vehicle (EV) charging for new construction NOT USED 4.106.4.2 New multifamily dwellings, hotels and motels and new residential parking facilities NOT USED 4.106.4.3 Electric vehicle charging for additions and alterations of parking facilities serving existing			generated. 5. Specify that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both.
	multifamily buildings NOT USED DIVISION 4.2 ENERGY EFFICIENCY			4.408.3 WASTE MANAGEMENT COMPANY. Utilize a waste management company, approved by the enforcing agency, which can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with Section 4.408.1.
	4.201 GENERAL 4.201.1 SCOPE. For the purposes of mandatory energy efficiency standards in this code, the California Energy			Note: The owner or contractor may make the determination if the construction and demolition waste materials will be diverted by a waste management company.
	DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION			4.408.4 WASTE STREAM REDUCTION ALTERNATIVE [LR]. Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed 3.4 lbs./sq.ft. of the building area shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1
	 4.303 INDOOR WATER USE 4.303.1 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the sections 4.303.1.1, 4.303.1.2, 4.303.1.3, and 4.303.4.4. 			4.408.4.1 WASTE STREAM REDUCTION ALTERNATIVE. Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed 2 pounds per square foot of the building area, shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1
	Note: All noncompliant plumbing fixtures in any residential real property shall be replaced with water-conserving plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate of occupancy, or final permit approval by the local building department. See Civil Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates.			4.408.5 DOCUMENTATION. Documentation shall be provided to the enforcing agency which demonstrates compliance with Section 4.408.2, items 1 through 5, Section 4.408.3 or Section 4.408.4 Notes:
	4.303.1.1 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 U.S. EPA WaterSense Specification for Tank-type Toilets.			Sample forms found in "A Guide to the California Green Building Standards Code (Residential)" located at www.hcd.ca.gov/CALGreen.html may be used to assist in documenting compliance with this section. Mixed construction and demolition debris (C & D) processors can be located at the California
	Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush.			Department of Resources Recycling and Recovery (CalRecycle). 4.410 BUILDING MAINTENANCE AND OPERATION 4.410.1 OPERATION AND MAINTENANCE MANUAL. At the time of final inspection, a manual, compact
	4.303.1.2 Urinals NOT USED 4.303.1.3 Showerheads.			disc, web-based reference or other media acceptable to the enforcing agency which includes all of the following shall be placed in the building:
	4.303.1.3.1 Single Showerhead. Showerheads shall have a maximum flow rate of not more than 1.8 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.			 Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure. Operation and maintenance instructions for the following: Equipment and appliances, including water-saving devices and systems, HVAC systems, Photographs appliances are string systems and other major.
	4.303.1.3.2 Multiple showerheads serving one shower. When a shower is served by more than one showerhead, the combined flow rate of all the showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to only allow one shower outlet to be in operation at a time.			photovoltaic systems, electric vehicle chargers, water-heating systems and other major appliances and equipment. b. Roof and yard drainage, including gutters and downspouts. c. Space conditioning systems, including condensers and air filters. d. Landscape irrigation systems.

d. Landscape irrigation systems. e. Water reuse systems.

3. Information from local utility, water and waste recovery providers on methods to further reduce

resource consumption, including recycle programs and locations.

Note: A hand-held shower shall be considered a showerhead.

YN		Public transportation and/or carpool options available in the area.
	PARTY	5. Educational material on the positive impacts of an interior relative humidity between 30-60 percand what methods an occupant may use to maintain the relative humidity level in that range.6. Information about water-conserving landscape and irrigation design and controllers which conswater.
		7. Instructions for maintaining gutters and downspouts and the importance of diverting water at lefeet away from the foundation.
		8. Information on required routine maintenance measures, including, but not limited to, caulking, painting, grading around the building, etc.9. Information about state solar energy and incentive programs available.
		10. A copy of all special inspections verifications required by the enforcing agency or this code.11. Information from the Department of Forestry and Fire Protection on maintenance of defensible space around residential structures.12. Information and/or drawings identifying the location of grab bar reinforcements.
		4.410.2 RECYCLING BY OCCUPANTS. Where 5 or more multifamily dwelling units are constructed on
		building site, provide readily accessible area(s) that serves all buildings on the site and are identified for depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) pap corrugated cardboard, glass, plastics, organic waster, and metals, or meet a lawfully enacted local recycling ordinance, if more restrictive.
		Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code Se 42649.82 (a)(2)(A) et seq. are note required to comply with the organic waste portion this section.
		DIVISION 4.5 ENVIRONMENTAL QUALITY SECTION 4.501 GENERAL
		4.501.1 Scope The provisions of this chapter shall outline means of reducing the quality of air contaminants that are odo
		irritating and/or harmful to the comfort and well being of a building's installers, occupants and neighbors. SECTION 4.502 DEFINITIONS
		5.102.1 DEFINITIONS The following terms are defined in Chapter 2 (and are included here for reference)
		AGRIFIBER PRODUCTS. Agrifiber products include wheatboard, strawboard, panel substrates and door cores, not including furniture, fixtures and equipment (FF&E) not considered base building elements.
		COMPOSITE WOOD PRODUCTS. Composite wood products include hardwood plywood, particleboard a medium density fiberboard. "Composite wood products" does not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber, prefabricate wood I-joists or finger-jointed lumber, all as specified in California Code of regulations (CCR), title 17, Sec 93120.1.
		DIRECT-VENT APPLIANCE. A fuel-burning appliance with a sealed combustion system that draws all ai combustion from the outside atmosphere and discharges all flue gases to the outside atmosphere.
		MAXIMUM INCREMENTAL REACTIVITY (MIR). The maximum change in weight of ozone formed by ad compound to the "Base Reactive Organic Gas (ROG) Mixture" per weight of compound added, expressed hundredths of a gram (g O³/g ROC).
		Note: MIR values for individual compounds and hydrocarbon solvents are specified in CCR, Title 17, Sec and 94701.
		MOISTURE CONTENT. The weight of the water in wood expressed in percentage of the weight of the over the product of the weight of
		article. The PWMIR is the total product reactivity expressed to hundredths of a gram of ozone formed per product (excluding container and packaging). Note: PWMIR is calculated according to equations found in CCR, Title 17, Section 94521 (a).
		REACTIVE ORGANIC COMPOUND (ROC). Any compound that has the potential, once emitted, to controzone formation in the troposphere.
		VOC. A volatile organic compound (VOC) broadly defined as a chemical compound based on carbon chawith vapor pressures greater than 0.1 millimeters of mercury at room temperature. These compounds typhydrogen and may contain oxygen, nitrogen and other elements. See CCR Title 17, Section 94508(a).
		4.503 FIREPLACES 4.503.1 GENERAL . Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any install woodstove or pellet stove shall comply with U.S. EPA New Source Performance Standards (NSPS) emis applicable, and shall have a permanent label indicating they are certified to meet the emission limits. Wo pellet stoves and fireplaces shall also comply with applicable local ordinances.
		4.504 POLLUTANT CONTROL 4.504.1 COVERING OF DUCT OPENINGS & PROTECTION OF MECHANICAL EQUIPMENT DURING
		CONSTRUCTION. At the time of rough installation, during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution composing openings shall be covered with tape, plastic, sheet metal or other methods acceptable to the enforcing agreduce the amount of water, dust or debris which may enter the system.
		4.504.2 FINISH MATERIAL POLLUTANT CONTROL. Finish materials shall comply with this section.
		4.504.2.1 Adhesives, Sealants and Caulks. Adhesives, sealant and caulks used on the project sealant requirements of the following standards unless more stringent local or regional air pollution or air quanagement district rules apply:
		1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and of shall comply with local or regional air pollution control or air quality management district applicable or SCAQMD Rule 1168 VOC limits, as shown in Table 4.504.1 or 4.504.2, as Such products also shall comply with the Rule 1168 prohibition on the use of certain toxi compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and tricloroethylene), except for aerosol products, as specified in Subsection 2 below.
		 Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compou units of product, less packaging, which do not weigh more than 1 pound and do not cons than 16 fluid ounces) shall comply with statewide VOC standards and other requirement prohibitions on use of certain toxic compounds, of <i>California Code of Regulations</i>, Title 1 commencing with section 94507.
		4.504.2.2 Paints and Coatings. Architectural paints and coatings shall comply with VOC limits in the ARB Architectural Suggested Control Measure, as shown in Table 4.504.3, unless more string apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings listed in Table 4.504.3 shall be determined by classifying the coating as a Flat, Nonflat or Nonflat-L coating, based on its gloss, as defined in subsections 4.21, 4.36, and 4.37 of the 2007 California A Board, Suggested Control Measure, and the corresponding Flat, Nonflat or Nonflat-High Gloss VO Table 4.504.3 shall apply.
		4.504.2.3 Aerosol Paints and Coatings. Aerosol paints and coatings shall meet the Product-weig Limits for ROC in Section 94522(a)(2) and other requirements, including prohibitions on use of cert compounds and ozone depleting substances, in Sections 94522(e)(1) and (f)(1) of California Code Regulations, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Boundary Management District additionally comply with the percent VOC by weight of product limits of 8, Rule 49.
		4.504.2.4 Verification. Verification of compliance with this section shall be provided at the reques enforcing agency. Documentation may include, but is not limited to, the following:
ם כ		 Manufacturer's product specification. Field verification of on-site product containers.
-		4.504.3 CARPET SYSTEMS. All carpet installed in the building interior shall meet the requirements of California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Org Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 testing method for California Specification 01350)
		See California Department of Public Health's website for certification programs and testing labs.
		https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx. 4.504.3.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requ
		the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volat Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, Jac 2017 (Emission testing method for California Specification 01350) See California Department of Public Health's website for certification programs and testing labs.
		https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx.

DISCLAIMER: THIS DOCUMENT IS PROVIDED AND INTENDED TO BE USED AS A MEANS TO INDICATE AREAS OF COMPLIANCE WITH THE CALIFORNIA GREEN BUILDING VERIFICATION WITH THE FULL CODE.

anuary 2023) ublic transportation and/or carpool options available in the area. ducational material on the positive impacts of an interior relative humidity between 30-60 percent nd what methods an occupant may use to maintain the relative humidity level in that range. nformation about water-conserving landscape and irrigation design and controllers which conserve nstructions for maintaining gutters and downspouts and the importance of diverting water at least 5 eet away from the foundation. nformation on required routine maintenance measures, including, but not limited to, caulking, ainting, grading around the building, etc. nformation about state solar energy and incentive programs available. A copy of all special inspections verifications required by the enforcing agency or this code. nformation from the Department of Forestry and Fire Protection on maintenance of defensible space around residential structures. nformation and/or drawings identifying the location of grab bar reinforcements. CYCLING BY OCCUPANTS. Where 5 or more multifamily dwelling units are constructed on a , provide readily accessible area(s) that serves all buildings on the site and are identified for the storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, cardboard, glass, plastics, organic waster, and metals, or meet a lawfully enacted local recycling ption: Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section 42649.82 (a)(2)(A) et seq. are note required to comply with the organic waste portion of ON 4.5 ENVIRONMENTAL QUALITY N 4.501 GENERAL ons of this chapter shall outline means of reducing the quality of air contaminants that are odorous, d/or harmful to the comfort and well being of a building's installers, occupants and neighbors. N 4.502 DEFINITIONS ng terms are defined in Chapter 2 (and are included here for reference) R PRODUCTS. Agrifiber products include wheatboard, strawboard, panel substrates and door ncluding furniture, fixtures and equipment (FF&E) not considered base building elements. **E WOOD PRODUCTS.** Composite wood products include hardwood plywood, particleboard and nsity fiberboard. "Composite wood products" does not include hardboard, structural plywood, anels, structural composite lumber, oriented strand board, glued laminated timber, prefabricated ts or finger-jointed lumber, all as specified in California Code of regulations (CCR), title 17, Section ENT APPLIANCE. A fuel-burning appliance with a sealed combustion system that draws all air for from the outside atmosphere and discharges all flue gases to the outside atmosphere. INCREMENTAL REACTIVITY (MIR). The maximum change in weight of ozone formed by adding a to the "Base Reactive Organic Gas (ROG) Mixture" per weight of compound added, expressed to values for individual compounds and hydrocarbon solvents are specified in CCR, Title 17, Sections 94700 CONTENT. The weight of the water in wood expressed in percentage of the weight of the oven-dry wood. WEIGHTED MIR (PWMIR). The sum of all weighted-MIR for all ingredients in a product subject to this PWMIR is the total product reactivity expressed to hundredths of a gram of ozone formed per gram of cluding container and packaging). R is calculated according to equations found in CCR, Title 17, Section 94521 (a). **ORGANIC COMPOUND (ROC).** Any compound that has the potential, once emitted, to contribute to ation in the troposphere. atile organic compound (VOC) broadly defined as a chemical compound based on carbon chains or rings pressures greater than 0.1 millimeters of mercury at room temperature. These compounds typically contain nd may contain oxygen, nitrogen and other elements. See CCR Title 17, Section 94508(a). **NERAL**. Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed or pellet stove shall comply with U.S. EPA New Source Performance Standards (NSPS) emission limits as and shall have a permanent label indicating they are certified to meet the emission limits. Woodstoves, s and fireplaces shall also comply with applicable local ordinances. DLLUTANT CONTROL VERING OF DUCT OPENINGS & PROTECTION OF MECHANICAL EQUIPMENT DURING CTION. At the time of rough installation, during storage on the construction site and until final ne heating, cooling and ventilating equipment, all duct and other related air distribution component nall be covered with tape, plastic, sheet metal or other methods acceptable to the enforcing agency to amount of water, dust or debris which may enter the system. IISH MATERIAL POLLUTANT CONTROL. Finish materials shall comply with this section. 1.2.1 Adhesives, Sealants and Caulks. Adhesives, sealant and caulks used on the project shall meet the rements of the following standards unless more stringent local or regional air pollution or air quality agement district rules apply: 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 Table 4.504.1 or 4.504.2, as applicable. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and tricloroethylene), 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 1 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. **1.2.2 Paints and Coatings.** Architectural paints and coatings shall comply with VOC limits in Table 1 of RB Architectural Suggested Control Measure, as shown in Table 4.504.3, unless more stringent local limits The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories in Table 4.504.3 shall be determined by classifying the coating as a Flat, Nonflat or Nonflat-High Gloss ng, based on its gloss, as defined in subsections 4.21, 4.36, and 4.37 of the 2007 California Air Resources I, Suggested Control Measure, and the corresponding Flat, Nonflat or Nonflat-High Gloss VOC limit in e 4.504.3 shall apply. 4.2.3 Aerosol Paints and Coatings. Aerosol paints and coatings shall meet the Product-weighted MIR s for ROC in Section 94522(a)(2) and other requirements, including prohibitions on use of certain toxic pounds and ozone depleting substances, in Sections 94522(e)(1) and (f)(1) of California Code of *ılations*, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air lity Management District additionally comply with the percent VOC by weight of product limits of Regulation **4.2.4 Verification.** Verification of compliance with this section shall be provided at the request of the cing agency. Documentation may include, but is not limited to, the following: 1. Manufacturer's product specification. 2. Field verification of on-site product containers. **ARPET SYSTEMS.** All carpet installed in the building interior shall meet the requirements of the Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 (Emission ethod for California Specification 01350) ornia Department of Public Health's website for certification programs and testing labs. w.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx. 04.3.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of ifornia Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic

Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January

See California Department of Public Health's website for certification programs and testing labs.

hhtps://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx.

4.504.3.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 4.504.1.

4.504.4 RESILIENT FLOORING SYSTEMS. Where resilient flooring is installed , at least 80% of floor area

receiving resilient flooring shall meet the requirements of 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 1.2, January 2017 (Emission testing method for California Specification 01350)

enclosure in wall or floor cavities. Wet-applied insulation products shall follow the manufacturers' drying

DIVISION 4.5 ENVIRONMENTAL QUALITY (continued) 4.504.5 COMPOSITE WOOD PRODUCTS. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the buildings shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.), by or before the dates specified in those sections, as shown in Table 4.504.5 4.504.5.1 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.
- 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, European 636 3S standards, and Canadian CSA 0121, CSA 0151, CSA 0153 and CSA 0325 standards.

NOT APPLICABLE

RESPONSIBLE PARTY (ie: ARCHITECT, ENGINEER.

. Other methods acceptable to the enforcing agency.

4.505 INTERIOR MOISTURE CONTROL 4.505.1 General. Buildings shall meet or exceed the provisions of the California Building Standards Code.

4.505.2 CONCRETE SLAB FOUNDATIONS. Concrete slab foundations required to have a vapor retarder by California Building Code, Chapter 19, or concrete slab-on-ground floors required to have a vapor retarder by the California Residential Code, Chapter 5, shall also comply with this section.

4.505.2.1 Capillary break. A capillary break shall be installed in compliance with at least one of the

- 1. A 4-inch (101.6 mm) thick base of 1/2 inch (12.7mm) or larger clean aggregate shall be provided with a vapor barrier in direct contact with concrete and a concrete mix design, which will address bleeding, shrinkage, and curling, shall be used. For additional information, see American Concrete Institute, ACI 302.2R-06.
- 2. Other equivalent methods approved by the enforcing agency. 3. A slab design specified by a licensed design professional.

4.505.3 MOISTURE CONTENT OF BUILDING MATERIALS. Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19 percent moisture content. Moisture content shall be verified in compliance with the following:

- 1. Moisture content shall be determined with either a probe-type or contact-type moisture meter. Equivalent moisture verification methods may be approved by the enforcing agency and shall satisfy requirements found in Section 101.8 of this code
- 2. Moisture readings shall be taken at a point 2 feet (610 mm) to 4 feet (1219 mm) from the grade stamped end of each piece verified
- 3. At least three random moisture readings shall be performed on wall and floor framing with documentation acceptable to the enforcing agency provided at the time of approval to enclose the wall and floor framing.

insulation products which are visibly wet or have a high moisture content shall be replaced or allowed to dry prior to

recommendations prior to enclosure.

4.506 INDOOR AIR QUALITY AND EXHAUST 4.506.1 Bathroom exhaust fans. Each bathroom shall be mechanically ventilated and shall comply with the

- 1. Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building. 2. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a
 - a. Humidity controls shall be capable of adjustment between a relative humidity range less than or equal to 50% to a maximum of 80%. A humidity control may utilize manual or automatic means of
 - b. A humidity control may be a separate component to the exhaust fan and is not required to be integral (i.e., built-in)
- 1. For the purposes of this section, a bathroom is a room which contains a bathtub, shower or tub/shower combination 2. Lighting integral to bathroom exhaust fans shall comply with the California Energy Code.
- 4.507 ENVIRONMENTAL COMFORT

4.507.2 HEATING AND AIR-CONDITIONING SYSTEM DESIGN. Heating and air conditioning systems shall be sized, designed and have their equipment selected using the following methods:

- 1. The heat loss and heat gain is established according to ANSI/ACCA 2 Manual J 2011 (Residential
- Load Calculation), ASHRAE handbooks or other equivalent design software or methods. 2. Duct systems are sized according to ANSI/ACCA 1 Manual D - 2014 (Residential Duct Systems), ASHRAE handbooks or other equivalent design software or methods.
- 3. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S 2014 (Residential Equipment Selection), or other equivalent design software or methods.

Exception: Use of alternate design temperatures necessary to ensure the system functions are

CHAPTER 7

INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS 702 QUALIFICATIONS

702.1 INSTALLER TRAINING. HVAC system installers shall be trained and certified in the proper installation of HVAC systems including ducts and equipment by a nationally or regionally recognized training or certification program. Uncertified persons may perform HVAC installations when under the direct supervision and responsibility of a person trained and certified to install HVAC systems or contractor licensed to install HVAC systems. Examples of acceptable HVAC training and certification programs include but are not limited to the following:

- State certified apprenticeship programs.
- 2. Public utility training programs. Training programs sponsored by trade, labor or statewide energy consulting or verification organizations. 4. Programs sponsored by manufacturing organizations. 5. Other programs acceptable to the enforcing agency.

702.2 SPECIAL INSPECTION [HCD]. When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the particular type of inspection or task to be performed. In addition to other certifications or qualifications acceptable to the enforcing agency, the following certifications or education may be considered by the enforcing agency when evaluating the qualifications of a special inspector:

- 1. Certification by a national or regional green building program or standard publisher. 2. Certification by a statewide energy consulting or verification organization, such as HERS raters, building performance contractors, and home energy auditors.
- 3. Successful completion of a third party apprentice training program in the appropriate trade. 4. Other programs acceptable to the enforcing agency.

1. Special inspectors shall be independent entities with no financial interest in the materials or the

project they are inspecting for compliance with this code. 2. HERS raters are special inspectors certified by the California Energy Commission (CEC) to rate

homes in California according to the Home Energy Rating System (HERS). [BSC] When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall

employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the particular type of inspection or task to be performed. In addition, the special inspector shall have a certification from a recognized state, national or international association, as determined by the local agency. The area of certification shall be closely related to the primary job function, as determined by the local agency.

Note: Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.

703 VERIFICATIONS

703.1 DOCUMENTATION. Documentation used to show compliance with this code shall include but is not limited to, construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the enforcing agency which demonstrate substantial conformance. When specific documentation or special inspection is necessary to verify compliance, that method of compliance will be specified in the appropriate section or identified applicable checklist.

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