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1		Code	Description	M	T1	T2	Enf. Agncy	Inst. Desgnr	3rd Party	Notes	Intent	Existing Law or Regulation:	Compliance Method: Design Team	Compliance Method: Contractor	Enforcement- Plan Intake	Enforcement- OnSite Enforcement
2			requirements of Divisions 5.1 through 5.5. • • •	x	o	o										
3	**PDS**		**Planning and Design Site**													
4	**SP**		**Site Preservation**													
5	**SD**		**Site Development**													
6	**SD**	**5.106.1**	5.106.1 Storm water soil loss prevention plan. For newly constructed projects of less than one acre, develop a Storm Water soil loss prevention plan that has been designed, specific to its site, conforming to the State Storm water NPDES Construction Permit 99-08-DWQ or local ordinance, whichever is stricter, as is required for projects one acre or more. The plan should cover prevention of soil loss by storm water run-off and/or wind erosion, of sedimentation, and/or of dust/particulate matter air pollution. Note: No state permit is required, but construction best management practices (BMPs) as approved by the local enforcing agency shall be followed. BMPs include but are not limited to the following:	x						Note: Assistance with the permit may be obtained from the California State Water Resources	The intent of this code provision is to ensure that newly constructed projects of less than one acre when soil is disturbed meet the same or similar (State Storm water NPDES [National Pollutant Discharge Elimination System] Construction Permit 99-08-DWQ or local ordinance) requirements currently required for projects one acre or more, though no notice of intent and fees to the state are required. The intent of NPDES is to prevent the discharge of surface water pollutants, dust and sediment from the project site into receiving waters in an attempt to maintain water and air quality using recognized best management practices (BMPs).	For projects that are one acre or larger in size, please refer to the California Water Code and Federal Water Pollution Control Act.	Provide a storm water soil loss prevention plan that has been prepared specific to the site and meets the State Storm Water NPDES Construction Permit 99-08-DWQ or local ordinance requirements, whichever is stricter. The plan should include BMPs and may be shown in the construction documents or can be separately submitted. It can be prepared by an individual acceptable to the design professional in charge.	No grading should be done until the storm water soil loss prevention plan has been approved by the enforcement agency. The contractor should employ the site-specific BMPs in the plan and as needed as conditions arise. He or she should conduct site inspections before, during extended storm events, and after each storm event to identify areas that may contribute to erosion and sediment problems or any other pollutant discharges. If additional control measures are needed, he or she should implement them immediately.	The reviewer and/or plan checker should review the storm water soil loss prevention plan either included with the construction documents or submitted separately to show site-specific BMPs, or conformance with the NPDES 99-08-DWQ or local requirements.	The inspector should check the erosion and sediment controls for conformance with the plan and BMPs during the normal inspection process, or a separate inspection may be deemed appropriate by the enforcing agency. Additional site inspections may be required during extended storm events to verify mitigation measures.
7			1. Erosion and sediment control BMPs a. Scheduling construction activity b. Preservation of natural features, vegetation and soil c. Drainage swales or lined ditches to control stormwater flow d. Mulching or hydroseeding to stablilize soils Erosion control covers to protect slopes e. Protection of storm drain inlets (gravel bags or catch basin inserts) f. Perimeter sediment control (perimeter silt fence, fiber rolls) g. Sediment trap or sediment basin to retain												Note: A sample checklist of BMPs and self-certification form may be found in Part 4 of this Guide.		
8			2. Housekeeping BMPs: a. Material handling and waste management b. Building materials stockpile management c. Management of washout areas (concrete, paints, stucco, etc.) d. Control of vehicle/equipment fueling to contractor's staging area e. Vehicle and													
9	**SD**	**5.106.4**	Bicycle parking and changing rooms. Comply with Sections 5.106.4.1 and 5.106.4.2; or meet local ordinance, whichever is stricter.	ox							The intent of this code provision is to ensure that newly constructed projects provide short term and/or long term bicycle parking accommodations to promote the use of bicycles as an alternate means of transportation in an attempt to reduce green house gas emissions.	There is NO current law or regulation for this code provision. However, there are some jurisdictions that have adopted local ordinances.			**Plan intake:** The reviewer and/or plan checker should review the plans and confirm that the correct number of bicycle parking racks and/or secured areas are included with the drawings and meet the requirements.	**On-Site Enforcement:** The inspector should review the permit set of plans to verify that al required bicycle parking requirements as shown on the plans have been provided and installed.
10	**SD**	**5.106.4.1**	Short-Term bicycle parking. If the project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5 percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack.	ox						Examples: Short-term: Visitor parking capacity at 42 x 5 percent =2.1 – Provide racks for 3 bikes.			Construction documents (plans & specifications and/or site plan) should reflect the location of the required number of short-term permanently anchored bicycle parking racks for 5 percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack.	Note: If the applicant is seeking a parking capacity reduction under §A5.106.6, or the local jurisdiction has a zoning ordinance for reduced parking, use the parking requirements that apply before the reduction is taken or outside any special zone in the calculations. This is to recognize that, with reduced parking capacity, more people are likely to ride bicycles.	The reviewer and/or plan checker should review the plans and confirm that the correct number of bicycle parking racks and/or secured areas are included with the drawings and meet the requirements.	The inspector should review the permit set of plans to verify that all required bicycle parking requirements as shown on the plans have been provided and installed.
11	**SD**	**5.106.4.2**	Long-Term bicycle parking. For buildings with over 10 tenant-occupants, provide secure bicycle parking for 5 percent.of tenant-occupied motorized vehicle parking capacity, with a minimum of one space. Acceptable parking facilities shall be convenient from the street and may include: 1. Covered, lockable enclosures with permanently anchored racks for bicycles; 2. Lockable bicycle rooms with permanently anchored racks; and 3. Lockable, permanently anchored bicycle lockers.	ox						Examples: Long-term: Total Vehicular parking capacity at 216 x 5 percent =10.8 –Provide 11 spaces. If specifying lockers, consider using six two-bike lockers.			1. Determine which of the three options will be used to comply or identify an alternate method(s). 2. Construction documents (plans & specifications and/or site plan) should reflect the method and location of the required number of long-term secured bicycle parking facilities based on 5 percent of motorized vehicle parking capacity, with a minimum of one space.	***Suggestion:*** *Provide a calculation table or a note on the plans showing the total number of required short-term spaces by multiplying the anticipated visitor parking spaces by 5 percent and for long-term spaces by multiplying the total vehicular parking required spaces by 5 percent.*	The reviewer and/or plan checker should review the plans and confirm that the correct number of bicycle parking racks and/or secured areas are included with the drawings and meet the requirements.	The inspector should review the permit set of plans to verify that all required bicycle parking requirements as shown on the plans have been provided and installed.

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12	**SD**	**5.106.5.2**	Designated parking. Provide designated parking for any combination of low-emitting, fuel efficient, and carpool/van pool vehicles as follows: Table 5.106.5.2 not shown refer to Code 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 VEHICLE	ox						**Examples: 1. 55 total parking spaces: based on TABLE 5.106.5.2 – Provide 6 Clean Air Vehicle spaces which fall within the range. 2. 240 total parking spaces: based on TABLE 5.106.5.2, calculate 240 x 8 percent = 19.2 – Provide 20 Clean Air Vehicle spaces. Diagram in development.**	This code provision is to ensure that newly constructed projects provide designated parking for clean air vehicles (low-emitting, fuel efficient, and carpool/van pool vehicles) which gives reserved parking to those who drive clean air vehicles. The intent is to promote the use of clean air vehicles in an attempt to conserve natural resources and reduce green house gas emissions.	There is **NO** current law or regulation for this code provision. However, there are some jurisdictions that have adopted ordinances.	**Design Team:** Construction documents (site plan) should reflect the location of the required number of designated parking stalls with the marking "CLEAN AIR VEHICLE" toward the back of the stall, similar to an accessible symbol, so that the writing can be seen when a clean air vehicle is parked. Lettering should be at least 8 inches high. The parking stalls can be located anywhere on the site without preferential location. ***Suggestion:*** *The plans should reflect the total number of required vehicular spaces and refer to*	*TABLE 5.106.5.2 to ensure that the correct number of designated parking stalls is being provided. Include all parking spaces in the calculation. As approved by the enforcing agency, some compact stalls may also be marked for clean air vehicles.* ***Examples:*** *1.* ***55 total parking spaces:*** *based on TABLE 5.106.5.2 – Provide 6 Clean Air Vehicle spaces which fall within the range 2.* ***240 total parking spaces:*** *based on TABLE 5.106.5.2, calculate 240 x 8 percent = 19.2 – Provide 20 Clean Air Vehicle spaces. Diagram in development.*	**Plan Intake:** The reviewer and/or plan checker should review the plans and confirm that the correct number and configuration of "CLEAN AIR VEHICLE" parking stalls are included on the drawings.	**On-Site Enforcement:** The inspector should review the permit set of plans to verify that the correct number of clear air vehicle parking stalls have been provided and marked
13	**SD**	**5.106.8**	Comply with lighting power requirements in the California Energy Code, CCR, Part 6, and design interior and exterior lighting such that zero direct-beam illumination leaves the building site. Meet or exceed exterior light levels and uniformity ratios for lighting zones 1-4 as defined in Chapter 10 of the California Administrative Code, CCR, Part 1, using the following strategies: 1. Shield all exterior luminaires or provide cutoff luminaries per Section 132 (b) of the California Energy Code. 2. Contain interior lighting within each source. 3. Allow no more than .01 horizontal lumen foot candles to escape 15 feet beyond the site boundary. 4. Automatically control exterior lighting dusk to dawn to turn off or lower light	ox						The intent of this code provision is to ensure that newly constructed projects reduce the amount of light and glare from both interior and exterior light sources leaving the site. This is an attempt to minimize light pollution in order to maintain our dark skies.	There are several existing codes that are being referenced in this provision as follows: **1.** Lighting power requirements in the California Energy Code, CCR, Title 24, Part 6. 2. Exterior light levels and uniformity ratios for lighting zones 1-4 as defined in Chapter 10 of the California Administrative Code, CCR Title 24, Part 1. 3. Requirements for cutoff luminaries per Section 132 (b) of the California Energy Code. 4. California Building Code, CCR title 24, Part 2 Section 1205.6 exception regarding campus lighting for parking and walkways.	**FIRST:** Comply with California Energy Commission regulations in Part 1 and Part 6 cited above. Those standards form a basis upon which to build for the purpose of light pollution reduction in addition to energy efficiency. The provisions in Part 1 provide a weighted approach to the project site location, with a project located in the middle of a big city allowed more light to escape than a project at a rural or urban location. Part 6 addresses power and energy efficiency of outdoor lighting. There are exceptions for certain occupancies for lighting power requirements, and generally, they would apply to this provision, but voluntary compliance with any or all of the items is encouraged. **THEN:**		**Plan Intake:** The reviewer and/or plan checker should review the construction documents, including exterior light sources, to confirm compliance with Part 1, Part 2 and Part 6; review the electrical plans and specifications for complying building and exterior lighting, including photometric data for perimeter site lighting fixtures; and review specifications for any controls to be installed on the project.	**On-Site Enforcement:** The inspector should review the permit set of plans to verify that all lighting and power calculations and specified products are installed as specified on the approved plans and specifications. The inspector may make a site visit after dark when all fixtures and amenities are installed to make visual assessments and take light measurements within 15 feet of the property line.
14			1. Shield all exterior luminaires or provide cutoff luminaries per Section 132 (b) of the California Energy Code.	ox									1. If custom lighting is needed, have it shielded to prevent uplight equivalent to cutoff fixtures. This could be an expensive option that may require photometric measurement. 2. Select cutoff exterior lighting fixtures that meet the definition in Section 5.102 of CALGreen, for installation at the building and the site.			
15			2. Contain interior lighting within each source.	ox									1. Lay out lighting to prevent light from shining through windows or screen walls. 2. Design exterior shading features that also serve as screens at night. 3. Design indirect interior lighting, e.g. coved, at the perimeter or locate fixtures inside the exterior walls to shine into the space. 4. Specify shielded fixtures, e.g. sconces, in corridors and on building exterior, fixtures that prevent uplight. 5. Specify interior task lighting, e.g. under-cabinet. 6. Specify perimeter window coverings, e.g. blinds. 7. Include instructions in the Operations and Maintenance Manual for extinguishing lights or drawing blinds when it gets dark, and recommend daylight janitorial services.			
16			3. Allow no more than .01 horizontal lumen foot candles to escape 15 feet beyond the site boundary.	ox									1. Avoid locating parking or site lighting fixtures adjacent to the property line, or choose perimeter fixtures whose photometrics are asymmetrical, focusing light on the site's interior. 2. Provide trees or man-made screens around perimeter of site. 3. As approved by the enforcing agency, multiple sites in a development or sites sharing common functions may be included within an overall site boundary for the purposes of this section.			

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17			4. Automatically control exterior lighting dusk to dawn to turn off or lower light levels during inactive periods.	OX									1. For occupancies that operate principally only during daylight hours, specify photo sensors to turn off exterior lighting between dawn and dusk. 2. Employ new dimming technologies that sense motion and activate lighting only as needed.			

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18	EEP		Energy Efficiency Performance													
19	EEP	5.201.1	Scope. The California Energy Commission will continue to adopt mandatory building standards.	ox						**5.201.1 Scope.** For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory building standards. **Note:** It is the intent of this code to encourage buildings to achieve exemplary performance in the area of energy efficiency. For the purposes of energy efficiency standards, the California Energy Commission believes specifically, a green building should achieve at least a 15 percent reductionin energy usage when compared to the State's mandatory energy efficiency standards.	The intent of this code provision is to recognize that the California Energy Commission retains its authority for energy efficiency standards. While not required by this code, a 15 percent reduction in building energy usage compared to current mandatory energy efficiency standards is recommended by the Energy Commission.	For the purposes of mandatory energy efficiency standards in this code, the California Energy commission will continue to adopt mandatory building standards. Local amendments increasing energy efficiency standards beyond those required in the California Energy Code may apply,	Meet the minimum mandatory energy efficiency standards as currently required by California Energy Code, CCR Title 24, Part 6.		**Plan Intake:** The reviewer and/or plan checker should review the plans, Title 24 Energy Compliance Forms and specifications as currently done for other portions of the code.	**On-Site Enforcement:** The inspector should review the permit set of plans to verify that all energy efficiency standards as specified on the approved plans and specifications are installed

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20	EEP		**Prescriptive Measures**													
21	EEP		**Renewable Energy**													
22	EEP		**Elevators, Escalators and Other Equipment**		o											
23	EEP		**Energy Efficient Steel**													
24	**WE**		**Water Efficiency and Conservation Indoor**													
25	**WE**	**5.303.1**	**Meters.** Separate meters or metering devices shall be installed for the uses described in Sections 503.1.1 and 503.1.2.	ox						1. For each individual leased, rented, or other tenant space within the building projected to consume more than 100 gal/day.2. For spaces used for laundry or cleaners, restaurant or food service, medical or dental office,laboratory, or beauty salon or barber shop projected to consume more than 100 gal/day.	The intent of this code provision is to reduce potable water use in new buildings over 50,000 square feet or consumption in excess of 1,000 gal/day by making building owners and/or tenants aware of their daily potable water consumption to encourage voluntary reduction of potable water use. Note: Owner billing of tenants based on actual use is not intended but is not prohibited.	There is **NO** current law or regulation for this code provision.	First determine if the new project will require separate meters based on the 50,000 square foot or excess consumption regulation. If so then:		**Plan Intake:** The reviewer and/or plan checker should review the plans and specifications to confirm that separate meters and/or metering devices are specified on the plans when required.	**On-Site Enforcement:** The inspector should review the permit set of plans to verify that all separate submeters and/or metering devices are installed as specified on the approved plans and specifications.
26	WE		5.303.1.1 Buildings in excess of 50,000 square feet. Separate submeters shall be installed as follows:													
27			1. For each individual leased, rented or other tenant space within the building projected to consume more than 100 gal/day.	ox									1. Determine if your leased, rented, or other tenant space within the 50,000 square foot building (including spaces used for laundry or cleaners, restaurant or food service, medical or dental office, laboratory, or beauty salon or barber shop) is projected to consume more than 100 gal/day. If so, then provide separate submeters to be installed by the owner or contractor after the main meter supplied by the utility. 2. If any building within a project or space within a building is projected			
28	WE		2. For spaces used for laundry or cleaners, restaurant or food service, medical or dental office, laboratory or beauty salon or barber	ox									Suggestion: Show separate meters on the plans (Site Utility Plan) and provide specifications for the submeters and/or metering devices.			
29	**WE**	**5.303.1.2**	Excess consumption. Any building within a project or space within a building that is projected to consume more than 1,000	ox	o	o										
30	**WE**	**5.303.2**	20 percent savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 20 percent shall be provided. (Calculate savings by Water Use Worksheets)	ox						**CALGreen Section: 5.303.2 Twenty percent savings.** A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 20 percent shall be provided. The reduction shall be based on the maximum allowable water use per plumbing fixture and fittings as required by the California Building Standards Code. The 20 percent reduction in potable water use shall be	The intent of this code provision is to reduce the overall use of potable water within the building by 20 percent. The Governor issued a proclamation in 2009 making 20 percent water use reduction a statewide goal.	AB 715 (Stats 2007, c. 499) modified the Health and Safety Code to allow only high-efficiency toilets and urinals to be sold or installed after January 1, 2014.	Demonstrate a 20 percent reduction in potable water use by using one of the following methods: 1. Prescriptive Method: Refer to Table 5.303.2.3 and select the plumbing fixtures and fittings with the reduced flow rates. OR 2. Performance Method: Refer to Table 5.303.2.2 and provide a calculation demonstrating a 20 percent reduction in the building "water use baseline" as established in the table. ***Suggestion:*** *For the Prescriptive Method, provide a note on the plans and specify the fixtures and fittings that meet the requirement. For the Performance Method, provide a plumbing calculation on the plans demonstrating an overall 20 percent water use reduction. Sample worksheets are included in Part 4 of this Guide.*		The reviewer and/or plan checker should review the plans and specifications to confirm that either the prescriptive or performance method has been submitted and check for the 20 percent water reduction compliance. If the performance method is used, review the water calculations showing the 20 percent reduction.	The inspector should review the permit set of plans to verify that the specified water efficient plumbing fixtures and fixture fittings are installed. If the performance method was used, the inspector will verify that fixtures or systems used to reduce overall water use by 20 percent have been installed. The inspector may review the fixture specifications to verify compliance or accept self-certification form.
31	**WE**	**5.303.2.1**	Multiple showerheads serving one shower. When single shower fixtures are served by more than one showerhead, the combined flow rate of all the showerheads shall not exceed the maximum flow rates specified in the 20 percent reduction column contained in Table 5.303.2.3 or the shower shall be designed to only allow one showerhead to be in operation at a time. • •	ox						Exception: The maximum flow rate for shower heads when using the calculation method specified in Section 5.303.2, Item 2 is 2.5 gpm @ 80 psi. ---------- Suggestion: Provide a note on the plans that multiple shower heads served by a single shower fixture shall have a combined flow rate of all the showerheads not to exceed the maximum flow rates specified in the 20 percent reduction column contained in Table 5.303.2.3. Or note that shower	The intent of this code provision is to establish that the maximum flow rate in the 20 percent reduction table covers all applications where water sprays from multiple sources at one time. It is not the intent to permit multiple independent water supply lines to a single shower enclosure. This is intended to cover a single shower enclosure or space. In multiple shower spaces or gang showers, the requirement shall apply to each shower.	There is **NO** current law or regulation for this code provision.	[illegible] the flow at the valve that serves all the showerheads to provide no more than 2 gpm @ 80 psi as specified in the 20 percent reduction column contained in Table 5.303.2.3. 2. Specify the flow rate of the showerheads to produce a combined flow rate of no more than 2 gpm @ 80 psi as specified in the 20 percent reduction column contained in Table 5.303.2.3. 3. Specify a valve that is designed to allow only one showerhead to be in operation at a time witha maximum flow rate of 2 gpm @ 80 psi. 4. Performance Method: Refer to Table 5.303.2.2 and provide a calculation demonstrating a 20 percent reduction in the building "water use baseline" with a maximum combined flow rate of 2.5 pm@80 psi for	Contractor should be able to provide documentation or self-certification form to the inspector.	The reviewer and/or plan checker should review the plans and confirm that multiple shower heads specified meet the combined flow rates on the tables or that they are plumbed to operate independently or that the performance method does not exceed the combined maximum flow rates.	The inspector should review the permit set of plans to verify that the specified showerheads and/or water reducing fittings are installed. If the performance method was used, the inspector will confirm that showerheads or systems used to reduce overall water use by 20 percent have been installed. The inspector may review fixture specifications provided by the manufacturers as verification of compliance. Testing of flow rates may be done at the inspector's discretion.
32	WE	5.303.4	Wastewater reduction. Each building shall reduce the generation of wastewater by one of the following methods:	A A						**ALGreen Section: 5.303.4 Wastewater reduction.** Each building shall reduce by 20 percent wastewater by one of the following methods: 1. [DSA-SS] The installation of water-conserving fixtures (water closets, urinals) meeting the criteria established in sections 5.303.2 or 5.303.3 or 2. Utilizing nonpotable water systems	The intent of this code provision is to reduce wastewater discharge potable and non-potable, into the municipal sewer system, thereby reducing energy used in sewage treatment.	Chapter 16A of the California Plumbing Code (CPC) regulates residential graywater and dual plumbing for residential and nonresidential recycled water systems. Appendix G contains provisions for nonresidential graywater.	Demonstrate a 20 percent waste water reduction by using one of the following methods: 1. Comply with the 20% water use reduction provision of section 5.303.2 discussed above. 2. Where available and/or permitted by the local jurisdiction, utilize non-potable water systems (captured rainwater, graywater, and municipally treated wastewater [recycled water]). 3. Use waterless urinals. 4. Irrigate landscape with graywater from fixtures or appliances per CPC Appendix G ***Suggestion:*** *Provide a note on the plans stating the method of compliance to be used.*		The reviewer and/or plan checker should review the plans and confirm that either the water-conserving fixtures (prescriptive or performance) method has been submitted and check for the 20 percent waste water reduction compliance. If the non-potable water systems method will be used, confirm availability and compliance with local ordinance.	The inspector should review the permit set of plans to verify that the specified water efficient plumbing fixtures and fixture fittings are installed. If the performance method was used, the inspector will verify that the 20 percent waste water reduction as approved has been followed. If a non-potable water systems is installed, the inspector will confirm that it meets local ordinances and operates properly.
33	WE		fixtures or	ox												
34	WE		applicable	ox												

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35	WE	**5.303.6**	Plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the requirements listed for each type in Items listed in Table 5.303.6.	A A						**CALGreen Section: 5.303.6 Plumbing fixtures and fittings.** Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall meet the standards referenced in Table 5.503.6.	The intent of this code provision is to provide specifications for plumbing fixtures and fittings by referencing US EPA Water Sense labels and ASME standards for fixtures that can be used to meet the 20 percent water use reduction.	AB 715 (Stats. 2007, c. 499) modified the Health and Safety Code to specify standards for high efficiency toilets and urinals. AB 1953 (Stats. 2006, c. 853) changed the code to redefine "lead free plumbing" to reduce the amount of lead allowed in potable water fittings and fixtures effective January 1, 2010. (AB 1953 is referenced in Section 604.10 of the California Plumbing Code.) Subsequent legislation in SB 1334 (Stats. 2008, c. 580) and SB 1395 (Stats. 2008, c. 581) required that products be certified as to lead levels by an ANSI-accredited third party.	Specify plumbing fixtures and fittings to meet the reference standards on Table 5.303.6. ***Note:*** *If the performance method of compliance is used and a trade off is included in the calculation, not all fixtures need to meet these standards.*		**Plan Intake:** The reviewer and/or plan checker should review the plans and specifications to confirm that plumbing fixtures and fittings specified meet the reference standards on Table 5.303.6. If the performance method is used and the water calculations produce a 20 percent reduction, it is possible that not all water closets and flush urinals will meet the standards on Table 5.303.6.	**On-Site Enforcement:** The inspector should review the permit set of plans to verify that the specified fixtures and fittings that meet the reference standards on Table 5.303.6 have been installed. If the performance method was used, the inspector will verify that fixtures or systems used to reduce overall water use by 20 percent have been installed, including any water closets and flush urinals which do not meet the standards on Table 5.303.6.
36	WE		1. Water closets (toilets) – flushometer type	ox												
37	WE		2. Water closets (toilets) – tank type	ox												
38	WE		3. Urinals	ox												
39	WE		4. Public lavatory faucets	ox												
40	WE		5. Public metering self-closing faucets	ox												
41	WE		6. Residential bathroom lavatory sink faucets	ox												
42	WE		7. Residential kitchen faucets	ox												
43	WE		8. Residential shower heads	ox												
44	WE		9. Single shower fixtures served by more than one showerhead As applicable	ox												

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45	WE		**Outdoor Water Use**													
46	**WE**	**5.304.1**	Water budget. A water budget shall be developed for landscape irrigation use that conforms to the local water efficient landscape ordinance or to the California Department of Water Resources Model Water Efficient Landscape Ordinance where no local ordinance is applicable. Note: Prescriptive measures to assist in compliance with the water budget are listed	ox						Note: Prescriptive measures and compliance forms to assist in compliance with the water budget are listed in Sections 492.5 through 492.8, 492.10 and 492.11 of the ordinance, which may be found at: http://www.owue.water.ca.gov/landscape/ord/ord.cfm	The intent of this code provision is to reduce the overall outdoor potable water use by requiring that a water budget be developed for landscape irrigation.	The California Department of Water Resources has adopted a Model Water Efficient Landscape Ordinance (MLO) which requires that a water budget be developed that is currently in effect. There are some local jurisdictions that have adopted water efficient landscape ordinances that may be more restrictive.	Develop a water budget using one of the following methods: 1. Check with your local jurisdiction to confirm whether a local water efficient landscape ordinance is in place and if so develop a water budget for landscape irrigation that conforms to the local ordinance. Or 2. Develop a water budget for landscape irrigation use that conforms to the California Department of Water Resources Model Water Efficient Landscape Ordinance for landscaped areas 2,500 square feet or more.		**Plan Intake:** The reviewer and/or plan checker should review the construction documents for calculations to confirm that a water budget is developed by either using the local ordinance and/or the California Department of Water Resources Model Water Efficient Landscape Ordinance.	**On-Site Enforcement:** The inspector should review the permit set of plans and calculations to verify that the approved water budget as specified is followed during construction. The MLO or local ordinance compliance forms may serve this purpose.
47	**WE**	**5.304.2**	5.304.2 Outdoor potable water use. For new water service for landscaped areas between 1,000 square feet and 5,000 square feet (the level at which Water Code §535 applies), separate meters or submeters shall be installed for indoor and outdoor potable water use.	ox							The intent of this code provision is to reduce outdoor potable water use for new water service for landscaped areas between 1,000 square feet and 5,000 square feet by making building owners and/or tenants aware of their daily outdoor potable water consumption for landscaping. Additionally, it allows the consumer to monitor water use to identify spikes that may occur due to leaks in irrigation systems. Water loss attributed to leaks can be substantial.	AB 1881 (Stats. 2006, c. 559) currently requires that a separate water meter be installed by the water purveyor for new water service serving more than 5,000 square feet of irrigated landscape. There might be some local jurisdictions that have adopted ordinances that may be more restrictive.	How to comply: First determine if the new project will require separate meters based on the 1,000-5,000 square foot landscape area. If so then: 1. Owner or contractor shall install a submeter after the main meter for outdoor potable water use. Suggestion: Show separate meters and submeters on the plans (Site Utility Plan) and specifications.		**Plan Intake:** The reviewer and/or plan checker should review the construction documents to confirm that a separate submeter for landscape irrigation was provided.	**On-Site Enforcement:** The inspector should review the permit set of plans to verify that separate meters as specified on the approved construction documents are installed.
48	WE	5.304.3	Irrigation design. In new nonresidential projects with between 1,000 and 2,500 square feet of landscaped area (the level at which the MLO applies), install irrigation controllers and sensors which include the following criteria and meet manufacturer's recommendations.							Suggestion: Show on the plans (Landscaping Plan) and specifications the irrigation controllers and sensors and design criteria outlined in section 492.7 of the MLO.	The intent of this code provision is to reduce outdoor potable water use for new construction landscaped areas between 1,000 square feet and 2,500 square by requiring the installation of irrigation controllers and sensors that are weather-or soil moisture-based.	The California Department of Water Resources has adopted a Model Water Efficient Landscape Ordinance (MLO) which requires that irrigation controllers utilizing either evapotranspiration or soil moisture sensor data for landscape areas 2,500 square feet or more. There might be some local jurisdictions that have adopted ordinances.	How to comply: First determine if the new project landscape area is between 1,000-2,500 square feet. If so then: Determine which type of controller is going to be installed (weather based versus soil-moisture based). If specifying a weather-based controller, make sure that it either has an integral rain sensor, or provide a separate sensor. Install all components of the irrigation control system per the manufacturer's instructions. Note: More information regarding irrigation controller function and specifications is available from the Irrigation Association at .. http://www.irrigation.org/SWAT/Industry/ia-tested.aspx		**Plan Intake:** The reviewer and/or plan checker should review the construction documents to confirm that irrigation controllers and sensors are weather-or soil moisture-based.	**On-Site Enforcement:** The inspector should review the permit set of plans to verify that irrigation controllers and sensors as specified on the approved construction documents are installed according to the manufacturer's instructions and as shown on the irrigation design plan. The inspector may accept a certification form as a method of compliance, including any forms used for compliance with MLO or local ordinance.
49	WE	5.304.3.1	Irrigation controllers. Automatic irrigation system controllers installed at the time of final inspection shall comply with the following:	aa						5.304.3.1 Irrigation controllers. Automatic irrigation system controllers installed at the time of final inspection shall comply with the following:1. Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change. 2. Weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless						
50	WE		1. Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in	ox												
51	WE		2. Weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-based controllers	ox												
52	WE															
53	MC		**Material Conservation and Resource Efficiency Efficient Framing**													
54																
55	MS		**Material Sources**		o											
56	MS															
57			**Enhanced Durability and Reduced Maintenance**													

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1		Code	Description	M	T1	T2	Enf. Agncy	Inst. Desgnr	3rd Party	Notes	Intent	Existing Law or Regulation:	Compliance Method: Design Team	Compliance Method: Contractor	Enforcement- Plan Intake	Enforcement- OnSite Enforcement
58	WRMM		**Weather Resistance and Moisture Management**													
59	**WRMM**	**5.407.1**	Weather protection.Provide a weather-resistant exterior wall and foundation envelope as required by California Building Code Section 1403.2 (Weather Protection) and California Energy Code Section 150, (Mandatory Features and Devices), manufacturer's installation instructions, or local ordinance, whichever is more stringent.	ox							The intent of this code provision is to provide a weather-resistant exterior wall and foundation envelope as currently required by California Building Codes. This measure is to spotlight those existing code provisions and increase the integrity and longevity of the structure.	Currently this code provision is regulated by California Building Code Section 1403.2 (Weather Protection) and California Energy Code Section 150, (Mandatory Features and Devices for lowrise residential) and some local ordinances.	**Design Team:** Determine local conditions that may affect the amount of moisture that might penetrate the envelope due to weather, wind-driven rain or exposure to salt spray, etc. For example, the protection measures in Section 150 of the energy code are required for Climate Zones 14 & 16, in the mountains. Design and detail exterior wall systems to reflect local findings, specifying appropriate materials and vapor retardance. Show on the plans and specifications. ***Suggestion:*** *Pay particular attention to openings and changes of material in detailing exterior wall systems.*	**Contractor:** Install any exterior wall system in accordance with architectural details and manufacturer's installation instructions. ***Suggestion:*** *Systems like exterior insulation and finish systems, if not installed to manufacturer's installation instructions, have the potential for moisture penetration and condensation that may lead to mold, structural failure, and increased liability.*	**Plan Intake:** The reviewer and/or plan checker should review the construction documents to confirm that the exterior wall and foundation envelope meets the California Building Code Section 1403.2 (Weather Protection) and California Energy Code Section 150, (Mandatory Features and Devices for low-rise residential) and/or local ordinances are being met.	**On-Site Enforcement:** The inspector should review the permit set of plans to verify that the exterior wall and foundation envelope as specified on the approved plans and specifications are installed.
60	**WRMM**	**5.407.2**	Moisture control. Employ moisture control measures by the following methods;									There is NO current law or regulation for this code provision.				
61	**WRMM**	**5.407.2.1**	Sprinklers. Prevent irrigation spray on structures.	ox						Design and maintain landscape irrigation systems to prevent spray on structures.			For Sprinklers: Design irrigation systems to prevent spray on structures by specifying sprinkler heads which are adjacent to or near exterior walls to have a maximum degree head rotation or spray pattern that ensures protection of the building exterior.		**Plan Intake:** The reviewer and/or plan checker should review the plans and specifications to confirm that the sprinkler design and design features at entries and openings are included in the submitted plans.	**On-Site Enforcement:** The inspector should review the permit set of plans to verify that the sprinkler design and design features at entries and openings as specified on the approved plans and specifications are installed per specifications.
62	**WRMM**	**5.407.2.2**	Entries and openings. Design exterior entries and openings to prevent water intrusion into buildings. • •	ox						Design exterior entries and/or openings subject to foot traffic or wind-driven rain to prevent water intrusion into buildings. **Notes:** 1. Use features such as overhangs and recesses, and flashings integrated with a drainage plane. 2. Use non-absorbent floor and wall	The intent of this code provision is to minimize the amount of moisture entering the building; at the exterior entries & openings from wind-driven rain and at exterior walls from poorly designed sprinkler systems.	There is **NO** current law or regulation for this code provision.	For entries and openings:1. Use design features such as overhangs and recesses, and flashings integrated with a drainage plane. 2. Specify non-absorbent flooring material at the interior landing surface a minimum of two feet in the direction of travel and at wall finishes adjacent to the door opening on the sides and at the top. If two feet is not available above the opening, wall finishes may terminate at the ceiling. ***Suggestion:*** *Show on the plans*		**Plan Intake:** The reviewer and/or plan checker should review the plans and specifications to confirm that the sprinkler design and design features at entries and openings are included in the submitted plans.	**On-Site Enforcement:** The inspector should review the permit set of plans to verify that the sprinkler design and design features at entries and openings as specified on the approved plans and specifications are installed per specifications.
63	CWR		**Construction Waste Reduction, Disposal and**													
64	**CWR**	5.408.1	Construction waste diversion. Establish a construction waste management plan for the diverted materials, or meet local construction and demolition waste management ordinance, whichever is more stringent.	ox						Construction waste diversion. Establish a construction waste management plan or meet local ordinance, whichever is more stringent. •	The intent of this measure is to ensure that construction waste is diverted away from landfills and re-used or recycled either in conformance with the construction Waste Management Plan (WMP) or local ordinance.	AB 939 (Stats. 1989, c. 1095) as amended (WMA) made all California cities, counties, and approved regional solid waste management agencies responsible for enacting plans and implementing programs to divert 25 percent of their solid waste by 1995 and 50 percent by year 2000.	How to comply: If no local construction waste diversion ordinance exists then establish a construction waste management plan and identify the construction waste materials to be diverted from disposal as well as the diversion facility where the material will be taken. The requirements for the WMP are indicated in the regulation above. Notes: Sample WMP form provided in Part 4 of this Guide can be used to		The reviewer and/or plan checker should review the set of plans, specifications and/or forms to confirm that a WMP for diverted materials has been included with the plan submittal, that a local ordinance is cited as the method of compliance, or that an exception should be granted for an isolated job site that lacks access to a recycling facility or markets.	The inspector should review the approved WMP or Exception (Isolated jobsite) to verify that the identified materials are being diverted as specified.
65	**CWR**	5.408.2	Construction waste management plan. Submit plan per this section to enforcement authority.	ox						Where a local jurisdiction does not have a construction and demolition waste management ordinance, submit a construction waste management plan for approval by the enforcement agency that: 1. Identifies the materials to be diverted from disposal by efficient usage, recycling, reuse on the project, or salvage for future use or sale. 2. Determines if materials will						
66	**CWR**	**5.408.2.1**	**Documentation**. Provide documentation of the waste management plan that meets the requirements listed in Section 5.408.2 Items 1 thru 4 and the plan is accessible to the enforcement authority.	ox						**5.408.2.1 Documentation.** Documentation shall be provided to the enforcing agency which demonstrates compliance with Section 5.408.2 items 1 thru 4. The waste management plan shall be updated as necessary and shall be accessible during construction for examination by the enforcing agency. **Exception: [DSA-SS]** Jobsites in areas where there is no mixed construction and demolition debris (C&D) processor or recycling						

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1		**Code**	**Description**	**M**	**T1**	**T 2**	**Enf. Agncy**	**Inst. Dsgnr**	**3rd Party**	**Notes**	**Intent**	**Existing Law or Regulation:**	**Compliance Method: Design Team**	**Compliance Method: Contractor**	**Enforcement- Plan Intake**	**Enforcement- OnSite Enforcement**
67	**CWR**	**5.408.2.2**	**Isolated jobsites.** The enforcing agency may make exceptions to the requirements of this section when jobsites are located in areas beyond the haul boundaries of the diversion facility.	ox						**5.408.2.2 Isolated jobsites.** The enforcing agency may make exceptions to the requirements of this section when jobsites are located in areas beyond the haul boundaries of the diversion facility. **NOTES:** 1. Sample forms found in Chapter 8 may be used to assist in documenting compliance with the waste management plan. 2. Mixed construction and demolition debris (C&D) processors can be located at the California Department of Resources Recycling and Recovery (CalRecycle).	The intent of this measure is to ensure that construction waste is diverted away from landfills and re-used or recycled either in conformance with the construction Waste Management Plan (WMP) or local ordinance.	AB 939 (Stats. 1989, c. 1095) as amended (WMA) made all California cities, counties, and approved regional solid waste management agencies responsible for enacting plans and implementing programs to divert 25 percent of their solid waste by 1995 and 50 percent by year 2000.	**How to comply:** If no local construction waste diversion ordinance exists then establish a construction waste management plan and identify the construction waste materials to be diverted from disposal as well as the diversion facility where the material will be taken. The requirements for the WMP are indicated in the regulation above. ***Notes:*** *Sample WMP form provided in Part 4 of this Guide can be used to identify diverted materials. Mixed construction and demolition debris (C&D) processors can be located at* ***http://www.ciwmb.ca.gov/ConDemo/*** .	**1.** Determine if a local construction waste management ordinance is in place in your jurisdiction and comply with the more stringent requirement **2.** Determine what local hauling and recycling facilities are available in your area to establish the most economically feasible option for recycle and/or salvage of construction debris. If there is no facilities in your area, use Exception 2 and work with the local enforcing agency to establish an acceptable alternate. **3.** Include for recycling the following materials: carpet, wood, aggregate, paint, shingles, wallboard or any other materials that have recyclable value. For more information on various materials visit the C&D Publications link on the CALRecycle website, the Construction Waste Management (CWM) Worksheet provided in Part 4 of this Guide, or as required by local ordinance. ***Note:*** *The demolition debris provision may be applicable in the CALGreen code if an EXISTING building is going to be completely torn down and a NEW building built on the same site, where both are considered to be part of the same project. This would be determ*	**Plan Intake:** The reviewer and/or plan checker should review the set of plans, specifications and/or forms to confirm that a WMP for diverted materials has been included with the plan submittal, that a local ordinance is cited as the method of compliance, or that an exception should be granted for an isolated job site that lacks access to a recycling facility or markets.	**On-Site Enforcement:** The inspector should review the approved WMP or Exception (Isolated jobsite) to verify that the identified materials are being diverted as specified.
68	**CWR**	**5.408.2.3**	**Construction waste.** Recycle and/or salvage for reuse a minimum of 50 percent of nonhazardous construction and demolition debris or meet local ordinance, whichever is	ox												
69	CWR		clearing debris.													
70	CWR		2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of													
71	LCA		**Life Cycle Assessment**													

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1		Code	Description	M	T1	T2	Enf. Agncy	Inst. Desgnr	3rd Party	Notes	Intent	Existing Law or Regulation:	Compliance Method: Design Team	Compliance Method: Contractor	Enforcement- Plan Intake	Enforcement- OnSite Enforcement
72	BMO		**Building Maintenance and Operation**													
73	BMO	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 nonhazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics and metals.								The intent of this code provision is to direct attention to existing law to provide areas for recycling by occupants, including collection and loading of recyclable materials.	Currently there is a requirement for a model ordinance in Chapter 18, Part 3, Division 30 of the Public Resources Code. Chapter 18 is known as the California Solid Waste Reuse and Recycling Access Act of 1991 (Act) that can be used for statewide application.	1. Determine if a local recycling ordinance is in place in your jurisdiction and comply. If no ordinance; then use the model recycling ordinance. 2. Show on the plans (site and/or floor plans) readily accessible areas and signage for those areas that serve the entire building for recycling of non-hazardous materials by occupants. 3. In accordance with the model ordinance, recycling areas shall be secure; be protected from the elements, such as rain; and be adequately separated from occupied spaces for protection against impacts such as noise, odor and pests. 4. Where feasible, recycling areas should be		The reviewer and/or plan checker should review the plans and confirm that the appropriate recycling areas and signage for those areas have been provided on the plans.	The inspector should review the permit set of plans to verify that the recycling areas and signage for those areas on the plans and specifications are installed.
74	BMO	5.410.1.1	**5.410.1.1 Sample ordinance.** Space allocation for recycling areas shall comply with Chapter 18, Part 3, Division 30 of the Public Resources Code. Chapter 18 is known as the California Solid Waste Reuse and Recycling Access Act of 1991 (Act). **Note:** A sample ordinance for use by local														
75	BMO	5.410.2	**Commissioning.** For new buildings 10,000 square feet and over, building commissioning for all building systems covered by T24, Part 6, process systems and renewable energy systems shall be included in the design and construction processes of the building project. Commissioning requirements shall include items listed in Section 5.410.2. CALGreen Section: 5.410.2 Commissioning. For new buildings 10,000 square feet and over, building commissioning shall be included in the design and construction processes of the building project to verify that the building systems and components meet the owner's or owner representative's project requirements. Commissioning shall be performed in accordance with this section by trained personnel with experience on projects of comparable size and complexity. Commissioning requirements shall include: 1. Owner's Project Requirements 2. Basis of Design 3. Commissioning measures shown in the construction documents 4. Commissioning Plan 5. Functional Performance Testing 6. Documentation &							The purpose of this code is to improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of concepts that reduce negative and increase positive environmental impacts. Commissioning is a vital element in this effort. Include commissioning measures or requirements in the construction documents (plans and specifications). Commissioning measures or requirements should be clear, detailed and complete to clarify the commissioning process.	**Acronyms**BOD Basis of Design Cx Commissioning FPT Functional Performance Test HVAC Heating Ventilating and Air-Conditioning O&M Operations and Maintenance OPR Owner's Project Requirements	**Glossary Acceptance Criteria -** The conditions that must be met for systems or equipment to meet defined expected outcomes. **Commissioning (Cx) -** Building commissioning as required in this code involves a quality assurance process that begins during design and continues to occupancy. Commissioning verifies that the new building operates as the owner intended and that building staff are prepared to operate and maintain its systems and equipment. **Owner -** The individual or entity holding title to the property on which the building is constructed. **Commissioning Coordinator -** The person who coordinates the commissioning process. This can be either a third-party commissioning provider or an experienced member of the design team or owner in-house staff member. **Commissioning Team -** The key members of each party involved with the project designated to provide insight and carry out tasks necessary for a successful commissioning project. Team members may include the commissioning coordinator, owner or owner's representative, building staff, design professionals, contractors or manufacturer's repre				
76	**BMO**	**5.410.2**	**5.410.2 Commissioning.** For new buildings 10,000 square feet and over, building commissioning shall be included in the design and construction processes…. Commissioning requirements shall include: 1. Owner's Project Requirements 2. Basis of Design **3. Commissioning measures shown in the construction documents** 4. Commissioning Plan 5. Functional Performance Testing 6. Documentation & Training 7. Commissioning Report This section provides details for element 3: *Commissioning measures shown in the construction documents.*								***Intent:*** Include commissioning measures or requirements in the construction documents (plans and specifications). Commissioning measures or requirements should be clear, detailed and complete to clarify the commissioning process.	Title 24 Part 6 requires that specific functional test procedure forms be included in the construction documents. These test forms create a subset of the broader CalGreen commissioning requirements described herein. Review local ordinances for additional applicable requirements.		Compliance is achieved by including commissioning requirements in the project specifications. The commissioning specifications should include the following: 1. Primary (and optionally all) commissioning requirements are included in the general specification division (typically Division 1) and clear cross references of all commissioning requirements to and from the general division are included to ensure all subcontractors are held to them 2. A list of the systems and assemblies covered by the commissioning requirements. 3. Roles and responsibilities of all parties including: □ General contractor and subcontractors, vendors, construction manager □ Commissioning provider lead □ Owner, facility staff □ Architect and design engineers □ Including the non-contractor parties in the construction specifications is for information only to provide the contractor with context for their work □ Include who writes checklists and tests, who reviews and approves test forms, who directs tests, who executes tests, who documents test results and who approves completed tests. These role	At their discretion, the building official confirms demonstrated compliance at *Plan Intake* by: a) Receipt of a copy of the commissioning specifications, or b) Receipt of a form signed by the owner or owner representative or designer of record attesting that the owner-approved commissioning specifications are included in the construction documents. *See (Part 4) for templates and forms.*	
77										**Introduction:**						
78			This code requires that **"Commissioning shall be performed in accordance with this section by trained personnel with experience on projects of comparable size and complexity."** The trained personnel manage and facilitate the commissioning process. The trained personnel develop and implement the commissioning tasks and documentation identified in sections 5.410.2.1 through 5.410.2.7. Trained personnel may include appropriate members of owner staff, contractor and design team as well as independent commissioning professionals. It is							The purpose of this code is to improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of concepts that reduce negative and increase positive environmental impacts. Commissioning is a vital element in this effort.**Definitions used in the CALGreen CX Guide: Acronyms: BOD Basis of Design Cx Commissioning FPT Functional Performance Test**				
79										**Acceptance Criteria -** The conditions that must be met for systems or equipment to meet defined expected outcomes.						
80										**Commissioning (Cx)** - Building commissioning as required in this code involves a quality assurance process that begins during design and continues to occupancy. Commissioning verifies that the new building operates as the owner intended and that building staff are prepared to operate and maintain its systems and equipment.						
81										**Owner** - The individual or entity holding title to the property on which the building is constructed.						
82										**Commissioning Coordinator -** The person who coordinates the commissioning process. This can be either a third-party commissioning provider or an experienced member of the design team or owner in-house staff member.						
83										**Commissioning Team** - The key members of each party involved with the project designated to provide insight and carry out tasks necessary for a successful commissioning project. Team members may include the commissioning coordinator, owner or owner's representative, building staff, design professionals, contractors or manufacturer's representatives, and testing specialists.						
84										**Independent Third-Party Commissioning Professional** - A commissioning consultant contracted directly by the owner who is not responsible to, or affiliated with any other member of the design and construction team.						
85										**Operation and Maintenance (O&M) Manuals** - Documents that provide information necessary for operating and maintaining installed equipment and systems.						
86										**Owner Representative** – An individual or entity assigned by the owner to act and sign on the owner's behalf.						
87										**Process Equipment** - Energy-using equipment and components that are not used for HVAC, Electrical, Plumbing and Irrigation operations. Such devices would include but are not limited to heat transfer, water purifying, air cleaning, air vacuum and air compressing.						
88										**Sequence of Operation –** A written description of the intended performance and operation of each control element and feature of the equipment and systems.						
89										**Selecting Trained Personnel for (Commissioning)**						

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1		Code	Description	M	T1	T2	Enf. Agncy	Inst. Dsgnr	3rd Party	Notes	Intent	Existing Law or Regulation:	Compliance Method: Design Team	Compliance Method: Contractor	Enforcement- Plan Intake	Enforcement- OnSite Enforcement
90			essential that there is a single person designated							For information about enforcement and compliance of each commissioning element see sections 5.410.2.1 through 5.410.2.7. See (Part 4) for forms and templates						
91																
92																
93	BMO	5.410.2.2	**CALGreen Section: 5.410.2.2 Basis of Design (BOD).** A written explanation of how the design of the building systems meets the OPR shall be completed at the design phase of the building project, and updated as necessary during the design and construction phases. The Basis of Design document shall cover the following systems: 1. Heating, ventilation, Air Conditioning (HVAC) Systems and Controls 2. Indoor Lighting System and Controls 3. Water Heating System 4. Renewable Energy Systems 5. Landscape Irrigation Systems 6. Water Reuse Systems							**5.410.2.1 Owner's or Owner representative's Project Requirements (OPR).** The expectations and requirements of the building appropriate to its phase shall be documented before the design phase of the project begins. This documentation shall include the following: 1. Environmental and Sustainability Goals 2. Energy Efficiency Goals 3. Indoor Environmental Quality Requirements 4. Project program, including facility functions and	The Owner's Project Requirements (OPR) documents the functional requirements of a project and expectations of the building use and operation as it relates to systems being commissioned. The document describes the physical and functional building characteristics desired by the owner and establishes performance and acceptance criteria. The OPR is most effective when developed during pre-design and used to develop the Basis of Design (BOD) during the design process. The level of detail and complexity of the OPR will vary according to building use, type and systems.	No existing law or regulation. Review local ordinances for any applicable commissioning OPR requirement.	Compliance is demonstrated by the owner or owner's representative developing and/or approving the Owner's Project Requirements (OPR) document and can be defined as follows: 1. *Environmental and Sustainability Goals* – Establish environmental project goals and objectives exceeding the code for the project's sustainability which may include: a) CALGreen voluntary measures or Tiers sought, or other specific green building rating system or program credits and/or level of certification sought b) Specific environmental or sustainability goals such as water efficiency, water reuse, CO2 monitoring, xeriscaping, etc. 2. *Energy Efficiency Goals* – Establish goals and targets affecting energy efficiency which may include: a) Overall energy efficiency		At their discretion, the building official confirms demonstrated compliance at *Plan Intake* by: a) Receipt of a copy of the OPR document, or b) Receipt of a form signed by the owner or owner representative attesting that the OPR has been completed and approved by the owner. *See (Part 4) for templates and forms.*	
94	BMO										***Intent:*** Include commissioning measures or requirements in the construction documents (plans and specifications). Commissioning measures or requirements should be clear, detailed and complete to clarify the commissioning process.	Title 24 Part 6 requires that specific functional test procedure forms be included in the construction documents. These test forms create a subset of the broader CalGreen commissioning requirements described herein. Review local ordinances for additional applicable requirements.	Compliance is achieved by including commissioning requirements in the project specifications. The commissioning specifications should include the following: 1. Primary (and optionally all) commissioning requirements are included in the general specification division (typically Division 1) and clear cross references of all commissioning requirements to and from the general division are included to ensure all subcontractors are held to them 2. A list of the systems and assemblies covered by the commissioning requirements. 3. Roles and responsibilities of all parties including: □ General contractor and subcontractors, vendors, construction manager □ Commissioning provider lead □ Owner, facility staff □ Architect and design engineers □ Including the		At their discretion, the building official confirms demonstrated compliance at *Plan Intake* by: a) Receipt of a copy of the commissioning specifications, or b) Receipt of a form signed by the owner or owner representative or designer of record attesting that the owner-approved commissioning specifications are included in the construction documents. *See (Part 4) for templates and forms.*	
95	BMO															
96	BMO															
97	BMO															
98	BMO	5.410.2.1	Owner's or Owner representative's Project Requirements: Owner's Project Requirements (OPR). Documented before the design phase of the project begins the OPR shall include items listed in Section 5.410.4.be completed at the design phase of the building project and updated periodically to cover the systems listed in Section 5.410.2.2.							(OPR). The expectations and requirements of the building appropriate to its phase shall be documented before the design phase of the project begins. This documentation shall include the following: 1. Environmental and Sustainability Goals 2. Energy Efficiency Goals 3. Indoor Environmental Quality Requirements 4. Project program, including facility functions and hours of operation, and need for after hours operation 5. Equipment and Systems Expectations 6. Building Occupant and	The Owner's Project Requirements (OPR) documents the functional requirements of a project and expectations of the building use and operation as it relates to systems being commissioned. The document describes the physical and functional building characteristics desired by the owner and establishes performance and acceptance criteria. The OPR is most effective when developed during pre-design and used to develop the Basis of Design (BOD) during the design process. The level of detail and complexity of the OPR will vary according to building use, type and systems.	No existing law or regulation. Review local ordinances for any applicable commissioning OPR requirement.	Compliance is demonstrated by the owner or owner's representative developing and/or approving the Owner's Project Requirements (OPR) document and can be defined as follows:		At their discretion, the building official confirms demonstrated compliance at Plan Intake by: a) Receipt of a copy of the OPR document, or b) Receipt of a form signed by the owner or owner representative attesting that the OPR has been completed and approved by the owner. See (Part 4) for forms and templates.	
99													1. Environmental and Sustainability Goals – Establish environmental project goals and objectives exceeding the code for the project's sustainability which may include: a) CALGreen voluntary measures or Tiers sought, or other specific green building rating system or program credits and/or level of certification sought b) Specific environmental or sustainability			
100													2. Energy Efficiency Goals – Establish goals and targets affecting energy efficiency which may include: a) Overall energy efficiency less than the California Energy Code performance approach energy budget by __%) b) Lighting system efficiency (less than the California Energy Code performance approach energy budget by __%) c) HVAC equipment efficiency & characteristics d) Any other measures affecting energy efficiency desired by owner Building orientation and siting Daylighting Facade,			
101													3. Indoor Environmental Quality Requirements - For each program space describe indoor environmental requirements including intended use and anticipated schedule a) Lighting b) Temperature and humidity c) Acoustics d) Air quality, ventilation and filtration e) Desired adjustability of system controls f) Accommodations for after-hours use g) Other owner			
102													4. Project Program, Including facility functions and hours of operation, and need for after hours operation – Describe primary purpose, program and use of proposed project a) Building size, number of stories, construction type, occupancy type and number b) Building program areas including intended use and anticipated occupancy schedules c) Future expandability and flexibility of spaces d) Quality and/or durability of materials			
103													5. Equipment and Systems Expectations – Describe the following for each system commissioned: a) Level of quality, reliability, equipment type, automation, flexibility, maintenance and complexity desired b) Specific efficiency targets, desired technologies, or preferred manufacturers for building systems, acoustics and vibration c) Degree of system integration,			
104													6. Building Occupant and O&M Personnel Expectations – Describe the following: a) How building will be operated and by whom b) Level of training and orientation required to understand, operate and use the building systems for building operation and maintenance staff, as well as occupants c)			
105																

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1		**Code**	**Description**	**M**	**T1**	**T 2**	**Enf. Agncy**	**Inst. Desgnr**	**3rd Party**	**Notes**	**Intent**	**Existing Law or Regulation:**	**Compliance Method: Design Team**	**Compliance Method: Contractor**	**Enforcement- Plan Intake**	**Enforcement- OnSite Enforcement**
106	**BMO**	**5.410.2.2**									The Basis of Design (BOD) describes the building systems to be commissioned and outlines design assumptions not indicated in the design documents. The design team develops the BOD to describe how the building systems design meets the Owner's Project Requirements (OPR), and why the systems were selected. The BOD is most effective when developed early in the project design and updated as necessary throughout the design process.	No existing law or regulation. Review local ordinances for any applicable commissioning BOD requirement.	Compliance requires the completion of the BOD document and should include the following where applicable: 1. *Heating, Ventilation, Air Conditioning (HVAC) Systems and Controls* a) Provide narrative description of system – system type, location, control type, efficiency features, outdoor air ventilation strategy, indoor air quality features, environmental benefits, other special features. b) Describe reasons for system selection – why chosen system is better than alternatives, issues such as comfort, performance, efficiency, reliability, flexibility, simplicity, cost, owner preference, site constraints, climate, maintenance, acoustics c) Provide design criteria including the following: □ Load calculation method/software □ Summer outdoor design conditions(__°F drybulb and	Compliance requires the completion of the BOD document and should include the following where applicable:	At their discretion, the building official confirms demonstrated compliance at *Plan Intake* by: a) Receipt of a copy of the BOD document, or b) Receipt of a form signed by the architect, engineer or designer of record, attesting that the BOD has been completed and meets the requirements of the OPR. *See (Part 4) for templates and forms.*	
107														1. Heating, Ventilation, Air Conditioning (HVAC) Systems and Controls a) Provide narrative description of system – system type, location, control type, efficiency features, outdoor air ventilation strategy, indoor air quality features, environmental benefits, other special features. b) Describe reasons for system selection – why chosen system is better than alternatives, issues such as comfort, performance, efficiency, reliability, flexibility, simplicity, cost, owner preference, site constraints, climate, maintenance, acoustics c) Provide design criteria including the following: Load calculation method/software Summer outdoor design conditions(__°F drybulb and __°F wetbulb) Winter outdoor design conditions (__°F drybulb and __°F wetbulb) Indoor design conditions (__°F drybulb cooling, __%RH cooling; __°F drybulb heating, __%RH heating) Applicable codes, guidelines, regulations and other references used Load calculation assumptions d) Sequence of Operations – operating schedules, setpoints, may refer to plans or specifications if sequence indicated within permit documents e) De		
108														2. Indoor Lighting System and Controls a) Provide narrative description of system – type of fixtures, lamps, ballasts, controls b) Describe reason for system selection – why chosen system better than alternatives, issues such as visual comfort, performance, efficiency, reliability, cost, flexibility, owner preference, color rendering, integration with daylighting, ease of control c) Provide design criteria for each type of space including the following: Applicable codes, guidelines, regulations and other references used Illumination design targets (footcandles) and lighting calculation assumptions d) Provide lighting power design targets for each type of space. Title 24 lighting power allowance and lighting power design target (watts/ft^2) e) Describe how system meets the OPR		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1		Code	Description	M	T1	T2	Enf. Agncy	Inst. Desgnr	3rd Party	Notes	Intent	Existing Law or Regulation:	Compliance Method: Design Team	Compliance Method: Contractor	Enforcement- Plan Intake	Enforcement- OnSite Enforcement
109														3. Water Heating System a) Provide narrative description of system – system type, control type, location, efficiency features, environmental benefits, other special features b) Describe reason for system selection – why chosen system is better than alternatives, issues such as performance, efficiency, reliability, space constraints, cost, utility company incentives, owner preference, ease of maintenance c) Water heating load calculations d) Describe how system meets the OPR		
110														4. Renewable Energy Systems a) Provide narrative description of system – type, performance, control type, energy savings, payback period b) Describe reason for system selection – why chosen system is better than alternatives, issues such as performance, efficiency, reliability, flexibility, simplicity, expandability, cost, payback period, utility company incentives, owner preference, c) Sequence of Operation – operating schedules, setpoints, storage capacity d) Describe how system meets the OPR		
111														5. Landscape Irrigation Systems a) Provide narrative description of system – type, performance, water usage b) Describe reason for system selection – why chosen system is better than alternatives, issues such as performance, efficiency, reliability, flexibility, expandability, cost, owner preference, simplicity c) Sequence of Operation – operating schedules, setpoints d) Describe how system meets the OPR		
112			Basis of Design (BOD). A written explanation of how the design of the building systems meets the OPR shall be completed at the design phase of the building project, and updated as necessary during the design and construction phases. The Basis of Design document shall cover the following systems: 1. Heating, Ventilation, Air Conditioning (HVAC) Systems and Controls 2. Indoor Lighting System and Controls 3. Water Heating System 4. Renewable Energy Systems 5. Landscape Irrigation Systems 6. Water Reuse Systems											6. Water Reuse Systems a) Provide narrative description of system – type, performance, capacity, reuse purpose b) Describe reason for system selection – why chosen system is better than alternatives, issues such as performance, efficiency, reliability, flexibility, expandability, cost, owner preference, simplicity c) Sequence of Operation – operating schedules, setpoints d) Describe how system meets the OPR . See (Part 4) for forms and templates.		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1		**Code**	**Description**	**M**	**T1**	**T2**	**Enf. Agncy**	**Inst. Desgnr**	**3rd Party**	**Notes**	**Intent**	**Existing Law or Regulation:**	**Compliance Method: Design Team**	**Compliance Method: Contractor**	**Enforcement- Plan Intake**	**Enforcement- OnSite Enforcement**
113	BMO	5.410.2								Commissioning. For new buildings 10,000 square feet and over, building commissioning shall be included in the design and construction processes…. Commissioning requirements shall include: 1. Owner's Project Requirements 2. Basis of Design 3. Commissioning measures shown in the construction documents 4. Commissioning Plan 5. Functional Performance Testing 6. Documentation & Training 7. Commissioning Report. This section provides details for element 3: Commissioning measures	Include commissioning measures or requirements in the construction documents (plans and specifications). Commissioning measures or requirements should be clear, detailed and complete to clarify the commissioning process. Existing Law or Regulation: Title 24 Part 6 requires that specific functional test procedure forms be included in the construction documents. These test forms create a subset of the broader CalGreen commissioning requirements described herein. Review local ordinances for additional applicable requirements.			Compliance is achieved by including commissioning requirements in the project specifications. The commissioning specifications should include the following:	At their discretion, the building official confirms demonstrated compliance at Plan Intake by: a) Receipt of a copy of the commissioning specifications, or b) Receipt of a form signed by the owner or owner representative or designer of record attesting that the owner-approved commissioning specifications are included in the construction documents. See (Part 4) for forms and templates.	
114			Commissioning . A commissioning plan describing how the project will be commissioned shall be started during the design phase of the building project and shall include items listed in Section 5.410.2.3. 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. Commissioning measures shown in the construction documents											1. Primary (and optionally all) commissioning requirements are included in the general specification division (typically Division 1) and clear cross references of all commissioning requirements to and from the general division are included to ensure all subcontractors are held to them 2. A list of the systems and assemblies covered by the commissioning requirements. 3. Roles and responsibilities of all parties including: General contractor and subcontractors, vendors, construction manager Commissioning provider lead Owner, facility staff Architect and design engineers Including the non-contractor parties in the construction specifications is for information only to provide the contractor with context for their work Include who writes checklists and tests, who reviews and approves test forms, who directs tests, who executes tests, who documents test results and who approves completed tests. These roles may vary by system or assembly. 4. Meeting requirements 5. Commissioning schedule management procedures 6. Issue and non-compliance management procedures 7. Requ		
115	**BMO**	**5.410.2.3**	Commissioning plan. Prior to permit issuance a commissioning plan shall be completed to document how the project will be commissioned and shall be started during the design phase of the building project. The Commissioning Plan shall include the following: 1. General project information 2. Commissioning goals 3. Systems to be commissioned. Plans to test systems and components shall include: a. An explanation of the original design intent b. Equipment and systems to be tested, including the extent of tests c. Functions to be tested d. Conditions under which the test shall be performed e. Measurable criteria for acceptable performance								The Commissioning Plan (Cx Plan) establishes the commissioning process guideline for the project and commissioning team's level of effort by identifying the required Cx activities to ensure that the Owner's Project Requirements (OPR) and the Basis of Design (BOD) are met. The Cx Plan also includes a commissioning schedule from design to occupancy.	No previous existing State of California laws or regulations. Review local county, city or jurisdiction ordinances for any applicable commissioning planning requirements.	Compliance is demonstrated by preparation of a project specific Cx Plan that includes the elements listed in the code section above. The following gives guidance for developing the components of the Commissioning Plan:		At their discretion, the building official confirms demonstrated compliance at Plan Intake by: a) Receipt of a copy of the Commissioning Plan, or b) Receipt of a form signed by the owner or owner representative attesting that the Cx Plan has been completed. See (Part 4) for forms and templates.	
116													1. General project information -Provide project identifying information including but not limited to the following: -Project Name, Owner, Location, -Building type, Building area, -Project Schedule -Contact information of individual/company providing the commissioning services 2. Commissioning Goals – Document the commissioning goals, including, but not limited to: -Meeting CALGreen code requirements for commissioning -Meeting OPR and BOD requirements -Carrying out requirements for commissioning activities as specified in plans and specifications 3. Systems to be commissioned – See BOD a. An explanation of the original design intent - Document the performance objectives and design intent for each system listed to be commissioned in a written narrative -Refer to the OPR and			
117	BMO	5.410.2.4	Functional performance testing. Functional performance tests shall demonstrate the correct installation and operation of each component, system, and system-to-system interface in accordance with the approved plans and specifications. Functional performance testing reports shall contain information addressing each of the building components tested, the testing methods utilized, and include any readings and adjustments made.								Develop and implement the functional performance tests to document, as set forth in the Commissioning Plan, that all components, equipment, systems and system-to-system interfaces were installed as specified, and operate according to the Owner's Project Requirements, Basis of Design, and plans and specifications. The following systems to be functionally tested are listed in the Basis of Design (5.410.2.2 of the Code): 1. Heating, Ventilation, Air Conditioning (HVAC) Systems and Controls 2. Indoor Lighting System and Controls 3. Water Heating System 4. Renewable Energy Systems 5. Landscape Irrigation Systems 6. Water Reuse Systems	Title 24 Acceptance Testing requirements call for functional testing of some systems and equipment required to be commissioned by CALGreen. Refer to Title 24 and Nonresidential Compliance Manual For California's 2008 Energy Efficiency Standards. http://www.energy.ca.gov/title24/2008standards/nonresidential_manual.html Note: CALGreen Functional Performance Tests are not intended to replace the Title 24 Section 6 Acceptance Tests. Instead, the T24 acceptance tests, which focus on energy efficiency, can be part of the broader scope of testing forms and procedures required for CALGreen compliance. Review local ordinances for any applicable requirements.	Compliance is demonstrated by developing and implementing test procedures for each piece of commissioned equipment and interfaces between equipment and systems according to the building-specific Commissioning Plan. Tests should include verification of proper operation of all equipment features, each part of the sequence of operation, overrides, lockouts, safeties, alarms, occupied and unoccupied modes, loss of normal power, exercising a shutdown, startup, low load through full load (as much as is possible) and back, staging and standby functions, scheduling, energy efficiency strategies and loop tuning. Elements of acceptable test procedures include:		At their discretion, the building official confirms demonstrated compliance during Onsite Enforcement by: a) Receipt of a copy of completed and signed Functional Performance Tests and corrected deficiencies, or b) Receipt of a form signed by the owner, owner representative or commissioning coordinator attesting that the Functional Performance Tests have been completed and any deficiencies corrected. See (Part 4) for forms and templates.	

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1		Code	Description	M	T1	T2	Enf. Agncy	Inst. Desgnr	3rd Party	Notes	Intent	Existing Law or Regulation:	Compliance Method: Design Team	Compliance Method: Contractor	Enforcement- Plan Intake	Enforcement- OnSite Enforcement
118													1. Date and Party -- Identification of the date of the test and the party conducting the test. 2. Signature Block -- Signature of the designated commissioning lead and the equipment installing contractor attesting that the recorded test results are accurate. 3. Prerequisites -- Any conditions or related equipment checkout or testing that needs to be completed before conducting this test. 4. Precautions -- Identification of the risks involved to the test team members and the equipment and how to mitigate them. 5. Instrumentation -- Listing of the instrumentation and tools necessary to complete the test. 6. Reference – In each procedure item, identify the source for what is being confirmed (e.g., sequence of operation ID, operating feature, specification requirement, etc.). 7. Test Instructions -- Step-by-step			
119	BMO	5.410.2.5	Documentation and training. A Systems Manual and Systems Operations Training are required, including Occupational Safety and Health Act (OSHA) requirements in California Code of Regulations (CCR), Title 8, Section 5142, and							See sections 5.410.2.5.1 and 5.410.2.5.2 below.						
120	BMO	5.410.2.5.1	Systems manual. Documentation of the operational aspects of the building shall be completed within the Systems Manual and delivered to the building owner or representative and facilities operator. The Systems Manual shall include the following: 1. Site information, including facility description, history and current requirements. 2. Site contact information 3. Basic operations & 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 required by the enforcing agency or this code 7. Other resources and documentation.								The Systems Manual documents information focusing on the operation of the building systems. This document provides information needed to understand, operate, and maintain the equipment and systems and informs those not involved in the design and construction of the building systems. This document is in addition to the record construction drawings, documents, and the Operation & Maintenance (O&M) Manuals supplied by the contractor. The Systems Manual is assembled during the construction phase and available during the contractors' training of the facility staff.	No existing law or regulation. Review local ordinances for any applicable Systems manual requirement.	Compliance is demonstrated by providing the Systems Manual. The information in the Systems Manual includes the following information: 1. Site information, including facility description, history and current requirements a) Site Information i. Location of property Address ii. Site acreage iii. Local utility information -Water service provider -Natural/LPG gas service provider -Electrical service provider -Telecommunications service provider -Other service providers b) Facility Description i. Use/Function ii. Square footage iii. Occupancy Type iv. Construction Type v. Basis of design vi. Location of major systems & equipment c) Project History i. Project requirements -Owner's Project Requirements (OPR) -Basis of Design (BOD) ii. Project undocumented events iii. Record Drawings & Documents iv. Final control drawings and schematics v. Final control sequences vi. Construction documents - Location or delivery information -Mechanical &		At their discretion, the building official confirms demonstrated compliance during Onsite Enforcement by: a. Receipt of a copy of the Systems Manual, or b. Receipt of a form signed by the owner or owner representative attesting that the System's Manual has been completed. See (Part 4) fort forms and templates.	
121																
122	BMO	5.410.2.5.2	Systems operations training. The training of the appropriate maintenance staff for each equipment type and/or system shall be documented in the commissioning report and shall include the following: 1. System/equipment overview (what it is, what it does and with what other systems and/or equipment it interfaces) 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								The systems operation training verifies that a training program is developed to provide training to the appropriate maintenance staff for each equipment type and/or system and that this training program is documented in the commissioning report. The systems operations training program is specified in the project specifications for the major systems listed. The System Manual, Operation and Maintenance (O&M) documentation, and record drawings are prepared and available to the maintenance staff prior to implementation of any training or the development of a written training program. The training program is to be administered when the appropriate maintenance staff is made available to receive training.	No existing law or regulation. Review local ordinances for any applicable Systems Operation Training requirement.		The written training program includes: (a) learning goals and objectives for each session, (b) training agenda, topics, and length of instruction for each session, (c) instructor information and qualifications, (d) location of training sessions (onsite, off-site, manufacturer's or vendor's facility), (e) attendance forms, (f) training materials, and (g) description on how the training will be archived for future use.	At their discretion, the building official confirms demonstrated compliance during Onsite Enforcement by: 1. In the event appropriate maintenance staff is made available to receive training for each equipment type and/or system installed in the building. a. Receipt of a copy of the written training program and completed attendance forms, or b. Receipt of a form signed by the owner or owner representative attesting that the training program and delivery of training has been completed 2. In the event appropriate maintenance staff are unavailable to receive training for each equipment type and/or system installed in the building. a. Receipt of a copy of the training program provided to the owner or owner's representative, or b. Receipt of a form signed by the owner or owner representative attesting that the written training program has been provided. See (Part 4) for forms and templates.	

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1		Code	Description	M	T1	T2	Enf. Agncy	Inst. Desgnr	3rd Party	Notes	Intent	Existing Law or Regulation:	Compliance Method: Design Team	Compliance Method: Contractor	Enforcement- Plan Intake	Enforcement- OnSite Enforcement
123														1. Systems/equipment overview a) Review OPR and BOD related to the major systems and equipment b) Describe system type and configuration c) Explain operation all major systems and equipment and how it interfaces with other systems and equipment d) Describe operation of critical devices, controls and accessories e) Review location of the major systems and equipment f) Describe operation of control system for each system, location of critical control elements, and procedures to properly operate control system g) Review recommendations for implementation to reduce energy and water use 2. Review and demonstration of servicing/preventive maintenance a) Explain location or delivery contact of the Operation & Maintenance manuals b) Review of all manufacturer's recommended maintenance activities to maintain warranty c) Review and demonstrate frequent maintenance activities (air filter replacement, lubrication, fan belt inspection and/or replacement, condenser water treatment, etc.), and suggested schedule. d) Review and demonstrate typical servicing procedures and techniques (electrical current, pre		
124	BMO	5.410.2.6	Commissioning report. A complete report of commissioning process activities undertaken through the design, construction and reporting recommendations for post-construction phases of the building project shall be completed and													
125	BMO	5.410.4	Testing and adjusting. Testing and adjusting of systems shall be required for buildings less than 10,000 square feet.								For construction projects less than 10,000 square feet testing and adjusting the building systems can ensure maximum efficiency of the equipment operation as well improve the indoor air quality for occupants. Additionally, testing and adjusting building system can prolong the life of the systems and maximize the equipment intended design parameters.	There is NO current law or regulation for this code provision.	Specify the systems in the project to be tested and adjusted; the testing team members and their qualifications, and the procedures, including those recommended by the manufacturer, as well as the report forms to be used in testing and adjusting.	Maintain evidence of the qualifications of the testing and adjusting team and install the specified building systems in accordance with the plans and specifications. Examine systems for functional deficiencies that cannot be adjusted and report deficiencies discovered before and during testing and adjusting. Prepare a testing and adjusting plan with step by step procedures and perform testing and adjusting of systems according to those procedures. Remedy any deficiencies that are discovered during testing. For HVAC systems use the balancing procedures defined by the organizations listed in the regulations, and perform additional testing and balancing as required to verify that balanced conditions are being maintained. Complete testing and adjusting reports as required. Prepare the O & M manual for turning over to the owner to encourage proper maintenance and optimum performance of the systems after Certificate of Occupancy.	Confirm that the testing and adjusting requirements are specified for the applicable building systems.	The inspector will collect copies of the testing, adjusting and balancing reports after all functional testing has been completed.
126		5.410.4.1														
127		**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 at a minimum, as applicable to the project: 1. HVAC systems and controls 2. Indoor and outdoor lighting and controls 3. Water heating systems 4.													
128		**5.410.4.3**	Procedures. Perform testing and adjusting procedures in accordance with industry best practices and applicable standards on each													
129		**5.410.3.1**	HVAC balancing. In addition to testing and adjusting, before a new space-conditioning system serving a building or space is operated for normal use, the system shall be balanced in accordance with the procedures defined by the Testing Adjusting and Balancing Bureau National Standards; the National Environmental Balancing													
130		**5.410.4.4**	Reporting. After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for													
131		**5.410.4.5**	Operation and maintenance (O & M) manual. Provide the building owner or representative with detailed operating and maintenance instructions and copies of guaranties/warranties for each system. O & M instructions shall be													

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1		Code	Description	M	T1	T2	Enf. Agncy	Inst. Desgnr	3rd Party	Notes	Intent	Existing Law or Regulation:	Compliance Method: Design Team	Compliance Method: Contractor	Enforcement- Plan Intake	Enforcement- OnSite Enforcement
132		**5.410.4.5.1**	Inspections and reports. Include a copy of all inspection verifications and reports required by													
133																
134	**EQ**	**5.410.4.5.1**	**Environmental Quality**													
135	EQ															
136	**EQ**	**5.503.1**	Install only a direct-vent sealed-combustion gas or sealed wood-burning fireplace or a sealed woodstove and refer to residential requirements in the California Energy Code, Title 24, Part 6, Subchapter 7, Section 150.							General. Install only a direct-vent sealed-combustion gas or sealed wood-burning fireplace, or a sealed woodstove or pellet stove, and refer to residential requirements in the California Energy Code, Title 24, Part 6, Subchapter 7, Section 150.	Although limited in non-residential applications, this code provision is intended to prevent the use of indoor air for combustion and to prevent contaminated air and any unused fuel from escaping the sealed fireplace to maintain indoor air quality and increased energy efficiency.	Currently the California Energy Code, CCR, Title 24, Part 6, Subchapter 7, Section 150 regulates residential fireplaces. There may be a local or regional ordinance in place.	1. Specify and install a direct-vent gas fireplace 2. Specify and install a pellet or wood stove which meets the US EPA Phase II emission standards. 3. Comply with local or regional ordinance. *Suggestion: Contractor: Retain product data sheets f*		The reviewer and/or plan checker should review the plans and specifications to confirm that the fireplaces and/or woodstoves meet the direct-vent sealed-combustion and/or US EPA Phase II emission limits.	The inspector should review the permit set of plans and product data sheets to verify that the fireplaces and/or woodstoves as specified on the approved plans and specifications are installed, or are stored on site with the ability to be verified.
137	**EQ**	**5.503.1.1**	pellet stoves shall comply with U.S. EPA Phase II emission limits.													

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1		Code	Description	M	T1	T2	Enf. Agncy	Inst. Dsgnr	3rd Party	Notes	Intent	Existing Law or Regulation:	Compliance Method: Design Team	Compliance Method: Contractor	Enforcement- Plan Intake	Enforcement- OnSite Enforcement
138	PQ		**Pollutant Control**													
139	PQ	**5.504.3**	Covering of duct openings and protection of mechanical equipment during construction. At the time of rough installation, or during storage on the construction site and until final startup of the heating and cooling 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 or debris which may collect in the system.								To enhance HVAC equipment efficiency and indoor air quality at building occupancy by preventing construction debris from building up in the air ducts during construction.	Section 604.4 of the California Mechanical Code, CCR, Title 24, Part 4, addresses Protection of Ducts to control "damage". However, the CALGreen regulation is designed also to reduce indoor environmental pollution in an attempt to comply with the spirit of AB 1807 (Stats. 1983, c. 1047), the public policy that emissions of toxic air contaminants should be controlled to levels which prevent harm to the public health.	Either when stored or moved into rough frame, HVAC equipment openings and ducts should be protected and protection maintained until final startup of the system.		The reviewer and/or plan checker should review the construction documents to confirm that protection measures are required of the contractor.	During site visits that occur after equipment is delivered and prior to final HVAC startup, the inspector will verify that protection is in place.
140	PQ	**5.504.4**	Adhesives, sealants, caulks. Adhesives and sealants used on the project shall meet the requirements of the following standards.							**CALGreen Section: 5.504.4 Finish material pollutant control**. Finish materials shall comply with Sections 5.504.4.1 through 5.504.4.4.	The purpose of these measures is to reduce the volatile organic compounds (VOC) of finish materials commonly installed on a project, which will help improve air quality for the building occupants.	The low-VOC provisions are based on the recommendations, guidelines and regulations of the Air Resources Board cited in each section. Regulations for aerosol adhesives and paints and for composite wood products are found in California Code of Regulations, Title 17 as noted above.	Specify finish materials that meet the limits of VOC shown in the tables for adhesives and sealants, paints and coatings, and composite wood products (particle board and hardboard casework). Flooring products (carpet systems and resilient flooring) shall be specified to meet VOC limit criteria as tested by the listed organizations. Substitutes may be approved by the local enforcing authority if it deems equivalency.	Retain product data sheets for onsite verification by the enforcing agency and for the operation and maintenance manual. Sample compliance forms can be found in Part 4 of this Guide.	The reviewer and/or plan checker should review the plans and specifications to confirm that the finishes are specified to meet VOC emission limits.	The inspector should review the permit set of plans and product data sheets maintained by the contractor to verify finishes specified on the approved plans and specifications are installed, or at least stored on site with the ability to be verified. The inspector may review data on material containers or specifications provided with products or accept self-certification form.
141	PQ	5.504.4.1	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.							**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						
142	PQ		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,													
143	PQ		Paints and coatings. Architectural paints and coatings shall comply with Table 5.504.4.3 unless more stringent local limits apply.													
144	PQ	**5.504.4.3**	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).							**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,						
145	PQ	**5.504.4.3.1**	Verification. Verification of compliance with this section shall be provided at the request of the enforcing agency.							**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						
146	PQ	**5.504.4.3.2**	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.							**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.						

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1		Code	Description	M	T1	T2	Enf. Agncy	Inst. Desgnr	3rd Party	Notes	Intent	Existing Law or Regulation:	Compliance Method: Design Team	Compliance Method: Contractor	Enforcement- Plan Intake	Enforcement- OnSite Enforcement
147	PQ	5.504.4.4	Carpet cushion. 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 Carpet systems.** All carpet installed in the building interior shall meet the testing and product requirements of one of the following: 1. Carpet and Rug Institute's Green Label Plus Program. 2. California Department of Public Health Standard Practice						
148	PQ	5.504.4.4.1	Carpet adhesive. All carpet adhesive shall meet the requirements of Table 804.4.1.							carpet cushion installed in the building interior shall meet the requirements of the Carpet and						
149	PQ	5.504.4.4.2	Composite wood products. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall							**5.504.4.4.2 Carpet adhesive.** All carpet adhesive shall meet the requirements of Table 5.504.4.1.						
150	**PQ**	**5.504.4.5**	Early compliance with formaldehyde limits. Where complying composite wood product is readily available for nonresidential occupancies, meet Phase 2 requirements before the compliance dates indicated in Table 5.504.4.5 (Tier I) or use composite wood products made with either CARB-approved no-added formaldehyde (NAF) resins or CARB-approved ultra-low emitting							**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 for Composite						
151	PQ	5.504.4.5.2	Resilient flooring systems. Comply with the VOC-emission limits defined in the 2009 CHPS criteria and listed on its Low-emitting Materials List (or Product Registry) or certified under the FloorScore program of the Resilient Floor Covering Institute.							**5.504.4.5.2 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.						
152	PQ	5.504.4.6	Verification of compliance. Documentation shall be provided verifying that resilient flooring materials meet the pollutant													
153	**PQ**	**5.504.5.3**	**CALGreen Section: 504.5.3 Filters.** In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air prior to occupancy that provides at least a Minimum Efficiency Reporting Value (MERV) of 8.							**CALGreen Section: 504.5.3 Filters.** In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air prior to occupancy that provides at least a Minimum Efficiency Reporting Value (MERV)	The intent of this regulation is to filter particulate matter from the air by the use of at least MERV 8-rated filters for improved air quality.	There is **NO** current law or regulation for this code provision.	Specify and install prior to occupancy at least MERV 8 filters for the return air grilles.		**Plan Intake:** The reviewer and/or plan checker should review the plans and specifications to confirm that the filters are specified to meet MERV 8.	**On-Site Enforcement:** The inspector should review the permit set of plans and product data sheets maintained by the contractor to verify that HVAC filtration specified on the approved plans and specifications are installed, or are stored on site with the ability to be verified. The inspector may check a sample of installed filters to verify the MERV rating.
154	PQ									**5.504.4.6.1 Verification of compliance.** Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.**Notes:** 1. CHPS Low-emitting materials List may be found at www.chpregistry.com/live or http://www.chps.net/dev/Drupal/node/381. 2. [DSA-SS] Products certified under the FloorScore program may be found at:	The purpose of these measures is to reduce the volatile organic compounds (VOC) of finish materials commonly installed on a project, which will help improve air quality for the building occupants.	The low-VOC provisions are based on the recommendations, guidelines and regulations of the Air Resources Board cited in each section. Regulations for aerosol adhesives and paints and for composite wood products are found in California Code of Regulations, Title 17 as noted above.	Specify finish materials that meet the limits of VOC shown in the tables for adhesives and sealants, paints and coatings, and composite wood products (particle board and hardboard casework). Flooring products (carpet systems and resilient flooring) shall be specified to meet VOC limit criteria as tested by the listed organizations. Substitutes may be approved by the local enforcing authority if it deems equivalency. ***Suggestion:*** ***Contractor:*** *Retain product data sheets for onsite verification by the enforcing agency and for the operation and maintenance manual. Sample compliance forms can be found in Part 4 of this Guide.*		**Plan Intake:** The reviewer and/or plan checker should review the plans and specifications to confirm that the finishes are specified to meet VOC emission limits.	**On-Site Enforcement:** The inspector should review the permit set of plans and product data sheets maintained by the contractor to verify finishes specified on the approved plans and specifications are installed, or at least stored on site with the ability to be verified. The inspector may review data on material containers or specifications provided with products or accept self certification form.
155	PQ	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 in buildings; 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. •							**CALGreen Section: 5.504.7 Environmental tobacco smoke (ETS) control.** Where outdoor areas are provided for smoking, prohibit smoking within 25 feet of building entries, outdoor air intakes and operable windows and in buildings; or as enforced by ordinances, regulations, or policies of any city, county, city and county, California Community college,	By prohibiting smoking in buildings, and in those instances where outdoor areas are and dedicated for the use of smokers, this provision is intended to improve indoor air quality and to protect non-smokers from second hand smoke.	State law prohibits smoking inside most buildings, and many local jurisdictions and college campuses have regulations that require a certain distance that smoking can occur outside a building. AB 1807 (Stats. 1983, c. 1047) is the public policy of the state that emissions of toxic air contaminants should be controlled to levels which prevent harm to the public health.	Include in the signage specification and post signs that prohibit smoking for an outdoor smoking area within 25 feet of building entries, outdoor air intakes and operable windows where they occur.Suggestion: In order to clarify sign placement and smoking area(s), show on one or all of the following plans: Site Plan, Floor Plan, Elevations and/or Detail Sheet.		**Plan Intake:** The reviewer and/or plan checker should review the plans and specifications to confirm that, if an outdoor smoking area is shown, signage is specified and located.	**On-Site Enforcement:** The inspector should review the permit set of plans against the outdoor smoking area and verify signage installed in the field.
156	PQ	5.504.7	Indoor Moisture and Radon Control													
157	PQ		Indoor moisture control. Buildings shall meet or exceed the provisions of California Building Code, CCR, Title 24, Part 2,													

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1		Code	Description	M	T1	T2	Enf. Agncy	Inst. Dsgnr	3rd Party	Notes	Intent	Existing Law or Regulation:	Compliance Method: Design Team	Compliance Method: Contractor	Enforcement- Plan Intake	Enforcement- OnSite Enforcement
158	**AQE**	**5.505**	**Air Quality and Exhaust**													
159	**AQE**	**5.505.1**	Outside air delivery. For mechanically or naturally ventilated spaces in buildings, meet the minimum requirements of Section 121 of the California Energy Code, CCR, Title 24, Part 6 and Chapter 4 of CCR, Title 8 or the applicable local code, whichever is more							**CALGreen Section: 5.505.1 Indoor moisture control.** Buildings shall meet or exceed the provisions of California Building Code, CCR, Title 24, Part 2, Sections 1203 (Ventilation) and Chapter 14	The intent is to direct the code user to other parts of Title 24 and this part for those provisions that are intended to reduce the probability of mold and mildew growth and improve air quality.	California Building Code Section 1203 for attic spaces and under-floor ventilation, Chapter 14 for a weather-resistant exterior wall envelope, and Section 5.407.2.2 Entries and openings in this code.	***Design Team:*** Include details on the construction plans addressing issues of moisture control, ***Contractor:*** Understand and install moisture control according to construction documents and manufacturer's installation recommendations. ***Note:*** *Vapor control recommendations for different climate zones may found at*		**Plan Intake:** The reviewer and/or plan checker should review the plans and specifications to confirm that moisture control features which meet Title 24 are specified and detailed.	**On-Site Enforcement:** The inspector should review the permit set of plans and confirm that moisture control measures have been incorporated into the building. Collect a copy of self certification form if completed and signed by the contractor.
160	**AQE**	**5.506.1**	Carbon dioxide (CO2) monitoring. For buildings equipped with demand control ventilation, CO2 sensors and ventilation controls shall be specified and installed in accordance with the requirements of the latest edition of the California Energy Code, CCR, Title 24, Part 6, Section 121(c).1 •							**Outside air delivery.** For mechanically or naturally ventilated spaces in buildings, meet the minimum requirements of Section 121 (Requirements For Ventilation) of the California Energy Code, CCR, Title 24, Part 6, or the	The purpose is to point building designers and contractors to the ventilation requirements in the California Code of Regulations that are intended to improve indoor air quality for building occupants.	The California Energy Code, CCR, Title 24, Part 6, Sections 121(a) through 121(e) with flow rates as required by Table121-A. There is a possibility of a more stringent local ordinance.	the provisions of the energy code that specify requirements for naturally and mechanically ventilated spaces, and may comply with this provision by using energy code compliance tools currently in place. Title 8 for Cal OSHA may have additional regulations which emphasize air quality for workers in particular environments which should be followed as required.		**Plan Intake:** The reviewer and/or plan checker should review the plans and specifications to confirm that building ventilation is calculated and specified to Title 24, Part 6, and if applicable, Part 8.	**On-Site Enforcement:** The inspector should review the permit set of plans against the natural ventilation features and mechanical ventilation systems that are installed on the project, requesting results of any testing of ventilation rates. Adequate pre-occupancy building ventilation shall be verified.
161	**AQE**	**5.506.2**	Environmental Comfort							**CALGreen Section: 5.506.2 Carbon dioxide (CO2) monitoring.** For buildings equipped with demand control ventilation, CO2 sensors and ventilation controls shall be specified and installed in accordance with the requirements of the current edition of the California Energy Code, CCR Title 24, Part 6, Section 121(c).	When demand control ventilation is required by Part 6, this provision intends to maintain CO2 levels which are within the range that is safe for human occupation.	The current edition of the California Energy Code, CCR, Title 24, Part 6, Section 121(c) identifies the sensors, controls and devices required to keep CO2 emissions at safe levels.	***Design Team:*** The designer should specify and show calculations and locations for CO2 sensors in the construction documents. The team familiar with demand control ventilation will be familiar with these requirements.	***Contractor:*** The contractor should install the specified equipment and make sure that it is operating as designed. Again, familiarity with demand control ventilation will be an advantage. ***Suggestion: Contractor:*** *Retain product data sheets for onsite verification by the enforcing agency and for the operation and maintenance manual.*	**Plan Intake:** The reviewer and/or plan checker should review the plans, specifications and calculations to confirm that sensors are included which meet the requirements of Part 6.	**On-Site Enforcement:** The inspector should review the permit set of plans and product data sheets to verify that complying sensors displaying readings are installed in designated locations. He/she should obtain assurance that the readings are recorded as required by Part 6.
162	AQE	A5.507	ENVIRONMENTAL COMFORT													
163	**EQ**	**5.507.4**	Acoustical control. Employ building assemblies and components with Sound Transmission Coefficient (STC) values determined in accordance with ASTM E90 and ASTM E413.								Where buildings are sited in the noisy areas described in this provision, the intent is to keep sound levels low enough to carry out the activities that take place inside the building without the distraction or discomfort of unwanted noise.	There is **NO** current law or regulation for this code provision for nonresidential buildings. There may be local ordinances that apply in those communities that have noise exposure such as commercial airports.	***Design Team:*** The designer should specify and detail wall and ceiling assemblies and show in the construction documents, showing on plans and/or sections the placement of sound walls and floor/ceilings.	***Contractor:*** The contractor should install the wall and ceiling assemblies as designed. ***Suggestion:*** Employing the services of an acoustical engineer is another option to assist with compliance. Choose an assembly from the "examples of assemblies" link that meet the corresponding sound ratings class. ***Note:*** *Examples of assemblies and their various STC ratings may be found at: http://www.toolbase.org/PDF/CaseStudies/stc_icc_ratings.pdf .*	**Plan Intake:** The reviewer and/or plan checker should review the plans, specifications and calculations to confirm that STC ratings are included which meet the requirements of Title 24.	**On-Site Enforcement:** The inspector should review the permit set of plans and product data sheets to verify that complying wall and ceiling assemblies are installed correctly.
164	**EQ**	**5.507.4.1**	Acoustical control. Employ building assemblies and components with STC values determined in accordance with ASTM E 90 and ASTM E 413. 5.507.4.1 Exterior noise transmission. Wall and floor-ceiling assemblies making up the building envelope shall have an STC of at least 50 and exterior windows shall have a minimum STC of 30 for any of the building locations listed in Items 1 through 3 in Section 5.507.5.1. Exterior noise transmission. Wall and roof-ceiling assemblies making up the building envelope shall have an STC of at least 50, and exterior windows shall have a minimum STC of 30 for any of the following building locations: 1. Within 1,000 ft (300 m.) of right of ways of freeways. 2. Within 5 mi. (8 km) of airports serving more than 10,000													
165	**EQ**	**507.4.2**	Interior sound. Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40. Note: Example of assemblies and their various STC ratings may be found in the Catalog of STC													
166	OAQ	A5.508	**Outdoor Air Quality**													
167	OAQ		reductions. Installations of HVAC, refrigeration and fire suppression equipment shall comply with Sections 5.508.1.1 and 5.508.1.2.							**CALGreen Section: 5.508.1 Ozone depletion and greenhouse gas reductions.** Installations of HVAC, refrigeration and fire						
168	OAQ	5.508.1	CFCs. Install HVAC and refrigeration equipment that does not contain CFCs.1													
169	OAQ		Halons. Install fire suppression equipment that does not contain Halons.1							**5.508.1.1 Chlorofluorocarbons (CFCs.)** Install HVAC, refrigeration and fire suppression equipment						

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1		**Code**	**Description**	**M**	**T1**	**T 2**	**Enf. Agncy**	**Inst. Desgnr**	**3rd Party**	**Notes**	**Intent**	**Existing Law or Regulation:**	**Compliance Method: Design Team**	**Compliance Method: Contractor**	**Enforcement- Plan Intake**	**Enforcement- OnSite Enforcement**
170	OAQ	5.508.1.1	Hydrochlorofluorocarbons (HCFCs). Install HVAC and refrigeration equipment that does not contain HCFCs.							**5.508.1.2 Halons.** Install HVAC, refrigeration and fire suppression equipment that do not contain Halons.	This measure eliminates the use of chlorofluorocarbons and Halons in fire suppression, HVAC and refrigeration systems in order to assist in meeting statewide requirements for the reduction of green house gas emissions to 1990 levels and to prevent ozone destruction.	Refrigerants are regulated at the federal level by the Environmental Protection Agency and those containing ozone depleting chemicals are being gradually phased out. In California, the Global Warming Solutions Act of 2006, Assembly Bill 32 (Stats 2006, c. 488), calls for the reduction of green house gas emissions to 1990 levels. Although these damaging compounds have been widely outlawed for most uses, prior to CALGreen, these issues were not addressed by the CCR Title 24 building standards.	Clearly note in appropriate place(s) in the construction documents and in the equipment specifications that the required total restriction of these compounds has been followed. ***Note:*** *Typically, new fire suppression, HVAC and refrigeration systems are designed to operate on a new generation of refrigerants that do not contribute to greenhouse gases; but there is an inventory of CFCs and Halons used for the recharge of existing equipment. Ensure that new equipment is specified and installed, which is usually required in a new project.*		**Plan Intake:** Enforcement provided by plan check and the on-site inspection by the building official should insure the drawing and installation requirements have been met and that no HVAC, fire suppression or refrigeration systems installed use the above mentioned environmental contaminants.	**On-Site Enforcement:** The inspector should review the permit set of plans and product data sheets to verify that complying equipment is installed. Inspection of this equipment may be combined with verification of building commissioning or testing and adjusting.
171	..	5.508.1.2														