# The Commercial Green Building Checklist for Alameda County

The **Commercial Green Building Checklist** provides 10 green building strategies applicable to most commercial construction projects in Alameda County.

**Instructions:** Applicants must fill out the entire checklist based on the planned scope of work, and projects must meet all applicable measures (including "A" and "B" portions of number measures unless otherwise stated). The Commercial Checklist includes three check-boxes per measure. Indicate selections for "Yes," "No," or "N/A" (Not Applicable) depending on the scope of work for the project. Indicate where on the plans and/or specifications a particular measure can be located by providing a reference or description in the "Notes" field. Use additional space on Page 10 if more notes are needed. The Documentation column provides suggested ways to document compliance for applicants. The Verification column provides suggested verification steps that the enforcing agency will undertake during review.

***Note for Projects that trigger the California Green Building Standards Code (CALGreen, Title 24, Part 11) mandatory requirements:*** *The Small Commercial Checklist measures herein are required in addition to the CALGreen requirements and are not a substitute for meeting CALGreen mandatory provisions. Several of the green strategies in this Checklist are similar or equivalent to CALGreen requirements and have been marked as such. Measures with overlap are notated with a reference to the similar CALGreen section and the designation "relates to" CALGreen. Measures which are equivalent to CALGreen are notated with a reference to the CALGreen section and the designation "aligns with" CALGreen. Find CALGreen code provisions at www.bsc.ca.gov/CALGreen .*

***About the Checklist:*** *The Commercial Green Building Checklist was developed for Alameda County jurisdictions by StopWaste.Org (the Alameda County Waste Management Authority & Recycling Board acting as one public agency). This Checklist leverages incentives and resources available in Alameda County, including the Small Commercial Green Materials Rebate Program. To view rebate program details, download an electronic copy of this Checklist, or find links to referenced information in this Checklist, visit www.StopWaste.org/SmallCommercial .*

**Project:** **Date:**

**Address:**

## General Requirements

| Yes | No | N/A | Measure & Requirement | Documentation | Verification | References & Notes |
|---|---|---|---|---|---|---|
| ☐ | ☐ | ☐ | **A. Required for All Projects: Include This Checklist on Plans** | | | |
| | | | Include a copy of the completed Commercial Green Building Checklist on building plans. | The Commercial Checklist is available as a fillable PDF form from the Commercial Checklist website. Complete the form and insert it into the building plan set. Indicate the location of the Checklist within the plans in the box at right. | Review at Plan Check:<br>Review the plan page indicated on the Checklist and verify it is attached to the set that will go into the field for verification. | |
| ☐ | ☐ | ☐ | **B. Operations & Maintenance Plan** | | | |
| | | | **For all projects,** develop an Operations & Maintenance (O&M) Plan for the building. Download a guide to green O&M at www.stopwaste.org/docs/greenmaintguide.pdf.<br><br>Also investigate participation in the following: Alameda County Green Business Program (www.greenbiz.ca.gov), Small Commercial Green Material Rebate program (www.stopwaste.org/smallcommercial), and local utility incentive programs. Participation in EnergyStar's portfolio manager benchmarking and performance tracking program is strongly encouraged (www.energystar.gov/buildings). Consider utilizing a green lease. Numerous guidebooks, best practices, toolkits and samples of green leases are available from the Green Lease Library (www.greenleaselibrary.com). | Develop an O&M plan for the project. The plan should address all that apply: building lighting, heating, cooling, plumbing, solar, rainwater catchment, irrigation/landscaping practices and other systems as well as more general building policies (such as green cleaning, environmental purchasing, etc). The plan should describe accessibility of units, proper maintenance techniques, descriptions of proper use, model numbers & cut sheets, manufacturer contact information for replacement/repair/questions. The plan should include switching/controls diagrams, lighting plans, heating, cooling, plumbing, solar, rainwater, irrigation/landscaping practices.<br><br>Submit signed O&M plan from the owner saying that the O&M plan will be followed once occupied. | Review at Plan Check:<br>Review O&M plan. Verify that all applicable parts of the building are listed in the plan (lighting, heating, maintenance, etc.)<br>Verify On-Site:<br>Verify that all systems are included in the plan. Identify any areas missing and inform owner to correct or supplement the plan as necessary. | |

| Yes | No | N/A | Measure & Requirement | Documentation | Verification | References & Notes |
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| **Site** | | | | | | |
| *Access to alternative transportation sources reduces the number of single passenger vehicle trips, reduces traffic congestion, and saves fuel and associated greenhouse gas emissions. Allowing space for bike parking increases participation in alternative transportation services. Cool sites and roofs reduce the amount of heat stored and re-radiated during summer days in urban environments that contribute to higher energy use and pollution.* | | | | | | |
| | | | **1. Alternative Transportation Access** | | | |
| ☐ | ☐ | ☐ | **A. Public transit** | | | |
| | | | **All projects** are located within 1/4 mile of two or more bus lines AND/OR within 1/2 mile of a light rail or commuter rail transit stop (BART, Amtrak, etc.). | Provide a simple map showing distances to public transit stops from the main entry of the buildings. Use the "Nearby Routes & Services" calculator on the www.511.org website or other transit agency website to calculate distances from the project address. | Review at Plan Check:<br>Review transit distances map. If results are questionable, inspect in person looking for mass transit stops or bus stops in vicinity. | |
| ☐ | ☐ | ☐ | **B. Bicycle parking* [Relates to CALGreen base code Section 5.106.4]** *Required regardless of the project's scope of work. | | | |
| | | | **All projects** include bicycle racks or storage areas for use by building occupants (workers) and visitors (if applicable).<br><br>*For new construction projects:*<br>Meet the requirement of CALGreen 5.106.4 for short-term and long-term bicycle parking, based on motorized vehicle parking capacity.<br><br>*For existing building improvements or renovations:*<br>Meet the requirements of CALGreen 5.710.6.2.1 and 5.710.6.2.2 or the applicable local ordinance, whichever is stricter.<br>-OR-<br>Provide at least 1 bike rack for every 2,000 sf of the total building footprint/interior area (with a min. of 1 rack) as occupied by the tenant/owner. This requirement is independent of the project scope of work square footage (i.e. if the scope of work is only 2,000sf of a 10,000sf office, then provide racks for the entire 10,000sf space). Existing racks within 200 feet of a building entrance can count towards compliance.<br><br>Additionally, **for projects over 7,500 square feet**, a designated changing area must be provided. | **For all projects** bike racks and storage areas must be placed in a secure and covered area for use by building occupants within 200 feet of the building entrance. If the project anticipates visitor traffic, provide permanently anchored bike racks within 200 feet of the visitor's entrance, readily visible to passers-by (or provide proof of adequate existing racks for existing building improvements/renovations).<br><br>Construction documents (plans & specifications and/or site plan) must reflect the location of the required number of short-term and long-term bike parking facilities. Provide a calculation table or note on the plans showing the calculated number of spaces required as per CALGreen or based on total building square footage. Round-up to the next whole number for calculations.<br><br>**For projects over 7,500 square feet** *(total site) p* rovide a floor plan noting the designated changing area. A changing area is any space that allows privacy but does not cause lengthy wait times or other privacy concerns to occupants (such as single occupant restrooms in small buildings). | Review at Plan Check:<br>Review the plans and confirm that the correct number of bike parking racks and/or secured areas, as well as changing areas where applicable, are included with the drawings and meet the requirements. At least 1 rack must be provided for all projects.<br>*Note: special circumstances may make adding bike racks outside impossible, such as for tenant improvement projects in multi-story buildings. Outside racks may require special permits as well that are outside the scope of work. Take into consideration the need for bike racks in the area (i.e. are existing racks suitable for the intended users?), and only relax the standards if bike parking is deemed unnecessary and/or overly burdensome to the project.*<br><br>Verify On-Site:<br>Based on Permit Set, verify that all required bike parking requirements as shown on the plans have been provided and installed. | |
| ☐ | ☐ | ☐ | **2. Reduced Parking [Relates to CALGreen 5.106.5]** | | | |
| | | | **For projects adding vehicular parking,** project does not exceed minimum local parking requirements.<br>OR<br>Designate preferred parking spaces for fuel efficient vehicles, car share vehicles, carpools and electric vehicle charging stations for 5% of the total parking spaces or per CALGreen 5.106.5 designated parking requirements if applicable. | 1. Provide proof of the minimum local parking requirements for the site<br>2. If parking is added, provide a site plan with parking areas highlighted. Total and highlight the number of existing and new parking spaces and total and highlight any designated spaces. | Review at Plan Check:<br>1. Submitted proof of the minimum local parking requirements<br>2. Site plan showing total parking spaces existing and new. The number of parking spaces must either not exceed the minimum or demonstrate that sufficient spaces are designated to fuel efficient alternatives to earn this credit.<br>Verify On-Site:<br>Verify count of total and designated parking spaces.<br>*Note:* CALGreen requires specific signage or striping to comply with elements of this credit. | |

| Yes | No | N/A | Measure & Requirement | Documentation | Verification | References & Notes |
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| | | | **3. Reduced Heat Island Effect** | | | |
| ☐ | ☐ | ☐ | **A. Nonroof heat islands [Aligns with CALGreen Section A5.106.11.1]** | | | |
| | | | **For projects impacting the building site,** combine cool site techniques for 75% of site area being impacted by construction (including all landscaping/hardscapes on site). Cool site techniques include pervious surfaces (including open grid pavement and vegetation) and light colored concrete.<br>Hardscape alternatives: Use one of a combination of strategies 1 through 3 for 50% of site hardscaping or put 50% of parking underground.<br>1. Provide shade (mature within 5 years of occupancy).<br>2. Use light-colored/high-albedo materials.<br>3. Use open-grid pavement system, decomposed granite, or other pervious paving option. | 1. Site plan with the following areas calculated and clearly visible (if applicable): total site area, landscape area, area of hardscapes under shade (from trees or awnings, etc.), and hardscape area.<br>2. Calculate the percent of the total site area that includes cool site techniques.<br><br>Where hardscape alternatives are used in lieu of 75% of total site, provide a site plan showing each of the paving material use and calculations that demonstrate compliance with the applicable strategy(ies). | Review at Plan Check:<br>1. Review site plan and calculation of percentage for compliance with 75% threshold.<br>2. Review the construction documents for the hardscape design calculations.<br>Verify On-Site:<br>1. Verify the specified products for cool paving are installed on-site. Verify pervious surfaces (landscapes, porous paving, etc.) are installed in the areas as outlined on plans.<br>2. Based on the permit set of plans, verify that hardscape alternatives are constructed as calculated. | |
| ☐ | ☐ | ☐ | **B. Roof heat islands [Aligns with CALGreen Section A5.106.11.2]** | | | |
| | | | **For projects adding or replacing a roof,** provide a cool roof for 75% of the roof area being impacted by construction. Cool roofs are reflective surfaces applied to the roof. To find cool roof products, go to www.coolroofs.org and use the "Rated Products Directory".<br>Cool roof: A roofing materials having a minimum aged Solar Reflectance Index (SRI) of 78. | 1. Roof plan with the following areas calculated and clearly visible: total building/roof area, photovoltaic array area<br>2. Calculate the percent of the total area that includes a cool roof. Photovoltaic panels are exempt from the calculation if mounted on the roof (subtract the photovoltaic array area from the total site area). For low-sloped roofs (<2:12), eligible cool roof materials must have a Solar Reflective Index (SRI) of 78 or higher. If SRI is not available for the cool roof product, then products with an initial solar reflectance of 0.70 or higher AND an initial thermal emittance of 0.75 or higher are acceptable. Steep sloped roofs (>2:12) do not need to comply and should have their square footage removed from calculation.<br>3. Provide manufacturer literature stating the cool roof SRI. | Review at Plan Check:<br>1. Review cool roof plan and calculation of percentage for compliance with 75% threshold. Review submitted literature for compliance with SRI (or reflectivity and emissivity) values.<br>2. Review the energy compliance forms and specifications for compliance with the cool roof provisions.<br>Verify On-Site:<br>1. Verify the specified products for cool roof are installed on-site.<br>2. Check product data sheets for the roofing materials for compliance with cool roof values. | |

| Yes | No | N/A | Measure & Requirement | Documentation | Verification | References & Notes |
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## Water

*Water-efficient fixtures reduce water use and sewer costs and reduce demand on water supplies and treatment facilities.*

### 4. Water Efficient Plumbing Fixtures [Aligns with CALGreen Base Code, Section 5.303.2.3]

There are 2 paths for improving water efficiency: Choose one path (Prescriptive or Performance) and mark the other path as "N/A."

☐☐☐ **Path 1: Prescriptive measures [Aligns with CALGreen Table 5.303.2.3, mandatory 20% reduction max flow rates]**

| Measure & Requirement | Documentation | Verification | References & Notes |
|---|---|---|---|
| **For projects installing new plumbing fixtures,** the following maximum thresholds are required for all new fixtures:<br>1. Toilets (water closets): High Efficiency Toilets (HETs) with flush rate ≤1.28 gallons per flush (gpf).<br>2. Urinals: Waterless or low-flow with flush rate ≤ 0.5 gpf.<br>3. Lavatory Faucets: flow rates ≤ 0.4 gallons per minute (gpm) @ 60 psi for all faucets except kitchen sinks.<br>4. Kitchen faucets: flow rates 1.8 gpm @ 60 psi.<br>5. Wash fountains: flow rates 1.8 [rim space (in.)/20 gpm @60 psi]<br>6. Metering faucets: flow rates 0.2 gallons/cycle<br>7. Metering faucets for wash fountains: 0.20 [rim space (in)/20 gpm @60 psi]<br>8. Pre-rinse Spray Valves: flow rates ≤ 2.0 gpm.<br>9. Showerheads: flow rates 2.0 gpm @80 psi | 1. Floor plan(s) showing location of all new toilets, urinals, faucets and kitchen pre-rinse spray valves in the project.<br>2. Specification sections or fixture schedules showing that low-flow fixtures are specified for all new fixtures (if specifications are created for the project).<br>3. Manufacturer literature (cut sheets) showing flush rate of toilets and urinals to be installed, and flow rates for faucets and spray valves.<br><br>*See the CALGreen code section 5.303.2 for more on the prescriptive requirements for water efficient fixtures.* | Review at Plan Check:<br>1. Floor plan to ensure that all new fixtures are identified.<br>2. Specifications or fixture schedule clearly states that new fixtures are comply with maximum flush and flow rates.<br>3. Cross-check the specified fixtures to the manufacturer cut sheets to verify flow and flush rates.<br>Verify On-Site:<br>1. Verify flow and flush rates. Flush rates for toilets and urinals should be printed on the units or on the flush valve. Flow rates on faucets may be printed on the aerators or elsewhere, but not likely. Match the picture from the manufacturer cut sheet to the installed unit to be sure. | |

☐☐☐ **Path 2: Performance measures**

| Measure & Requirement | Documentation | Verification | References & Notes |
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| **For projects installing new plumbing fixtures,** provide a calculation demonstrating a minimum 20% reduction in the building "water use baseline" based on the following flow rates:<br>1. Showerheads: 2.5 gpm @ 80 psi<br>2. Lavatory faucets: 0.5 gpm @ 60 psi<br>3. Kitchen faucets: 2.2 gpm @ 60 psi<br>4. Wash fountains: 2.2 [rim space (in.)/20 gpm @ 60 psi]<br>5. Metering faucets: 0.25 gallons/cycle<br>6. Metering faucets for wash fountains: 0.25 [rim space (in.)/20 gpm @60 psi]<br>7. Gravity tank type water closets, flushometer tank water closets, flushometer valve water closets, electromechanical hydraulic water closets: 1.6 gallons/flush<br>8. Urinals: 1.0 gpf | Provide a plumbing calculation on the plans demonstrating an overall minimum 20% water use reduction for all fixture types 1-8.<br><br>*Utilize the CALGreen water calculation guidelines to determine percent savings, found in code section table 5.303.2.2.* | Review at Plan Check:<br>Review water reduction calculations and confirm that performance calculations achieve the minimum 20% water reduction compliance.<br>Verify On-Site:<br>Verify that fixtures or systems used to reduce overall water use by 20% have been installed. The inspector may review the fixture specifications to verify compliance or accept self-certification form. | |

## Energy

*Exceeding energy efficiency minimums results in reduced greenhouse gas emissions, lower utility costs and increased comfort. Another benefit is higher quality construction, thanks to better air sealing, increased insulation, and high efficiency equipment.*

### 5. Improved Energy Efficiency [Relates to CALGreen Section 5.201.1]

There are 2 paths for improving energy efficiency:
**Path 1. Performance:** Buildings for which energy code compliance modeling is performed, complete Path 1. Check "N/A" in the Path 2 box.
**Path 2. Prescriptive:** Projects for which energy modeling is not employed, complete Path 2. Check "N/A" in the Path 1 box.

**Path 1: Building Energy Modeling or On-site Power Generation**

| Measure & Requirement | Documentation | Verification | References & Notes |
|---|---|---|---|
| ☐☐☐ **For all whole building or comprehensive system projects,** beat California minimum energy efficiency standards (Title 24, Part 6) by 10% or more. | Submit Title 24 report for whole building or by component. Percent better than code is determined by TDV from ECON-1 report. | Review at Plan Check:<br>Review T24 report and check for percent margin better than code. Review ECON-1 report.<br>Verify On-Site:<br>Verify Title 24 report by inspecting in the field. | |

| Yes | No | N/A | Measure & Requirement | Documentation | Verification | References & Notes |
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| ☐ | ☐ | ☐ | OR, offset the total project energy demand that exceeds the annual average of 10% better than Title 24, Part 6 threshold via an on-site renewable energy generation (solar, wind, etc.) system. | 1. Provide estimated output and percent of building load to be offset with renewable energy system. Calculations to be provided by a licensed solar installer, electrical contractor, or from the CEC rebate application.<br>2. Provide manufacturer cut sheets for generation equipment including inverters. | Review at Plan Check:<br>Review estimate of energy generation.<br>Verify On-Site:<br>1. Verify panels/equipment: manufacturer, model number, and quantity.<br>2. Verify inverter: manufacturer, model number, quantity. | |
| | | | **Path 2: For projects that DO NOT require building energy modeling: Complete all parts below as applicable per project scope.** | | | |
| | | | ***LIGHTING*** | | | |
| ☐ | ☐ | ☐ | **For projects retrofitting existing and/or installing all new lighting,** reduce Lighting Power Density (LPD) in the facility to 90% of code. | 1. Provide lighting design plans and/or specifications.<br>2. Calculate the total LPD and include on plans or in other format. The LPD can be calculated from lighting design plans or from Title 24 submissions. Must be a maximum of 90% of Title 24 LPD. Do not include occupancy sensor or other switches/control strategies in this calculation.<br>3. Where display lighting is used it must be calculated separately and installed lighting shall not exceed the 90% of the maximum display lighting allowed by Title 24 part 6. | Review at Plan Check:<br>Ensure that lighting power density is no more than 90% of that allowed by code by reviewing lighting plans.<br>Verify On-Site:<br>Compare lighting plan to actual installed lighting. Verify wattages, fixture counts, placement, etc. | |
| ☐ | ☐ | ☐ | **For projects with 50% or more occupied space within 30 feet of building perimeter and installing new lighting controls** Automatic daylight sensors are installed in at least 75% of spaces with exterior windows, automatic sensors must turn lights on, off, or dim depending on amount of daylight. | 1. Highlight areas to be daylit on plans (those areas or rooms within 15 feet of skylights or exterior windows).<br>2. Highlight locations of daylight sensors.<br>3. Provide calculation showing that 75% or more of the space in daylit areas (by square feet or rooms) are under daylighting control. | Review at Plan Check:<br>Review plans for daylight area calculation and sensor/control placement.<br>Verify On-Site:<br>Verify correct placement of daylight sensors. | |
| ☐ | ☐ | ☐ | **For projects where lighting replacement occurs in outside of occupied space,** locate occupancy sensors in 40% of intermittent or non-regularly occupied spaces (hallways, bathrooms, closets, conference rooms). Exclude areas containing mechanical equipment or electrical panels which require light for maintenance activities. | 1. Provide lighting plans with intermittent/non-regularly occupied spaces highlighted.<br>2. Highlight occupancy sensors on plans that serve these spaces.<br>3. Provide calculation showing that 40% or more of the spaces are controlled by occupancy sensors. | Review at Plan Check:<br>Review plans for intermittent/non-regularly occupied area calculation.<br>Verify On-Site:<br>Verify placement of occupancy controls. | |
| ☐ | ☐ | ☐ | **For projects installing exit signs,** all new exit signs in the project are to be LED or luminescent. Recommend replacing all existing exit signs as well, even if not in project scope. | Provide lighting plans specifying correct signage product. | Review at Plan Check:<br>Review plans for correct signage.<br>Verify On-Site:<br>Verify correct product was installed. | |
| | | | ***ENVELOPE*** | | | |
| ☐ | ☐ | ☐ | **For projects replacing windows**, all new windows must have a U-factor no higher than 0.47. Solar Heat Gain Coefficient (SHGC) is dependent on glazing percentage and climate zone.<br>Climate Zone 3, for buildings with:<br>- less than 20% glazing, SHGC ≤ 0.41.<br>- more than 20% glazing, SHGC ≤ 0.35.<br>Climate Zone 12, for buildings with:<br>- less than 20% glazing, SHGC ≤ 0.35.<br>- more than 20% glazing, SHGC ≤ 0.31.<br>*Glazing: non-north window-wall ratio.* | 1. Provide plans and/or specifications with a window schedule.<br>2. Provide manufacturer cut sheets, NFRC label or other documentation showing U-factor and SHGC for windows chosen. | Review at Plan Check:<br>1. Review plans and/or specifications and manufacturer literature to ensure compliance with U-factor and SHGC.<br>2. Check the window-wall ratio against the applicable U-factor and SHGC.<br>Verify On-Site:<br>Verify U-factor and SHGC on-site. Inspect before stickers are removed from windows. | |

| Yes | No | N/A | Measure & Requirement | Documentation | Verification | References & Notes |
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| | | | ***HVAC*** | | | |
| ☐ | ☐ | ☐ | **For projects installing new HVAC Equipment,** all new HVAC equipment must comply with the Consortium for Energy Efficiency (CEE) Tier 1 commercial HVAC standards. See www.stopwaste.org/CommercialChecklist for a link to the CEE standards or download them at www.cee1.org/com/com-main.php3. | 1. Provide plans and specifications showing equipment schedule and performance specifications.<br>2. Provide manufacturer literature confirming compliance with CEE Tier 1 standards. | Review at Plan Check:<br>Review efficiency, model number, and HVAC equipment type.<br>Verify On-Site:<br>Confirm installation of correct equipment. | |
| ☐ | ☐ | ☐ | **For projects replacing a furnace**, meet the following high performance minimums. when units being replaced were manufactured after 2001 (<10 years old), replace with units that have a minimum energy efficiency of 92 AFUE. For furnace replacements to units manufactured before 2001 (>10 years old), replace with at least the code required minimum efficiency units. | 1. Submit plans or specifications highlighting efficiency of forced air furnace(s).<br>2. Submit manufacturer cut sheet for furnace(s) and highlight efficiency. | Review at Plan Check:<br>Review plans/specs for furnace efficiency.<br>Verify On-Site:<br>Check nameplate data and model number to verify equipment efficiency. | |
| ☐ | ☐ | ☐ | **For projects where existing HVAC equipment will be used** that is dedicated to the project tenant or space, tune-up HVAC by verifying outside air economizer operation. | 1. Evaluate economizer operation upon startup. Confirm operation of actuator from minimum position to 100% open.<br>2. Verify economizer operates per control sequence (outside air, room set point) to meet space requirements. | Review at Plan Check:<br>Review economizer start up documentation.<br>Verify On-Site:<br>Verify damper operation: check that damper moves and has the proper stops installed. | |
| ☐ | ☐ | ☐ | **For projects where new ductwork will be installed** that is dedicated to the project tenant or space, test and seal all ductwork. | 1. Submit evidence (HERS duct testing contract or report or other documentation that ducts will been sealed and tested) that duct sealing and testing will be performed.<br>2. Provide final Title 24-2008 Non-Residential Acceptance Form for Duct Testing. | Review at Plan Check:<br>Review documentation of planned duct testing/sealing.<br>Verify On-Site:<br>Review final duct testing report to verify duct testing was completed. | |
| | | | ***EQUIPMENT, APPLIANCES, WATER HEATING*** | | | |
| ☐ | ☐ | ☐ | **For projects installing new equipment or appliances**, install ENERGY STAR rated office equipment and appliances. For eligible equipment, at least 75% of all new office equipment and 90% of all new appliances must be ENERGY STAR rated. See www.energystar.gov for product lists. | 1. Submit list of all planned new office equipment and appliances.<br>2. Calculate the percent of planned office equipment and appliances that are to be ENERGY STAR. If ENERGY STAR products are not available for a particular appliance or piece of equipment, note that on the list and do not include those in the percentage calculation. | Review at Plan Check:<br>Review list of appliances and office equipment. Confirm the 75%/90% mark has been reached.<br>Verify On-Site:<br>Look for the ENERGY STAR label on new office equipment and appliances. | |
| ☐ | ☐ | ☐ | **For projects installing new water heating systems,** specify gas water heaters above 0.65 EF or preferably a condensing water heater at 0.86.<br>Specify boilers with efficiency of 90% or more. (This excludes all tankless water heaters and any small kitchen or bathroom water heaters under 5 gallons.) | 1. Submit plans or specifications highlighting efficiency of water heater(s) or boiler(s).<br>2. Submit manufacturer cut sheet for water heaters/boilers and highlight efficiency. | Review at Plan Check:<br>1. Review plans/specs for efficiency of water heater/boiler.<br>Verify On-Site:<br>1. Check nameplate data and model number to verify equipment efficiency. | |

| Yes | No | N/A | Measure & Requirement | Documentation | Verification | References & Notes |
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| **Materials** | | | | | | |
| *Construction materials constitute about 22% of the disposed waste stream statewide. Many of these materials can be reduced, reused or recycled. Recycling reduces the amount of material entering landfills and can save money for building owners through reduced disposal and operating fees. Buying environmentally preferable new products can reduce the impact on raw materials extraction and disposal at end of life.* | | | | | | |
| ☐ | ☐ | ☐ | **6. Construction Waste Management [Aligns with CALGreen Section 5.408]** | | | |
| | | | **For all projects,** during construction, divert at least 50% of job site construction and demolition waste from landfill via recycling or reuse. Check local ordinances for more stringent requirements and additional tools for compliance, such as online submittal and tracking forms. | 1. Prior to construction, complete a construction waste management plan. The City should provide a sample template, or one can be downloaded at www.stopwaste.org/C&D.<br>2. After construction, provide final waste management plan and verification (service provider weight tags and/or receipts) that 100% of concrete and asphalt concrete were diverted and at least 50% of remaining job site construction waste diverted from landfill via recycling or reuse. If material was taken to a transfer station, a facility average recycling rate must be applied to the amount of material sent to that facility. See www.RecyclingRulesAC.org for a list of mixed-waste diversion recycling rates and locations. | Review at Plan Check:<br>1. Review the pre-construction waste management plan.<br>2. Verify final waste management plan once completed.<br>Verify On-Site:<br>Check that materials are being sorted (if applicable) and collected and that contractor is keeping track of waste tags. | |
| | | | **7. Environmentally Preferable Materials**<br>When the materials listed below are within the scope of a building renovation or construction project, follow the guidelines as listed.<br>**Renovation projects:** At least 2 items in scope achieve the thresholds listed below;<br>**New Construction projects:** At least 5 of items in scope achieve the thresholds listed below.<br>*Measures in this section may qualify for a rebate under the Green Materials Rebate Program. Visit www.StopWaste.org/SmallCommercial for details.* | | | |
| ☐ | ☐ | ☐ | i. Salvaged and Reclaimed Materials.<br>*Reuse and/ repurpose materials salvaged from the site, other sites, or purchased at a local salvage yard.* | 1. Provide finish schedule or specifications with applicable material(s) highlighted.<br>2. Provide manufacturer literature to support environmental claims of material.<br>3. Provide calculation of applicable material percentage. | Review at Plan Check:<br>Finish schedule, manufacturer literature, and quantity calculation.<br>Verify On-Site:<br>Verify manufacturer, product name, and quantity. | |
| ☐ | ☐ | ☐ | ii. Recycled Content.<br>*Use products with a minimum recycled content of 25% by weight. Post-consumer recycled content is preferable.* | 1. Provide finish schedule or specifications with applicable material(s) highlighted.<br>2. Provide manufacturer literature to support environmental claims of material.<br>3. Provide calculation of applicable material percentage. | Review at Plan Check:<br>Finish schedule, manufacturer literature, and quantity calculation.<br>Verify On-Site:<br>Verify manufacturer, product name, and quantity. | |
| ☐ | ☐ | ☐ | iii. Low-Emitting Resilient Flooring.<br>(Exceeds the 50% requirement of CALGreen section 5.504.4.6)<br>*At least 75% of new flooring should be low-emitting and meet the 2009 Collaborative for High Performance Schools (CHPS) VOC criteria and listed on its Low-Emitting Materials List or certified under the FloorScore program of the Resilient Floor Covering Institute.* | 1. Provide finish schedule or specifications with applicable material(s) highlighted.<br>2. Provide manufacturer literature to support environmental claims of material.<br>3. Provide calculation of applicable material percentage. | Review at Plan Check:<br>Finish schedule, manufacturer literature, and quantity calculation.<br>Verify On-Site:<br>Verify manufacturer, product name, and quantity. | |

| Yes | No | N/A | Measure & Requirement | Documentation | Verification | References & Notes |
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| ☐ | ☐ | ☐ | iv. Exterior Paint.<br>*At least 50% of all exterior paint (by square footage or volume) is recycled content (40%+). For new construction projects, this credit is superseded by CALGreen's low-emitting paint requirements and may not be achievable.* | 1. Provide finish schedule or specifications with applicable material(s) highlighted.<br>2. Provide manufacturer literature showing recycled content.<br>3. Provide calculation of applicable material percentage. | Review at Plan Check:<br>Finish schedule, manufacturer literature, and quantity calculation.<br>Verify On-Site:<br>Verify manufacturer, product name, and quantity. | |
| ☐ | ☐ | ☐ | v. Low-Emitting Interior Paint.<br>(Relates to CALGreen Section 5.504.4.3)<br>*All interior paints are low emitting:*<br>*≤ 50 grams/liter for flat paints,*<br>*≤ 150 g/L for non-flat high gloss coatings, and*<br>*≤ 100 g/L for non-flat coatings.* | 1. Provide finish schedule or specifications with applicable material(s) highlighted.<br>2. Provide manufacturer literature to support environmental claims of material.<br>3. Provide documentation that all paints and coatings are low-emitting. Provide MSDS sheets. | Review at Plan Check:<br>Finish schedule and manufacturer literature.<br>Verify On-Site:<br>Verify manufacturer and product name. | |
| ☐ | ☐ | ☐ | vi. Low-Emitting Adhesives & Sealants.<br>(Aligns with CALGreen Section 5.504.4.1)<br>*All adhesives and sealants are low-emitting according to the South Coast Air Quality Management District Rule 1168 (see www.aqmd.gov/rules/reg/reg11/r1168.pdf for VOC limits).* | 1. Provide finish schedule or specifications with applicable material(s) highlighted.<br>2. Provide manufacturer literature to support environmental claims of material.<br>3. Provide documentation that all adhesives and sealants are low-emitting. Provide MSDS sheets. | Review at Plan Check:<br>Finish schedule and manufacturer literature.<br>Verify On-Site:<br>Verify manufacturer and product name. | |
| ☐ | ☐ | ☐ | vii. Low-Emitting Carpeting. (Aligns with CALGreen section 5.504.4.4)<br>*All carpet installed in the building interior shall meet the testing and product requirements of one of the following:*<br>*1. Carpet and Rug Institute's Green Label Plus Program. See www.carpet-rug.org for label requirements and product lists.*<br>*2. California Department of Public Health Standard Practice for the testing of VOCs (Specification 01350).*<br>*3. NSF/ANSI 140 at the Gold level*<br>*4. Scientific Certifications Systems Sustainable Choice.*<br>*All carpet cushion installed in the building interior shall meet the requirements of Carpet and Rug Institute Green Label Program. All carpet adhesive shall meet 50 g/L VOC limit.* | 1. Provide finish schedule or specifications with applicable material(s) highlighted.<br>2. Provide manufacturer literature to support environmental claims of material.<br>3. Provide CRI Green Label Plus, Spec 01350, NSF/ANSI 140 Gold, or SCS Sustainable Choice documentation. | Review at Plan Check:<br>Finish schedule and manufacturer literature.<br>Verify On-Site:<br>Verify manufacturer and product name. | |
| ☐ | ☐ | ☐ | viii. Low-Emitting Composite Wood.<br>(Aligns with CALGreen section 5.504.4.5)<br>*Where complying composite wood product is readily available for non-residential occupancies, meet current formaldehyde limits (ppm) as specified in ARB's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.):*<br>*Hardwood plywood veneer core: 0.05*<br>*Hardwood plywood composite core: 0.08*<br>*Particle board: 0.09*<br>*Medium density fiberboard: 0.11*<br>*Thin medium density fiberboard: 0.21* | 1. Provide finish schedule or specifications with applicable material(s) highlighted. (Specify levels of formaldehyde in composite wood products on the plans or in the project specifications.)<br>2. Provide manufacturer literature to support environmental claims of material.<br>3. Provide MSDS sheets of composite wood. | Review at Plan Check:<br>Finish schedule and manufacturer literature. Review plans and specifications to confirm that the composite wood products and/or resins are specified to beat the CARB timetable or meet the ultra-low formaldehyde limits.<br>Verify On-Site:<br>Verify manufacturer, product name, and quantity, or at least stored on site with the ability to be verified. | |

| Yes | No | N/A | Measure & Requirement | Documentation | Verification | References & Notes |
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| ☐ | ☐ | ☐ | ix. Responsible Sourcing of New Materials. Purchase materials that include responsible extraction, harvesting, and manufacturing processes with reputable standards and tracking, such as Forest Stewardship Council (FSC) wood products. | 1. Provide finish schedule or specifications with applicable material(s) highlighted.<br>2. Provide manufacturer literature to support environmental claims of material (recycled content %, FSC certification, etc.).<br>3. Provide calculation of applicable material percentage. | Review at Plan Check:<br>Finish schedule, manufacturer literature, and quantity calculation.<br>Verify On-Site:<br>Verify manufacturer, product name, and quantity. | |
| ☐ | ☐ | ☐ | **8. Collection of Recyclables [CALGreen Section 5.410.1]** | | | |
| | | | **For all projects,** encourage ongoing recycling by providing at least as much bin volume for recycling as for waste. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage, and collection of non-hazardous materials for recycling, including paper, corrugated cardboard, glass, plastics, and metals. Additionally, where feasible, recycle at least 1 of the following material streams: food scraps, household hazardous waste (fluorescent lamps, batteries, oil, etc.), or e-waste (computer equipment). | 1. Provide plans showing recycling receptacles and signage are provided in all applicable areas: offices, private rooms, meeting rooms, kitchens, etc.<br>2. 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.<br>3. Where feasible, recycling areas should be located adjacent to solid waste collection areas.<br>4. Provide calculation of adequate recycling volume.<br>5. Provide evidence of recycling for at least 6 (the 5 required materials plus the additional 1) of the material streams. Submit recycling hauler information for recyclables and food scraps. Provide a short narrative on how the facility will collect and recycle hazardous and e-waste. | Review at Plan Check:<br>1. Review plans and confirm that the appropriate recycling areas and signage for those areas have been provided on the plans.<br>2. Assess that the central collection space is large enough to fit recycling and waste bins and that it is appropriately sized to fit commercial space (including tenants, if applicable.). At least half the total bin volume must be dedicated to recycling.<br>3. Verify recycling hauler/collection information.<br>Verify On-Site:<br>1. Look for recycling bins throughout the site and verify that the central collection area has at least half its volume dedicated to recycling.<br>2. Based on the permit set, verify recycling areas and signage for those areas on the plans and specifications are installed. | |

## Indoor Environment & Air

*Effective daylighting and natural ventilation may improve indoor environmental quality. Natural ventilation can reduce heating and cooling requirements and may justify smaller, simpler HVAC systems, which can reduce the project's first costs. Ventilation (natural or mechanical) improves indoor air quality. Daylighting can offset some of the electric lighting load.*

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| ☐ | ☐ | ☐ | **9. Daylight, Views & Natural Ventilation** | | | |
| | | | **For projects that are replacing windows and (re)configuring interior work spaces/layout,** provide access to views to the outdoors (any window or skylight can provide a view) from 80% of regularly occupied areas (i.e. offices, reception areas, bedrooms, kitchens, living rooms, dining rooms, but not bathrooms or storage areas). Operable windows are recommended for all projects but are strongly encouraged in spaces where 2 or more walls have windows or access to outdoor air and there is not a security compromise by having operable windows. | *For spaces where windows are installed or replaced:*<br>1. Provide window schedule showing operable and non-operable windows.<br>2. Provide site plan and/or calculation on the number of occupants within 15 feet of windows, showing that at least half of the workers have access to an operable window.<br>3. Calculate percent of regularly occupied areas with/without access to views. | Review at Plan Check:<br>1. Check submitted plans for views and operable windows.<br>2. Review the calculation of views.<br>Verify On-Site:<br>Look for windows and skylights and test that some windows on every floor are operable. Ensure that there are appropriate extension tools necessary for opening hard-to-reach windows. | |

| Yes | No | N/A | Measure & Requirement | Documentation | Verification | References & Notes |
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| ☐ | ☐ | ☐ | **10. Fresh Air Monitors for Densely Occupied Spaces [Relates to CALGreen Section 5.506.2]** | | | |
| | | | **For new building systems with moveable outside air dampers,** provide the following: For all densely occupied spaces, such as multi-purpose rooms or conference rooms, provide CO2 monitors with alarms (example: small visual indicator such as a light to alert building occupants or building operator), and the ability to manually adjust air flow.<br><br>*[Note that for buildings equipped with demand control ventilation, CO2 sensors and ventilation controls are required, under CALGreen and Title 24, Part 6, Section 121(c).]* | 1. Provide mechanical plans with CO2 monitors highlighted.<br>2. Confirm alarm function (user adjustable) of Building Automation System. Verify control sequence resulting from "alarm" in Sequence of Operations.<br>3. Provide Title 24 "Acceptance" forms.<br>4. Written confirmation that testing, adjusting and balancing (TAB) contractor will adjust and balance the moveable outside air damper to provide cooling as required for air conditioning the space. When CO2 monitor located within referenced AC unit's conditioned space sends an alarm signal the economizer damper actuator shall open outside air damper to provide 30% more air than the minimum damper setting. | Review at Plan Check:<br>1. Check plans for airflow adjustment technology and alarming potential.<br>2. Review Title 24 "Acceptance" forms.<br>Verify On-Site:<br>1. Confirm operation of CO2 monitors.<br>2. Ensure that the AC system has a movable outside air damper and CO2 monitor and that the AC control sequence specifies that the CO2 monitor alarm overrides outside air damper position. | |

## Additional Notes & References

*Use this section to provide additional comments, notes, or indicate references to plan or specification sheet numbers.*

| Measure Number/Title | Additional Notes & References |
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