



## TIER 1 RESIDENTIAL MEASURES EFFECTIVE JANUARY 1, 2017

This checklist focuses on TIER 1 measures only.  
See specific referenced sections for complete details on CALGreen mandatory requirements.

### 2016 CALGREEN CODE

SECTION	REQUIREMENTS
<b>DIVISION A4.1- PLANNING AND DESIGN (SITE DEVELOPMENT)</b>	
	<b>Topsoil protection</b>
<b>A4.106.2.3</b>	<p>Displaced topsoil shall be stockpiled for reuse in a designated area and covered or protected from erosion.</p> <p><b>Note:</b> Protection from erosion includes covering with tarps, straw, mulch, chipped wood, vegetative cover, or other means acceptable to the enforcing agency to protect the topsoil for later use.</p>
	<b>Water permeable surfaces</b>
<b>A4.106.4</b>	Not less than 20% of the total parking, walking, or patio surfaces shall be permeable.
	<b>Cool roof for reduction of heat island effect</b>
<b>A4.106.5</b>	<p>Roofing materials for Tier 1 buildings shall comply with this section.</p> <p><b>Exceptions:</b></p> <ol style="list-style-type: none"> <li>1. Roof constructions that have a thermal mass over the roof membrane, including areas of vegetated (green) roofs, weighing at least 25 lbs/sf.</li> <li>2. Roof areas covered by building integrated solar photovoltaic panels and solar thermal panels.</li> </ol>
	<b>Solar reflectance</b>
<b>A4.106.5.1</b>	Roofing materials shall have a minimum 3-year aged solar reflectance equal to or greater than the values specified in Tables A4.106.5.1(1) and A4.106.5.1(3). If Cool Roof Rating Council (CRRC) testing for aged solar reflectance is not available for any roofing products, the aged value shall be determined using the CRRC certified initial value in Section A4.106.5.1.
	<b>Thermal emittance</b>
<b>A4.106.5.2</b>	Roofing materials shall have a CRRC initial or aged thermal emittance equal to or greater than those specified in Tables A4.106.5.1(1) & A4.106.5.1(3). Thermal emittance may also be certified by other entities approved by the Energy Commission pursuant to the California Administrative Code.
	<b>Solar reflectance index alternative</b>
<b>A4.106.5.3</b>	<p>Solar Reflectance Index (SRI) equal to or greater than the values specified in Tables A4.106.5.1(1) &amp; A4.106.5.1(3) may be used as an alternative to compliance with the 3-year aged solar reflectance values and thermal emittance.</p> <p>SRI values shall be calculated using the SRI Calculation Worksheet (SRI-WS) or in compliance with ASTM E1980-01 as specified in the 2016 California Energy Code. Solar reflectance values used in the SRI-WS shall be based on the aged reflectance value of the roofing product or the equation in Section A4.106.5.1 if the CRRC certified aged solar reflectance are not available.</p> <p>Certified thermal emittance used in the SRI-WS may be either the initial value or the aged value listed by the CRRC.</p> <p>Solar reflectance and thermal emittance may also be certified by other entities approved by the Commission pursuant to the California Administrative Code.</p> <p><b>Note:</b> SRI-WS is available by contacting the Energy Standards Hotline at 1-800-772-3300, website at <a href="http://www.energy.ca.gov">www.energy.ca.gov</a> or by e-mail at <a href="mailto:Title24@energy.ca.us">Title24@energy.ca.us</a></p>



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	<b>Verification</b>
<b>A4.106.5.4</b>	Inspection shall be conducted to ensure roofing materials meet cool roof aged solar reflectance and thermal emittance or SRI values.
	<b>Electric vehicle (EV) charging for new construction</b>
<b>A4.106.8</b>	New construction shall comply with Sections A4.106.8.1 and A4.106.8.2 to facilitate future installation and use of electric vehicle chargers. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the California Electrical Code, Article 625.
	<b>1 &amp; 2-family dwellings and townhouses with attached private garages</b>
<b>A4.106.8.1</b>	For each dwelling unit, a dedicated 208/240-volt branch circuit shall be installed in the raceway required by Section 4.106.4.1. The branch circuit and associated overcurrent protective device shall be rated at 40 amperes minimum. Other electrical components, including a receptacle or blank cover, related to this section shall be installed in accordance with the California Electrical Code.
	<b>New multifamily dwellings</b>
<b>A4.106.8.2</b>	<ul style="list-style-type: none"> <li>• Applies to sites with 17 or more multifamily dwelling units constructed on the site.</li> <li>• 5% of the total number of parking spaces provided for all types of parking facilities, but in no case less than 1, shall be electric vehicle charging spaces (EV spaces) capable of supporting future EVSE.</li> <li>• Calculations for EV spaces shall be rounded up to the nearest whole number.</li> <li>• See Section 4.106.4.2 for additional requirements related to EVCS for multifamily dwellings.</li> </ul> <p><b>Notes:</b> See CALGreen Section A4.106.8.2, Notes, for referenced documents.</p>
	<b>Required elective measures</b>
<b>A4.601.4.2</b>	Comply with at least 2 elective measures selected from Division A4.1.
<b>DIVISION A4.2- ENERGY EFFICIENCY</b>	
	<b>Prerequisites</b>
<b>A4.203.1.1</b>	Each of the following efficiency measures is required for all applicable components of the project. <ul style="list-style-type: none"> <li>• A4.203.1.1.1 An energy design rating for the Proposed Design Building shall be computed by Compliance Software certified by the Commission and this rating shall be included in the Certificate of Compliance documentation.</li> <li>• A4.203.1.1.2 Complete Quality Insulation Installation procedures specified in the Building Energy Efficiency Standards Reference Residential Appendix RA3.5.</li> </ul>
	<b>Performance standards</b>
<b>A4.203.1.2.1</b>	Requires Energy Budget no greater than 85% of the 2016 California Energy Code (CEC) Energy Budget for the Standard Design Building, or an Energy Design Rating showing a 15% or greater reduction in its Energy Budget Component compared to the Standard Design Building, as calculated by the CEC Compliance Software.
	<b>Prerequisites</b>
<b>A5.203.1.1</b>	Newly installed outdoor lighting power shall be no greater than 90% Allowed Outdoor Lighting Power.



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<b>A5.203.1.1 continued</b>	The Allowed Outdoor Lighting Power calculation is specified in the 2016 CEC, Section 140.7 "Requirements For Outdoor Light.
<b>A5.203.1.2</b>	<p style="text-align: center;"><b>Performance standards</b></p> <p>Buildings complying with the first level of advanced energy efficiency shall have an Energy Budget no greater than indicated below, depending on the type of energy systems included in the building project. If the newly constructed building or addition does not include indoor lighting or mechanical systems, no additional performance requirements above the Energy Code are required.</p> <ol style="list-style-type: none"> <li>1. Building projects that include indoor lighting or mechanical systems, but not both: No greater than 95% of the CEC Energy Budget for the Standard Design Building as calculated by Compliance Software certified by the Energy Commission.</li> <li>2. Building projects that include indoor lighting and mechanical systems: No greater than 90% of the CEC Energy Budget for the Standard Design Building as calculated by Compliance Software certified by the Energy Commission.</li> </ol>
<b>DIVISION A4.3 - WATER EFFICIENCY AND CONSERVATION</b>	
<b>A4.601.4.2</b>	<p style="text-align: center;"><b>Required elective measures</b></p> <p>Comply with at least 2 elective measures selected from Division A4.3.</p>
<b>DIVISION A4.4- MATERIAL CONSERVATION AND RESOURCE EFFICIENCY</b>	
<b>A4.403.2</b>	<p style="text-align: center;"><b>Reduction in cement use</b></p> <p>As allowed by the enforcing agency, cement used in foundation mix design shall be reduced to not less than 20%. Examples of products commonly used to replace cement in concrete mix designs: fly ash, slag, silica fume, rice hull ash.</p>
<b>A4.405.3 A4.405.3.1</b>	<p style="text-align: center;"><b>Recycled content</b></p> <p>Use materials, equivalent in performance to virgin materials, with a total (combined) recycled content value (RCV) of not less than 10% per Section A4.405.3.1. <b>Note:</b> Interactive forms for calculation of RCV are available at <a href="http://www.hcd.ca.gov/calgreen.html">http://www.hcd.ca.gov/calgreen.html</a></p>
<b>A4.408.1</b>	<p style="text-align: center;"><b>Enhanced construction waste reduction 65%</b></p> <p>Nonhazardous construction and demolition debris generated at the site is diverted to recycle or salvage in compliance with the following:</p> <ul style="list-style-type: none"> <li>• At least a 65% reduction.</li> <li>• Any mixed recyclables sent to mixed-waste recycling facilities shall include a qualified third party verified facility average diversion rate. Verification of diversion rates shall meet minimum certification eligibility guidelines, acceptable to the local enforcing agency.</li> </ul> <p><b>Exceptions:</b></p> <ol style="list-style-type: none"> <li>1. Equivalent or alternative waste reduction methods are developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist.</li> <li>2. 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.</li> </ol>



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<b>A4.601.4.2</b>	<b>Required elective measures</b>
	Comply with at least 2 elective measures selected from Division A4.4.
<b>DIVISION A4.5 - ENVIRONMENTAL QUALITY</b>	
	<b>Resilient flooring systems</b>
<b>A4.504.2</b>	<p>At least 90% of the total area of resilient flooring systems installed in the building shall comply with the VOC emission limits defined in at least 1 of the following:</p> <ol style="list-style-type: none"> <li>1. Products compliant with the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.1, February 2010 (also known as Specification 01350), certified as a CHPS Low-Emitting Material in the Collaborative for High Performance Schools (CHPS) High Performance Products Database.</li> <li>2. Products certified UL GREENGUARD GOLD (formerly the Greenguard Children &amp; Schools program).</li> <li>3. Certification under the Resilient Floor Covering Institute (RFCI) FloorScore program.</li> <li>4. Meet the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.1, February 2010 (also known as Specification 01350).</li> </ol> <p><b>Note:</b> Documentation must be provided that verifies that finish materials are certified to meet the pollutant emission limits in this section.</p>
	<b>Thermal insulation</b>
<b>A4.504.3</b>	<p>Install thermal insulation in compliance with the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.1, February 2010 (also known as Specification 01350), certified as a CHPS Low-Emitting Material in the Collaborative for High Performance Schools (CHPS) High Performance Products Database; products certified under the UL GREENGUARD Gold (formerly Greenguard Children &amp; Schools program); or meet California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.1, February 2010 (also known as Specification 01350).</p> <p><b>Note:</b> Documentation must be provided that verifies the materials are certified to meet the pollutant emission limits in this section.</p>
<b>A4.601.4.2</b>	<b>Required elective measures</b>
	Comply with at least 1 elective measures selected from Division A4.5.