



## TIER 2 RESIDENTIAL MEASURES EFFECTIVE JANUARY 1, 2017

This checklist focuses on TIER 2 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</b> |   |
|   | <b>Topsoil protection</b>   |
| <b>A4.106.2.3</b>                         | The construction area shall be identified and delineated by fencing or flagging to limit construction activity to the construction area. Heavy equipment or vehicle traffic and material storage outside the construction area shall be limited to areas that are planned to be paved.  |
|   | <b>Water permeable surfaces</b>   |
| <b>A4.106.4</b>                           | Not less than 30% 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>                           | Roofing materials for Tier 2 buildings shall comply with this section:<br><b>Exceptions:</b><br>1. Roof constructions that have a thermal mass over the roof membrane, including area of vegetated (green) roofs, weighing at least 25 lbs/sf.<br>2. Roof areas covered by building integrated solar photovoltaic panels and building integrated solar thermal panels.<br>Comply with the cool roof requirements in Section A4.106.5. |
|   | <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(2) and A4.106.5.1(4). 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(2) & A4.106.5.1(4). 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>                         | Solar Reflectance Index (SRI) equal to or greater than the values specified in Tables A4.106.5.1(2) & A4.106.5.1(4) may be used as an alternative to compliance with the 3-year aged solar reflectance values and thermal emittance.<br>SRI values shall be calculated as allowed in Section A4.106.5.3.  |
|   | <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 the Tier 1 electric vehicle (EV) charging requirements in Section A4.106.8.  |
|   | <b>Required elective measures</b>   |
| <b>A4.601.5.2<br/>(1)(1.5)</b>            | Comply with at least 4 elective measures selected from Division A4.1.   |



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| <b>DIVISION A4.2- ENERGY EFFICIENCY</b>                  |   |
| <b>Prerequisites</b>                                     |   |
| <b>A4.203.1.1</b>  | Newly constructed low-rise residential buildings shall comply with the Tier 1 prerequisites in Section A4.203.1.1.  |
| <b>Performance standards</b>                             |   |
| <b>A4.203.1.2.2</b>                                      | Requires Energy Budget no greater than 70% of the 2016 California Energy Code (CEC) Energy Budget for the Standard Design Building, or an Energy Design Rating showing a 30% or greater reduction in its Energy Budget Component compared to the Standard Design Building, as calculated by the CEC Compliance Software.  |
| <b>Additions low-rise</b>                                |   |
| <b>A4.204.1.2</b>  | Buildings complying with the second level of advanced energy efficiency shall have an Energy Budget no greater than indicated below, depending on the number of mechanical systems added. Space heating systems, space cooling systems and water heating systems are each separate mechanical systems for the purpose of complying with this requirement. If the addition changes only the envelope with no change to any mechanical system, no additional performance requirements above the California Energy Code are required. <ol style="list-style-type: none"> <li>1. Only one mechanical system. 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> <li>2. Two or more mechanical systems. No greater than 85% of the CEC Energy Budget for the Standard Design Building as calculated by Compliance Software certified by the Energy Commission.</li> </ol> |
| <b>Prerequisites</b>                                     |   |
| <b>A5.203.1.2</b>  | To achieve Tier 2 status, newly constructed high-rise residential buildings and hotels/motels shall comply with the Tier 1 prerequisites in Section A5.203.1.1.   |
| <b>Performance standards</b>                             |   |
| <b>A5.203.1.2</b>  | Buildings complying with the second 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. <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>Required elective measures</b>                        |   |
| <b>A4.601.5.2</b>  | Comply with at least 3 elective measures selected from Division A4.3.   |





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| <b>DIVISION A4.4 – MATERIAL CONSERVATION AND RESOURCE EFFICIENCY</b> |  |
| <b>Reduction in cement use</b>                                       |  |
| <b>A4.403.2</b>  | As allowed by the enforcing agency, cement used in foundation mix design shall be reduced to not less than 25%.<br>Examples of products commonly used to replace cement in concrete mix designs: fly ash, slag, silica fume, rice hull ash.  |
| <b>Recycled content</b>  |  |
| <b>A4.405.3<br/>A4.405.3.1</b>                                       | Use materials, equivalent in performance to virgin materials, with a total (combined) recycled content value (RCV) of not less than 15% per Section A4.405.3.1.<br><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>  |
| <b>Enhanced construction waste reduction 75%</b>                     |  |
| <b>A4.408.1</b>  | Nonhazardous construction and demolition debris generated at the site is diverted to recycle or salvage in compliance with the following: <ul style="list-style-type: none"> <li>• At least 75 percent reduction with third party verification.</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> <b>Exceptions:</b> <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> |
| <b>Required elective measures</b>                                    |  |
| <b>A4.601.5.2</b>  | Comply with at least 4 elective measures selected from Division A4.4.  |
| <b>DIVISION A4.5 - ENVIRONMENTAL QUALITY</b>                         |  |
| <b>Resilient flooring systems</b>                                    |  |
| <b>A4.504.2</b>  | 100% of the total area of resilient flooring systems installed in the building shall comply with the VOC emission limits in Section A4.504.2.<br><b>Exception:</b> An allowance for up to 5% specialty purpose flooring may be permitted.<br><b>Note:</b> Documentation must be provided that verifies that finish materials are certified to meet the pollutant emission limits in this section.  |
| <b>Thermal insulation</b>  |  |
| <b>A4.504.3</b>  | Install insulation which complies with Tier 1 plus does not contain any added formaldehyde.<br><b>Note:</b> Documentation must be provided that verifies the materials are certified to meet the pollutant emission limits in this section.  |
| <b>Required elective measures</b>                                    |  |
| <b>A4.601.5.2</b>  | Comply with at least 1 elective measures selected from Division A4.5.  |