



2022 CALGREEN TIER 2 RESIDENTIAL MEASURES EFFECTIVE July 1, 2024

This list focuses on TIER 2 measures only.
See specific referenced sections for complete details on CALGreen requirements.

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DIVISION A4.1 – PLANNING AND DESIGN

| SECTION | REQUIREMENTS |
|-------------------|---|
| A4.106.2.3 | Topsoil protection |
| | 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. |
| A4.106.4 | Water permeable surfaces |
| | Not less than 30% of the total parking, walking or patio surfaces shall be permeable. Exceptions: <ol style="list-style-type: none"> 1. The primary driveway, primary entry walkway and entry porch or landing shall not be included when calculating the area required to be a permeable surface. 2. Required accessible routes for persons with disabilities as required by California Code of Regulations, Title 24, Part 2, Chapter 11A and/or Chapter 11B as applicable. |
| A4.106.5 | Cool roof for reduction of heat island effect |
| | Roofing materials for Tier 2 buildings shall comply with this section. Exceptions: <ol style="list-style-type: none"> 1. Roof constructions that have a thermal mass over the roof membrane, including areas of vegetated (green) roofs, weighing at least 25 lbs/sf. 2. Roof areas covered by building integrated solar photovoltaic panels and building integrated solar thermal panels. |
| A4.106.5.1 | Solar reflectance |
| | <ul style="list-style-type: none"> • 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, see Section A4.106.5.1 and Table A4.106.5.1. |
| A4.106.5.2 | Thermal emittance |
| | <ul style="list-style-type: none"> • 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) and A4.106.5.1(4). • Thermal emittance may also be certified by other entities approved by the Energy Commission pursuant to the <i>California Administrative Code</i>. |



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| A4.106.5.3 | Solar reflectance index alternative |
| | <ul style="list-style-type: none"> • 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. • SRI values shall be calculated as allowed in Section A4.106.5.3. <p>Note: An SRI Calculation Worksheet (SRI-WS) is available by contacting the Energy Standards Hotline by phone at (800) 772-3300 (toll-free within California) or (916) 651-5106; on the California Energy Commission website at: https://www.energy.ca.gov/; or by email at title24@energy.ca.gov.</p> |
| A4.106.5.4 | Verification |
| | <p>Inspection shall be conducted to ensure roofing materials meet cool roof aged solar reflectance and thermal emittance or SRI values.</p> |
| A4.106.8 | Electric vehicle (EV) charging for new construction |
| | <p>New construction shall comply with Section A4.106.8.1 or A4.106.8.2 to facilitate the installation and use of EV ready spaces. Electric vehicle supply equipment (EVSE) shall comply with the <i>California Electrical Code</i>.</p> |
| A4.106.8.1 | New one- and two-family dwellings and townhouses with attached private garages |
| | <p>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 <i>California Electrical Code</i>.</p> |
| A4.106.8.1.1 | Identification |
| | <p>Service panel or subpanel circuit directory shall identify the overcurrent protective device designated for future EV charging purposes as “EV READY” in accordance with the <i>California Electrical Code</i>. Receptacle or blank cover shall be identified as “EV READY.”</p> |



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| | New multifamily dwellings, hotels and motels |
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| <p>A4.106.8.2 & A4.106.8.2.1 & A4.106.8.2.2</p> | <p>New multifamily dwellings, hotels and motels shall meet the following requirements: Tier 2. Consists of Option A and Option B. One or both may be adopted as voluntary measures.</p> <p>Option A for New multifamily dwellings, hotels and motels</p> <ol style="list-style-type: none"> 1. EV Ready Parking Spaces with Receptacles <ol style="list-style-type: none"> a. Hotels and Motels 55% of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. b. Multifamily parking facilities 55% of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. EV charging receptacles shall be located in at least one assigned parking space per dwelling unit where assigned parking is provided, but need not exceed 55% of the total number of assigned spaces provided on the site. <p>Exception:</p> <ol style="list-style-type: none"> 1. Areas of parking facilities served by parking lifts, including but not limited to automated mechanical-access open parking garages as defined in the California Building Code; or parking facilities otherwise incapable of supporting electric vehicle charging. 2. Hotels and motels may install Level 2 EV chargers instead of all or portions of the required percentage of low power Level 2 receptacles for EV charging. Where Level 2 EV chargers are installed in place of low power Level 2 receptacles, at least 50% of the installed EV chargers shall be equipped with J1772 connectors. 2. EV Ready Parking spaces with EV Chargers <ol style="list-style-type: none"> a. Hotels and Motels 20% of the total number of parking spaces for hotels and motels shall be equipped with level 2 EV chargers. At least 50% of the required EV chargers shall be equipped with J1772 connectors. b. Multifamily parking facilities 20% of the total number of parking spaces shall be equipped with level 2 EV chargers. At least 50% of the required EV chargers shall be equipped with J1772 connectors. Where common use parking or unassigned parking is provided, EV chargers shall be located in the common use or unassigned parking areas and shall be available for use by all residents and guests. |



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Exception:

1. Areas of parking facilities served by parking lifts, including but not limited to automated mechanical-access open parking garages as defined in the California Building Code; or parking facilities otherwise incapable of supporting electric vehicle charging.
2. Where no common use parking spaces are provided.

An automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes, and installed EV chargers shall have a capacity of not less than 30 amperes.

• Option B Multifamily Dwellings

1. **EV Ready parking spaces with receptacles** install one low power level 2 EV charging receptacle for each parking space available for use by residents.

Exception: Areas of parking facilities served by parking lifts, including but not limited to automated mechanical-access open parking garages as defined in the California Building Code; or parking facilities otherwise incapable of supporting electric vehicle charging.

2. **EV Ready parking spaces with EV chargers** 20% of parking available to nonresidents or guests shall be equipped with level 2 EV chargers. At least 50% of chargers shall be equipped with J1772 connectors. Where common use parking is provided, EV chargers shall be located in the common use parking area and shall be available for use by all residents or guests.

Exception:

1. Areas of parking facilities served by parking lifts, including but not limited to automated mechanical-access open parking garages as defined in the California Building Code; or parking facilities otherwise incapable of supporting electric vehicle charging.
2. Where no common use parking spaces are provided.



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| | An automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes, and installed EV chargers shall have a capacity of not less than 30 amperes. |
| A4.601.5.2 | Prerequisite and elective measures for Tier 2 |
| | Comply with at least four elective measures selected from Division A4.1. |

DIVISION A4.2 – ENERGY EFFICIENCY

| SECTION | REQUIREMENTS |
|-------------------|---|
| A4.203.1.1 | Low-Rise Residential Prerequisites A4.203.1.1 through A4.203.1.3 |
| | Hourly Source Energy Design Rating (EDR1) for the Proposed Design Building shall be calculated by compliance software certified by the Energy Commissioner and included in the Certificate of Compliance documentation. <ul style="list-style-type: none"> • See Table A4.203.1.1 Recommended EDR1 Margins by Climate Zones with note. |
| A4.203.1.2 | Prerequisite Options. A minimum of two of the following options are required: <ul style="list-style-type: none"> A4.203.1.2.1 – Roof deck insulation or ducts in conditioned space. A4.203.1.2.2 – High performance walls. A4.203.1.2.3 – Compact hot water distribution system. A4.203.1.2.4 – Drain water heat recovery. A4.203.1.2.5 – High performance vertical fenestration. A4.203.1.2.6 – Heat pump water heater demand management. A4.203.1.2.7 – Battery storage system controls. A4.203.1.2.8 – Heat pump space and water heating. |
| A4.203.1.3 | Local jurisdictions considering the adoption of reduced EDR targets based on using solar photovoltaic (PV) systems larger than required by the <i>California Energy Code</i> shall consult with the local electric service provider for acceptance. The local jurisdiction shall not require onsite PV systems that are larger than the local electric service provider will allow to be interconnected. |



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DIVISION A5.2 – ENERGY EFFICIENCY

| SECTION | REQUIREMENTS |
|-------------------|---|
| A5.203.1.1 | <p>High-Rise Residential and Hotel/Motel Prerequisites</p> <p>A5.203.1.1 and A5.203.1.2.2 apply if lighting and mechanical systems are included. Buildings permitted without lighting or mechanical systems shall comply with Section A5.203.1.1 only.</p> |
| | <p>Tier 2. <u>Two</u> of the following efficiency measures are required:</p> <p>A5.203.1.1.1 – ≤ 90% of Allowed Outdoor Lighting Power and color temperature for applicable general hardscape lighting is ≤ 3000K. See exception.</p> <p>A5.203.1.1.2 – Newly constructed restaurants ≥ 8000 square feet with service water heaters rated ≥ 75,000 Btu/h shall install a solar water-heating system with a minimum solar savings fraction of 0.15. See exceptions.</p> <p>A5.203.1.1.3 – Warehouse exterior loading dock doors adjacent to conditioned or indirectly conditioned spaces shall have dock seals or dock shelters installed at the time of permit. Applies to newly constructed buildings and to loading dock doors added to existing buildings.</p> <p>A5.203.1.1.4 – Daylighting devices shall be installed as specified in <i>California Energy Code</i>, Section 140.3(d).</p> <p>A5.203.1.1.5 – Heat recovery requirements based on ASHRAE 90.1, Section 6.5.6.1 are adapted and modified for California climate zones as specified in CALGreen. See exceptions.</p> |



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| | High-Rise Residential and Hotel/Motel Performance Standards |
|---------------------|--|
| A5.203.1.2.2 | <p>Tier 2. Buildings complying with the second level of advanced energy efficiency shall have an Energy Budget no greater than indicated below, depending on building type and 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 <i>California Energy Code</i> are required.</p> <ol style="list-style-type: none"> 1. For nonresidential building projects that include indoor lighting or mechanical systems, but not both: No greater than 90% of the <i>California Energy Code's</i> Energy Budget for the Standard Design Building as calculated by compliance software certified by the Energy Commission. 2. For nonresidential building projects that include indoor lighting and mechanical systems: No greater than 85% of the <i>California Energy Code's</i> Energy Budget for the Standard Design Building as calculated by compliance software certified by the Energy Commission. 3. High-rise residential and hotel/motel projects: No greater than 95% of the <i>California Energy Code</i> Energy Budget for the Standard Design Building as calculated by compliance software certified by the Energy Commission. |

DIVISION A4.3 – WATER EFFICIENCY AND CONSERVATION

| SECTION | REQUIREMENTS |
|-------------------|---|
| A4.601.5.2 | <p style="text-align: center; background-color: #f2d2d2; margin: 0;">Required elective measures</p> <p>Comply with at least three elective measures selected from Division A4.3.</p> |

DIVISION A4.4 – MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

| SECTION | REQUIREMENTS |
|-----------------|---|
| A4.403.2 | <p style="text-align: center; background-color: #f2d2d2; margin: 0;">Reduction in cement use</p> <ul style="list-style-type: none"> • As allowed by the enforcing agency, cement used in foundation mix design shall be reduced to not less than 25%. • Examples of products commonly used to replace cement in concrete mix designs: fly ash, slag, silica fume, and rice hull ash. |



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|-------------------|---|
| | Recycled content |
| A4.405.3 | <p>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.</p> <p>Note: Interactive forms for calculation of RCV are available on the HCD CALGreen website at: https://www.hcd.ca.gov/building-standards/calgreen</p> |
| | Enhanced construction waste reduction |
| A4.408.1 | <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"> • At least 75% reduction with third party verification. • 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. <p>Exceptions:</p> <ol style="list-style-type: none"> 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. 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. |
| | Required elective measures |
| A4.601.5.2 | Comply with at least four elective measures selected from Division A4.4. |

DIVISION A4.5 – ENVIRONMENTAL QUALITY

| SECTION | REQUIREMENTS |
|-----------------|--|
| | Resilient flooring systems |
| A4.504.2 | <p>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.</p> <p>Exception: An allowance for up to 5% specialty purpose flooring may be permitted.</p> <p>Note: Documentation must be provided that verifies that finish materials are certified to meet the pollutant emission limits in this section.</p> |



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| | Thermal insulation |
|-------------------|--|
| A4.504.3 | Install insulation which complies with Tier 1, plus does not contain any added formaldehyde. Note: Documentation must be provided that verifies the materials are certified to meet the pollutant emission limits in this section. |
| | Required elective measures |
| A4.601.5.2 | Comply with at least one elective measure selected from Division A4.5 |