



2022 CALGREEN TIER 1 RESIDENTIAL MEASURES EFFECTIVE JANUARY 1, 2023

HCD SHL 620A (New 02/23)

This list focuses on TIER 1 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
	<p>Displaced topsoil shall be stockpiled for reuse in a designated area and covered or protected from erosion.</p> <p>Note: 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>
A4.106.4	Water permeable surfaces
	Not less than 20% of the total parking, walking or patio surfaces shall be permeable.
A4.106.5	Cool roof for reduction of heat island effect
	<p>Roofing materials for Tier 1 buildings shall comply with this section.</p> <p>Exceptions:</p> <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 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(1) and A4.106.5.1(3). • 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(1) and A4.106.5.1(3). • Thermal emittance may also be certified by other entities approved by the Energy Commission pursuant to Title 24, Part 1, 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(1) & A4.106.5.1(3) 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. • 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) 654-5106; on the California Energy Commission website at: https://www.energy.ca.gov/; or by email at title24@energy.ca.gov.
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 future installation and use of electric vehicle chargers. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the <i>California Electrical Code</i>, Article 625.</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.</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 development projects and hotels and motels
A4.106.8.2 & A4.106.8.2.1 & A4.106.8.2.2	<p>New multifamily development projects and hotels and motels shall meet the following requirements:</p> <ul style="list-style-type: none"> • EV Ready. 35% of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit. (See definition or “Low Power Level 2 Electric Vehicle (EV) Charging Receptacle” in Chapter 2.) <ul style="list-style-type: none"> ○ Exception: Areas of parking facilities served by parking lifts. • EV Chargers for projects with 20 or more dwelling units, sleeping units or guest rooms. 10% of the total number of parking spaces shall be equipped with Level 2 EVSE. Where common use parking is provided, at least one EV charger shall be located in the common use parking area. • Section A4.106.8.2.2 provides the design requirements for EV parking spaces required by Section A4.106.8.2.
	Prerequisite and elective measures for Tier 1
A4.601.4.2	Comply with at least two elective measures selected from Division A4.1.

DIVISION A4.2 – ENERGY EFFICIENCY

SECTION	REQUIREMENTS
	Low-Rise Residential Prerequisites A4.203.1.1 through A4.203.1.3
A4.203.1.1	<p>Hourly Source Energy Design Rating (EDR1) for the Proposed Design Building is included in the Certificate of Compliance documentation.</p> <ul style="list-style-type: none"> • See Table A4.203.1.1 (Recommended EDR1 Margins by Climate Zones) with note.
A4.203.1.2	<p>Tier 1 Prerequisite Options. <u>Two</u> of the following efficiency measures are required:</p> <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.



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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.
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DIVISION A5.2 – ENERGY EFFICIENCY

SECTION	REQUIREMENTS
A5.203.1.1	<div style="background-color: #ADD8E6; text-align: center; padding: 5px; margin-bottom: 5px;"> High-Rise Residential and Hotel/Motel Prerequisites A5.203.1.1 and A5.203.1.2 apply if lighting and mechanical systems are included. Only A5.203.1.1 applies if there are no lighting or mechanical systems. </div> <p>Tier 1. <u>One</u> of the following efficiency measures is 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 – New 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 – 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 new 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 Title 24, Part 6, <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. See exceptions.</p>
A5.203.1.2.1	<div style="background-color: #ADD8E6; text-align: center; padding: 5px; margin-bottom: 5px;"> High-Rise Residential and Hotel/Motel Performance Standards </div> <p>Tier 1. Buildings complying with the first level of advanced energy efficiency shall have an Energy Budget no greater than indicated below, depending on building type and 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. Does not apply; nonresidential. 2. Does not apply; nonresidential. 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.



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DIVISION A4.3 – WATER EFFICIENCY AND CONSERVATION

SECTION	REQUIREMENTS
A4.601.4.2	Required elective measures
	Comply with at least two elective measures selected from Division A4.3.

DIVISION A4.4 – MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

SECTION	REQUIREMENTS
A4.403.2	Reduction in cement use
	<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 20%. Examples of products commonly used to replace cement in concrete mix designs: fly ash, slag, silica fume, and rice hull ash.
A4.405.3.1	Recycled content
	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. Note: Interactive forms for calculation of RCV are available on the HCD CALGreen website at: https://www.hcd.ca.gov/building-standards/calgreen
A4.408.1	Enhanced construction waste reduction
	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"> At least a 65% reduction. 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. Exceptions: <ol style="list-style-type: none"> 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. 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.



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	Required elective measures
A4.601.4.2	Comply with at least two elective measures selected from Division A4.4.

DIVISION A4.5 – ENVIRONMENTAL QUALITY

SECTION	REQUIREMENTS
	Resilient flooring systems
A4.504.2	<p>At least 90% of the total area of resilient flooring systems installed in the building shall meet the percentages specified in this section and meet the requirements of 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 1.2, January 2017 (Emission testing method for California Specification 01350). See California Department of Public Health’s website for certification programs and testing labs:</p> <p>https://www.cdph.ca.gov/Programs/CCDC/DEOD/DCDC/ELB/AQS/Pages/VOCs.aspx</p> <p>Note: Documentation must be provided that verifies the materials are certified to meet the pollutant emission limits in this section.</p>
	Thermal insulation
A4.504.3	<p>Install thermal insulation that meet the requirements of 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 1.2, January 2017 (Emission testing method for California Specification 01350). See California Department of Public Health’s website for certification programs and testing labs.</p> <p>https://www.cdph.ca.gov/Programs/CCDC/DEOD/DCDC/ELB/AQS/Pages/VOCs.aspx</p> <p>Note: Documentation must be provided that verifies the materials are certified to meet the pollutant emission limits in this section.</p>
	Required elective measures
A4.601.4.2	Comply with at least two elective measures selected from Division A4.5