



Title 24 Update: Summary of 2008 Changes to California's Cool Roof Requirements

Summary of Title 24 Requirements

The California Energy Commission adopted changes to the Building Energy Efficiency Standards contained in the California Code of Regulations (CCR), Title 24, Part 6 (also known as the California Energy Code) and associated administrative regulations in Part I of the 2005 standards. The Commission adopted the new standards at a hearing for 15-day language on April 23, 2008. The amended standards will go into effect in 2009.

Several sections of the document outline the prescriptive requirements for several roofing categories, organized by construction type, occupancy type, slope, and roofing product density. Some new additions in this draft version of Title 24 include cool roof prescriptive requirements for steep slope and residential roofs, use of 3-year aged solar reflectance data, and requirements by climate zone. (Please see reverse side of this document for a table summarizing the cool roof prescriptive requirements). Also, many of the minimum requirements allow a Solar Reflectance Index (SRI) calculation in lieu of individual solar reflectance and thermal emittance values. The minimum SRI values are calculated using a thermal emittance value of 0.85. Note that there are exceptions to many of these requirements; please see the CEC document for details on these exceptions.

Section 10-113 establishes rules for implementing labeling and certification requirements relating to reflectance and emittance for roofing products. It designates the Cool Roof Rating Council (CRRC) as the supervisory entity for radiative properties of roofing materials; no substantive changes have been made to this section. Section 118 explains that roofing products must be certified and labeled, and if not, will assume default ratings for aged reflectance and emittance values. The current document also provides a calculation to determine Solar Reflectance Index (SRI) values.

For More Information

The official document "2008 Building Energy Efficiency Standards for Residential and Nonresidential Buildings- 15 Day Language," can be found at: www.energy.ca.gov/title24/2008standards/rulemaking/documents/index.html

Please Note

The CRRC has summarized these changes for the convenience of CRRC members. The CRRC does not intend to interpret the CEC's regulations; please see the CEC's documents for the full language of the proposed changes.

**Title 24, Part 6, of the California Code of Regulations: California's Energy Efficiency Standards for Residential and Nonresidential Building:
Summary of the adopted 2008 Cool Roof Prescriptive Requirements (as of 6/30/08)**

Original CEC documents available at: <http://www.energy.ca.gov/title24/2008standards/rulemaking/documents/index.html>

Section		Construction Type	Occupancy Type	Slope	Roofing Product Density	Climate Zone	Minimum 3 year Aged Solar Reflectance	Minimum Thermal Emittance	Minimum Solar Reflectance Index (SRI)	Notes	Page
143	Prescriptive	New Construction	Non residential	Low Slope	N/A	Zones 2-15	0.55	0.75	64	*Exceptions	127
143	Prescriptive	New Construction	Non residential	Steep Slope	<5 pounds/ft ²	Zones 2-16	0.2	0.75	16	*Exceptions	127
143	Prescriptive	New Construction	Non residential	Steep Slope	> or = 5 pounds/ft ²	Zones 1-16	0.15	0.75	10	*Exceptions	127
143		New Construction	High rise residential buildings, hotels, motels	Low Slope	N/A	Zones 10,11,13,14,15	0.55	0.75	64	*Exceptions	127
143 c		New Construction	Relocatable Public School Buildings Where Manufacturer certifies use in all climate zones	Low Slope	N/A	Zones ALL	0.55	0.75			134
143 c		New Construction	Relocatable Public School Buildings Where Manufacturer certifies use in all climate zones	Steep Slope	<5 pounds/ft ²	Zones ALL	0.2	0.75			134
143 c		New Construction	Relocatable Public School Buildings Where Manufacturer certifies use in all climate zones	Steep Slope	> or = 5 pounds/ft ²	Zones ALL	0.15	0.75			134
149		Re-Roofing (Replacements, recovering or recoating)	Non-residential	Low Slope	N/A	Zones 2-15	0.55	0.75	64	* Where more than 50% of the roof or more than 2,000 square feet of roof, whichever is less is being replaced, recovered or relocated. *Exceptions	186
149		Re-Roofing (Replacements, recovering or recoating)	Non-residential	Steep Slope	<5 pounds/ft ²	Zones 2-16	0.2	0.75	16	* Where more than 50% of the roof or more than 2,000 square feet of roof, whichever is less is being replaced, recovered or relocated. *Exceptions	186
149		Re-Roofing (Replacements, recovering or recoating)	Non-residential	Steep Slope	> or = 5 pounds/ft ²	Zones 1-16	0.15	0.75	10	* Where more than 50% of the roof or more than 2,000 square feet of roof, whichever is less is being replaced, recovered or relocated. *Exceptions	186
149		Re-Roofing (Replacements, recovering or recoating)	High rise residential buildings, hotels, motels	Low Slope	N/A	Zones 10,11,13,14,15	0.55	0.75	64	* Where more than 50% of the roof or more than 2,000 square feet of roof, whichever is less is being replaced, recovered or relocated. *Exceptions	186
151	Prescriptive	New Construction	Low Rise Residential	Steep Slope	<5 pounds/ft ²	Zones 10-15	0.2	0.75	16	*Exceptions	209
151	Prescriptive	New Construction	Low Rise Residential	Steep Slope	> or = 5 pounds/ft ²	Zones 1-16	0.15	0.75	10	*Exceptions	209
151	Prescriptive	New Construction	Low Rise Residential	Low Slope	N/A	Zones 13 and 15	0.55	0.75	64	*Exceptions	209
151	Prescriptive	Re-Roofing	Low Rise Residential	Low Slope	N/A	Zones 13 and 15	0.55	0.75	64	*Exceptions	209
152	Prescriptive	Re-Roofing (Replacements)	Low Rise Residential	Steep Slope	<5 pounds/ft ²	Zones 10-15	0.2	0.75	16	* Where more than 50% of the roof or more than 1,000 square feet of roof, whichever is less is being replaced, recovered or relocated. *Alternatives/Exceptions	218
152	Prescriptive	Re-Roofing (Replacements)	Low Rise Residential	Steep Slope	>5 pounds/ft ²	Zones 1-16	0.15	0.75	10	* Where more than 50% of the roof or more than 1,000 square feet of roof, whichever is less is being replaced, recovered or relocated. *Alternatives/Exceptions	219

Equation to obtain an aged value if the product does not have an aged Value listed in the CRRD Directory and only has the current value:

$$* \text{REFLECTANCE}_{\text{AGED}} = (0.2 + 0.7(\rho_{in} - 0.2))$$

* ρ_{in} = Initial Reflectance listed with the CRRD