



Title 24 Update: Summary of 2013 Changes to California's Cool Roof Requirements

Summary of Title 24 Requirements

The California Energy Commission (CEC) adopted changes to the Building Energy Efficiency Standards contained in the California Code of Regulations, Title 24, Part 6 (also known as the California Energy Code) on May 31, 2012. The effective date of the amended standards is July 1, 2014.

Major changes to California's cool roof requirements include:

- increased minimum aged solar reflectance for nonresidential and residential low-slope and steep-slope roofs across California's 16 climate zones (§140.3(a)1Aia and §150.1(c)11);
- removal of roof weight designations (§150.1(c)11);
- updated equation to calculate the aged solar reflectance for field-applied coatings (§110.8(i)2);
- roof/ceiling insulation tradeoff for aged solar reflectance (§140.3(a)1Aia); and
- requirements for additions, alterations, and repairs that apply to the roof/ceiling insulation tradeoff for aged solar reflectance of roofing being replaced, recovered or recoated (§141.0 and §150.2(b)1H).

An allowance for using the Solar Reflectance Index (SRI) as an alternative to thermal emittance and aged solar reflectance when complying with the cool roofing requirements of the Title 24 Standards is retained in the updated Standards. To view the SRI Calculator, please visit the 2013 Building Energy Efficiency Standards website at <http://www.energy.ca.gov/title24/2013standards/index.html>. The certification and labeling requirements for roofing products also remain unchanged (§10-113).

Please see page 3 for a table summarizing the cool roof prescriptive requirements.

For More Information

The official document "2013 Building Energy Efficiency Standards for Residential and Nonresidential Buildings," can be found at: <http://www.energy.ca.gov/2012publications/CEC-400-2012-004/CEC-400-2012-004-CMF-REV2.pdf>

Manuals for achieving compliance can be found here
<http://www.energy.ca.gov/title24/2013standards/index.html>

Please Note

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

Title 24, Part 6, of the California Code of Regulations: California's Energy Efficiency Standards for Residential and Nonresidential Buildings
Summary of the adopted 2013 Cool Roof Prescriptive Requirements (as of 5/31/12)
Original CEC documents available at: <http://www.energy.ca.gov/title24/2013standards/index.html>

Section		Construction Type	Occupancy Type	Slope	Climate Zone	Minimum 3 year Aged Solar Reflectance	Minimum Thermal Emittance	Minimum Solar Reflectance Index (SRI)	Notes	Page
140.3	Prescriptive	New Construction	Non residential	Low Slope	Zones ALL	0.63	0.75	75	*Exceptions	150
140.3	Prescriptive	New Construction	Non residential	Steep Slope	Zones ALL	0.20	0.75	16		150
140.3	Prescriptive	New Construction	High rise residential buildings, hotels, motels	Low Slope	Zones 10,11,13,14,15	0.55	0.75	64	*Exceptions	150
140.3	Prescriptive	New Construction	High rise residential buildings, hotels, motels	Steep Slope	Zones 2 - 15	0.20	0.75	16		150
140.3	Prescriptive	New Construction	Relocatable Public School Buildings Where Manufacturer certifies use in all climate zones	Low Slope	Zones ALL	0.63	0.75	75		154
140.3	Prescriptive	New Construction	Relocatable Public School Buildings Where Manufacturer certifies use in all climate zones	Steep Slope	Zones ALL	0.20	0.75	16		154
141.0	Prescriptive	Re-Roofing (Replacements, recovering or recoating)	Non-residential	Low Slope	Zones ALL	0.63	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	197
141.0	Prescriptive	Re-Roofing (Replacements, recovering or recoating)	Non-residential	Steep Slope	Zones ALL	0.20	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	197
141.0	Prescriptive	Re-Roofing (Replacements, recovering or recoating)	High rise residential buildings, hotels, motels	Low Slope	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	197
141.0	Prescriptive	Re-Roofing (Replacements, recovering or recoating)	High rise residential buildings, hotels, motels	Steep Slope	Zones 2 - 15	0.20	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	197
150.1	Prescriptive	New Construction	Low Rise Residential	Steep Slope	Zones 10-15	0.20	0.75	16		225
150.1	Prescriptive	New Construction	Low Rise Residential	Low Slope	Zones 13 and 15	0.63	0.75	75	*Exceptions	225
150.2	Prescriptive	Re-Roofing (Replacements)	Low Rise Residential	Steep Slope	Zones 10-15	0.20	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	234
150.2	Prescriptive	Re-Roofing (Replacements)	Low Rise Residential	Low Slope	Zones 10-15	0.63	0.75	75	* 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	235

Equation to obtain an aged value if the product does not have an aged Value listed in the CRRC Directory:

* Aged Reflectance_{calculated}=(0.2+ β[p_{initial}- 0.2])

* p_{initial} = Initial Reflectance listed with the CRRC

* β= 0.65 for Field Applied Coating, or 0.70 for Not a Field Applied Coating

Title 24 Energy Hotline

(800) 772-3300 (within CA)

(916) 654-5106 (outside CA)