

New Cool Roof Requirements: Preparing for California Title 24, Part 6

An easy-to-understand overview of the new standards going into effect January 1, 2010



California Title 24, Part 6 Building Energy Efficiency Standards were established to reduce California's energy consumption. Cool roofs are an important component of an energy efficient structure, offering significant energy and cost savings. The California Energy Commission is updating the standards effective January 2010 to include prescriptive requirements for residential steep-slope roofs.

Inside you will find a straightforward explanation of the new standards related to cool roofing along with valuable information on how to ensure that your projects meet the new standards. Plus, you'll learn why concrete roof tiles from MonierLifetile are an energy efficient cool roofing solution that not only meet the new standards, but also help you to provide quality homes that your customers will love.



MonierLifetile®

Changing the way people think about roofs.

New Construction

The preferred method for new construction is the **Performance Method** using California Energy Commission approved software.

The input variables for the roof are the following:

1. reflectivity and emissivity from the Cool Roof Rating Council (CRRC) listing
2. R value of 0.85 when using tile installed on an Energy Efficient Roof System
3. whether or not you are using a radiant barrier

If the roofing product is not listed on the CRRC, the default reflectivity value is 0.10, and emissivity is 0.75. The approved software will automatically generate Form CF-1R for permit application.

An alternative is to use the **Prescriptive Method**, which requires CRRC listed minimum aged values of 15% reflectivity or Solar Reflective Index (SRI) 10. The SRI value is calculated from the reflectivity and emissivity. Since aged values are not yet available, the California Energy Commission provides a method to calculate these values from the initial values reported on the CRRC product label. This information is submitted for permit application on Form CF-1R.

NOTE: Radiant barrier is required in Climate Zones 2, 4 & 8-15.



The Energy Commission's California Climate Zone Map can be accessed online to determine zone boundaries and where specific addresses are located. (See Resources on back page.)

TIP: Your local permit office may have substitute CF-1R forms for the permit application.



Reroof

The preferred method for reroof or alterations to existing buildings is the **Prescriptive Method**, which requires Cool Roof Rating Council (CRRC) listed minimum aged values of 15% reflectivity or SRI 10. The Solar Reflective Index (SRI) value is calculated from the reflectivity and emissivity. Since aged values are not yet available, the California Energy Commission provides a method to calculate these values from the initial values reported on the CRRC product label.

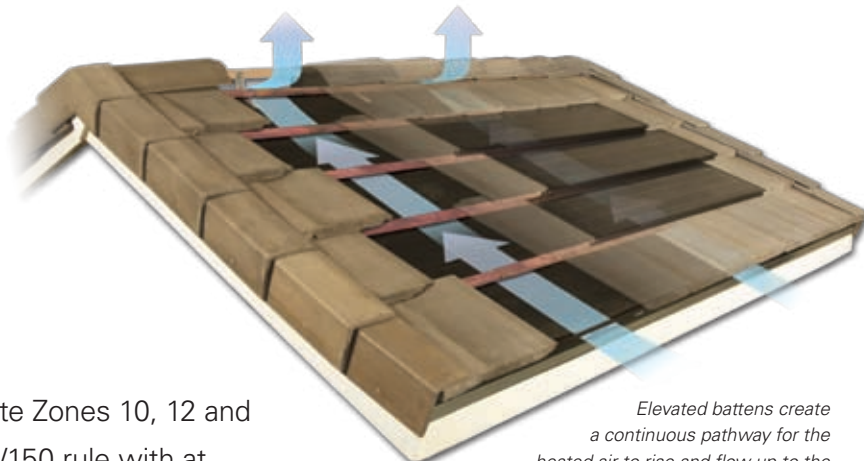
	Solar Reflectance	Initial 0.00	Weathered Pending
	Thermal Emittance	Initial 0.00	Weathered Pending
	Rated Product ID	-----	
	Licensed Seller ID Number	-----	
Classification	Production Line		
<small>Cool Roof Rating Council ratings are determined for a fixed set of conditions, and may not be appropriate for determining seasonal energy performance. The actual effect of solar reflectance and thermal emittance on building performance may vary. Manufacturer of product stipulates that these ratings were determined in accordance with the applicable Cool Roof Rating Council procedures.</small>			

The code allows specific alternatives to reflective roofs.

MonierLifetile's Energy Efficient Roof System (EER)

qualifies as an alternative cool roof by providing an insulation R value of greater than 0.85 above the roof decking. The MonierLifetile Elevated Batten System (EBS) and new Tru-Flow battens that are critical parts of the EER system provide sufficient air space with a ventilation path to remove heat.

As the sun slowly heats the tiles during the day, the air beneath the tiles in the sub-tile space is slowly heated. Rising heated air escapes through a vented ridge weather block, such as Figaroll, Zephyr Roll® or MLT RidgeVent.

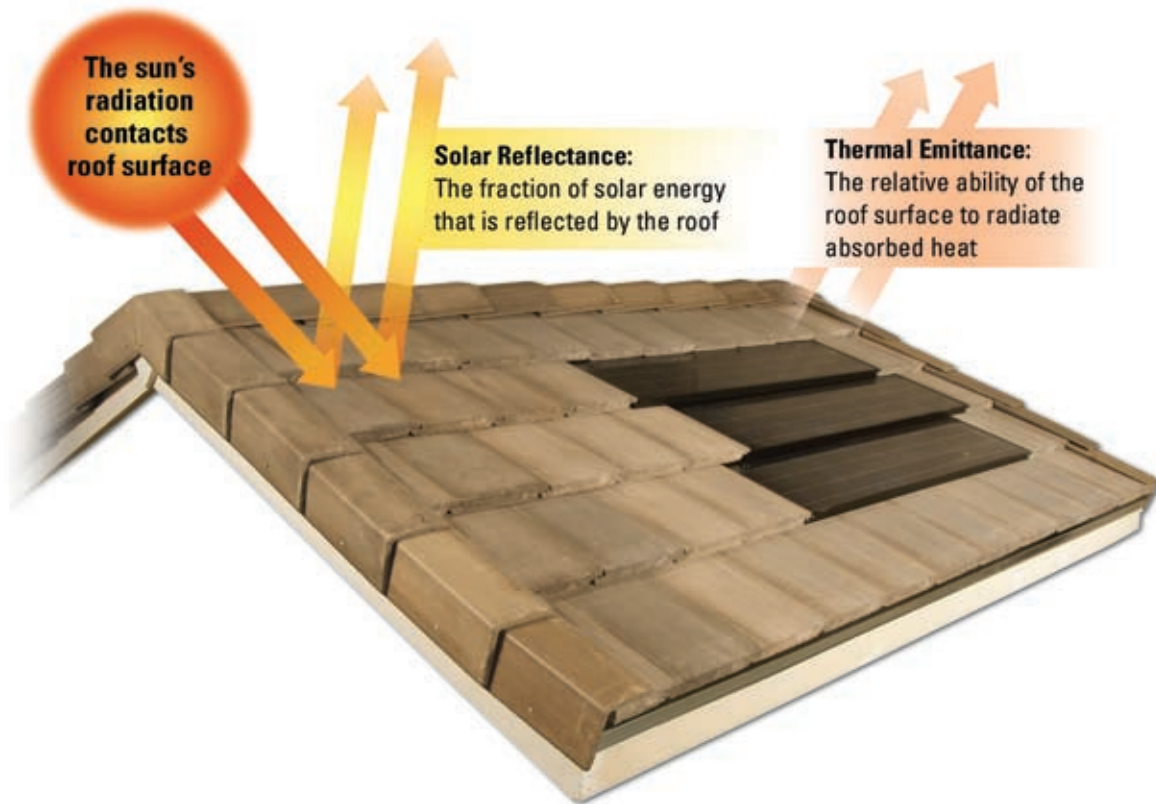


Elevated battens create a continuous pathway for the heated air to rise and flow up to the ridge while drawing in cool, fresh air through the Vented Eave Risers.

Another alternative cool roof option in Climate Zones 10, 12 and 13 is to install MLT RidgeVent to meet the 1/150 rule with at least 30% at the highest location on the roof.

Project Definition	California Energy Commission Form
Residential: Reroofing more than 50% or more than 1,000 sq.ft. Non-residential: Reroofing more than 50% or more than 2,000 sq.ft.	CF-1R-ALT
For additions < 1,000 sq. ft.	CF-1R-ADD

TIP: Check with your utility provider for possible cool roof rebate incentives.



The Solar Reflectance Index (SRI) is a value from 0-100 that indicates surface heat when exposed to sunlight. The SRI is derived from a calculation incorporating thermal emittance and solar reflectance. The highest SRI values are attributed to the coolest surfaces.

This guide applies to steep-slope roofing, which is >2:12 and weighing >5 pounds per square foot for low rise residential and non-residential.

Resources

MonierLifetile

www.monierlifetile.com

Cool Roof Rating Council

www.coolroofs.org

Title 24

www.energy.ca.gov/title24

Climate Zone Map

http://www.energy.ca.gov/maps/building_climate_zones.html