



# Residential Re-Roofing Cool Roof Requirements 2016 Energy Code Permit Guide

City of Dublin  
Building & Safety Division  
Ph: (925) 833-6620

**Permit Date:** \_\_\_\_\_ **Permit Number:** \_\_\_\_\_ **CA Climate Zone: 12 (only)**

**Permit Address:** \_\_\_\_\_ **City and Zip Code:** \_\_\_\_\_

**COOL ROOF IS NOT REQUIRED** if any of the boxes below are checked.

**Cool Roof Exemptions:** Check any that apply.

- Roof pitch is less than 2:12
- Area to be re-roofed is less than 50% of total roof area  
Area to be re-roofed = \_\_\_\_\_ ft<sup>2</sup> Total roof area = \_\_\_\_\_ ft<sup>2</sup>

**Cool Roof Alternatives:** Check any that apply.

- There is/will be an attic radiant barrier
- There are/will be NO ducts in the attic
- There is/will be at least R-38 ceiling insulation
- There is/will be at least R-2 insulation above the roof deck
- The installed roofing product will have a profile ratio of rise to width of 1 to 5 for 50 percent or greater of the width of the roofing product (e.g., Spanish-style barrel tiles)
- There is/will be at least a 1.0 inch air-space between the top of the roof deck and the bottom of the roofing product

**COOL ROOF IS REQUIRED** if none of the boxes above are checked. Roofing material to be installed must meet the applicable requirements in the table below. Aged solar reflectance and thermal emittance are tested performance values for roofing products that are available from the manufacturer. The product must have a CRRC label to be shown to the building inspector.

3 year Aged Solar Reflectance, minimum	0.20
AND Thermal Emittance, minimum	0.75
-OR- Solar Reflective Index (SRI), minimum	16

### Prescriptive Requirements for COOL ROOFS

Does not apply to roof area covered by building-integrated photovoltaic (PV) and building-integrated solar thermal panels

### Building Inspector:

Roofing material must have a Cool Roof Rating Council (CRRC) package label indicating compliance with the requirements in the table above. See page 2 of this guide for an example of a CRRC label, and instructions for calculating Aged Solar Reflectance and Solar Reflective Index.

### Required Forms:

- CF1R-ALT-01-E: Certificate of Compliance – Prescriptive Residential Alterations (Sections A, C, and Declaration Statement)
- CF2R-ENV-04-E: Certificate of Installation – Roofing-Radiant Barrier (Cool Roofs - Sections A, F, G and Declaration Statement)

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## Explanation from the 2016 Title 24 Residential Compliance Manual:

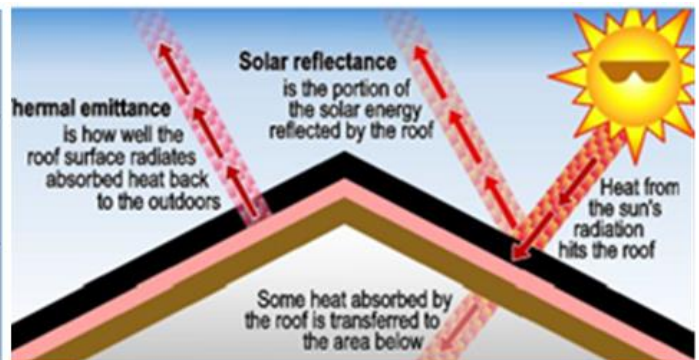
- Cool roofs are specially designed to reflect much of the sun’s radiant energy back into space instead of transferring it as heat into the building below. Two basic characteristics that determine the performance of a cool roof are solar reflectance and thermal emittance. These roofing products must be certified by the Cool Roof Rating Council (CRRC, [www.coolroofs.org](http://www.coolroofs.org)).
- CRRC label values for installed roofing products must meet or exceed T24 code requirements
- Solar Reflectance Index (SRI) can be used instead of Aged Solar Reflectance and Thermal Emittance.  
Go to: [http://www.energy.ca.gov/title24/2013standards/documents/solar\\_reflectance/](http://www.energy.ca.gov/title24/2013standards/documents/solar_reflectance/)

## Information from the Cool Roof Rating Council website

[www.coolroofs.org/resources/california-title-24](http://www.coolroofs.org/resources/california-title-24)

California’s Title 24 Building Energy Efficiency Standards establish minimum prescriptive values for 3-year Aged Solar Reflectance, Thermal Emittance, and Solar Reflectance Index. Requirements for residential buildings are limited to specific climate zones; in those climate zones they apply to all new construction, additions of at least

 <p><b>CRRC</b> COOL ROOF RATING COUNCIL</p>		<b>Initial</b>	<b>Weathered</b>
	Solar Reflectance	0.00	Pending
	Thermal Emittance	0.00	Pending
	Rated Product ID Number	-----	
	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. Manufacturers of product stipulates that these ratings were determined in accordance with the applicable Cool Roof Rating Council procedures.</small>			



300 ft<sup>2</sup> and alterations that replace over 50% of the roof surface. There are numerous exceptions to these cool roofing requirements, such as for low slope roofs (pitch ≤ 2:12), roof areas covered by building-integrated photovoltaic panels, and roofs with thermal mass greater than 25 lbs/ft<sup>2</sup> over the roof membrane (green roofs).

## Cool Roof and Solar Panels:

- When 50% or more of the roof is being replaced, the roofing requirements are triggered. Any areas of roof covered by building integrated photovoltaic panels and solar thermal panels are exempt. However, the area of roof not covered by photovoltaic panels would still need to meet any applicable cool roof requirements.

## For more information on 2016 Title 24 Part 6 requirements:

- Visit <http://www.energy.ca.gov/title24/2016standards/>
- Contact the Energy Standards Hotline at (800) 772-3300 or email: [title24@energy.state.ca.us](mailto:title24@energy.state.ca.us)
- Contact the BayREN Codes & Standards Program by email: [codes@bayren.org](mailto:codes@bayren.org)