



# CITY OF NEWPORT BEACH

## COMMUNITY DEVELOPMENT DEPARTMENT BUILDING DIVISION

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### **Cool Roof Information for Homeowners** **Regarding Reroofing Projects**

The 2008 California Energy Code became effective January 1, 2010, and requires residential reroofing projects to comply with energy saving construction standards.

#### ***What is a Cool Roof?***

A cool roof is one that reflects the sun's heat and emits absorbed radiation back into the atmosphere. The roof literally stays cooler and reduces the amount of heat transferred to the building below, keeping the building a cooler and more constant temperature. Imagine wearing a white or a black T-shirt on a hot day. By wearing the white T-shirt you will remain cooler than if you wore a black T-shirt because it reflects more sunlight and absorbs less heat. Cool roofs like a white T-shirt keep the internal temperature of the building cooler.

However, a cool roof need not be white. There are many "cool color" products which use darker-colored pigments that are highly reflective in the near infrared (non-visible) portion of the solar spectrum. With "cool color" technologies there are roofs that come in a wide variety of colors and still maintain a high solar reflectance.

The two basic characteristics that determine the 'coolness' of a roof by the Cool Roof Rating Council (CRRC) are solar reflectance (SR=0.15 in climate zone 6) and thermal emittance (TE=0.75 in climate zone 6). Both properties are rated on a scale from 0 to 1, where 1 is the most reflective or emissive.

The CRRC measures these two properties for roofing products, both for the product's initial values and after three years of weather exposure. The CRRC publishes results online at <http://www.coolroofs.org/> select the Rated Products Directory. The online Directory is available to the general public at no charge.

#### ***What are the Benefits of a Cool Roof?***

There are numerous benefits in having a cool roof:

- Increase ecological sustainability factor, or make your house "greener" by:
  - ✓ Reducing your utility bills associated with air conditioning. Average energy savings range from 7%-15% of total cooling costs.
  - ✓ Increasing occupant comfort and avoid installing an air conditioner where there isn't already one.
  - ✓ Decreasing the size and prolong the life of your air conditioning system.
  - ✓ Lowering roof maintenance costs and extending roof life, avoiding reroofing costs and reducing solid waste.
- Assist your home in meeting building codes.
- Maintain aesthetics with a roof that performs *and* looks good.
- For indirect benefits go to:  
[http://www.coolroofs.org/documents/IndirectBenefitsofCoolRoofs-WhyCRareWayCool\\_000.pdf](http://www.coolroofs.org/documents/IndirectBenefitsofCoolRoofs-WhyCRareWayCool_000.pdf)

## ***When is a cool roof required for your home's reroofing project?***

### **Conditioned Space**

Single-family homes typically have heated and cooled interior living space commonly referred to as "conditioned space". The new regulations require conditioned space to reduce their energy consumption. Cool roofing is one method of achieving this goal for reroofing projects; but the new regulations also allow alternative designs and there are exceptions within §152(b).

### **Slope**

All roofs essentially fall into one of two general categories:

- Low-slope (less than 2 inches of rise over 12 inches of run) or
- Steep-slope (2:12 or greater).

### **Climate**

Newport Beach is located within climate zone 6 per the CEC.

### **Roofing Material Weight**

Low-slope roofing materials are not required to be a cool roof in climate zone 6.

Steep slope roofing materials, that weigh 5 lbs/ft<sup>2</sup> or more, are required to be a cool roof in climate zone 6.

### **Alternatives and Exceptions**

The CF-1R-ALT-ReRoof form contains the alternates and exceptions for reroof projects. The California Energy Commission does not allow alternatives which state "attic" for sloping ceilings with rafters connected to the roof sheathing and supporting the ceiling's finish material.