

SOLAR GUARD COATINGS



CALIFORNIA TITLE 24

What is it, and When will it Go into Effect?

On November 5, 2003, the California Energy Commission (CEC) approved changes to Title 24 that will dramatically change roofing in California, **effective October 2005**.

Title 24 is written by the California Energy Commission, and addresses various energy requirements for HVAC, lighting, windows, and walls as well as roofs. The last revisions went into effect in 2001. The recent changes going into effect in 2005 will make a cool roof the base line for all non-residential buildings. These changes were implemented to alleviate rising cooling energy costs, energy demand, as well as to help alleviate the heat island effect in warmer climates.

What Kind of Roofs and What Size?

With few exceptions, cool roofs will be mandatory for non-residential construction as follows:

- 1) <2:12 slope,
- 2) over air conditioned space,
- 3) **When more than 50% of the roof or more than 2,000 sq. ft. of roof, whichever is less, is being replaced, recovered or recoated.**
- 4) A permit is required. New construction, reroofing, and recoating are all covered.
- 5) These requirements are covered under Title 24, Section 118, and Mandatory Requirements for Insulation and Cool Roofs, and are part of the California Building Code
- 6) In general, gravel roofs are not permitted unless all of the following occur:
 - The existing roof has a rock or gravel surface, and
 - The new roof has a rock or gravel surface, and
 - There is no removal of existing layers of roof coverings of more than 50% of the roof or more than 2,000 square feet of roof, whichever is less, and
 - There is no recoating with a liquid-applied coating, and
 - There is no installation of a recover board, rigid insulation or other rigid, smooth substrate to separate and protect the new roof recover from the existing roof.

Product Requirements

The CEC definition for a cool roof for non-residential construction is that the **roofing product has an initial thermal emittance greater than or equal to 0.75 and a minimum initial solar reflectance of 0.70**. Low-rise residential buildings using concrete or clay tile still require a thermal emittance of 0.75, but only a solar reflectance of 0.40.

Liquid coatings other than cement based roof coatings have additional criteria beyond thermal emittance and solar reflectance. **The product must be applied at a minimum dry thickness of 20 mils and have minimum physical properties as shown in the table below.**

TABLE 118-C
Minimum Performance Requirements for Liquid Roof Coatings

Physical Properties	ASTM Test Procedure	Requirements
Initial percent elongation (break)	D2370	Minimum 60% 0° F Minimum 200% 73° F
Initial tensile strength (maximum stress)	D2370	Minimum 100 psi 73° F Minimum 200 psi 0° F
Final percent elongation after accelerated Weathering 1000 hours	D2370	Minimum 40% 0° F Minimum 100% 73° F
Permeance	D1653	Maximum 50 perms
Accelerated weathering 1000 hours	D4798	No visible cracking or checking

The contractor will be required to furnish a Certificate of Compliance when pulling a permit. It must include the features and performance specification needed to comply with these requirements and be approved by the local enforcement agency.

What is the CRRC?

The state established the Cool Roof Rating Council (CRRC) as the sole supervisory entity responsible for administering the state's certification program for roofing products. **Independent laboratories approved by CRRC conduct the testing and provide the data that the manufacture can publish on the label.** This data includes initial solar reflectance and initial thermal emittance. Weathered values will include the data after the product has been exposed for three years. Because the testing criteria were only established and adopted in late 2002, weathered values are currently listed as pending. The manufacturer and the product also have an ID number on the labels. Without this label the product would not be in compliance with Title 24. If the manufacturer makes a significant change to the product, albeit an improvement, the product must be retested.

An Energy Star® labeled product is not an acceptable substitute because of the lack of thermal emittance values and testing criteria that were not acceptable to the CEC.

For more information on Title 24, visit these websites:

- www.energy.ca.gov/title24
- www.coolroofs.org