



## TOWN OF LOOMIS

### BUILDING DEPARTMENT

3665 Taylor Road  
Loomis, CA 95650  
916-652-1840  
(fax) 916-652-1847

# Re-Roofing and the 2008 California Residential Energy Compliance Requirements for Cool Roofs

**Important information you need to know BEFORE obtaining a re-roof permit!**

***The California Energy Commission (CEC) has adopted new requirements for re-roofing projects.***

**Beginning January 1, 2010** when more than 50% of the exterior surface of the roof or more than 1,000-sq. ft. of roof is replaced, whichever is less, the roofing product must meet the following prescriptive requirements for Cool Roofs.

#### **For roof slopes of greater than 2:12:**

1. Roofing products with a density of less than 5lbs/sq.ft. (i.e. Asphalt shingles) shall have a minimum 3-year aged solar reflectance of 0.20 and a minimum thermal emittance of 0.75, or a Solar Reflectance Index (SRI) of 16.
2. Roofing products with a density of 5lbs/sq.ft. or more (i.e. Concrete, clay tiles or slate) shall have a minimum 3-year aged solar reflectance of 0.15 and a minimum thermal emittance of 0.75, or a SRI of 10.

Or,

#### **Alternatives to the Cool Roof requirement may be one of the following:**

1. Insulation with a thermal resistance of at least 0.85hr.ft<sup>2</sup>.°F/Btu or at least ¾ inch air-space is added to the roof deck over an attic; or
2. If existing ducts in the attic are insulated and sealed according to CEC Regulations §151(f)10 ; or
3. Buildings with at least R-30 ceiling insulation; or
4. If the building with a radiant barrier in the attic meeting the requirements of §151(f)2 ; or
5. Buildings with no ducts in the attic; or
6. If in climate Zones 10, 11, 13, and 14, R-3 or greater roof deck insulation above vented attic.

A Certificate of Compliance Energy Form "**CF-1R-ALT**" must be completed and submitted with the permit application. The "**CF-1R-ALT**" form must be signed by the documentation Author and the Building Designer (i.e. Contractor or Home Owner).

At Final Inspection an Installation Certificate Form "**CF-6R-ENV-01**" must be completed by the installing contractor and submitted to the owner and the building department.

Roofing products that are used for compliance with the energy standards are required to be tested and labeled by the Cool Roof Rating Council (CRRC).

The roofing products manufacturer must have its roofing product tested for solar reflectance and thermal emittance, and be listed in the CRRC's Rated Product Directory (see <http://www.coolroofs.org>) and be labeled according to CRRC procedures. Below is an example of an approved CRRC product label.

		<u>Initial</u>	<u>Weathered</u>
	Solar Reflectance	0.00	Pending
	Thermal Emittance	0.00	Pending
	Rated Product ID Number	-----	
	Licensed Seller ID Number	-----	
	Classification	Production Line	
<p>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.</p> <p>Manufacturer of product stipulates that these ratings were determined in accordance with the applicable Cool Roof Rating Council procedures.</p>			

**Attached are the CF-1R-ALT and the CF-6R-ENV-01 forms for your use. To obtain Additional CF-1R-ALT and CF-6R-ENV-01 forms or for more information please visit the California Energy Commissions webpage at: [www.energy.ca.gov](http://www.energy.ca.gov).**



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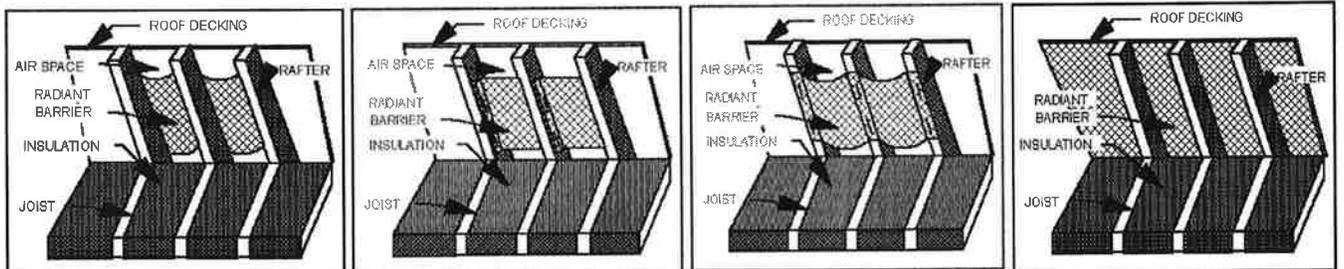
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## RE-ROOFING USING RADIANT BARRIER AS AN ALTERNATIVE TO COOL ROOF REQUIREMENTS

**Important information you should know BEFORE obtaining a re-roof permit**

One of the alternatives to the cool roof requirements, when re-roofing a residential structure, is installing a radiant barrier in the attic. The following clarifies the specific requirements of section 151 (f) 2.

- Radiant barrier must have an emittance of 0.05 or less.
- Only four (4) ways of installing the radiant barrier are acceptable:
  - 1) Drape a foil type radiant barrier over the top of the top chords/rafters before roof sheathing is installed,
  - 2) Radiant barrier can be field laminated using a secure mechanical means of securing foil to the bottom of the roof decking,
  - 3) Stapling the radiant barrier to the underside of the truss/rafters (top chord),
  - 4) Use roof sheathing that has a radiant barrier bonded to it in the factory (must install so that the shiny side is facing down toward the attic space).
 Please see diagrams below.



**Method 1**  
Radiant Barrier Draped Over Top of Truss/Rafter

**Method 2**  
Radiant Barrier Attached Between Truss/Rafter

**Method 3**  
Radiant Barrier Attached to Bottom of Truss/Rafter

**Method 4**  
Radiant Barrier Attached to Underside of Roof Deck\*

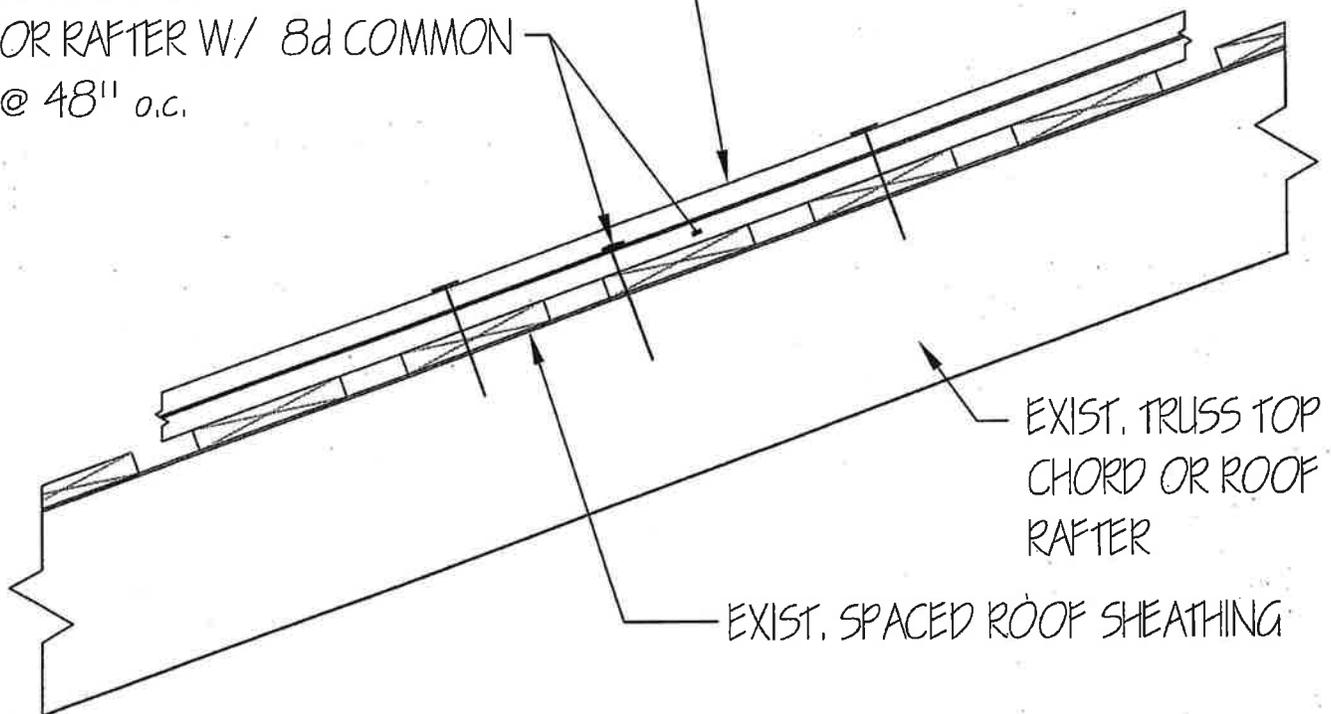
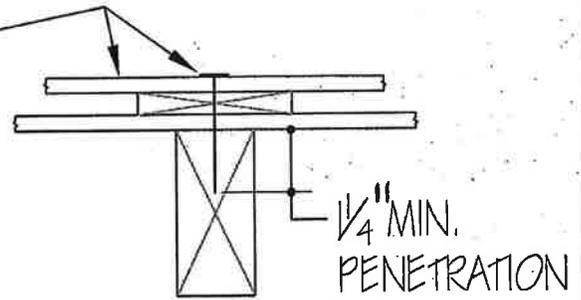
- Radiant barrier shall be installed to cover all gable end walls and other vertical surfaces in the attic.
- Provide a min. free ventilation area of not less than one square foot of vent area for each 150 square feet of attic floor area.
- Provide no less than 30 percent upper vents. (Ridge vents or gable vents are recommended to achieve the best performance. The material should be cut to allow for full airflow to the venting).

\* radiant barrier shall not be installed over existing skip sheathing

# Radiant Barrier Alternative Over Skip Sheathing

NEW RADIANT BARRIER SHEATHING  
W/ 12d COMMON @ 6" o.c.  
SUPPORTED EDGES, 12" o.c. FIELD

NEW 1x4 FLAT AT Ea. TRUSS  
OR RAFTER W/ 8d COMMON  
@ 48" o.c.



## NOTES:

8d COMMON:  $2\frac{1}{2}$ " x 0.131"

12d COMMON:  $3\frac{1}{4}$ " x 0.148"

PROVIDE 1 x 4 FLAT AT Ea. TRUSS  
OR RAFTER, HIP AND VALLEY.

SUPPORTED EDGES OCCUR AT Ea.  
TRUSS OR RAFTER, HIP AND VALLEY.



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