

# A COOL ROOF OVER MY HEAD

If you replace your roof or overlay it, you need a permit AND the roof may need to meet State Energy Code “cool roof” minimum standards

**The State requires a “cool roof” on commercial and apartment buildings to:**

- Reflect 75%\* (called reflectivity or reflectance)
- Quickly release the heat (called emissivity or emittance)

**So why not cool the roof of your house also!**

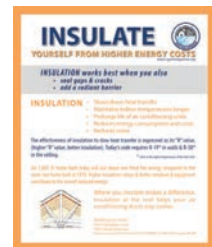
\* refers to Prescriptive Requirements of the Energy Code



There are even some coatings that can be rolled on like paint that will cool your roof & make it last longer

For residences such as single family homes, cool roof is not required by the California Energy Code. However, the roof is the first line of defense from undesired heat gain or loss and there is a great benefit in utility cost savings from having a cool roof. So, if you are going through the expenses of improving your roof, then consider a cool roof product.

Keep in mind, not all roofs advertised as “cool” meet Energy Code requirements so you may have to add insulation or improve the energy efficiency of other systems in your home. To learn more, please see our handout **Insulate**.



Additional Info: [www.coolroofs.org](http://www.coolroofs.org); [www.coolrooftoolkit.org](http://www.coolrooftoolkit.org);  
[http://asset.sce.com/Documents/Shared/08Apr\\_ResidentialEnergyGuide.pdf](http://asset.sce.com/Documents/Shared/08Apr_ResidentialEnergyGuide.pdf)

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## Why COOL ROOF?

*Why not?*

### What makes a COOL ROOF?

Roofs get hot because they absorb the sun's energy. Darker colors and heavier materials absorb more than lighter (color and weight) roofs.

A "cool roof" reflects sunlight and doesn't store heat.



Dark Color Roof

Light Color COOL Roof




All Cool Roof products are rated & labeled by Cool Roof Rating Council

### Terms YOU should know

"**Reflectivity**" measures percentage of the sun's energy is reflected aka SRI (Solar Reflective Index).

"**Emissivity**" measures how quickly heat is given off aka TE (Thermal Emittance). For example, tile and metal roofs both get hot, but metal cools off much faster.

	<b>Solar Reflectance</b>	<b>Initial</b> 0.88	<b>Weathered</b> 0.68
	<b>Thermal Emittance</b>	0.87	0.89 3 year aged
	Rated Product ID Number	0001	
	Licensed Seller ID Number	0896	
	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>			

*Basically, the idea is to keep the roof cool: light-colored is better than dark, & light-weight is better than heavy.*


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A COOL ROOF is highly recommended for your home  
**How to tell if a product is COOL ROOF?**

When altering more than 50% of your roof area or more than 2,000 S.F. of roof area, COOL ROOF should definitely be considered for your home with these minimum values:

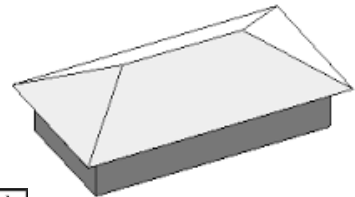


**FLAT roof values**  
**SRI 64**  
**TE 75**

 <b>CRRC</b> COOL ROOF RATING COUNCIL	<b>Initial</b>	<b>Weathered</b>
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[www.coolroof.org](http://www.coolroof.org)



Average home roof areas are 2000 sf.

**SLOPED roof values**  
**SRI 16**  
**TE 75**



Asphaltic Shingles

Clay Tile

The Energy Star label helps you know that your roof material is COOL ROOF



“Energy Star” is an energy efficiency rating system developed by the US Environmental Protection Agency (EPA). It establishes minimum performance requirements for different roof types. [www.energystar.gov](http://www.energystar.gov)

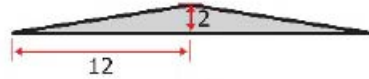
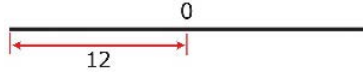
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## Improve your roof

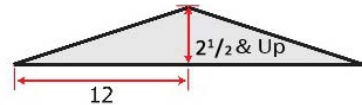
Questions to ask yourself

### What is the SLOPE of your roof?

FLAT ROOF: 0- 9.5 degrees (2:12)



SLOPED ROOF: More than 9.5 degrees (2:12)



### What type of roof do you have?

FLAT ROOF:

Built-up, single-ply, and more.



Built-up Flat Roof

SLOPED ROOF:

Metal, Clay or Concrete Tile, Wood or Asphalt Shingle.



Asphalt Shingle Sloped Roof



Clay Tile Sloped Roof

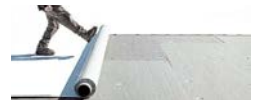
### What is the type of improvement?

FOR A FLAT ROOF:

You can spray, overlay or replace with a cool roof.



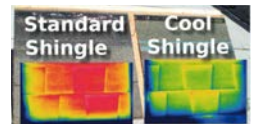
Spray over Flat Roof



Overlay over Flat Roof

FOR A SLOPED ROOF:

You can replace your roof with energy star tiles or shingles.



Red shows unwanted heat from the sun

# A **COOL ROOF** OVER MY HEAD

## *The steps you need to follow*

*Replace, Overlay, or Spray your roof*

### **What should YOU do when taking on the project to replace a roof, overlay or spray it?**

- Evaluate the roof you have.
- Select the right **contractor** – one who knows your roof type and material, one who can lead and get things done right with proper insurance.
- Submit **Certificates, Application** and **Plans** for permit from your local building department.
- Schedule **inspections** with your local building inspector to review paperwork including **certificates** and **work completed**. Inspections may include Pre-inspection, Framing/Sheathing, and Final.

### **Things to consider before getting started**

- **Is your house historic?** If so, some limitations and/or restrictions may apply.
- **Do you live in a community with HOA (Homeowner's Association)?** Check for approval process and acceptable roof material and color.
- **When re-roofing, new material may add weight.** The combined weights of the existing and new roof systems may require a structural retrofit or the removal/disposal of the existing roof.
- **Why not install roof top solar (PV) panels?** Besides reducing electric bills, the panels **shade** the roof, which reduces heat build-up **eliminating** the need for a cool roof.
- **Why not add or increase the thickness of the insulation in your attic?** Additional insulation helps to resist heat gain in your house.

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## Building Department Checklist

Plans, Permit, and Inspection

### For PLANS and PERMIT

TO OBTAIN A PERMIT, submit

1. Building Permit Application and Fees.
2. Complete **Certificate of Compliance Form CF1R-ALT-01E** for Residential Alteration roofing replacement.
3. Roof Plans & Photos.

### For CLOSEOUT

TO OBTAIN COMPLETION,

1. Check for Roof Product Certifications.
2. Schedule inspections with the City.
3. Complete **Certificate of Installation, Form CF2R-ENV-04-E** for Roofing by Contractor.
4. Make the certificates and labels available to the Inspector during inspection.

Visit your local Building and Planning Department for very helpful information including specific requirements for permit submittal and approvals. Design approval submittal may be required.

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[www.sgvenergywise.org](http://www.sgvenergywise.org)

Check out other improvement ideas...

**Windows**

**Electricity**

**Shade**

**Insulate**

**Addition**

**Air Conditioning**

**Kitchen**



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**SGVCOG**  
San Gabriel Valley Council of Governments

*This program is funded by California Utility ratepayers and administered by Southern California Edison under the auspices of the California Public Utilities Commission*



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# COOL ROOF

## OVER MY HEAD

[www.sgvenergywise.org](http://www.sgvenergywise.org)

***A “cool roof” can save up to 15% on your AC load & add years to the life of your roof.***

*What’s “cool” about a roof?*

- *It reflects the sun’s radiation*
- *It gives off heat quickly*

You save money immediately with lower electric bills, and in the long run your roof lasts longer.



### **You can SPRAY IT**

- Spray foam is waterproof & provides high insulation value
- Lightweight but durable
- Costs \$3.50-4.50 a square foot for 3 inches



### **You can OVERLAY IT**

- White single-ply reflects up to 90% of the sun’s energy
- Costs \$3.50-\$4.50 a square foot



### **You can REPLACE IT**

- Metal roofs offer a variety of highly reflective coated color options and allow hot air to escape
- Light-colored composition shingles provide multiple rich choices in color
- Costs \$4-6 a square foot