

rethink / ROOFS



Lighten up with a Light Colored Roof



Home with cool roof
in Austin, Texas

Ever notice that when you're out in the hot sun wearing a dark shirt, you feel hotter than you do in a white shirt?

The same principle applies to roofs. Dark-colored roofs absorb more solar energy. That drives up the building's cooling-related energy use, costs and carbon footprint.

Dark roofs also radiate solar energy at night, preventing the city from cooling off as well on hot summer nights. Put a light colored, high albedo roof on a building to reflect away solar energy and heat.

Choose A Cool Roof

To cut your long-term costs and use up to 40% less energy, choose a "Cool Roof" product, or other light-colored or reflective roofing material, over dark-colored shingles.

Rooftop solar panels (photovoltaics) and green roofs are cool roofs too.

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What is a Cool Roof?

Cool roofing products are made of highly reflective materials that can remain approximately 50° to 60°F cooler than traditional materials during peak summer weather (U.S. EPA).

A California study found that cool roofs average net **savings of almost 50 cents per square foot annually**. Savings come from reduced summertime energy use, downsizing AC systems, and reduced long-term costs due to the longer life of cool roofs. This calculation factors in the price premium for cool roofing

BENEFITS

A COOL ROOF PRODUCT:

- Reduces heat gain, to lower indoor temperatures
- Reduces energy use and costs
- Can extend a roof's life by up to three times
- Is a sustainable choice

CHOOSING A COOL ROOF

For Steep-Sloped Roofs:

Many cool-roof products are available for roofs with a pitch greater than 2:12 -- typical for most homes.

The initial cost premium for a cool roof can range from 0 to 10 cents per s.f. It can be 10 to 20 cents per s.f. for a built-up roof with a cool coating. However, it is important to calculate the long-term savings over the life of the roof.



Consider engaging a roofing company that is knowledgeable about the latest technologies and has experience with Cool Roof product choices for: Asphalt shingles; tiles; shake shingles; and metal roofs.

Research the **Energy Star** rating system for these products. Some use pigments to reflect the sun's energy. Cool-colored metal roofing uses infrared reflecting pigments to keep temperatures cool.

For Low-Sloped Roofs:

Cooling choices include applying a reflective coating or using a single-ply membrane. These are options for roofs having less than a 2:12 pitch (typically on commercial, office, and multifamily buildings).

Costs vary greatly depending on location and project specifics. On average, coatings on a low-slope roof cost from 75 cents to \$1.50 per s.f. Single-ply membranes costs range from \$1.50–\$3.00 per s.f.

- **Coatings:** Consider surface treatments with a solar reflectance of 65 percent or higher, and a thermal emittance of 80 to 90 percent or more. In addition to cooling the building, these treatments can increase the roof's durability, suppress algae and fungal growth, and keep the roof clean of dirt.
- **Single-Ply Membranes:** These pre-fabricated sheets include cool-roof products. This can be a good choice when repairing a roof, rather than installing a new one.

Resources

U.S. EPA	www.epa.gov/heatisland/mitigation/coolroofs.htm
Cool Roof Strategies (PDF)	www.epa.gov/hiri/resources/pdf/CoolRoofsCompendium.pdf
Cool Roofs	http://coolcalifornia.org/cool-roofs