

## An Efficient Roof That Pays You Back

Did you know your roof can be up to 50 degrees hotter than the outside air? That excess heat is not isolated. It transfers into your attic and your home, resulting in more work for your air conditioner and higher utility bills.

Replacing conventional shingles with cool roofing material can reduce your annual energy bill by up to 15 percent and help keep the air clean in your community by reducing the demand at neighboring power plants.

Modern cool roofs come in every type and color, and many are aesthetically indistinguishable from traditional roofing – such as asphalt shingles that look like typical shingles but incorporate engineered granules to reflect light. Expansion in available product choices has allowed more homeowners the opportunity to install cool roofs.

### Energy Ratings

These rating systems have already done the work to determine which materials are more energy-efficient, so you don't have to. Look for products that bear these labels and you can feel confident that you are purchasing an energy-efficient cool roof.



### Rules of Thumb

Things to keep in mind when deciding what's right for you:

- Cooler, more energy-efficient roofs are usually lighter in color and more reflective than conventional roofs.
- Painted metal and tile roofing are typically more energy-efficient than asphalt shingles.

More information on cool roofs can be found here:

<https://www.energy.gov/energysaver/cool-roofs>

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## Compare Apples to Apples

There are important metrics to help you compare the energy efficiency of different roofing materials. Higher values, whether represented as a percentage or a numerical value between 0 and 100, represent cooler, more reflective and energy-efficient roofs.

- Solar reflectance, or reflectivity, is the material's ability to reflect radiation.
- Aged solar reflectance is how well the material reflects radiation after three years of use.
- Thermal emittance, or emissivity, is the material's ability to release absorbed heat.
- Solar Reflective Index, or SRI, is calculated based upon both solar reflectance and thermal emittance.

Even if you can't find the above values on the package or brochure for the product, you can usually get them by contacting the manufacturer.

## What Else Can I Do?

If you want to make a bigger impact on your roof's efficiency than simply selecting cool roofing materials, you may also want to consider:

- Radiant barriers
- Reflective coatings
- Improved insulation
- Improved ventilation

## Green Roofs

Another rooftop option involves adding vegetation to the roof surface. This strategy is called a green roof, or rooftop garden, which can also reduce energy demand and provide additional environmental benefits. Unlike most cool roofs, green roofs can absorb some pollutants, reduce/filter stormwater runoff, and promote native vegetation and wildlife. While green roofs can have a higher initial cost, they tend to have a longer life span and add natural habitats, recreational green space, and aesthetics to urban areas. More information on green roofs can be found at <https://www.epa.gov/heatislands/using-green-roofs-reduce-heat-islands>.

## Contact Us

If you have further questions, please contact the Oklahoma Department of Environmental Quality's Air Quality Division at (405) 702-4100.