

# Reflective White Roofs Cut Energy Costs 20%

Author: **Christine Mann**  
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**If your house is located in an area where air conditioners run on hot days, installing a white, reflective roof can lead to significant savings.**

A study released September 9, 2008 by scientists from Lawrence Berkeley National Laboratory in California quantified what traditional builders have known for centuries: that white roofs help deflect the sun's hot rays and reduce the indoor temperature of the building below. In air-conditioned houses, a reflective white roof helps reduce the amount of heat that reaches the inside of the house, reducing the need for air conditioning. In houses without air conditioning, a white roof keeps the house more comfortable on hot days.

## **Potential Savings: 20% of Your Home's Annual Energy Use**

"White roofs can cut a building's energy use by 20% and save consumers money," says California Energy Commissioner Art Rosenfeld. "The potential energy savings in the U.S. is in excess of \$1 billion annually."

While cool roofs significantly reduce a building's cooling load in most climate zones around the world, they can also increase heating costs in winter months by reflecting solar heat back into the air instead of absorbing it as other roofs do. But the energy savings in warm months typically greatly outweigh the extra costs in winter, since less of the sun's heat reaches the earth in winter.

## **Dramatic Reductions in Greenhouse Gas Emissions**

The reduction in electricity use has the added benefit of reducing power plant carbon dioxide emissions. The study estimates that replacing nonreflective, dark roofing materials with a white roof on an average house with a 1,000-square-foot roof would reduce CO<sub>2</sub> (carbon dioxide) emissions by 10 metric tons a year.

## **Reducing the Risk of Blackouts and Brownouts**

Energy managers dread the hot, sunny days when millions of air conditioners click on at the same time, straining the power grid and sometimes even causing brownouts or blackouts. Air conditioning demand peaks from mid-afternoon to early evening on hot days, when the sun beats down hardest on air-conditioned houses. White roofs help lighten the strain on the grid by reflecting more of the sun's energy back into space at just the moment when conservation is most needed.

## **Choosing an Energy-Efficient Roof**

If it's time to replace your roof, industry experts recommend looking at four types of energy-efficient roofing materials:

1. Metal roofs. These perform best with a factory-applied polymeric coating that helps the metal radiate the heat away more quickly.
2. Ceramic or concrete roofing tile
3. Roofing membranes
4. White reflective coatings

Check with a professional roofer to see which material fits best with your house. The energy and money savings definitely make it worth the effort to seek out energy-efficient roofing.