

# LEHIGH WHITE CEMENT FOR CONCRETE ROOF TILE

**LEHIGH**<sup>™</sup>  
WHITE CEMENT



For centuries, roof tile has been known as a durable and beautiful building material. In addition to lending grandeur and grace to each building style, concrete roof tile is noncombustible, bug proof, wind resistant and durable. The quality, uniform color and strength of Lehigh White Cement used in the manufacture of white or light-colored concrete roof tiles can help qualify a project for green building credits and benefit building owners by saving on energy bills when compared to dark colored products.

Reflective roof tiles can reduce air conditioning loads (roof surface temperatures can be reduced by up to 100° F) and prevent the transfer of heat into the building. Peak cooling demand can be

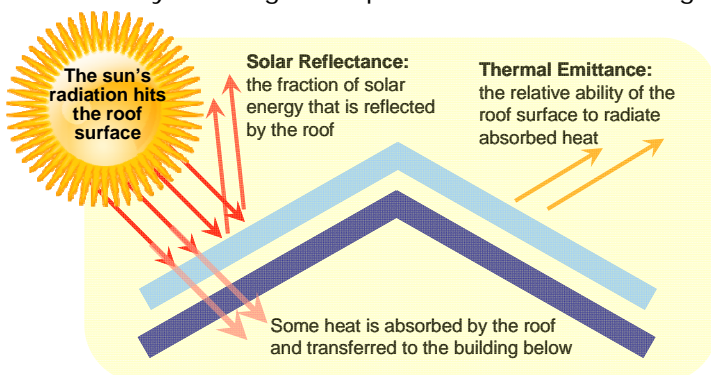
reduced by 10-15% when compared to dark-colored roof products.

In-field monitoring by Lawrence Berkeley National Laboratory of more than ten buildings in California and Florida demonstrates that cool roofs save residents and building owners between 20-70% in annual cooling energy use.

A California study found that cool roofs provide an average yearly net savings of almost 50 cents per square foot. Savings calculations included an assumed price premium for cool roofing products and increased heating costs in the winter. Also included were savings from downsizing cooling equipment, and reduced labor and material costs over time due to the longer life of cool roofs compared with conventional roofs (source: [www.epa.gov](http://www.epa.gov)).

Lawrence Berkeley National Laboratory conducted an analysis of energy savings from cool roofs in 11 metropolitan areas. Based on 1999 energy costs, LBNL estimated savings from \$3 million in Philadelphia to \$37 million in Phoenix for a high rate of cool roof implementation over the metropolitan statistical area.

Heat islands develop in cities and result in temperatures of up to 8°F warmer than the surrounding countryside. Heat islands occur when many buildings and paved surfaces are designed with dark



This diagram shows solar radiation on a roof surface.

Source: Cool Roof Rating Council

## BENEFITS AND COSTS

Cool roofs provide a number of benefits beyond urban heat island mitigation, including:

*Reduced energy use:* A cool roof transfers less heat to the building below, so the building stays cooler and uses less energy for air conditioning.

*Reduced air pollution and greenhouse gas emissions:* By lowering energy use, cool roofs decrease the production of associated air pollution and greenhouse gas emissions.

*Improved human health and comfort:* Cool roofs can reduce air temperatures inside buildings with and without air conditioning, helping to prevent heat-related illnesses and deaths.

Source: [www.epa.gov](http://www.epa.gov)

materials that absorb heat from the sun. The heat is then released at night, causing the air temperature to remain high and resulting in higher demand for air conditioning and increased levels of smog.

Durability, low maintenance and lasting beauty in a wide variety of colors make roof tile made with Lehigh White Cement the distinct choice of professional designers, builders and homeowners throughout North America.

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**White Cement Division**  
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Allentown, PA 18195  
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### SUGGESTED TECHNICAL SPECIFICATIONS

#### WHITE PORTLAND CEMENT

'Cement shall be white Portland cement conforming with the requirements of Standard Specification for \_\_\_\_\_ (Type I, II, III, V) Portland Cement, ASTM C 150, for Portland cement, except that it shall contain not more than 0.50% by weight Ferric Oxide ( $Fe_2O_3$ ).'

#### WHITE MASONRY CEMENT

'Cement shall be white masonry cement conforming with the requirements of Standard Specification for masonry cement, ASTM C 91, for \_\_\_\_\_ (Type N, S) masonry cement, except that it shall contain not more than 0.50% by weight Ferric Oxide ( $Fe_2O_3$ ).'



### REGIONAL SALES OFFICES

#### NORTH / SOUTHEAST

7660 IMPERIAL WAY  
ALLENTOWN, PA 18195  
610.366.4600  
800.961.5932

#### CENTRAL

1512 LAKE AIR DRIVE  
SUITE 105  
WACO, TX 76710  
254.772.9350  
800.331.7062

#### WEST

1980 ATLANTA AVENUE  
RIVERSIDE, CA 92507  
951.683.7796  
800.368.7557

#### IMPORTANT NOTICE

The information and statements herein are believed to be reliable, but are not to be construed as a warranty or representation for which we assume legal responsibility. No other warranty, representation or condition of any kind, expressed or implied (including NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE) shall apply. Having no control over the use of cement, Lehigh will not guarantee finished work, nor shall Lehigh be liable for consequential damages.

#### DANGER

Portland cement when dry is non-hazardous. When in contact with moisture (such as in eyes or on skin) or when mixed with water to make concrete, mortar or grout, it becomes highly caustic and will burn (as severely as third-degree) the eyes or skin. Inhalation of dry Portland cement can irritate the upper respiratory system.