



Technical Bulletin #12

THERMAL ADVANTAGES OF CONCRETE TILE

January, 2000

With the world becoming more sensitive to environmental issues and energy conservation, our industry is beginning to look for more energy efficient systems for building construction. This is certainly not a new endeavor, but it recently has gathered new momentum in the form of the government sponsored EnergyStar Program. This program is being promoted as a way to convince homebuilders and owners that using energy efficient building materials can not only help the environment but save money as well.

The roof tile industry has been invited to participate in the development of the standards for part of this program and the NTRMA has begun to research the concept of tile as an EnergyStar component. While much work needs yet to be done, we have unearthed some interesting facts in the process that you may find useful.

- The State of Florida has conducted a number of studies over the years to determine which roofing materials offer the greatest potential energy savings. The findings of the Florida Power & Light Company found that - "Attics under white tile roofs are, generally the coolest."
- The Florida Solar Energy Center (FSEC) determined that -" The vented tile roof reduced ceiling (heat) flux by 48% compared to the black shingle roof, while the direct-nail installation returned a flux reduction of 39%. It appears that the tile thermal mass and interstitial ventilation around each tile are the predominant phenomena reducing the cooling load in such roofs."
- The FSEC also noted that even red tile roofs significantly reduced attic temperatures.
- Tiles are invariably selected for use on homes that are specifically designed for energy efficiency. Concrete tile was prominently displayed on the subject of a recent article about a home designed for "high-efficiency, low maintenance living."

Cooling costs represent a huge portion of energy consumption in hot climates and more and more Americans are moving into these regions, further taxing our resources. The thermal advantage of tile roofing has long been understood by residents of desert communities and it is likely that future studies will help to quantify that advantage and help to encourage more use of this logical choice for energy conscious consumers.