

# TILE: the environmental pioneer



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Concerns for sustainability and the environment have shifted into overdrive. What were once “feel-good” topics have turned into global and mainstream necessities. In some regards, it is business as usual for the tile industry, because tile and related products have inherently possessed many sustainable and ecological attributes for years. Today’s environmental push gives the tile industry numerous opportunities to tout the many “green before green was cool” aspects of its products.

“Green” is a dynamic concept, and its definition can vary depending on a person’s point of view. Some say the greenest products are those with the highest regard for nature. Others say human health is the most important attribute. Affordability is another concept that is often factored into the green product equation. Many consider sustainability to be the determining factor. Tile fares exceptionally well in all of these categories.

## **The home-turf advantage**

One of tile’s big environmental advantages can be its regional availability. Tile and installation products made from local raw materials are available within 500 miles of nearly every construction site in North America. The short distance required to ship many North American-manufactured tile products can result in minimal amounts of energy consumption and air emissions. When building green, this regional availability of North American tile can contribute to LEED MR Credits 5.1 and 5.2.

## **Reclamation and recycling**

The tile industry has also maintained environmental consciousness through its manufacturing processes. Most factories salvage a large percentage of unfired material from airborne dust, sludge, and waste streams, which results in only negligible amounts of scrap and waste water. Additionally, many tile manufacturers recycle a significant amount of post-

consumer waste material in their production processes, which might include glass or various recycled aggregates. Manufacturers of installation materials use a wide variety of recycled material in their products, ranging from recycled rubber to calcium sulfate from power plant coal scrubbers. Both post and pre-consumer recycled content in ceramic tile and related installation materials can contribute towards points in LEED projects via MR Credits 4.1 and 4.2.

### Exterior benefits

The outdoor use of tile is also an ecological practice. A naturally durable product, most tiles are fade-, frost-, and fire-resistant, making them superior options for external facades. Some tile facades are ventilated, creating an air pocket system that evacuates warm air in the summer and keeps insulation dry in the winter. Though not yet widespread in the U.S., the use of tile as a thermal barrier can increase the energy efficiency of a building. In addition to facades, tile is an environmentally preferable product for use on driveways, sidewalks, courtyards, and parking lots. Tile products tend to have higher solar reflectance indices than traditional paving materials, and can assist in lowering the heat island effect (thermal gradient differences between developed and undeveloped areas). The use of tile on site hardscapes can contribute towards the acquisition of LEED SS Credit 7.1.

### Breathe easy with tile

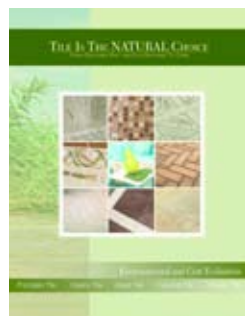
Another characteristic of environmentally preferable products is based on

a consumer-driven emphasis on indoor air quality. Tile and related installation materials are conducive to clean and healthy indoor air. Since tile is fired at high temperatures, there are no volatile organic compounds (VOCs) that can be released into breathable air. Being VOC-free, tile can contribute towards LEED EQ Credit 4.3. Tile is also a hypoallergenic surface covering that is inhospitable to dust mites, mold, germs, and bacteria. It is easily cleaned, often with warm water only, and harsh chemicals are generally not needed.

Low and zero VOC tile adhesives are available from grout and mortar manufacturers. For LEED projects, the use of low-emitting tile adhesives can contribute towards LEED EQ Credit 4.1. Furthermore, many grout and mortar manufacturers have incorporated dust-free technology into their products. This, in conjunction with little to no VOCs, results in cleaner job sites and healthier work and living conditions.

### Lifecycle cost benefits

Cost savings are yet another reason why tile is routinely preferred over other surface coverings. Per square foot, tile is the least expensive long term option of all floor coverings. It costs less to maintain, and



*More information on the environmental benefits of ceramic tile can be found in "Tile is the Natural Choice," available in the 2009 TCA Handbook.*

when properly installed, has the lowest cost per year. Lifecycle and lifecycle costs are an important part of building green. Tile's long lifetime makes it the most economical choice of all surface coverings.

**Tile: ultimate sustainability**

Perhaps the "common denominator" that puts tile in an environmental league

of its own is sustainability. Nothing is more ecological than a building material that only has to be installed once. Few would argue that tile can last an extremely long time. For example, colorful glazed tiles on pyramids built in ancient Egypt around 2600 B.C. still exist today. When calculating a product's environmental foot print, it is necessary to divide by the life expectancy of that product. Commonly, the United States Green Building Council (USGBC) uses 50 years, which results in a very small environmental footprint for tile.

Tile is a durable, beautiful and luxurious design investment that can be enjoyed for a lifetime or many lifetimes. It is regionally available, resource and cost efficient, and increases environmental quality both indoors and out. Not only can tile earn credits in LEED and other green building rating systems, it is inherently the most environmentally-friendly of all surface covering options. Tile truly is the natural choice.

*Bill Griese, standards development and green initiative manager for the Tile Council of North America (TCNA), is involved in the development and revision of ASTM, ANSI, ISO, and other industry-specific standards, and the coordination of TCNA's environmental efforts. He serves as chairman for the ASTM C21 Committee on Ceramic Whitewares and Related Products, and also works closely with TCNA's Product Performance Testing Laboratory. Griese earned a Bachelor of Science degree in Ceramic and Materials Engineering from Clemson University in Clemson, SC.*

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