



CONCRETE ROOF TILE HISTORY AND ITS MYTHS

What is concrete roof tile?



Concrete roof tile is a high quality product that fuses beauty and aesthetic traditional qualities with the benefits provided by concrete. In the production process different amounts of cement, sand, water and pigments are used to produce the tiles. At the end of the production process the tiles are placed into curing chambers at constant temperatures and humidity to obtain the highest quality product in the marketplace.

The result of this process is a product with a very natural appearance that offers greater durability than any other similar product. Equally, concrete roof tiles provide other functional advantages (for example, greater protection against weather, UV protection, easy installation, to name a few). In addition to the above, concrete roof tiles are a non-flammable product, thus offering fire protection. Lastly, we must underline that concrete roof tile is considered to be a product that is in harmony with nature because fuels are not used in the production process. In addition to having great technical and functional qualities, concrete roof tiles have the widest range of models in the world.

Tiles range from the more traditional styles with low and high barrels all the way up to different models of completely flat tiles, which allows the architect or designer to select the model that best suits the needs of the project. Regarding colors and finishes, at Crown we have a wide range of products among which we have roof tiles with the traditional clay colors all the way to roof tiles with the more contemporary colors of green and black. This allows us to offer our clients a range of almost 50 colors and finishes from which you will always be able to select the perfect roof tile for your construction.



Myths About Concrete Roof Tile

Myths are not real events, however, sometimes they are considered to be true. As with every new product there are certain myths regarding concrete roof tile that are totally unfounded. Perhaps you have heard some of these myths about concrete roof tile; following we present some of them.

1. Myth: Concrete Roof Tile is Too Heavy.

Truth: Concrete tiles typically weigh 9 -11 pounds each with lightweight versions typically 6- 7 pounds. While the lighter weight tiles ostensibly require less exertion to install, most skilled tilers prefer to work with the heavier tiles due to their superior strength and workability. The weight of a tile is typically what provides the strength and durability to remain in service sometimes for hundreds of years. Construction requirements for tile roofs are almost identical to those used for any other roofing materials with the only difference being slightly shorter rafter spans. Likewise, tile can be considered when reroofing since it is a rather simple matter to add reinforcement to the attic area during the course of the reroof.

2. Myth: Concrete roof tile can become discolored.

Truth: At Crown we use world-quality inorganic pigments that are specially designed for outdoor applications where a greater resistance to weathering is required. The pigment is mixed into the body of the tile and remains unchanged throughout the life of the tile. The top surface of the tile however is susceptible to erosion from exposure to the elements and will invariably develop the appearance that is closer to the color of the aggregate than the pigment. This is due to the fact that the pigment will saturate the softest component of the tile which is the cement but merely coat the aggregate which is typically sand that absorbs very little of the pigment.

3. Myth: Concrete Roof Tile is a Poor Insulator.

Truth: Concrete roof tiles provide better thermal resistance than nearly any other type of roofing material due primarily to its thermal mass and method of installation.

- a) The main factor is the air cushion that is generated between the roof tile and the roof because the concrete roof tile has minimal number of contact points it allows a lower transfer of heat from the tile to the roof and it provides for greater air circulation in the roof.
- b) Tile material: The concrete employed in roof tile production uses cement in low proportions and is composed primarily of natural sands of different granule size, creating a high thermal mass and emissivity that holds heat and then emits it back to the atmosphere.
- c) Tile surface: Concrete roof tile has a protective seal on the upper face that helps reflect sunlight, absorbing less heat than other materials that do not have protective coatings.

4. Myth: It is not possible to walk on tile roofs

Truth: Concrete tiles are very strong and unlike other roofing materials, actually gain more strength as they age. This is one of the reasons that concrete tile roofs fare so much better than other materials during severe hail and wind storms. Walking on concrete tiles roofs can be accomplished as long as care is taken to avoid slippery



surfaces and focus on placing your feet near the lowest portion of the tile since this is where the tiles overlap and provide double thickness supported directly to the roof deck.

5. Myth: Concrete Roof Tile is a new product that recently appeared on the market.

Truth: Concrete roof tiles have been in service around the world for close to three hundred years and were introduced into the Americas in the early twentieth century. Advances in manufacturing technology and building code standards have progressively improved the quality, consistency and affordability of concrete tiles to the point that many asphalt shingles now cost more than concrete tiles. Since asphalt shingles are petroleum-based it is likely that the cost differential will continue to grow and the value of a concrete tile roof will.

6. Myth: Clay Roof Tile looks more “Natural”.

Truth: Clay tiles are the natural color of the clay that they are made from, however with the advances in technology of texture and coloring, most people are hard-pressed to tell the difference between concrete and clay. Even experienced roofers and builders are often incapable of differentiating based on appearance.

7. Myth: Concrete Roof Tile is installed differently than other roof tiles.

Truth: Concrete roof tile is installed in a similar method as other types of tile and in America, all are installed in accordance with the same building codes and installation guidelines published by the Tile Roofing Institute. Most of the installation differences are based on the tile design, size and climate conditions of where they are being installed. The TRI publishes different guidelines for Moderate Climates, Hurricane regions and areas subject to severe winter conditions.

8. Myth: Concrete Roof Tile is more Expensive.

Truth: Concrete roof tile is cheaper than most would expect due to the efficient manufacturing process and use of plentiful natural ingredients. Concrete tiles are made from roughly 75% sand and 25% cement on high speed machines and are cured in controlled chambers that do not employ any expensive firing processes that are required of clay tiles or asphalt shingles.

9. Myth: Concrete Roof Tile is equal or similar to Fiber-cement roof tile.

Truth: Concrete roof tile is totally different than fiber-cement roof tile in that no expensive fibers are used in the manufacture and the testing and manufacturing standards for concrete tile are far more stringent than the imitation type products made from fiber-cement. In recent years, there have been a great many fiber-cement products introduced into the US markets only to fail on the roof and become subject to numerous class-action lawsuits. Concrete roof tiles, on the other hand have been used successfully all over the world for centuries.

10. Myth: Concrete Roof Tile is equal or similar to Fiber-cement roof tile.

Truth: While both concrete and clay must be made to meet the same code standards for initial strength, concrete roof tile is generally considered more resistant to damage and more durable than clay roof tile. This is in part due to the fact concrete tiles tend to gain considerable strength as they age due to ongoing hydration and curing of the cement within the tile as they are exposed to the elements. Clay tile on the other hand is as strong as it will ever be the day it comes out of the kiln. Since concrete tiles are usually



thicker and heavier than clay, they will typically resist damage from impact and foot traffic far better than clay tiles. Evidence of this becomes apparent when testing for Hail impact resistance. Concrete tiles typically achieve the highest Class 4 and Class 3 impact ratings whereby clay tiles rarely rate higher than a Class 2.

11. Myth: Tile Roofs don't work in Snow Country.

Truth: Nothing could be further from fact. One needs only take a trip to Europe or to the Scandinavian countries known for their harsh winters to find that the majority of roofs in those countries are tile and have been for centuries. In fact, roof tiles in this country are required to pass a test that puts submerged tiles through 50 freeze-thaw cycles without breaking to achieve code recognition. The tile roof systems used in snow country are built to maximize ventilation and snow retention and when properly installed outperform all other roof systems. Guidelines for tile roofs in these areas are published in the TRI Installation Manual for Cold and Snow Regions.