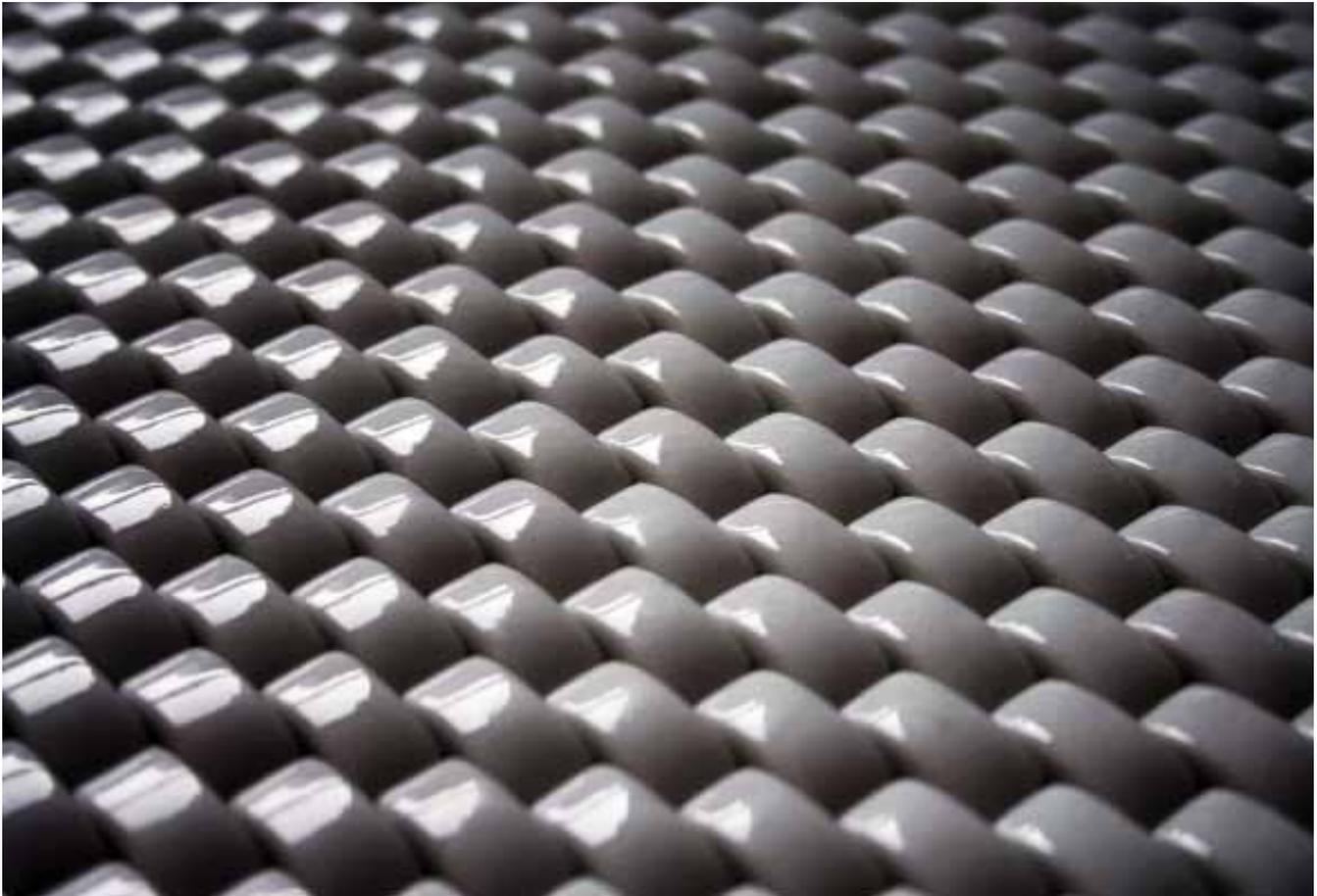


Introducing ANSI A137.2 – The New Standard for Glass Tile

With the newly established standard, specifiers can now have a better understanding of glass tile types and specifications, its performance, and inherent aesthetic properties

BY RYAN MARINO



From opaque to transparent, glass tiles today are produced in a wide array of opacities. The extent you can see through a tile is important when selecting installation materials and even how the tile is installed. Photo courtesy of Mosaico+.

Over the past several years, glass tiles have become increasingly popular among consumers. With the rapid increase in glass tile products in the marketplace, there has been one underlying problem — the lack of a standard that specifies performance requirements, until now.

ANSI A137.2 American National Standard Specifications for Glass Tile was approved at the end of 2011 and

will be published in the first quarter of 2012. This new standard clearly defines different types of glass tiles and establishes real-world standards for performance and aesthetic properties, which are different from those for ceramic tiles.

What types of glass tiles are covered by ANSI A137.2?

Not all glass tiles are created equally.

There are three primary types based on different forming processes: cast, fused, and low temperature-coated glass tiles. ANSI A137.2 addresses each type individually due to their inherent and unique characteristics:

- *Cast Glass Tiles:* The casting process involves pouring molten glass into a mold and allowing it to cool, resulting in glass tiles which can be any shape, any size, and any through-body color.



Inherent properties such as folds, creases, and bubbles can be the result of casting, considered by many to add to the beauty and individuality of cast glass tiles. ANSI A137.2 establishes what the appropriate aesthetic attributes are and what defects are. Photo courtesy of Crossville.

Cast glass tile textures vary from smooth to wavy with inherent folds, bubbles, and creases.

- **Fused Glass Tiles:** The fusing process for glass tiles involves altering sheet glass units through heat, allowing for different materials and glazes to be fused to the glass and allowing for any color or pattern. The fusing process allows for a variety of textures and finishes which can be smooth, textured, uniform, or non-uniform.
- **Low Temperature-Coated Glass Tiles:**

The process for manufacturing low temperature-coated glass tiles involves transferring decorative coatings through heat, typically on the back of transparent sheet glass units, at temperatures lower than those of the fusing process. A broad spectrum of colors and patterns are available.

Size Matters

In order to provide the most accurate standard possible, ANSI A137.2 further

divides glass tiles into three size categories: large format, mosaic, and miniature mosaic.

In addition to different dimensional characteristics, different size tiles have different strength criteria. Where a larger tile might crack when subjected to excessive load, a smaller tile could crush before cracking. Depending on size, three different breaking strength methods are used; modulus of rupture, triangular point load, and compressive strength testing.

What tests are unique to the glass standard?

Real World Testing – Thermal Shock

ANSI A137.2 requires thermal shock resistance testing using a 100°F temperature range and passing the test is mandatory for all glass tiles except those intended for dry interior wall applications. Unlike ceramic, not all glass tiles in the market can withstand the range of temperatures outdoors. This important requirement will reduce the number of glass tile failures due to thermal shock by defining which tiles will work and which tiles won't before they are installed.

Can You See Me Now?

From opaque to transparent, glass tiles today are produced in a wide array of opacities. The extent you can see through a tile is important when selecting installation materials and even how the tile is installed. Whether to use white or gray mortar and whether to smooth out the trowel lines relates directly to the tile opacity. A test method and opacity definitions were established in ANSI A137.2 to communicate to users how opaque or transparent the glass tiles are.

Thinking Environmentally

Recycled materials are easily incorporated into many glass tiles. There are many sources of recycled glass: curbside pick-up, recycling centers, scrap from bottling companies, and scrap from other glass companies.

ANSI A137.2 calculates total recycled content by adding the percentage (by weight of the final product) of the post-consumer content to half the percentage of the pre-consumer content. For instance,

this could be the percentage of glass from a recycling center added to half the percentage of glass scrap from a bottling company. Calculated in this fashion, recycled content is divided into three categories: Category 1 – at least 25%; Category 2 – at least 40%; and Category 3 – at least 60%. The manufacturer can declare one of these categories and display that category on its packaging.

Is It a Beauty Mark or a Defect?

Inherent properties such as folds, creases, and bubbles can be the result of casting, considered by many to add to the beauty and individuality of cast glass tiles. ANSI A137.2 establishes what the appropriate aesthetic attributes are and what defects are. For example, if a cast glass tile has a bubble inside the body, the bubble is classified as a beauty mark, but if that tile has a bubble on the surface that creates a sharp edge or crater, the bubble is classified as a defect.

The aesthetic criteria though for fused

and low temperature-coated products are different from those of cast glass tiles. Greater uniformity is more easily achieved for fused and low temperature-coated products and the aesthetic criteria reflect that.

Mounted Tiles

Since glass tiles are generally sold and installed as mounted assemblies, whether they are back mounted or face mounted products is an important aspect to consider. ANSI A137.2 recommends that glass tiles intended for submerged applications be face mounted to prevent problems stemming from improper coverage or backing material failure. For back mounted and edge mounted products, manufacturers must clearly state for which areas their mounted tiles are suitable.

How is this new standard significant to the industry?

For the first time, we have a common mechanism by which all glass tiles can

be defined and evaluated. ANSI A137.2 provides clarity on criteria that were previously undefined. ANSI A137.2 also provides a firm foundation for which future installation specifications can be built upon. This much-needed standard will prove to be a valuable tool for producers, suppliers, specifiers, and end users. **TILE**

ABOUT THE AUTHOR



Ryan Marino is a ceramic engineer at the Tile Council of North America working in standards development.

He is involved in the research, development, and

revision of ASTM, ANSI, and ISO standards. Ryan earned his Bachelor of Science degree in Ceramic and Materials Engineering from Clemson University.