

# VITREO

## DATASHEET

FICHA TECNICA · FICHE TECHNIQUE

### VITREO

**Series:** Vitreo available in 80 different colors.

**Format:** 3/4" x 3/4" (2 x 2 cm).

**Sheet size:** 12 7/16" x 12 7/16" (31.6 x 31.6 cm).

**Joint:** 2/48" (1 mm).

**Weight per sheet:** 1.58 lbs.

**Vitreo:** opalescent colored glass mosaic, available in 80 different colors.

**Manufacturing Technology:** fusion.

**Applications:** wall and floor, residential and light commercial\* and especially for swimming pools.

*\*Using mosaic on a commercial floor is not a problem if the installation is done properly, the sub-floor is leveled and you use epoxy adhesive and grout or a polyurethane adhesive if flexibility is needed. Only light commercial.*

#### **ASTM C 484/99 Resistance to Thermal Shock**

Test performed with immersion: 5.

Number of test specimens with visible defects: 0.

#### **ASTM C 373/88 (99) Apparent Porosity, Water Absorption, Apparent Specific Gravity and Bulk Density**

Apparent porosity: 0.20%.

Water Absorption: 0.08%.

Apparent Specific Gravity g/cm<sup>3</sup>: 2.37.

Bulk Density g/cm<sup>3</sup>: 2.36.

#### **ASTM C 499/78 (99) Standard Method for Facial Dimensions and Thickness of Flat, Rectangular Ceramic Wall and Floor Tile**

Length & Width, actual size: 25/32".

Average size on 20 samples submitted: 25/32".

Thickness, nominal 5/32".

Average on 20 samples submitted: 5/32" mm.

#### **ASTM C 502 - 93A Standard Method for Wedging of Flat, Rectangular Ceramic Wall & Floor Tile**

Average on 20 samples submitted: 0.0%.

#### **Hydrolitic Attack Test**

For the use in swimming pool we have done the HYDROLITIC ATTACK TEST, to measure how the material reacts to the chemicals used in pool. The result of the material to the test was positive.

#### **ASTM C 1028 - 96 Friction coefficient**

Three samples were considered. Both dry and wet conditions were used. Calibration was performed based on a 4 pulls test on standard tile, as prescribed in the norm.

Samples were subjected to the pull test in the renovated conditions (cleaned samples).

Four pulls perpendicular to the previous were performed on each sample. An actual normal load of 233 N was used for all the pulls.

Friction coefficient in dry conditions: 0.71.

Friction coefficient in wet conditions: 0.61.

Sample were submitted preinstalled on backer-board and grouted with sanded grout.



# PRODUCT TESTING SERVICE

100 Clemson Research Blvd. • Anderson, SC 29625 • Tel (864) 646-TILE • Fax (864) 646-2821

TCNA TEST REPORT NUMBER: TCNA-424-12

PAGE: 1 OF 1

**TEST REQUESTED BY:**

E-Stone  
Attn: Livio Magni  
8041 Haywood Taylor Blvd.  
Sebring, FL 33870

**TEST SUBJECT MATERIAL:**

Identified by client as: **Mosaic 160**

**TEST DATE:**

8/21/12-9/18/12

**TEST PROCEDURE:**

**ANSI A137.2 Section 7.7: "Test Method for Evaluating - Shear Bond Strength of Glass Tile"**

- Eight specimens were adhered to 2 x 7 x 15-1/2-inch concrete blocks according to A137.2 section 7.7.
- TCNA thin-set testing mortar was used to bond the tiles to the block. Mapei Kerapoxy was used to grout the tiles.
- Four shear specimens were allowed to cure for 28 days at room temperature and four shear specimens were allowed to cure for 21 days at room temperature and were then submerged in water for 7 days.
- All specimens were loaded in shear at a rate of 200 psi/min.

**TEST RESULTS:**

	28 day dry shear strength (psi)	Failure Mode	21 day dry, 7 day submerged shear strength (psi)	Failure Mode
Specimen 1	122 psi	Cohesive within thin-set	101 psi	Cohesive within thin-set
Specimen 2	106 psi	" " " "	79 psi	" " " "
Specimen 3	146 psi	" " " "	46 psi	" " " "
Specimen 4	117 psi	" " " "	78 psi	" " " "
Average	123 psi		76 psi	

[The ANSI A137.2 Specification for Glass Tile states that the average shear bond strength shall be 150 psi or greater after 28 day dry curing and 100 psi or greater after 21 day dry and 7 day submerged curing.]

  
Katelyn Simpson  
Laboratory Manager

9/25/12  
Date

Testing Services: [testing@tileusa.com](mailto:testing@tileusa.com) • Literature Orders: [literature@tileusa.com](mailto:literature@tileusa.com) • Web Site: [www.tileusa.com](http://www.tileusa.com)

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Sebring, FL 33870

**TEST SUBJECT MATERIAL:**

Identified by client as: **Mosaic 160**

**TEST DATE:**

8/27/12-8/28/12

**TEST PROCEDURE:**

**ANSI A137.2 Section 7.9: "Test Method for Determining Thermal Shock Resistance of Glass Tile"**


-Five whole tiles were subjected to ten cycles of thermal shock per section 8.2 (immersion test) of ASTM C484 except the high end temperature was set to  $160 \pm 9^{\circ}\text{F}$  per ANSI A137.2 section 7.9.

-The tiles were inspected for failure using a solution of methylene blue prior to cycle one and immediately following cycle ten.

**TEST RESULTS:**

	Observations
Specimen 1	None
Specimen 2	None
Specimen 3	None
Specimen 4	None
Specimen 5	None

[The ANSI A137.2 Specification for Glass Tile states: "the tile shall show no evidence of degradation, chipping, or cracking."]

  
Katelyn Simpson  
Laboratory Manager

9/25/12  
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Attn: Livio Magni  
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Sebring, FL 33870

**TEST SUBJECT MATERIAL:**

Identified by client as: **Mosaic 160**

**TEST DATE:**

9/5/12

**TEST PROCEDURE:**

**ANSI A137.2 Section 7.8: "Test Method for  
Determining Compressive Strength of Miniature  
Mosaic Glass Tile"**

- Ten whole glass tiles were tested.
- The tiles were loaded at a rate of 3000 PSI per minute.
- Testing was performed on an Instron Universal Tester, model #3385-H

**TEST RESULTS:**

The average compressive strength of ten (10) tiles was:  
**82 lbf.**

The individual results of compressive strength are as follows:

Specimen 1: **117 lbf**  
Specimen 2: **64 lbf**  
Specimen 3: **89 lbf**  
Specimen 4: **64 lbf**  
Specimen 5: **94 lbf**  
Specimen 6: **90 lbf**  
Specimen 7: **68 lbf**  
Specimen 8: **94 lbf**  
Specimen 9: **83 lbf**  
Specimen 10: **60 lbf**

[The ANSI A137.2 Specification for Glass Tile states that the average compressive strength shall be **2500 PSI** or greater for fused, low temperature, or cast mosaic glass tile.]

  
Katelyn Simpson

Laboratory Manager

9/25/12  
Date

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Sebring, FL 33870

**TEST SUBJECT MATERIAL:**

Identified by client as: **Mosaic 160**

**TEST DATE:**

9/20/12

**TEST PROCEDURE:**

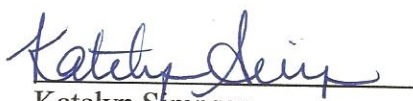
**ANSI A137.2 Section 7.6: "Test Method for Mounting Variations"**

- Two sheets were evaluated according to section 7.6 of ANSI A137.2.
- The sheets of miniature mosaic glass tile had 364 grout joints.
- For standard cast miniature mosaic glass tile the allowable deviation from nominal joint size stated in ANSI A137.2 is "as reported". The nominal joint size for this material is 1.0 mm.

**TEST RESULTS:**

	# of Grout Joints Outside of Compliance
Sheet 1	All grout joints were within $\pm 0.50$ mm from nominal
Sheet 2	All grout joints were within $\pm 0.50$ mm from nominal

Note: There are no specific requirements in ANSI A137.2 for mounting variation of standard miniature mosaic tiles. For more details regarding the allowable deviation from nominal joint size see Tables 5, 6, and 7 of ANSI A137.2.

  
Katelyn Simpson  
Laboratory Manager

9/26/12  
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