



PRODUCT TESTING SERVICE

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

TCNA TEST REPORT NUMBER:

TCNA-549-14

PAGE: 1 OF 2

TEST REQUESTED BY:

Arto Brick California Pavers

TEST METHOD: ASTM C373-14: "Standard Test Method for Water Absorption, Bulk Density, Apparent Porosity, and Apparent Specific Gravity of Fired Whiteware Products"

Informal Test Method Description: This test method covers procedures for determining water absorption, bulk density, apparent porosity, and apparent specific gravity of fired unglazed whiteware products. The water absorption, reported here, is expressed as a percent, the relationship of the mass of water absorbed to the mass of the dry specimen.

This summary is provided for the reader's convenience and is not a complete description of the method. See ASTM C373 for all method details and information.

TEST SUBJECT MATERIAL:

Identified by client as: "Oleson Braun (1-5)"
Approximate Size as Received: 4"x4"

TEST DATE:

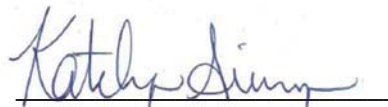
9/29/2014 – 9/30/2014

TEST PROCEDURE:

- Sample prep: The tiles were cut to 2"x4" per section 4.2 of ASTM C373.
- Five (5) samples were tested.
- Samples were dried to a constant mass at a temperature of 150°C and cooled to room temperature in a desiccating unit.
- Samples were subjected to a five-hour boil and 24 hour soak at room temperature.
- Saturated mass of the samples is determined after the soaking for 24hrs
- Water absorption is calculated by using the following formula: $(M - D)/D \times 100$
Where; D is the constant dry mass
 M is the saturated mass

TEST RESULTS:

| | Water Absorption (%) |
|----------------|----------------------|
| Sample 1 | 7.52 % |
| Sample 2 | 7.37 % |
| Sample 3 | 7.31 % |
| Sample 4 | 7.20 % |
| Sample 5 | 6.88 % |
| Average | 7.26 % |


Katelyn Simpson
Laboratory Manager

10/8/2014

Testing Services: testing@tileusa.com Literature Orders: literature@tileusa.com Web Site: www.tileusa.com

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COMMENTS: None

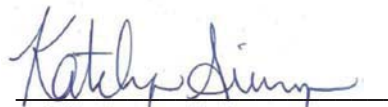
TILE CLASSIFICATION*:

| Class | Requirement |
|---------------|--|
| Impervious | Water absorption less than or equal to 0.5% |
| Vitreous | Water absorption more than 0.5 % and less than or equal to 3.0% |
| Semi-vitreous | Water absorption more than 3.0 % and less than or equal to 7.0% |
| Non-vitreous | Water absorption more than 7.0 % and less than or equal to 20.0% |

ANSI SPECIFICATIONS*:

| ANSI standard | Tile Type | Specification |
|--------------------------------|--------------------|---|
| ANSI A 137.1 (Ceramic Tile) | Mosaic Tile | Shall be impervious (porcelain), vitreous, semi-vitreous, or non-vitreous depending on the class. |
| ANSI A 137.1 (Ceramic Tile) | Quarry Tile | Shall be classified as impervious (porcelain), vitreous, or semi-vitreous with the water absorption not exceeding 5.0 percent |
| ANSI A 137.1 (Ceramic Tile) | Pressed Floor Tile | Shall be classified as vitreous, semi-vitreous, or non-vitreous |
| ANSI A 137.1 (Ceramic Tile) | Porcelain Tile | Shall be impervious |
| ANSI A 137.1 (Ceramic Tile) | Glazed Wall Tile | Shall be classified as non-vitreous |
| ANSI A 137.2 (Glass Tile) | All Glass Tile | Shall be impervious |

**For more detailed information, refer to ANSI A137.1 Specifications for Ceramic Tile and ANSI A137.2 Specifications for Glass Tile*


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