



# 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 Copper (1-5)"  
Approximate Size as Received: 4"x4"

TEST DATE:

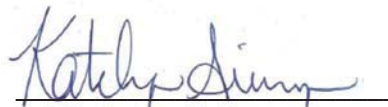
9/29/2014 – 9/30/2014

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	7.28 %
Sample 2	7.59 %
Sample 3	5.86 %
Sample 4	7.58 %
Sample 5	7.83 %
<b>Average</b>	<b>7.23 %</b>

  
Katelyn Simpson  
Laboratory Manager

10/8/2014

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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COMMENTS: None

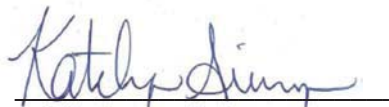
## TILE CLASSIFICATION\*:

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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