



**PRODUCT PERFORMANCE TESTING LABORATORY**  
100 Clemson Research Blvd., Anderson, SC 29625  
Phone 864.646.8453 Fax 864.646.2821  
Email [testing@tcnatile.com](mailto:testing@tcnatile.com) Web [www.TCNAtile.com](http://www.TCNAtile.com)

**TCNA TEST REPORT NUMBER:** TCNA-0219-19 **PAGE: 1 OF 8**

**TEST REQUESTED BY:** United Plastics Corporation

**TEST PROCEDURE:** [ASTM C627-18: "A Standard Test Method for Evaluating Ceramic Floor Tile Installation Systems Using the Robinson-Type Floor Tester"](#)

**Informal Test Method Description:** This test method covers the evaluation of ceramic floor tile installation systems, using the Robinson-type floor tester. This test method consists of preparing an installation assembly to simulate the type of installation under consideration, subjecting it to various cycles on a Robinson-type floor tester, and evaluating the results in a prescribed manner. This summary is provided for the reader's convenience and is not a complete description of the method. See ASTM C627-18 for all method details and information.

**TEST SUBJECT MATERIAL:** Identified by client as: "dB Ceramic"

**TEST DATE:** 4/25/2019

**TEST ASSEMBLY SET-UP:**

All the materials used were specified by the client and the tested assembly was built per the client's instructions.

**Materials:**

As per client's request, the following materials were used for the preparation of the test assembly.

Item #	Product name and size	Product Code	Provided By:
1	Concrete base with a smooth finish Nominal Size: 48" x 48" x 2" (1219 mm x 1219 mm x 51 mm)	N/A	TCNA
2	Roberts 2057 Adhesive	02/25/19 19871	United Plastics
3	dB Ceramic Acoustical Underlayment	Not Provided	United Plastics
4	Mapei Porcelain Tile Mortar	L07K8002 1303	United Plastics
5	12" x 12" Crossville Porcelain Tiles	A850	TCNA
6	Mapei Flexcolor CQ	J17L808 351 18	United Plastics

**Tester and Foundation:**

TCNA uses bottom-driven testers with a 4x4 ft square and 1ft thick cement slab foundation as outlined in Appendix X1.1 of the method.

**Substrate:**

**Subfloor Type:** Concrete, A 48" x 48" x 2" concrete base was prepared and cured for a minimum of 28 days prior to testing.





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***Underlayment:*** The underlayment was installed by a TCNA representative.

Product Name: Roberts 2057 Adhesive and dB Ceramic Acoustical Underlayment

Installation Notes: Using a 1/16" x 1/16" square notched trowel, the adhesive was applied to the surface of the substrate. The adhesive was first keyed in with the flat side of the trowel then combed with the notched side to form parallel ridges. The underlayment was cut to 2 pieces (36" x 48" and 9" x 48") and laid into the adhesive with an abutted seam placed 15" off-center, in the wheel path of the tester. Using a 50 lb roller, the underlayment was pressed into the adhesive in all directions to ensure proper adhesion and eliminate air pockets. The system was allowed to cure 24 hours before tiles were installed.

***Tile:*** The tile was installed by a TCNA representative.

Tile Type: 12" x 12" Crossville Porcelain

Setting Material: Mapei Porcelain Tile Mortar

Mix Ratio: 25:100 by weight

Trowel Size: 1/4" x 3/8" square notched

Installation Notes: The thin-set was first keyed in with the flat side of the trowel then combed with the notched side to form parallel ridges. The tiles were back buttered with a skim coat to ensure proper coverage. The assembly was cured 24 hours before grouting.

***Grout:*** The grout was installed by a TCNA representative.

Grout Type: Mapei Flexcolor CQ

Mix Ratio: Pre-mixed

Grout Joint Size: 1/8"

Installation Notes: A grout float was used to force the grout into the joints. Excess grout was removed with the edge of the float. The grout was allowed to set up for approximately 20 minutes before the installation was cleaned with a sponge and water.

Cure Time: The grouted installation was allowed to cure for 38 days.





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**TEST RESULTS:**

Cycle	Wheels	Weight (lb)	Observations
1	Soft Rubber	100	No damage observed.
2		200	No damage observed.
3		300	No damage observed.
4		300	No damage observed.
5	Hard Rubber	100	No damage observed.
6		200	3 broken tiles observed.
7		300	
8		300	
9	Steel	50	
10		100	
11		150	
12		200	
13		250	
14		300	

*Note: Per ASTM C627, section 9.2, an installation shall be considered to have failed to pass any cycle in which the cumulative total number of damages to tile and grout in any one of the following categories meets or exceeds the amount stated in the following table:*

*Possible types of damage: chipped tile, broken tile, loose tile, spalled grout joints, cracked grout joints, and powdered grout joints. All are defined in ASTM C627.*

Total # of damages to tile and grout required to fail to pass a cycle for X number joints and tiles, where X= (# of joints in the wheel path) + (#of tiles in the wheel path)				
X ≤ 40	40 < X ≤ 60	60 < X ≤ 80	80 < X ≤ 100	>100
2	3	4	5	>5% of tiles and joints in wheel path

**HANDBOOK CLASSIFICATIONS\*:**

Classification	Cycles
Residential	Passes cycles 1-3
Light	Passes cycles 1-6
Moderate	Passes cycles 1-10
Heavy	Passes cycles 1-12
Extra Heavy	Passes cycles 1-14

\*For more detailed information, refer to the TCNA Handbook for Ceramic, Glass, and Stone Tile Installation.



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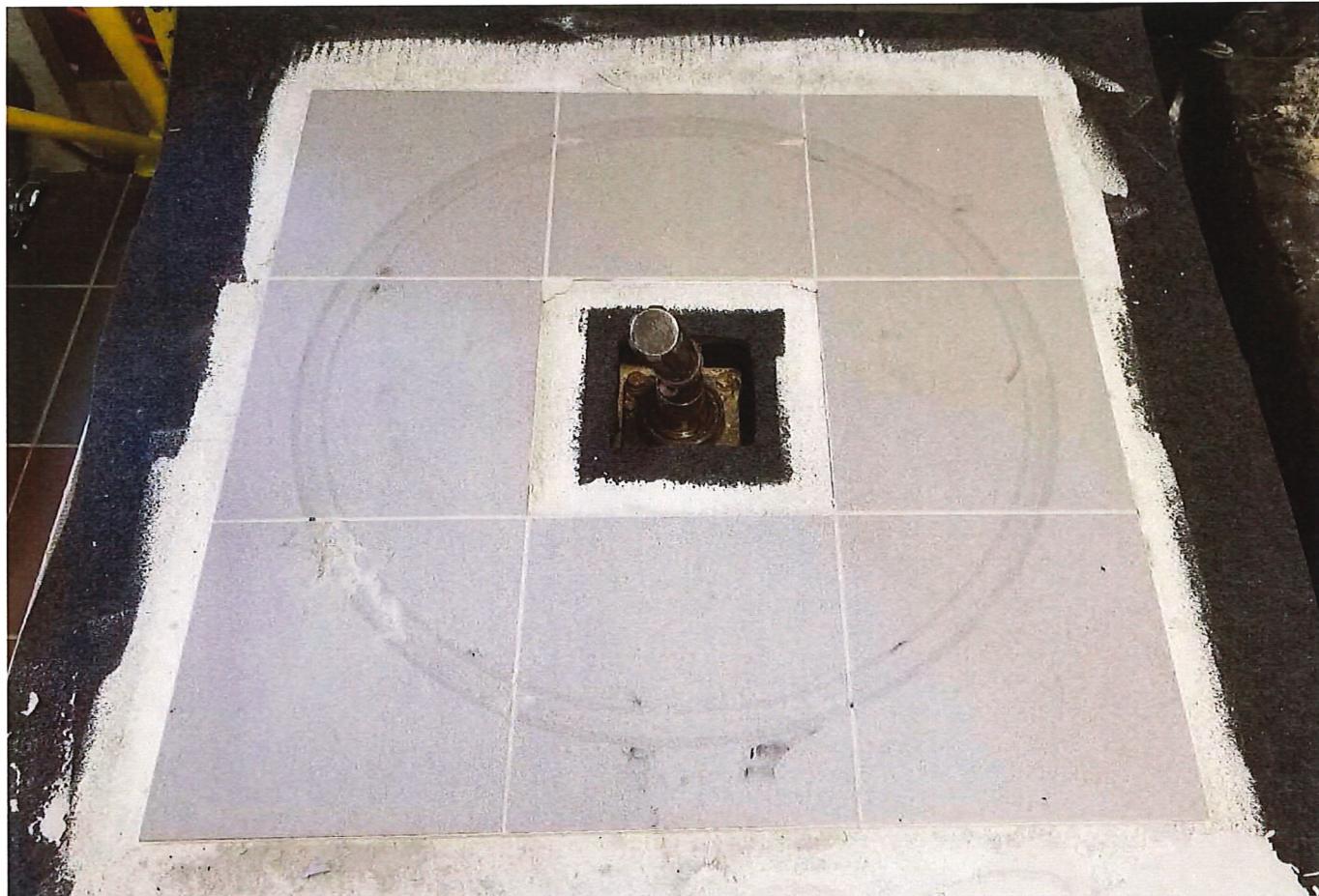
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**PHOTOS:**



**Image 1:** Full assembly after testing





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**Image 2:** Broken Tile





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**Image 3:** Broken Tile



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**Image 4:** Broken Tile



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5/1/2019

Katelyn Simpson  
Laboratory Manager

