



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.





PRODUCT PERFORMANCE TESTING LABORATORY

100 Clemson Research Blvd., Anderson, SC 29625

Phone 864.646.8453 Fax 864.646.2821

Email testing@tcnatile.com Web www.TCNAtile.com

TCNA TEST REPORT NUMBER: TCNA-0219-19

PAGE: 2 OF 8

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.





TCNA TEST REPORT NUMBER: TCNA-0219-19

PAGE: 3 OF 8

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)				
$X \leq 40$	$40 < X \leq 60$	$60 < X \leq 80$	$80 < X \leq 100$	>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.



TCNA TEST REPORT NUMBER: TCNA-0219-19

PAGE: 4 OF 8

PHOTOS:

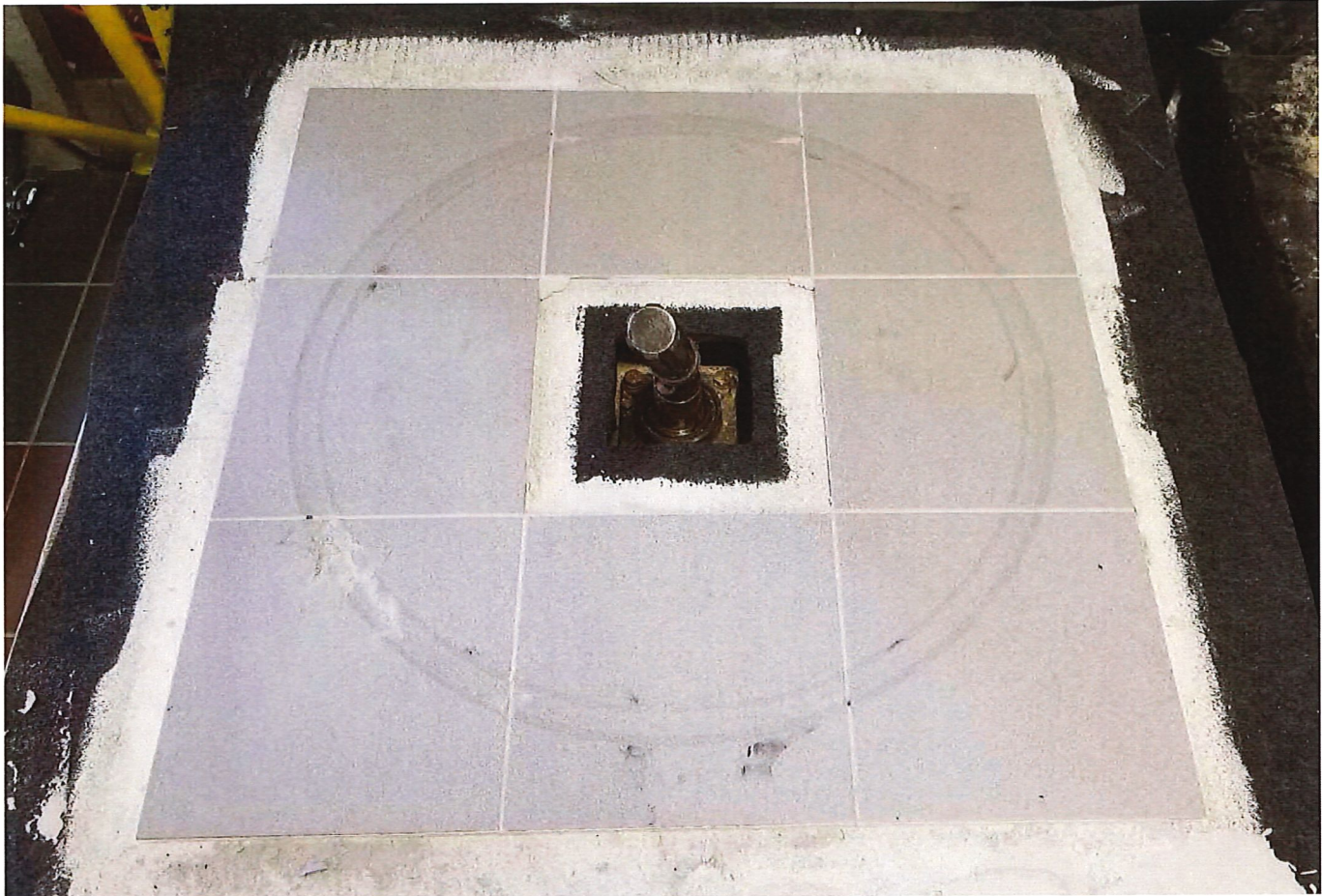


Image 1: Full assembly after testing

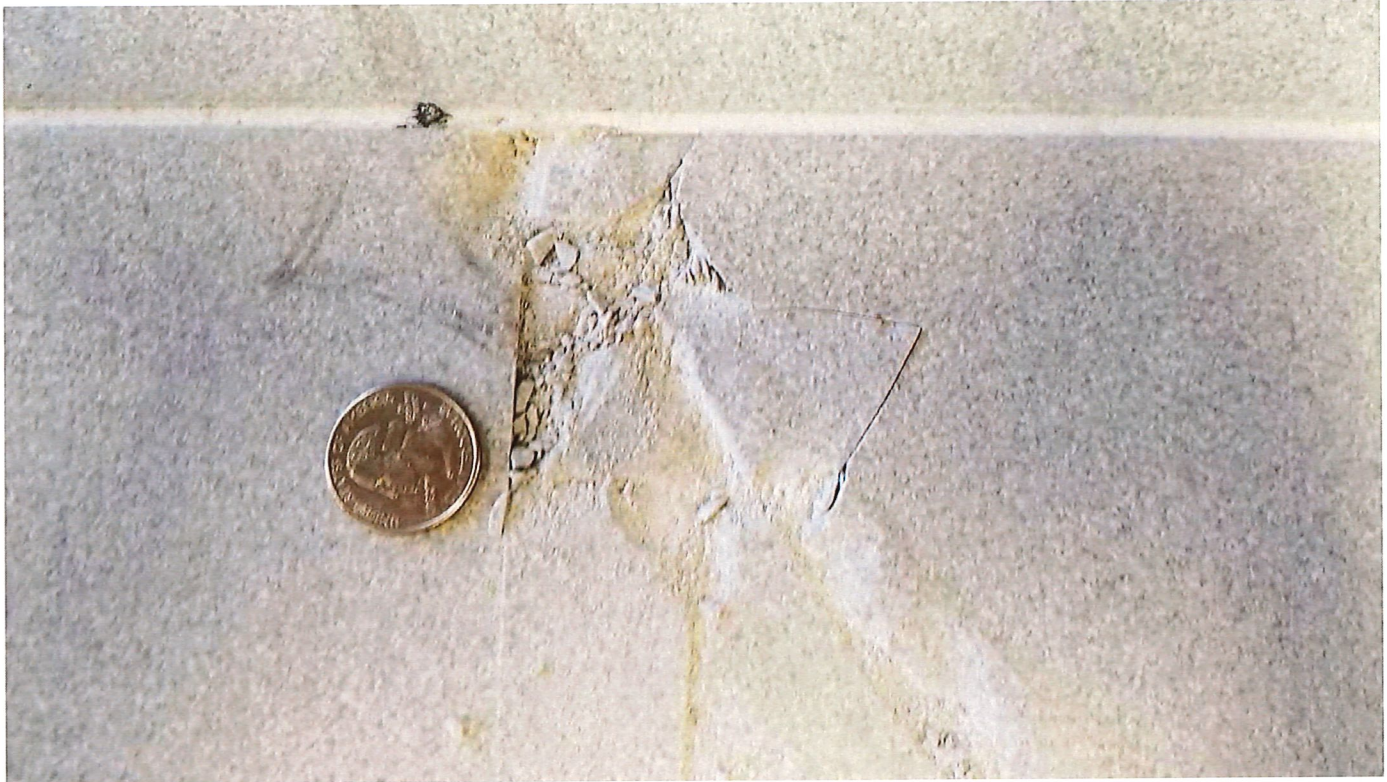


Image 2: Broken Tile

TCNA TEST REPORT NUMBER:

TCNA-0219-19

PAGE: 6 OF 8



Image 3: Broken Tile

TCNA TEST REPORT NUMBER:

TCNA-0219-19

PAGE: 7 OF 8



Image 4: Broken Tile



PRODUCT PERFORMANCE TESTING LABORATORY
100 Clemson Research Blvd., Anderson, SC 29625
Phone 864.646.8453 Fax 864.646.2821
Email testing@tcnatile.com Web www.TCNAtile.com

TCNA TEST REPORT NUMBER: TCNA-0219-19

PAGE: 8 OF 8

DISCLAIMER AND LIMITATION OF LIABILITY

This report is provided for the sole use of the client and no one else. It is intended for professional use by a knowledgeable professional. If published by the client, it must be published in full, including this disclaimer and limitation of liability.

This report is not an endorsement, recommendation, approval, certification, or criticism by TCNA of any particular product or its application. TCNA recommends that anyone considering the use or installation of a particular product consult with the manufacturer or an industry professional for advice specific to the person's needs and consider any applicable laws, statutes, codes, or regulations relevant to the particular product. TCNA does not know all the different manners and applications in which a client's particular product might be used, and, therefore, it disclaims any and all duty to provide warnings or to further investigate the suitability of the use of a particular product in a particular situation.

Unless otherwise expressly stated, TCNA tested the specific test subject material provided by the client and identified in the lab report, as indicated by the client. TCNA does not independently verify the information provided by the client, and it makes no representation that similar results would be achieved with other, untested materials, even if such other materials purportedly have the same product name, are purportedly of the same or similar type of tile or product made by the client, or are purportedly from the same batch of tile or product. Nor does TCNA state that the date in this report is representative of production occurring at the same time or at any other time. Only the manufacturer may make that claim, based on sampling and quality control parameters beyond the knowledge and control of TCNA. TCNA does not provide any supervision, review, management, or quality control of any manufacturer's production.

TCNA makes no representation that the client's products are uniform or identical to the test subject material, that the test subject material is suitable for any particular use, application, or installation, or that it will exhibit the same properties when installed or used in a particular manner. The data provided in this report results from standardized laboratory testing performed under laboratory conditions. As such it does not represent all conditions under which the products may be used or subjected. For testing on actual materials being used or considered for a job site, contact TCNA for sampling provisions and possible testing.

This report is intended solely to provide the results of the test procedure stated above as performed on the test subject material provided by the client, and may not be relied on for any other purpose. TCNA MAKES NO OTHER REPRESENTATIONS OR WARRANTIES OF ANY KIND, WHETHER EXPRESS OR IMPLIED. ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY EXPRESSLY DISCLAIMED. IN THE EVENT OF A DISPUTE CONCERNING THIS REPORT, THE EXCLUSIVE REMEDY FOR CLIENT SHALL BE FOR TCNA TO REPEAT THE TEST REQUESTED, BUT IN NO EVENT SHALL TCNA BE LIABLE FOR AN AMOUNT GREATER THAN THE AMOUNT IT RECEIVED FROM CLIENT FOR THE TEST. UNDER NO CIRCUMSTANCES WILL TCNA BE LIABLE TO CLIENT FOR ANY OTHER DAMAGES (NOR SHALL IT BE LIABLE TO ANY OTHER PERSON OR BUSINESS ENTITY FOR ANY DAMAGES), INCLUDING WITHOUT LIMITATION ANY AND ALL DIRECT, INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES, RESULTING, IN WHOLE OR IN PART, FROM ANY USE OF, REFERENCE TO, OR RELIANCE UPON THE REPORT, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. TCNA DISCLAIMS ALL LIABILITY TO ANY THIRD PARTY CONCERNING THIS REPORT. THE FOREGOING LIMITATION OF LIABILITY IS A FUNDAMENTAL ELEMENT OF TCNA'S AGREEMENT TO CONDUCT AND PROVIDE THE REPORT.

5/1/2019

Katelyn Simpson
Laboratory Manager

