



## PRODUCT TESTING SERVICE

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

September 24, 2015

Patriot Timber Products  
Attn: Paula Spinks  
PO Box 19065  
Greensboro, NC 27419

Dear Ms. Spinks,

Tile Council of North America has tested the samples you submitted. Test report TCNA-454-15 is enclosed. If you have any questions or concerns, please contact us.

Best Regards,

TILE COUNCIL OF NORTH AMERICA, INC.

Katelyn Simpson  
Laboratory Manager  
Enclosures



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TCNA TEST REPORT NUMBER: TCNA-454-15 Test #1

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TEST REQUESTED BY: Patriot Timber Products

TEST SUBJECT MATERIAL: Identified by client as: "IronPly Premium Underlayment"

TEST DATE: September 12– 14, 2015

TEST PROCEDURE: ASTM C627: "A Standard Test Method for Evaluating Ceramic Floor Tile Installation Systems Using the Robinson-Type Floor Tester"

## TEST AND MATERIAL DESCRIPTION:

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

Item #	Product name and size	Provided By:
1	APA rated "Exposure 1" plywood subfloor; 23/32" thick OSB; T&G	TCNA
2	IronPly Premium Underlayment	Patriot Timber Products
3	High Performance ANSI A118.4/A118.11 Mortar	TCNA
4	12" x 12" Crossville porcelain tiles	TCNA
5	Custom Polyblend sanded grout	TCNA

## TYPE OF INSTALLATION:

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

The 12" x 12" Crossville porcelain tiles were installed over the IronPly Premium Underlayment using High Performance ANSI A118.4/A118.11 Mortar thin-set mortar. Further details about the installation are provided below.

### **Base and Underlayment:**

The installation of the plywood subfloor and IronPly Premium underlayment was performed by a TCNA representative according to the client's instructions. The installation procedure followed by the technician is outlined below.

The plywood subfloor was nailed to four 2" x 2" joists spaced 16" O.C. to simulate the support provided in an actual installation. The tongue and groove seam was positioned 15" off the centerline of the system and perpendicular to the joist. The subfloor was nailed to the joists with 2" ring shank nails set at six-inch centers on the perimeter joists and twelve-inch centers on the intermediate joists. A 1/4" bead of construction adhesive was applied to each joist prior to nailing.

Katelyn Simpson  
Laboratory Manager

9/24/15  
Date



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## *Base and Underlayment continued:*

The IronPly Premium Underlayment was cut and placed with a seam positioned 15" off the centerline of the system and perpendicular to the seam in the OSB layer. The seam was lightly abutted. The IronPly was stapled to the plywood subfloor using 1/4" staples. The staples were placed 4" OC in the field and 2" along the perimeter. Special care was taken to follow the stapling instructions provided by the client.

## *Tile preparation:*

Any required cutting of the 12" x 12" x 0.375" tile was done on a wet saw by a TCNA representative.

## *Tile and Grout:*

All tile installation and grouting was performed by a TCNA representative. The installation procedure followed by the technician is outlined below.

The High Performance ANSI A118.4/ A118.11 thin-set mortar was mixed per manufacturer's instructions (mix ratio 20.9:100 by weight) and troweled over the IronPly Premium Underlayment with a 1/4" x 3/8" notched trowel. The thin-set was combed with the notched side to form parallel ridges. The 12" x 12" Crossville porcelain tiles were back buttered to ensure proper coverage. Once set, the installation was allowed to cure for 24 hours before grouting.

Custom Polyblend sanded grout was mixed with water per manufacturer's instructions (mix ratio 16.7:100 by weight) and forced into the 1/4" grout joints with a rubber float. 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. The grouted installation was subsequently allowed to cure for 40 days.

## **TEST RESULTS:**

The installation completed all fourteen cycles with no evidence of damage to the tiles or grout joints. The maximum deflection during cycling was 0.015" (during cycle 14). All evaluation criteria were based on 8 tiles and 8 grout joints in the wheel path of the Robinson-Type Floor Tester.

## **CONCLUSION:**

In accordance with the Performance-Level Requirement Guide and Selection Table of the 2015 *TCNA Handbook for Ceramic, Glass, and Stone Tile Installation* (page 41), the test pad reached the "EXTRA HEAVY" classification.

Katelyn Simpson  
Laboratory Manager

9/24/15  
Date

Appendix: Photos

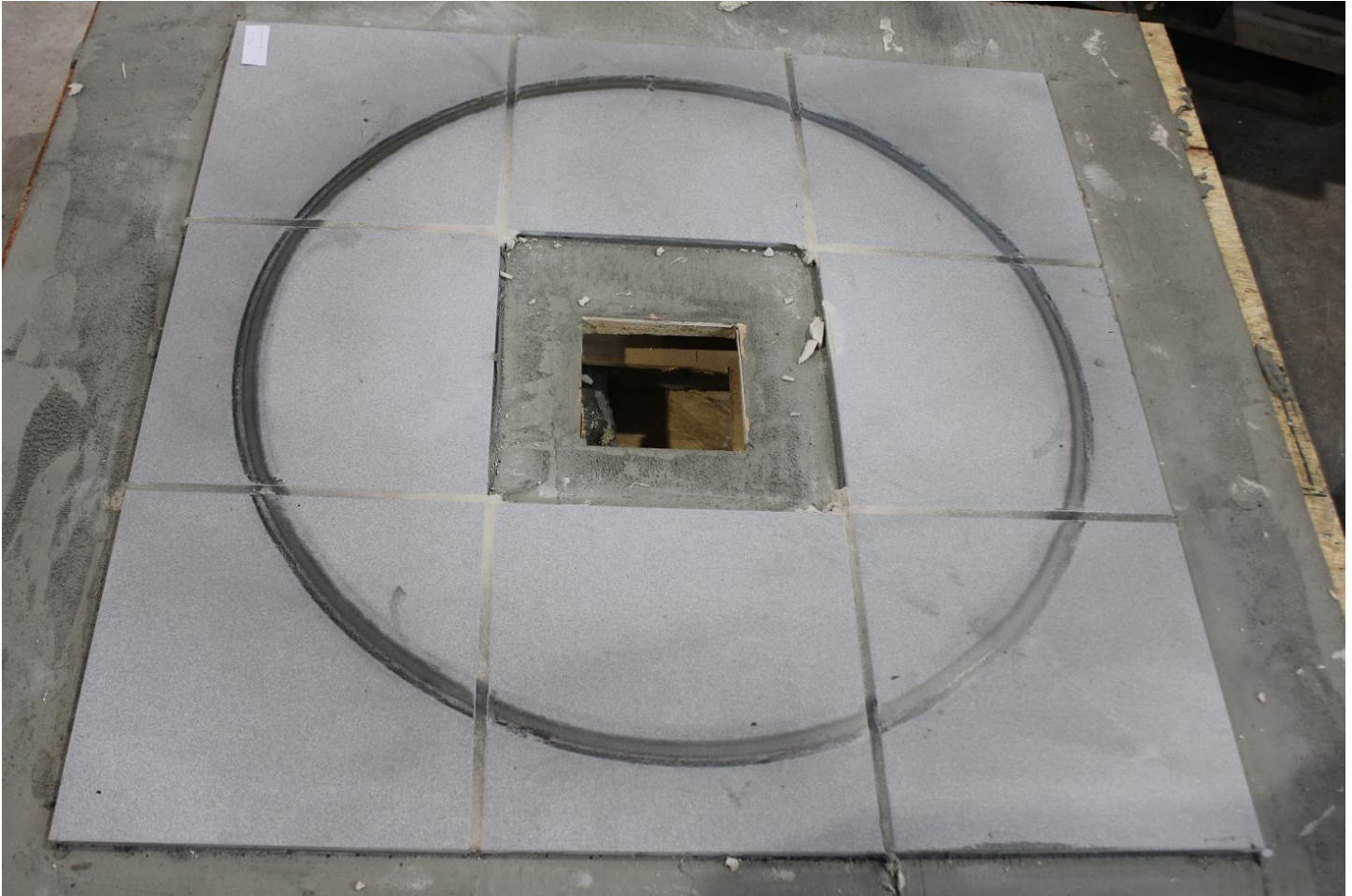


Image 1: Full assembly after testing



Katelyn Simpson  
Laboratory Manager

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