



# PRODUCT TESTING SERVICES

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

May 24, 2010

Heatlay Ltd.  
Attn: Dan Jackman  
41 Shoemaker St. Unit #1  
Kitchener, ON N2E 3G9  
Canada

Dear Mr. Jackman,

Tile Council of North America has tested the samples you submitted. Test report TCNA-115-10 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-115-10 PAGE: 1 OF 2

TEST REQUESTED BY: Heatlay Ltd.  
Attn: Dan Jackman  
41 Shoemaker St. Unit #1  
Kitchener, ON N2E 3G9  
Canada

TEST SUBJECT MATERIAL: Identified by client as: Heatlay HL Series Radiant Heating Mat

TEST DATE: 5/13/10 – 5/14/10

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

*Materials:*

A thin-set installation over a 47 ½" x 49 ½" plywood base was prepared using the following materials:

- 1) APA rated "Exposure 1" Tongue and groove plywood subfloor; 23/32" thick
- 2) APA rated "Exposure 1" plywood subfloor; 19/32" thick
- 3) TCNA High Performance Modified ANSI A118.4/A118.11 thin-set mortar
- 4) Heatlay HL Series Radiant Heating Mat
- 5) 8" x 8" Interceramic ceramic tiles with 3/16" grout joint
- 6) Laticrete Tripoly 1500 sanded grout

*Base and Underlayment:*

The 23/32" APA rated "Exposure 1" tongue and groove plywood subfloor was nailed to four 2" x 2" joists spaced 16" O.C. to simulate the support provided in an actual installation. For maximum stiffness, the face grain was directed perpendicular to the joists. The tongue and groove 1/8" seam was positioned at the centerline of the system perpendicular to the joists. Prior to nailing the subfloor, a ¼" bead of construction adhesive was applied to each joist. The plywood was nailed to the joists with 2" ring shank nails set at 6" O.C. on the perimeter joists and 12" O.C. at the intermediate joists.

An additional layer of 19/32" plywood was nailed to the subfloor with 2" wood screws spaced 8" O.C. throughout the field. The face grain of the second layer was positioned perpendicular to the grain of the 23/32" plywood subfloor.

TCNA High Performance Modified ANSI A118.4/A118.11 thin-set mortar, mixed with water per the manufacturer's instructions, was troweled over the plywood subfloor with a ¼" x ¼" square-notched trowel. The thin-set mortar was first keyed in with the flat side of the trowel and then combed with the notched side to form parallel ridges. Heatlay HL Series Radiant Heating Mat was immediately installed over the plywood subfloor. A rubber grout float was used to eliminate any air pockets underneath the Heatlay HL Series Radiant Heating Mat. The system was allowed to cure for 24 hours.

  
Katelyn Simpson  
Laboratory Manager

5/24/10  
Date



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## *Tile and Grout:*

TCNA High Performance Modified ANSI A118.4/A118.11 thin-set mortar, mixed with water per the manufacturer's instructions, was troweled over the Heatlay HL Series Radiant Heating Mat with a 1/4" x 1/4" square-notched trowel. The thin-set mortar was first keyed in with the flat side of the trowel and then combed with the notched side to form parallel ridges. The 8" x 8" Interceramic ceramic tiles were set in the thin-set by pressing down and sliding the tile in a direction perpendicular to the combed ridges. After the tiles were installed, the thin-set was allowed to cure for 24 hours before grouting.

Laticrete Tripoly 1500 sanded gout, mixed with water per the manufacturer's instructions, was forced into the 3/16" 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 28 days.

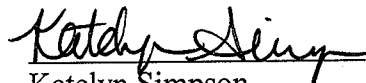
At the end of the cure period, the installation was subjected to load cycling as defined in ASTM C-627.

## TEST RESULTS:

The installation completed fourteen cycles (steel wheels, three hundred pounds per wheel), with no evidence of damage to the tile or grout joints. All evaluation criteria were based on 16 tile and 16 grout joints in the wheel path of the Robinson-Type Floor Tester. The maximum deflection during cycling was 0.044".

## CONCLUSION:

In accordance with the Performance-Level Requirement Guide of the 2010 *TCA Handbook for Ceramic Tile Installation* (page 15) the installation is classified as "EXTRA HEAVY" for "extra heavy and high-impact use in food plants, dairies, breweries, and kitchens".

  
Katelyn Simpson  
Laboratory Manager

5/24/10  
Date