



PRODUCT TESTING SERVICE

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

June 22, 2007

EGS EASYHEAT
Attn: Charles Durias
99 Union Street
Elmira, Ontario Canada N3B 3L7

Dear Mr. Durias,

Tile Council of North America has tested the samples you submitted. Test report TCNA-196-07 is enclosed. If you have any questions or concerns, please contact us.

Best Regards,

TILE COUNCIL OF NORTH AMERICA, INC.

Katelyn Luedeke
Laboratory Engineer
Enclosures



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TCNA TEST REPORT NUMBER: TCNA-196-07 PAGE: 1 OF 2

TEST REQUESTED BY: EGS EASYHEAT
Attn: Charles Durias
99 Union Street
Elmira, Ontario Canada N3B 3L7

TEST SUBJECT MATERIAL: Identified by client as: EGS EASYHEAT

TEST DATE: 6/13/07

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 48" x 49 1/2" plywood base was prepared using the following materials:

- 1) APA rated "Exposure 1" plywood subfloor; 19/32" thick (2 layers)
- 2) EGS EASYHEAT Warm Tiles mat
- 3) Ardex FB9L Portland cement based thin-set mortar
- 4) 12" x 12" American Olean Ceramic Tile
- 5) Custom Polyblend Sanded Grout

Base and Underlayment:

The 19/32" plywood subfloor was nailed to four 2" x 2" joists spaced 16" O.C. to simulate the support provided in an actual installation. Prior to nailing the subfloor, a 1/4" bead of construction adhesive was applied to each joist. For maximum stiffness, the face grain was directed perpendicular to the joists. The plywood was nailed to the joists with 2" ring shank nails set at six-inch centers on the perimeter joists and twelve-inch centers at the intermediate joists.

An additional layer of 19/32" plywood was nailed to the first subfloor layer with 1 1/4" ring shank nails. The nails were spaced 8" O.C. throughout the field and 8" O.C. along the perimeter. The face grain of the second layer was positioned perpendicular to the grain of the first layer of plywood. Special attention was taken to avoid hitting the joist.

The EGS EASYHEAT Warm Tiles mat was laid on top of the second layer of plywood and secured with staples along the perimeter of the subfloor. Ardex FB9L Portland cement based thin-set mortar, was mixed with water per manufacturer's instructions, and was troweled over the EASYHEAT mat with the flat side of a trowel. Additionally, ridges were then pulled with a 1/4" x 3/8" U-notched trowel and flattened out to form a skim coat. Special attention was taken to make sure the skim coat was pulled above the heating cables. The skim coat was then allowed to dry for 24 hours before setting the tile.



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Tile and Grout:

Ardex FB9L Portland cement based thin-set mortar, was mixed with water per manufacturer's instructions, and was troweled over the skim coat with a 1/4" x 3/8" U-notched trowel. The thin-set mortar was combed with the notched side of the trowel to form parallel ridges. The ceramic tiles were set in the thin-set by pressing down and sliding the tiles in a direction perpendicular to the combed ridges. A beat-in block and rubber mallet were used to reduce lippage between tiles. After the tiles were installed, the thin-set was allowed to cure for 24 hours before grouting.

Custom Polyblend sanded grout, mixed with water per manufacturer's instructions was 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 clean 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. The deflection of the plywood subfloor was measured under the wheel path, midway between the 16" O.C. joists.

TEST RESULTS:

The installation completed all fourteen cycles with no evidence of damage to the tiles or grout joints. The maximum deflection of the plywood subfloor during load cycling was approximately 0.023".

All evaluation criteria were based on eight (8) tiles and eight (8) grout joints in the wheel path of the Robinson-type floor tester.

CONCLUSION:

In accordance with the Performance-Level Requirement Guide of the 2007 *TCA Handbook for Ceramic Tile Installation* (page 16) the installation is classified as "EXTRA HEAVY" for "extra heavy and high-impact use in food plants, dairies, breweries, and kitchens".

Katelyn Luedeke
Laboratory Engineer

6/22/07
Date