

VEREA CLAY ROOF TILE TEST REPORT

SCOPE OF WORK

FM 4473-2011 IMPACT RESISTANCE TESTING

REPORT NUMBER

L1863.01-801-44-R0

TEST DATE(S)

07/16/20

ISSUE DATE

08/14/20

RECORD RETENTION END DATE

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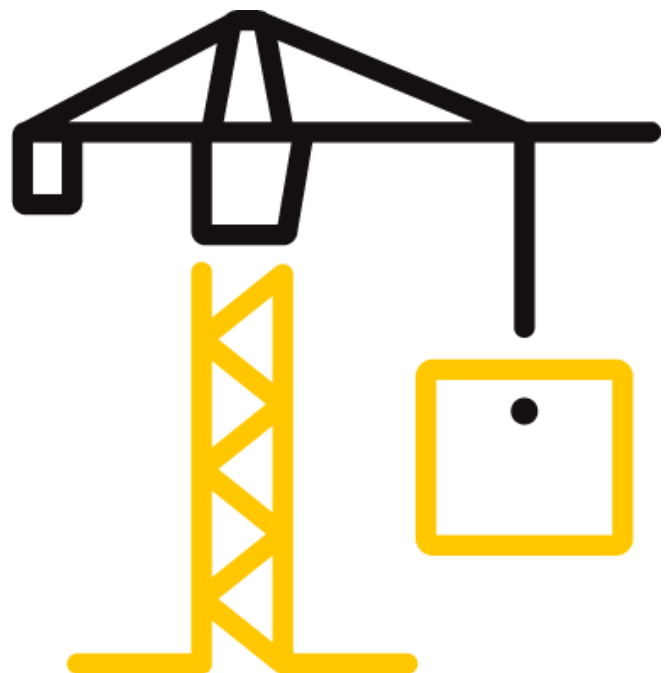
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TEST REPORT FOR VEREA CLAY ROOF TILE

Report No.: L1863.01-801-44-r0

Date: 08/14/20

REPORT ISSUED TO

VEREA CLAY ROOF TILE

7275 NW 61 Street

Miami, FL 33166

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by Vereza Clay Roof Tile to perform impact resistance testing in accordance with FM 4473 on their Barrel Roof Tile. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at Intertek test facility in Plano, TX. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

SECTION 2

SUMMARY OF TEST RESULTS

Product Type: Barrel Roof Tile

Series/Model: Grade 1

Product Classification Achieved: Class 3

For INTERTEK B&C:

COMPLETED BY:	Fred Muñoz	REVIEWED BY:	Tyler Westerling, P.E.
TITLE:	Project Manager	TITLE:	Sr. Project Engineer
SIGNATURE:		SIGNATURE:	
DATE:	08/14/20	DATE:	08/14/20

LFM: ac/cm

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SECTION 3

TEST METHOD(S)

The specimens were evaluated in accordance with the following:

ANSI/FM 4473 (2011), *Specification Test Standard for Impact Resistance Testing of Rigid Roofing Materials by Impacting with Freezer Ice Balls*. American National Standard, FM Approvals (January 2011).

SECTION 4

MATERIAL SOURCE/INSTALLATION

Test specimens were provided by the client. Representative samples of the test specimen(s) will be retained by Intertek B&C for a minimum of four years from the test completion date.

Installation of the tested product was performed by Intertek B&C. The tiles were secured to the deck in an overlapped fashion. No underlayment was used in the installation. The tiles were installed with 2-1/2" of overlap.

SECTION 5

EQUIPMENT

Cannon: Constructed from steel piping utilizing compressed air to propel the missile

Missile: 44.45 mm (1-3/4") diameter ice balls

Cannon Identification Number: 005469

Timing Device: Electronic Beam Type

Timing Device Calibration Date: 05/13/20

SECTION 6

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Fred Muñoz	Intertek B&C

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SECTION 7

TEST SPECIMEN DESCRIPTION

Product Type: Barrel Roof Tile

Series/Model: Grade 1

Color: Red

Finish: Natural

Overall Assembly Size: 775 mm (30-1/2") width by 933 mm (36-3/4") length

Nominal Thickness: 13 mm (1/2")

Tile Description:

Individual Tile Weight: 2790 g (6.15 lb)

Individual Tile Size: 156 mm (6-1/8") Top / 207 mm (8-1/8") Base width by 495 mm (19-1/2") length

Exposed Tile Size: 165 mm (6-1/2") Top / 207 mm (8-1/8") Base width by 432 mm (17") length

Number of Tiles: 10

Deck Construction

The wood test deck was 3' wide x 5' high and constructed with 2x4 pine construction lumber at the perimeter with one stud located at the midspan. The test deck was covered with 15/32" thick plywood decking secured to the test deck with #6 x 1-5/8" screws located 2" from each end and on 6" centers.

Tile Construction

The tile was constructed from clay. As a barrel roof tile, each tile is curved along the long axis forming a vaulted profile. Additionally, one end edge length is shorter than the other. Each tile had one nailing hole located 1-1/4" from the top edge and equidistant from each lateral edge.

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SECTION 8

TEST RESULTS

FM 4473, Ice Ball Impact Resistance

Sample Conditioning Temperature: 72°F for at least 4 hours

Sample Conditioning Relative Humidity: 50% for at least 4 hours

Ice Ball Conditioning Temperature: -23°C (-10°F) for at least 48 hours

Muzzle Distance from Test Specimen: 914 mm (36")

The ambient temperature during testing was 72°F. The results are tabulated as follows.

Test Unit #1

IMPACT ¹	MISSILE					IMPACT AREA	OBSERVATIONS	RESULTS
	VELOCITY m/s (fps)	ORIENTATION	WEIGHT g (lbs)	DIAMETER mm (in.)	ENERGY ft-lb			
1	30.82 (101.1)	15° of vertical	43.8 (0.097)	44.45 (1.75)	15.34	Bottom left corner, 2" from each edge	No visible cracking or breakage	Pass
2	31.09 (102.0)	15° of vertical	42.7 (0.094)	44.45 (1.75)	15.22	Bottom left corner, 2" from each edge	No visible cracking or breakage	Pass
3	30.78 (101.0)	15° of vertical	42.8 (0.094)	44.45 (1.75)	14.96	Center of tile, 8" from bottom	No visible cracking or breakage	Pass
4	29.78 (97.7)	15° of vertical	43.5 (0.096)	44.45 (1.75)	14.00	Center of tile, 8" from bottom	No visible cracking or breakage	Pass

¹ The exposed tile area is less than 125 square inches, so according to the FM 4473 standard only two (2) shots are required

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SECTION 9

CONCLUSION

The sample tested meets the performance requirements set forth in the referenced test procedures for a Class 3.

SECTION 10

TESTING SETUP



Photo No. 1
Test Specimen Configuration

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SECTION 11 PHOTOGRAPHS

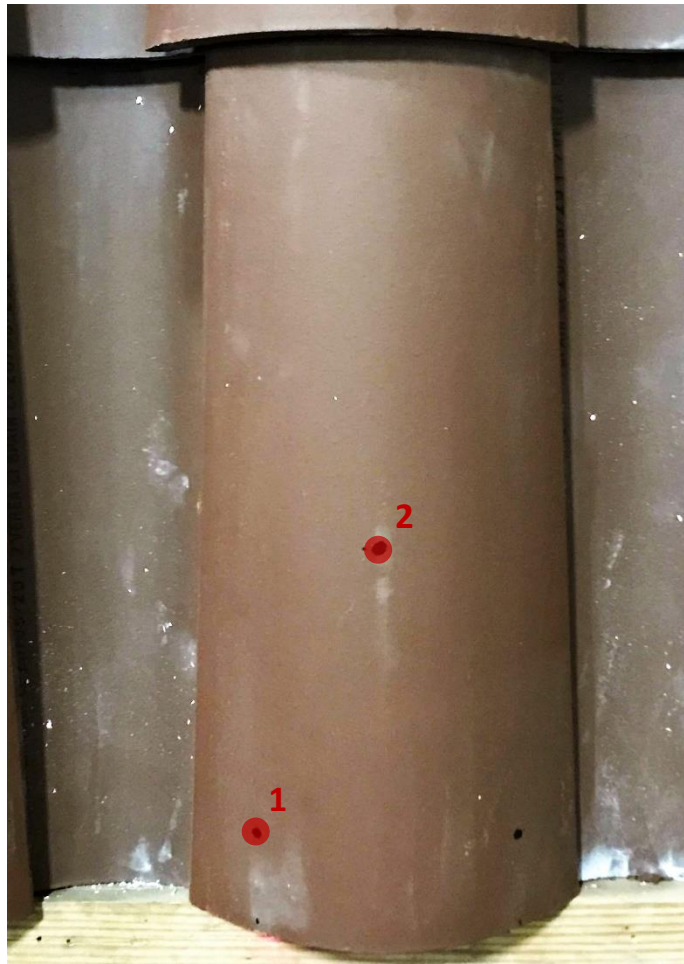


Photo No. 2
Front View of the Tile
With Impact Locations



Total Quality. Assured.

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REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	08/14/20	N/A	Original Report Issue