

PRESAJET SAPI DE CV DBA CROWN BUILDING PRODUCTS TEST REPORT

SCOPE OF WORK

FM 4473 IMPACT RESISTANCE TESTING OF WINDSOR ROOF TILE

REPORT NUMBER

P5633.04-801-44 R1

TEST DATE(S)

12/21/22

ISSUE DATE

03/13/23

REVISION DATE

03/15/23

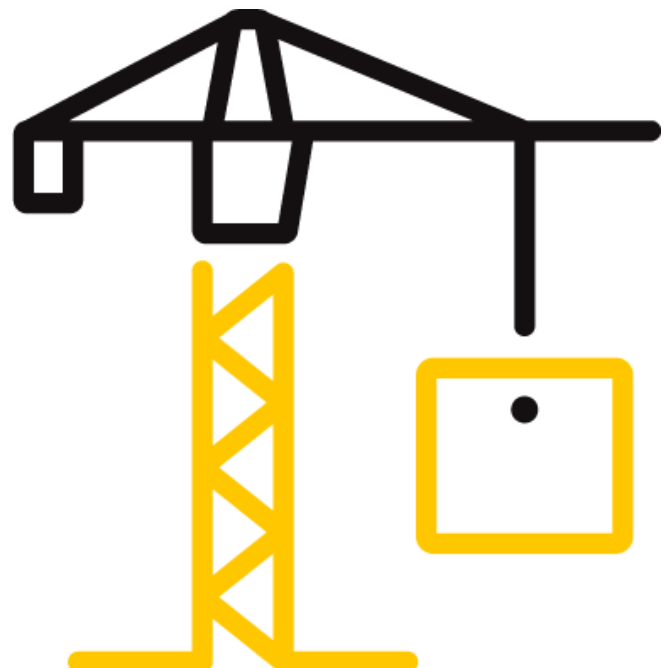
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TEST REPORT FOR PRESAJET SAPI DE CV DBA CROWN BUILDING PRODUCTS

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REPORT ISSUED TO

PRESAJET SAPI DE CV DBA CROWN BUILDING PRODUCTS

Planta Garcia

Carretera a Villa de Garcia km. 11.8

Garcia, Nuevo León, México 66001

SECTION 1

SCOPE

Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted by Crown Roof Tiles to perform impact resistance testing in accordance with FM 4473 on their Windsor Roof Tile. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at Intertek B&C test facility in Plano, Texas

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SECTION 2

SUMMARY OF TEST RESULTS

Product Type: Roof Tile

Series/Model: Windsor

Product Classification Achieved: Class 3

For INTERTEK B&C:

COMPLETED BY:

Lucio "Fred" Muñoz

REVIEWED BY:

Jeff Crump, FMPC

TITLE:

Project Manager

TITLE:

Lab Manager

SIGNATURE:

SIGNATURE:

DATE:

03/15/23

DATE:

03/15/23

LFM:jc/cm

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SECTION 3 TEST METHOD(S)

The specimens were evaluated in accordance with the following:

ANSI/FM 4473-2011 (R2020), *American National Standard for Impact Resistance Testing of Rigid Roofing Materials by Impacting with Freezer Ice*

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 Building & Construction (B&C). 1x2 wood battens were secured to the deck with #8 x 2-1/2" wood screws located on 18" centers. Battens were spaced 14" on center from the bottom. Tiles were placed on the battens in overlapped weatherboard fashion and secured with #8 x 2-1/2" located in one nail hole. Tiles overlapped 3" at the bottom and 1" at the sides.

SECTION 5 EQUIPMENT

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

Missile: 44.5 mm (1-3/4") diameter ice balls

Cannon Identification Number: 005469

Timing Device: Electronic Beam Type

Timing Device Calibration Date: 06/21/22

SECTION 6 LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Tim Lastovica	Crown Roof Tiles
Fred Muñoz	Intertek B&C

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TEST SPECIMEN DESCRIPTION

Tile Description: Roofing Tile

Individual Tile Weight: 5533.8 g (12.2 lb)

Individual Tile Size: 333 mm (13-1/8") width by 438 mm (17-1/4") length

Exposed Tile Size: 311 mm (12-1/4") width by 356 mm (14") length

Number of Tiles: 3 width by 3 length

Deck Construction

The wood test deck was 3' wide x 4' 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.

Clips: No clips were utilized.

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**SECTION 8
TEST RESULTS**

FM 4473, Ice Ball Impact Resistance

Sample Conditioning Temperature: 19°C (66°F) for at least 4 hours

Sample Conditioning Relative Humidity: 40% for at least 4 hours

Ice Ball Conditioning Temperature: -22°C (-7°F) for at least 48 hours

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

The ambient temperature during testing was 17°C (63°F). The results are tabulated as follows.

Test Unit #1

IMPACT	MISSILE					IMPACT AREA	OBSERVATIONS	RESULTS
	VELOCITY m/s (fps)	ORIENTATION	WEIGHT g (lbs)	DIAMETER mm (in.)	ENERGY ft-lb			
1	31.2 (102.4)	15° of vertical	42.2 (0.093)	44.5 (1.75)	15.16	Bottom left corner, 2" from bottom	No visible cracking or breakage	Pass
2	31.5 (103.3)	15° of vertical	42.1 (0.093)	44.5 (1.75)	15.39	Bottom left corner, 2" from bottom	No visible cracking or breakage	Pass
3	31.5 (103.3)	15° of vertical	42.1 (0.093)	44.5 (1.75)	15.39	Center, 8" from bottom	No visible cracking or breakage	Pass
4	31.5 (103.3)	15° of vertical	42.1 (0.093)	44.5 (1.75)	15.39	Center, 8" from bottom	No visible cracking or breakage	Pass
5	30.7 (100.8)	15° of vertical	42.7 (0.094)	44.5 (1.75)	14.87	Bottom right corner, 2" from bottom	No visible cracking or breakage	Pass
6	31.1 (101.9)	15° of vertical	42.6 (0.094)	44.5 (1.75)	15.16	Bottom right corner, 2" from bottom	No visible cracking or breakage	Pass

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SECTION 9

CONCLUSION

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

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SECTION 10 PHOTOGRAPHS



Photo No. 1
Test Deck, Overall View

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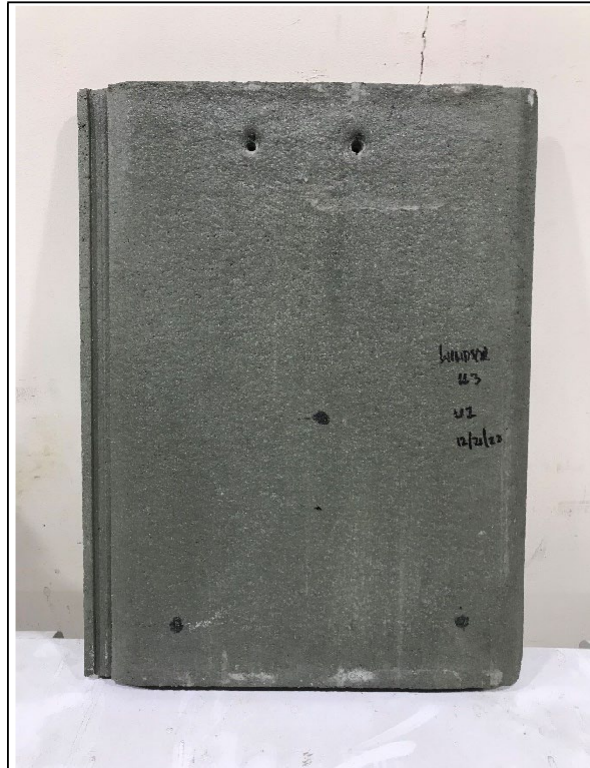


Photo No. 2
Impact Tile, Front View

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Photo No. 3
Impact Tile, Rear View



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**SECTION 11
REVISION LOG**

REVISION #	DATE	PAGES	REVISION
0	03/13/23	N/A	Original Report Issue
1	03/15/23	All	Updated company name and address