

**LISTING REPORT
INTERTEK TESTING SERVICES NA INC.**

8431 MURPHY DRIVE
MIDDLETON, WISCONSIN 53562
PHONE: 608-836-4400

TEST DATE:
NOVEMBER 28, 2000

REPORT DATE:
NOVEMBER 29, 2000

REPORT NO. J20026618-231

IMPACT RESISTANCE EVALUATION

OF

MAJESTIC SLATE ROOFING TILES

FOR:

ECOSTAR, INC.
230 CENTER DRIVE #201
VERNON HILLS, IL 60061

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ITS LISTING REPORT #J20026618-231
MODEL: MAJESTIC SLATE ROOFING TILES
CLIENT: ECOSTAR, INC.
TEST DATE: NOVEMBER 28, 2000

IMPACT RESISTANCE TESTS

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INTRODUCTION

This report gives the results of the evaluation of the provided sample (Job #J20026618). The test results described in this report are limited to the submitted items. On November 28, 2000 Intertek Testing Services conducted tests on Majestic Slate Roofing Tiles at the ITS Middleton, Wisconsin facility for Ecostar, Inc. The tests conducted are listed in the procedure section. The samples were tested according to UL 2218, "Impact Resistance of Prepared Roof Covering Materials", dated May 31, 1996.

SPECIMEN DESCRIPTION

MAJESTIC SLATE:

Shingle Type: Injection Molded Polymer Roofing Tile
Dimensions: 18 inches long by 12 inches wide by ¼ inch thick-tapered
Weight per Square: 252 lbs.
Color: Smoke

PROCEDURE

A 3 foot by 3 foot square base frame was constructed, using nominal 2 inch by 4 inch wood studs, with a stud positioned centrally, running parallel to the edges. The frame was sheathed with 15/32 inch A-C Grade plywood, with the 'A' side facing up. The roofing material was applied with the recommended exposure of 6 inches using galvanized 1-1/2 inch long roofing nails with 3/8 inch diameter heads (2 nails per tile). All materials used in construction of the test samples were stored at ambient temperatures of approximately 70 degrees F for 48 hours prior to testing. The test decks were then placed on a concrete floor and a 2 inch diameter stainless steel ball, weighing 1.18 lbs., was elevated to 20 feet with an electromagnetic clamp and then released. The ball was dropped twice on the same impact location, and depression measurements and observations were made. This procedure was repeated for 6 different impact locations on each test deck. Observations were made using 5X magnification.

RESULTS

MAJESTIC SLATE

<u>Drop Location</u>	<u>Distance Between Depressions</u>	<u>Depth of Depression</u>	<u>Observations</u>
Edge over Seam	Less than 1/2"	No Visible Depression	No evidence of tearing, fracturing, cracking, splitting, rupture, crazing, or other evidence of opening in the roof covering system
Corner	Less than 1/2"	No Visible Depression	No evidence of tearing, fracturing, cracking, splitting, rupture, crazing, or other evidence of opening in the roof covering system
Center	Less than 1/2"	No Visible Depression	No evidence of tearing, fracturing, cracking, splitting, rupture, crazing, or other evidence of opening in the roof covering system
Center	Less than 1/2"	No Visible Depression	No evidence of tearing, fracturing, cracking, splitting, rupture, crazing, or other evidence of opening in the roof covering system
Seam	Less than 1/2"	No Visible Depression	No evidence of tearing, fracturing, cracking, splitting, rupture, crazing, or other evidence of opening in the roof covering system
Corner	Less than 1/2"	No Visible Depression	No evidence of tearing, fracturing, cracking, splitting, rupture, crazing, or other evidence of opening in the roof covering system

CONCLUSION

The Majestic Slate roofing tiles, as described herein, met the requirements of UL 2218 "Impact Resistance of Prepared Roof Covering Material" after testing with a 2.00 inch diameter ball at a 20 foot drop distance.

Test Conducted by:



Russ Burt
Engineering Technician

Report Reviewed by:



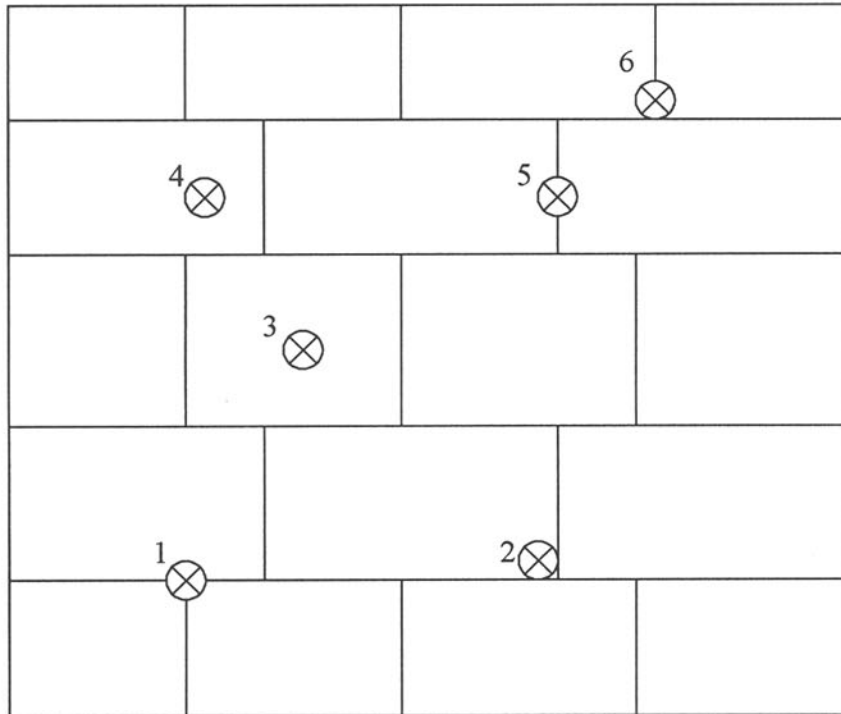
Jim Turgeson
Project Manager- Fenestration

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IMPACT LOCATIONS



INTERTEK TESTING SERVICES, INC.

Engineering Judgement Record

Applicant's Name: EcoStar Division of Carlisle Syn-Tec

Project Number: 3019573

Product: Roof Covering Material

Cat. No. : _____

Applicable Standards: UL 2218

Rating: _____

Section or Clause: _____

Description of the Feature in Question:

- Addition of Seneca Shake, Colonial Tile, and Titus Tile shapes to existing product listing.

Rationale for the Engineering Judgement:

- The new tile shapes are made using the same formulation as the Majestic Slate.
- The new tile shapes are not to be less than 3/8 of an inch in thickness.
- Reference Documents: ITS reports #J20009325-231, #J20026618-231 and existing listing.

Engineer:


James F. Turgeson

Reviewer:


Nigel R. Stamp

Engineering Judgement (3019100) General Products