Architectural Testing

DYNAMIC WIND PERFORMANCE TEST REPORT

Rendered to:

WINDSTRIPS, INC.

SERIES/MODEL: Windstrips®
Underlayment Retaining System

Report No: 56259.01-122-44
Report Date: 03/22/05
Expiration Date: 03/14/09

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York, PA 17402-9405
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WINDSTRIPS, INC.
P.O. Box 873
Erie, Colorado 80516

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Series/Model: Windstrips® Underlayment Retaining System

Project Summary: Architectural Testing, Inc., (ATI) was contracted by Windstrips, Inc. to perform dynamic wind resistance testing of their roofing paper retaining system. This report includes a complete description of the product, the "As Tested" roof assemblies, photos, installation details, and documentation of the test results.

Product Description: The Windstrips® product is a 1-1/8" wide by 0.009" thick plastic strip. The strip is yellow in color and imprinted with black ink (See Photo No. 1).

Equipment: The wind generator consists of an engine driven vane axial fan. The fan blades are fixed into a 5-1/2° pitch as marked on the fan. The plenum has an outlet of 8' by 4' (w x h) with eight 2' by 2' baffled outlets.

Set-up: Each test assembly was centered in front of the vane axial fan with the leading edge 24" from the plenum outlet. The assemblies were anchored to the fan and the wind was applied as described in the Test Procedure section of this report.

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WIND RESISTANCE TEST

Overall Size: Test 1 and Test 2 - 6' 0" wide by 8' 0" long.
Test 3 and Test 4 - 8' 0" wide by 10' 0" long with valley, eave, and rake exposure.

General Description: The roof system test assembly for Test 1 and Test 2 was an 8' wide by 6' long sloped roof section having a 2:12 pitch and a 1' 6" leeward section beyond the ridge. The roof system test assembly used for Test 3 and Test 4 was 8' wide by 10' long and incorporated a valley, eave, and one rake condition. The plywood test decks consisted of four-ply 15/32" thick sheathing installed over 2x10 perimeter supports and 2x10 intermediate supports 24" on center. The valley condition was constructed into the test deck and located at the deck's front edge.

Underlayment: 30 lb saturated felt (ASTM D 4869-88 Type II)

Installation:

Test Unit #1 and Test Unit #3:

Both units utilized 30 lb saturated felt applied to the deck using Windstrips® and staples. The felt was applied with a 4" overlap at each seam and held-in-place with staples applied in a 24" wide "W" pattern across the deck approximately 9" apart. Windstrips® were installed along each edge of the felt and above the seams in the field with staples spaced every 9". All staples were 3/8" crown by 3/8" long galvanized and were installed with a manual staple hammer.

Test Unit #1 and Test Unit #3 were installed by Mr. Steven Clisset of Windstrips, Inc. over a period of approximately 10 minutes per unit.

Test Unit #2 and Test Unit #4:

Both units utilized 30 lb saturated felt applied to the deck using 1-1/4" long ring shank nails with a 1" diameter plastic cap (See Photo No. 2). The felt was applied with a 4" overlap at each seam and held-in-place on the deck with nails 6" on center around the perimeter and 12" on center in rows 12" apart across the field of the deck per the requirements of the 2001 Florida Building Code, Section 1518.2.1.

Test Unit #2 and Test Unit #4 were installed by Mr. John McClane, Senior Technician of Architectural Testing, Inc. over a period of approximately 20 minutes per unit.

Test Procedure:

The following tables explain the wind speed and durations for each specimen tested.

Test Unit #1 and Test Unit #2

Interval No.	Wind Speed (mph)	Time (minutes)
1	35	5
2	50	5
3	0	5
4	65	5
5	80	5
6	0	5
7	95	5
8	110	5

Test Unit #3 and Test Unit #4

Interval No.	Wind Speed (mph)	Time (minutes)
1	35	5
2	50	5
3	65	5
4	80	5
5	0	5
6	95	5
7	110	5

Test conditions represented continuous exposure for the wind speeds and durations stated above. Current building code wind speeds are based on a 3-second gust duration. For reference, the following table is provided (Ref. 2001 Florida Building Code, Table 1606.1.6.1).

3-sec. Gust Wind Speed (MPH)	85	90	100	105	110	120	125	130
Equivalent Sustained Wind Speed (MPH)	70	75	80	85	90	100	105	110

Calibration: Wind stream velocity was calibrated prior to the test and is documented in ATI Report No. 56259.02-122-44.

Test Results: At the conclusion of all tests, the underlayment was completely intact and secured to the test deck.

Detailed drawings, representative samples of the test specimen, and a copy of this report will be retained by ATI for a period of four years from the original test date. The above results were secured by using the designated test methods and they indicate compliance with the performance requirements of the above referenced specification. This report does not constitute certification of this product, which may only be granted by the certification program administrator. This report may not be reproduced, except in full, without the approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC.:

Digitally Signed by: Dwayne A. Spangler

Dwayne A. Spangler

Digitally Signed by: Joseph A. Reed

Joseph A. Reed, P.E.
Director - Engineering and Product Testing

DAS:das/jar

Attachments (pages):
Appendix-A: Photographs (3)

Revision Log

Rev. #	Date	Page(s)	Revision(s)
0	03/22/05	N/A	Original report issue

Appendix A

Photographs

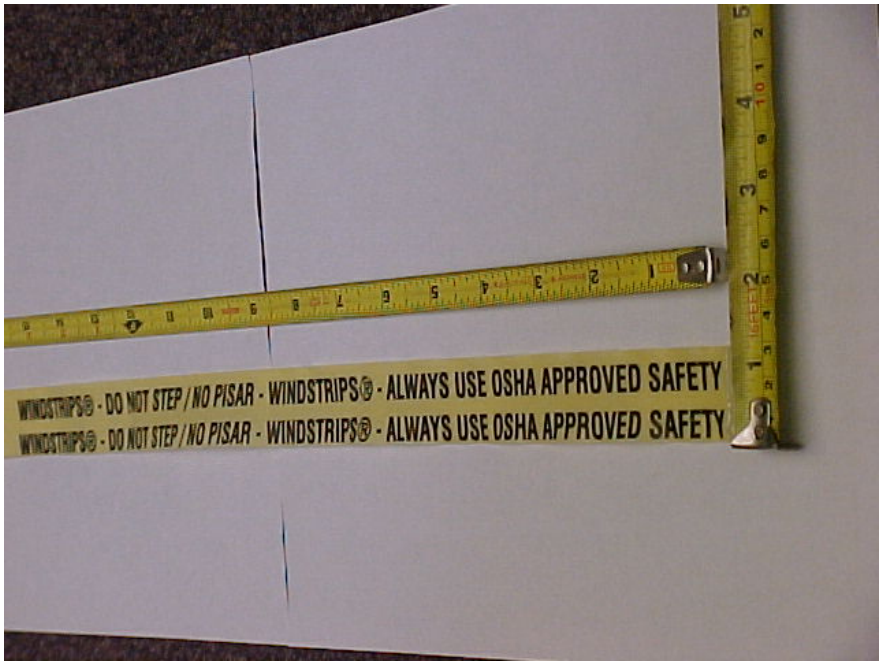

Photo No. 1
WindStrips® Product

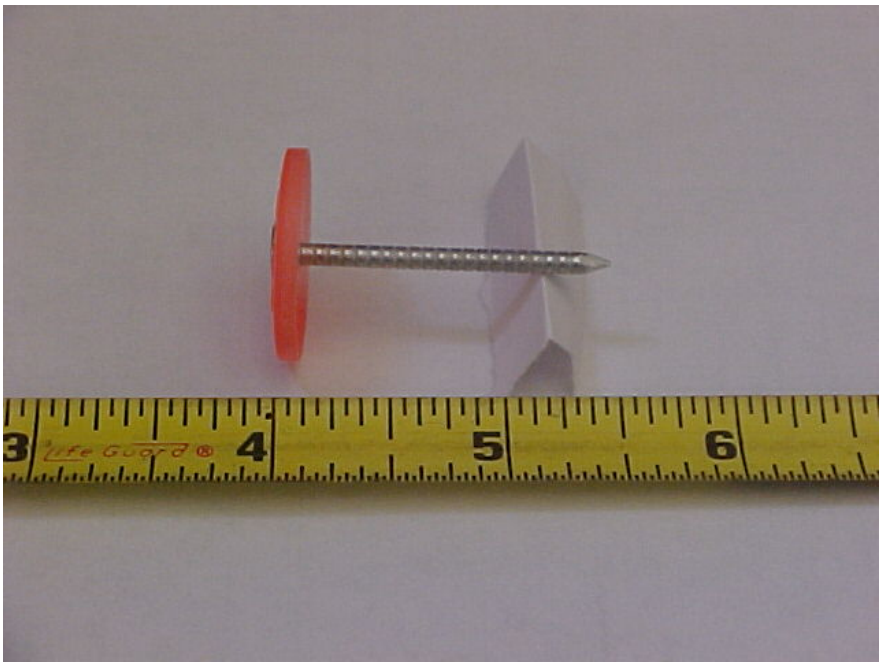

Photo No. 2
Ring Shank Cap Nail

Photo No. 3
Test Unit #1 at 110 mph

Photo No. 4
Test Unit #2 at 110 mph

Photo No. 5
Test Unit #3 at 110 mph

Photo No. 6
Test Unit #4 at 110 mph