

TAS 100 PERFORMANCE TEST REPORT

Rendered to:

TEMO, INC.

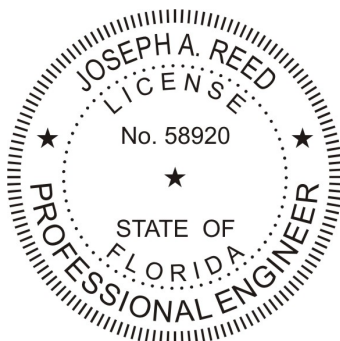
PRODUCT TYPE: Sunroom Roof Panel

This report contains in its entirety:

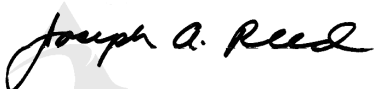
Cover Page: 1 page

Report Body: 5 pages

Photos: 3 pages



Date: 2006.06.05 16:06:03 -04'00'

A handwritten signature in black ink that reads "Joseph A. Reed".

Digitally Signed by: Joseph A. Reed

Report No: 64395.01-122-44
Test Completion Date: 05/17/06
Report Date: 06/05/06
Expiration Date: 05/17/10

TAS 100 PERFORMANCE TEST REPORT

Rendered to:

TEMO, INC.
20400 Hall Road
Clinton Township, Michigan 48038

Report No: 64395.01-122-44
Test Date: 05/17/06
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Expiration Date: 05/17/10

Project Summary: Architectural Testing, Inc. (ATI) was contracted by TEMO, Inc. to conduct wind driven rain testing in accordance with Florida Building Code, Test Protocols for High Velocity Hurricane Zone, Protocol TAS 100 on asphalt shingles installed over sunroom roof panels. The tested system successfully completed all the requirements for the wind driven rain test. All test data, photos, and results are included herein.

Test Specification: All tests were performed in accordance with the referenced specification, unless stated otherwise.

TAS 100-95, Test Procedure for Wind and Wind Driven Rain Resistance of Discontinuous Roof Systems.

Test Specimen Description:

Product Type: 3" Thick Sunroom Roof Panels

Overall Size: 8' 0" wide by 10' 0" deep

Roof Panel Size (2): 4' 0" wide by 10' 0" deep by 3" thick

Test Sample Description: The roof panels utilized 0.032" thick aluminum skins on the interior and exterior face. The skins were laminated to a 3" thick polystyrene core with rolled on adhesive. The panel cords utilized tongue and groove construction at the panel-to-panel connection. A PVC transition strip was utilized on the interior to cover the exposed joint. The PVC transition strip was fabricated from a 0.050" thick extruded vinyl member.

Test Specimen Description: (Continued)

Roof Deck Description: An 8' 0" wide by 10' 0" deep roof deck was utilized on a 3:12 slope. The roof deck consisted of double Spruce-Pine-Fir #2 nominal 2x10 lumber around the perimeter the roof deck.

Test Specimen Installation: The roof system was installed into a wood roof frame constructed of 2x10 Spruce-Pine-Fir roof joists. A layer of ice and water shield was applied over the roof panels. The roof panels were secured to the wood frame with 1/8" x 4" screws which were installed through the ice and water shield, end caps (where applicable) and the roof panel. The panels were then covered with 15 year 3-tab asphalt shingles installed with five (5) 0.120" diameter with 0.375" diameter head by 1-1/4" long roofing nails per shingle. At the peak of the roof, an aluminum end cap was utilized. The end cap was constructed from 0.080" thick thermally improved (poured and debridged) extruded aluminum. Along all other edges of the roof, a drip edge and water barrier cap is utilized. The drip edge was fabricated from a 0.080" thick extruded aluminum member and had two 1" long legs that the roof panel was inserted between.

Test Procedure: The following test procedure was used during testing:

The wind speed intervals were conducted as follows:

<u>Interval No.</u>	<u>Wind Speed (mph)</u>	<u>Time (min)</u>	<u>Water Spray</u>
1	35	15	On
2	0	10	Off
3	70	15	On
4	0	10	Off
5	90	15	On
6	0	10	Off
7	110	5	On
8	0	10	Off

Test Results: The following results have been recorded:

Protocol TAS 100-95 Wind Driven Rain

Test Specimen: Shingle over Sunroom Roof Panel

<u>Wind Speed</u>	<u>Results</u>	<u>Allowed</u>
35 mph	No Leakage	No Leakage
70 mph	No Leakage	No Leakage
90 mph	No Leakage	No Leakage
110 mph	No Leakage	No Leakage

<u>Wind Speed</u>	<u>Observations</u>
35 mph	No damage
70 mph	Two shingles in the middle of 13th course lifted up off of the roof. The shingles remained attached to the roof and laid flat on the roof after the completion of the test.
90 mph	Three shingles in the middle of 13th course lifted up off of the roof. The shingles remained attached to the roof and laid flat on the roof after the completion of the test.
110 mph	Four shingles in the middle of 13th course and two shingles on the right side of the 6th course lifted up off of the roof. The shingles remained attached to the roof and laid flat on the roof after the completion of the test.

Results: PASSED

Official Observers: The following representatives witnessed all or part of the testing.

<u>Name</u>	<u>Company</u>
Ken Clutter	Architectural Testing, Inc.
Michael D. Stremmel, P.E.	Architectural Testing, Inc.

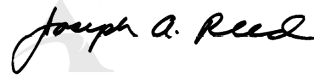
Representative samples of the test specimen and a copy of this report will be retained by ATI for a period of four years from the original test date. The above results were secured by using the designated test methods and they indicate compliance with the performance requirements of the above referenced 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: Michael D. Stremmel

Michael D. Stremmel, P.E.
Senior Project Engineer



Digitally Signed by: Joseph A. Reed

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

BME:vlm/cmd

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

Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
0	06/05/06	N/A	Original report issue

APPENDIX A

Photographs



Photo No. 1
Roof System Prior to Test



Photo No. 2
Roof System During 35 MPH Phase



Photo No. 3
Roof System During 70 MPH Phase



Photo No. 4
Roof System During 90 MPH Phase



Photo No. 5
Roof System During 110 MPH Phase



Photo No. 6
Roof System During 110 MPH Phase