



130 Derry Court • York, PA 17402-9405
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May 1, 1998

Mr. David Keener
 Fabral, Inc.
 3440 Hempland Road
 P.O. Box 4608
 Lancaster, Pennsylvania 17604-4608

RE: Stand 'N' Seam Metal Roof Test Results

Dear David:

On March 27, 1998, Architectural Testing, Inc. (ATI) performed air infiltration, air exfiltration and water penetration tests on your Stand 'N' Seam metal roof panels per ASTM E 1680-95 and ASTM E 1646-95. The following test results were obtained:

<u>Air Infiltration</u>	<u>Total</u>	<u>Tare</u>	<u>Results</u>
@ 1.57 psf	3.4	3.4	< 0.01 cfm/ft ²
@ 6.24 psf	11.0	11.0	< 0.01 cfm/ft ²
@ 12.0 psf	20.0	20.0	< 0.01 cfm/ft ²
@ 20.0 psf	26.0	26.0	< 0.01 cfm/ft ²

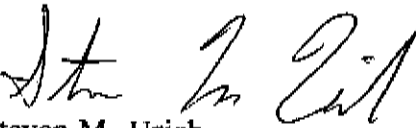
<u>Air Exfiltration</u>	<u>Total</u>	<u>Tare</u>	<u>Results</u>
@ 1.57 psf	3.4	3.4	< 0.01 cfm/ft ²
@ 6.24 psf	11.0	11.0	< 0.01 cfm/ft ²
@ 12.0 psf	20.0	20.0	< 0.01 cfm/ft ²
@ 20.0 psf	28.0	28.0	< 0.01 cfm/ft ²

<u>Water Penetration</u>	<u>Results</u>
@ 20.0 psf	No leakage

A full test report will be forwarded to you within two weeks. Should you have any questions or need further information, please contact me.

Sincerely,

ARCHITECTURAL TESTING, INC.


 Steven M. Urlich
 Test Engineer

SMU:cat
 cc: 01-31112

ARCHITECTURAL TESTING INC.

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PERFORMANCE TEST REPORT

Rendered to:

FABRAL, INC.
P.O. Box 4608
Lancaster, Pennsylvania 17604-4608

Report No: 01-31112.02
Test Date: 03/26/98
Report Date: 06/03/98

Project Summary: Architectural Testing, Inc. (ATI) was contracted by Fabral, Inc. to perform air and water testing on their model Stand 'N Seam metal roof panels. The test specimen successfully completed all of the requirements in the referenced specifications. Individual data and results are reported below.

Test Methods: The specimen was tested in accordance with the following:

ASTM E 1646-95, Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference.

ASTM E 1680-95, Standard Test Method for Rate of Air Leakage Through Exterior Metal Roof Panel Systems.

Test Specimen Description: The test specimen utilized of 16-gauge (0.062" thick) steel "C" purlins. Steel one-piece 18-gauge (0.050" thick) clips were used to anchor the panels to the purlins. The panels were 24-gauge (0.025" thick) steel by 16-1/2" wide by 2-1/2" high. The seams were lapped together and seamed with an electric seamer. A single bead of butyl caulk was shop applied to the female part of the seam on each panel. The overall size of the specimen was 6' 0" wide by 8' 9" long.

Test Results

The results are tabulated as follows:

<u>Title of Test</u>	<u>Results</u>
Simulated Thermal Expansion Cycling (2 cycles of 1" in ea. direction)	---
Preload (3 cycles) @ +15.0 psf	---
@ -20.0 psf	---

**Test Results
(Continued)**

<u>Title of Test</u>	<u>Total</u>	<u>Tare</u>	<u>Results</u>
Air Infiltration			
@ 1.57 psf	3.4	3.4	<0.01 cfm/ft ²
@ 6.24 psf	11.0	11.0	<0.01 cfm/ft ²
@ 12.0 psf	20.0	20.0	<0.01 cfm/ft ²
@ 20.0 psf	26.0	26.0	<0.01 cfm/ft ²
Air Exfiltration			
@ 1.57 psf	3.4	3.4	<0.01 cfm/ft ²
@ 6.24 psf	11.0	11.0	<0.01 cfm/ft ²
@ 12.0 psf	20.0	20.0	<0.01 cfm/ft ²
@ 20.0 psf	28.0	28.0	<0.01 cfm/ft ²
Water Penetration			
@ 6.24 psf			No leakage
@ 12.0 psf			No leakage
@ 20.0 psf			No leakage

Representative samples of the test specimen, and a copy of this report will be retained by ATI for a period of four years. This report is the exclusive property of the client so named herein and is applicable to the sample tested. Results obtained are tested values and do not constitute an opinion or endorsement by this laboratory.

For ARCHITECTURAL TESTING, INC.:



Steven M. Urich
Test Engineer



Joseph W. Wise
Senior Project Manager

SMU:rac
01-31112.02

DOCUMENT CONTROL ADDENDUM #01-31112.00**Current Issue Date: 06/03/98**

Report No.: 01-31112.01**Requested by:** David Keener, Fabral, Inc.**Purpose:** Testing of roof panels, in accordance with ASTM E 1646 and E 1680**Issued Date:** 05/18/98**Comments:****Report No.: 01-31112.02****Requested by:** David Keener, Fabral, Inc.**Purpose:** Revise report**Issued Date:** 06/03/98**Comments:** Eliminated street number from Fabral, Inc. address.
Corrected model name from "Stand 'N' Seam" to Stand 'N Seam".
Corrected "gauge" misspelling.
Corrected thickness of clips and panels in the Test Specimen Description.
Corrected description of installation in the Test Specimen Description.
Changed "urethane" sealant to "butyl" in the Test Specimen Description.