Project No. T132-09

Report Date: February 24, 2009

No. Pages: 7 (inclusive)

ASTM E-283-04 AIR LEAKAGE TEST
ASTM E-331-00 WATER PENETRATION TEST

7/8" CORRUGATED ROOF PANEL
37.33" COVERAGE X 24 GA STEEL

FOR

PETERSSEN ALUMINUM CORP.
1005 TONNE RD.
ELK GROVE VILLAGE, IL 60007

Prepared by:
Paul G. Farabaugh

Approved by:
Daniel G. Farabaugh, PE
AIR LEAKAGE AND WATER PENETRATION TESTING

**Purpose**

The purpose of this test is to establish air and water infiltration rates on the referenced test specimen in accordance with ASTM E-283-04 “Rate of Air Leakage Through Exterior Windows, Curtian Walls, and Doors Under Specified Pressure Differences Across the Specimen”, and ASTM E-331-00, “Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference”.

**Test Date**

2/23/09 & 2/24/09

**Test Specimen**

Manufacturer: Petersen Aluminum Corp.
1005 Tonne Rd.
Elk Grove Village, IL 60007

Panel: 7/8” Corrugated Roof Panel, 37.33” wide coverage X 24 ga steel

Side joint Sealant 3/16” thick X 1/4” wide Butyl Tape Sealer

**Test Apparatus**

Test Chamber: Vacuum chamber.

Manometer: Inclined manometer from Dwyer Instruments, 6” capacity.

Air Flow Meter: Laminar Flow Element
Installation

The panels were installed on the chamber frame and intermediate support. The panels were attached to each support using ¼”-14 X 1-1/4” long hex head self drill fasteners with 5/8” seal washer located at every other low cell of the panel. The panel side-joints were overlapping using butyl tape sealer with #12-14 X 1” long hex head self drill fasteners with 5/8” seal washer located at 12” oc. The panels were sealed to the perimeter frame with silicone sealant. Test was done with panels in horizontal position.

Test Procedure

The tests were conducted in accordance with ASTM E-283-04 “Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen”, and ASTM E-331-00,” Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference” and as provided herein.
Test Date 2/23/09

Ambient Temperature = 50 deg. F
Barometric Pressure = 30.3"Hg

ASTM E-283-04
AIR LEAKAGE TEST
Summary

POSITIVE PRESSURE
(INFILTRATION)

<table>
<thead>
<tr>
<th>Test Specimen</th>
<th>Static Pressure Differential (psf)</th>
<th>Air Leakage Rate (cfm/sf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAC 7/8” Corrugated Roof Panel</td>
<td>+1.57</td>
<td>0.014</td>
</tr>
<tr>
<td>37.33” wide X 24 ga</td>
<td>+6.24</td>
<td>0.024</td>
</tr>
</tbody>
</table>

NEGATIVE PRESSURE
(EXFILTRATION)

<table>
<thead>
<tr>
<th>Test Specimen</th>
<th>Static Pressure Differential (psf)</th>
<th>Air Leakage Rate (cfm/sf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAC 7/8” Corrugated Roof Panel</td>
<td>-1.57</td>
<td>0.003</td>
</tr>
<tr>
<td>37.33” wide X 24 ga</td>
<td>-6.24</td>
<td>0.007</td>
</tr>
</tbody>
</table>
ASTM E-331-00
WATER PENETRATION TEST
Summary

POSITIVE PRESSURE
(INFILTRATION)

<table>
<thead>
<tr>
<th>Test Specimen</th>
<th>Static Pressure Differential (psf)</th>
<th>Rate</th>
<th>Test Duration</th>
<th>Water Infiltration</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAC 7/8&quot; Corrugated Roof Panel</td>
<td>+6.24</td>
<td>5 gal./hr/sq.ft.</td>
<td>15 min</td>
<td>No Leakage</td>
</tr>
<tr>
<td>37.33&quot; coverage X 24 ga</td>
<td>+15.0</td>
<td>5 gal./hr/sq.ft.</td>
<td>15 min</td>
<td>No Leakage</td>
</tr>
</tbody>
</table>
2.67" X 7/8" CORRUGATED

PANEL PROFILE

OVERALL WIDTH = 39.75"
37.33" COVERAGE WITH ONE LAPPED RIB FOR SIDING
34.87" COVERAGE WITH 2 LAPPED RIBS FOR ROOFING
4.875" R"-

SEALANT

FASTENER PATTERN

APPLICATION →

PREVAILING WIND ←