Project No. T303-11

Report Date: October 6, 2011

No. Pages: 8 (inclusive)

ASTM E-283-04 AIR LEAKAGE TEST
ASTM E-331-00 STATIC WATER PENETRATION TEST
AAMA 501.1-05 DYNAMIC WATER PENETRATION TEST

16" SIDING PANEL W/ NAIL GROOVE

FOR

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

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AIR LEAKAGE AND WATER PENETRATION TESTING

Purpose

The purpose of this test is to establish air and water infiltration rates on the Petersen 16” Siding Panel w/ Nail Groove Wall Panels.

Test Date

10/5/11

Test Specimen

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

Panel: 16” Siding Panel w/ Nail Groove, 24 ga steel (nominal)

Substrate: 16 ga Studs @ 16” oc / 5/8” DensDeck / Tyvek Wrap w/ Taped Joints

Referenced Test Standards


- ASTM E 331-00 “Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference”

Test Assembly

An 8’ X 8’ mock-up assembly was constructed using steel framing supports comprised of 16 ga studs located at 16” oc. The 5/8” DensDeck was attached to the studs and then covered with the Tyvek barrier. The Tyvek Tape was used to seal all laps and joints of the Tyvek. The wall panels were attached using #10-16 X 1” long pancake head self drill fasteners located on the panel nail groove spaced at 16” oc through the DensDeck and into the 16 ga studs (1 panel fastener per support). There was no sealant used in the panel sidejoints. The test mock-up was positioned so that the panel sidejoints were in the horizontal direction.

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 AAMA 501.1-05 “Standard Test Method for Water Penetration of Windows, Curtain Walls and Doors Using Dynamic Pressure” and as provided herein.
### ASTM E-283-04

**AIR LEAKAGE TEST**

**Summary**

Manufacturer: Petersen Aluminum Corp.

Test Specimen: 16" Siding Panel w/ Nail Groove, 24 ga steel

Ambient Temp. = 68 deg.F

Barometric Pressure = 30.24" Hg

### POSITIVE PRESSURE (INFILTRATION)

<table>
<thead>
<tr>
<th>STATIC PRESSURE DIFFERENTIAL (PSF)</th>
<th>AIR LEAKAGE RATE (CFM/SF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.57</td>
<td>0.005</td>
</tr>
<tr>
<td>6.24</td>
<td>0.005</td>
</tr>
</tbody>
</table>

### Results:

As a result of the test pressures, the test specimen exhibited air leakage rates as shown on the above table.
ASTM E-331-00
WATER PENETRATION TEST
Summary

Manufacturer: Petersen Aluminum Corp.
Test Specimen: 16" Siding Panel w/ Nail Groove, 24 ga steel
Ambient Temp. = 68 deg.F

POSITIVE PRESSURE
(INFILTRATION)

<table>
<thead>
<tr>
<th>STATIC PRESSURE DIFFERENTIAL (PSF)</th>
<th>WATER SPRAY RATE (GAL/HR/SF)</th>
<th>TEST DURATION (MIN)</th>
<th>WATER INFILTRATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.24</td>
<td>5</td>
<td>15</td>
<td>None</td>
</tr>
<tr>
<td>12.48</td>
<td>5</td>
<td>15</td>
<td>None</td>
</tr>
</tbody>
</table>

Results:
As a result of the test pressures, the test specimen exhibited no water penetration as shown on the above table.
AAMA 501.1-05
DYNAMIC WATER TEST
Summary

Manufacturer: Petersen Aluminum Corp.

Test Specimen: 16" Siding Panel w/ Nail Groove, 24 ga steel

Ambient Temp. = 68 deg.F

<table>
<thead>
<tr>
<th>Static Pressure Differential (psf)</th>
<th>Water Penetration</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.0</td>
<td>None</td>
<td>No water leakage was detected</td>
</tr>
</tbody>
</table>

Results:

As a result of the test pressures, the test specimen exhibited no water penetration as shown on the above table.
MOCK-UP ASSEMBLY