Project No. T125-17

Report Date: January 31, 2017

No. Pages: 6 (inclusive)

ASTM E330 UNIFORM LOAD STRUCTURAL TEST

ON

LARGE PRECISION TILE PANEL
14-1/2" WIDE X 24 GA. STEEL

FOR

PETERSEN ALUMINUM CORP.
10551 PAC ROAD
TYLER, TX. 75707

Prepared by:

Paul G. Farabaugh

Approved by:

Daniel G. Farabaugh
Project No. T125-17

**Purpose**
The purpose of this test is to establish the structural loading on the test specimen mock-up in accordance with the referenced test standards and as provided herein.

**Referenced Test Standards**

**Test Completion Date**
1/26/17

Manufacturer:  Petersen Aluminum  
10551 PAC Rd.  
Tyler, TX. 75707

**Product Identification**  
*Specimen*: Large Precision Tile Panel, 14-1/2” wide, 24 ga. steel

**Substrate:**  
5/8" plywood decking / W. R. Grace Ice & Water Shield roof underlayment membrane

**Test Specimen Assembly**
The test mock-up was a 8’ wide X 8’ high (nominal) Large Precision Tile System mock-up. The mock-up frame was a wood frame comprised of 2 x 10 perimeter supports with intermediate 2 x 10 supports at 2'-0" o.c.  5/8” plywood was attached to 2 x 10 wood structural framing supports using 8d x 2-1/2” long ring Shank nails. The nail pattern is 6” o.c. in the field and 6” o.c. around the perimeter. A layer of Self Adhering Waterproof Membrane was on top of the plywood sheathing substrate and wrapped around the perimeter sides of the wood buck. The Large Precision Tile Panels were attached thru the top layer of underlayment membrane and into the plywood substrate using (2) #10 -13 x 1" long GP Concealer screws. Fasteners were located at the pre-punched fasteners holes spaced at 12-7/8" o.c. on the top nail flange for each panel. Additional screws were added around perimeter of the mock-up at top and bottom of panel when needed to secure perimeter panels to plywood. All fasteners for the panel were the #10-13 x 1" long GP Concealer screws.

- **NOTE:** For Structural Test only - A plastic barrier was located between the panels and the underlying substrate.

**Test Procedure**
The tests were conducted using the test procedures per the referenced test standards. Tests were performed at the given test pressures and test data was recorded as shown on the attached data sheets.
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TEST RESULTS

ASTM E330 UNIFORM LOAD TEST

Specimen: Large Precision Tile Panel, 14-1/2" wide, 24 ga. steel

Panel Fastener Spacing on Nail flange: 12.875" o.c

NEGATIVE PRESSURE

<table>
<thead>
<tr>
<th>PRESSURE (PSF)</th>
<th>NET DEFLECTION (INCHES)</th>
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<tbody>
<tr>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>37.5</td>
<td>0.219</td>
</tr>
<tr>
<td>0</td>
<td>0.000</td>
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<tr>
<td>75</td>
<td>0.250</td>
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<td>0</td>
<td>0.031</td>
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<td>112.5</td>
<td>0.344</td>
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<tr>
<td>0</td>
<td>0.063</td>
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</table>

Maximum Net Deflection is D2 - (D1 + D3)/2 = Net Deflection of Panel

RESULTS
Upon completion of the testing at the negative pressures noted above there were no noticeable failures of the specimen
TEST SETUP

TOP

SUPPORT
(2X10 TYP.)

SUPPORT

2'-0"
(TYP.)

SUPPORT

SUPPORT

WOOD CHAMBER FRAME

PANEL SPECIMEN OVER ADHESIVE MEMBRANE & 5/8" PLYWOOD.
(NOTE: PLASTIC BETWEEN PANEL AND MEMBRANE FOR STRUCTURAL TEST ONLY)

BOTTOM

8'-0"

8'-0"

X# - DEFLECTION POINTS FOR STRUCTURAL TEST ONLY

PLAN VIEW OF PANELS
TENSILE TEST REPORT

Client: Petersen Aluminum
10551 PAC Rd.
Tyler, TX. 75707

Test Date: January 31, 2017

Test Method: ASTM A370-10

Material Description: Large Precision Tile Panel, 14-1/2" wide, 24 ga. steel

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>Width (in)</th>
<th>Thickness (in)</th>
<th>Yield Load (lb)</th>
<th>Max. Load (lb)</th>
<th>0.2% Offset Yield Strength (psi)</th>
<th>Tensile Strength (psi)</th>
<th>Elongation (% in 2 inches)</th>
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</thead>
<tbody>
<tr>
<td>0012-17</td>
<td>0.498</td>
<td>0.023</td>
<td>540.7</td>
<td>677.4</td>
<td>47,204</td>
<td>59,140</td>
<td>28.9</td>
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</table>

Equipment Used: Tensile Machine #QT7-061196-020
Caliper #1074379
Extensometer #10311744D
Micrometer #110596927