Farabaugh Engineering and Testing Inc.

Project No. T114-17

Report Date: January 23, 2017

No. Pages: 8 (inclusive)

ASTM E-283 AIR LEAKAGE TEST
ASTM E331 WATER PENETRATION TEST
ASTM E330 UNIFORM LOAD STRUCTURAL TEST
AAMA 501.1 DYNAMIC WATER PENETRATION TEST

ON

LARGE PRECISION TILE PANEL
14-1/2" WIDE X 0.032" ALUMINUM

FOR

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

Prepared by:

Paul G. Farabaugh

Approved by:

Daniel G. Farabaugh

Project No. T114-17

Purpose

The purpose of this test is to establish the air, water and dynamic water infiltration rates and structural loading on the test specimen mock-up in accordance with the referenced test standards and as provided herein.

Referenced Test Standards

1. ASTM E 283-04 "Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen"

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

3. AAMA 501.1-05 " Standard Test Method for Water Penetration of Windows, Curtain Walls and Doors Using Dynamic Pressure"

4. ASTM E-330-02 "Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference"

Test Completion Date

1/18/17

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

Product Identification

Specimen: Large Precision Tile Panel, 14-1/2" wide, 0.032" aluminum

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 Concealor 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.

Project No. T114-17

TEST RESULTS

Date: 1/18/17

Ambient Temperature = 57 deg. F Barometric Pressure = 30.02"Hg

ASTM E-283
AIR INFILTRATION LEAKAGE TEST

TEST PRESSURE (PSF)	TOTAL AIR LEAKAGE RATE (CFM)	AIR INFILTRATION RATE (CFM/SF)
15	0.69	0.010
12	0.55	0.008
6.24	0.28	0.004

Based on 64 sq.ft.

ASTM E-331
WATER PENETRATION TEST

TEST PRESSURE (PSF)	WATER SPRAY RATE GAL/SF/HR	TEST DURATION (MIN)	RESULTS
15.00	5	15	PASS - NO VISIBLE LEAKAGE

AAMA 501.1
DYNAMIC WATER TEST

POSITIVE PRESSURE
(INFILTRATION)

Test Pressure (psf)	Water Spray Rate (gal/sf/hr)	Time Duration (min)	Comments
15	5	15	No Leakage

Results:
As a result of the test pressure and water spray for the specified time duration, there was no water leakage on the interior side of the specimen assembly.

Project No. T114-17

ASTM E330 UNIFORM LOAD TEST

Specimen: Large Precision Tile Panel, 14-1/2" wide, 0.032" aluminum

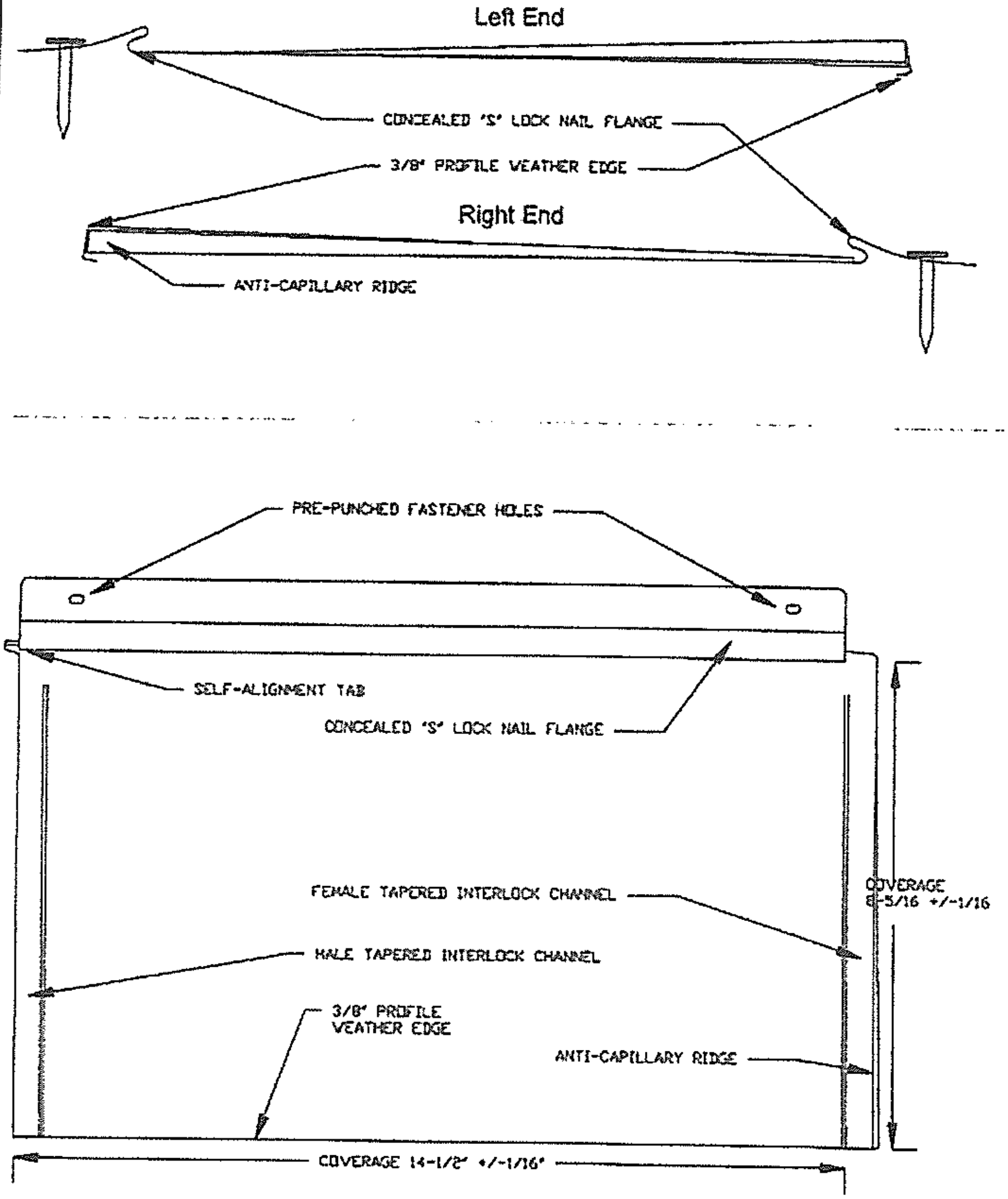
Panel Fastener Spacing on Nail flange: 12.875" o.c

NEGATIVE PRESSURE

PRESSURE (PSF)	NET DEFLECTION (INCHES)
0	0.000
37.5	0.250
0	0.000
75	0.438
0	0.063
112.5	0.563
0	0.063

RESULTS

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



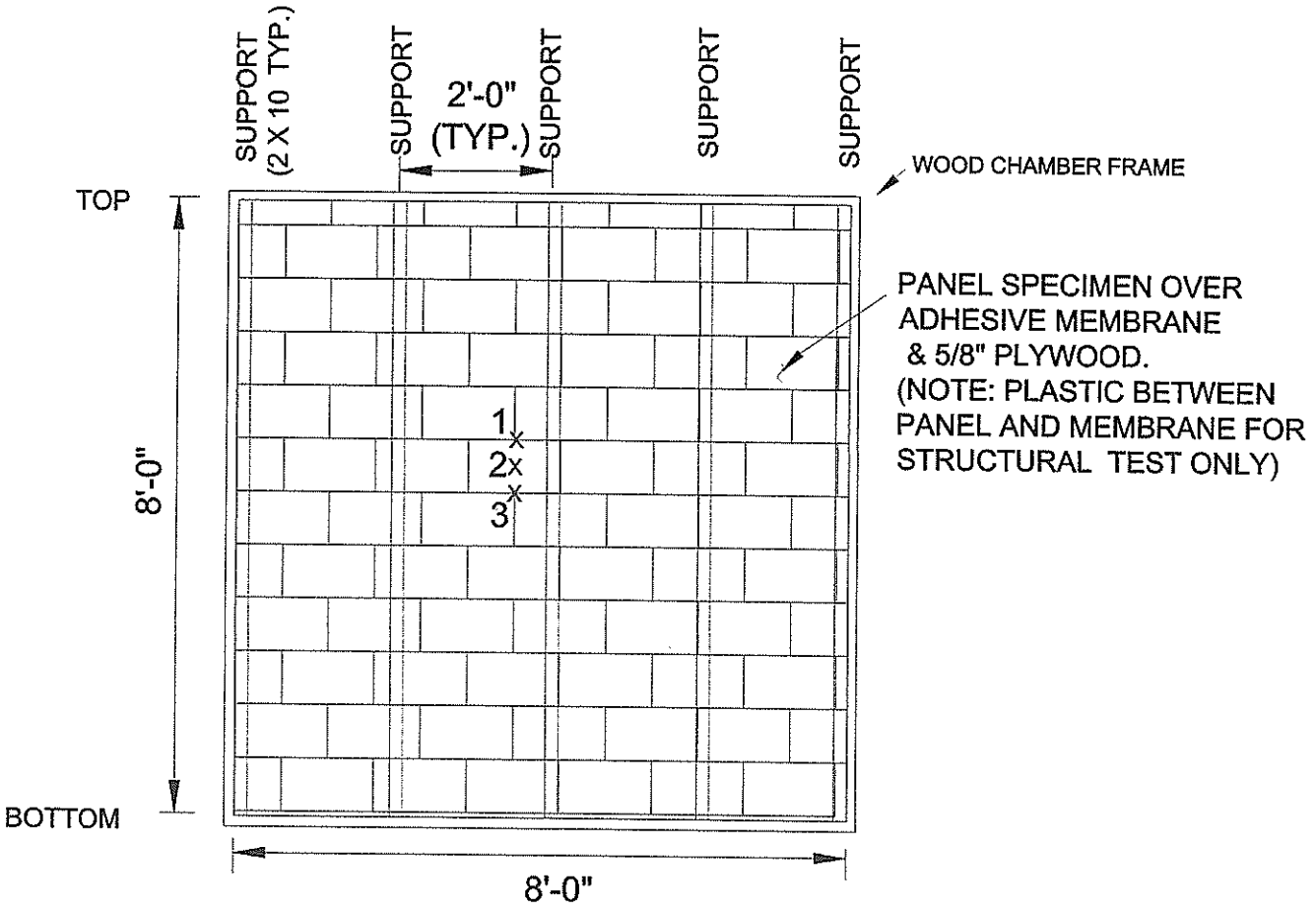
Large Precision Tile -

Large Precision Tile - Profile Details

Millennium tiles	*STAINLESS COLORS	GA. AVAILABLE	MATERIALS	FINISH
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			SIZES AVAILABLE	
			[illegible]	

PG. 1

TEST SETUP



PLAN VIEW OF PANELS

Project No. T114-17

TENSILE TEST REPORT

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

Test Date: January 16, 2017

Test Method: ASTM B557-10

Material Description: Large Precision Tile Panel, 14-1/2" wide, 0.032" aluminum

Sample No.	Width (in)	Thickness (in)	Yield Load (lb)	Max. Load (lb)	0.2% Offset Yield Strength (psi)	Tensile Strength (psi)	Elongation (% in 2 inches)
0003-17	0.500	0.029	379.6	382.8	26,184	26,406	2.47

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