



Farabaugh Engineering and Testing Inc.

Project No. T162-19

Report Date: April 11, 2019

No. Pages: 8 (inclusive)

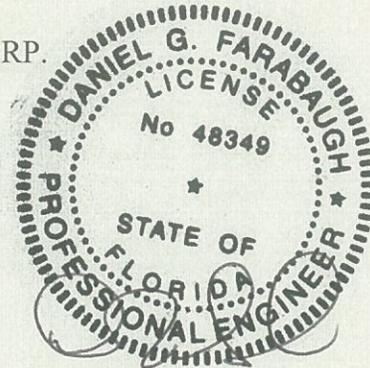
ASTM E283 AIR LEAKAGE TEST
ASTM E331 WATER PENETRATION TEST

ON

**T-PANEL - METAL ROOF PANEL
16" WIDE X 24 GA. STEEL
WITH INTERMITTENT CLIPS**

FOR

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



4/11/19

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Project No. T162-19

AIR LEAKAGE AND WATER PENETRATION TESTING

Purpose

The purpose of this test is to establish air and water infiltration rates on the Petersen Aluminum Roof Panel System.

Test Date

4/10/19

Test Specimen

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

Panel: T-PANEL - Metal Roof Panel, 16" wide x 24 ga. steel with 24 ga. steel cap

Intermittent Clip: 6" wide x 16 ga. galvanized steel clip

Testing Apparatus

A vacuum test chamber was used with static pressure taps. A controlled blower provided uniform pressure to the specimen mock-up. Calibrated manometers were used to measure the pressure at each pressure tap.

Installation

The panels were installed on to 16 ga supports with using (2) #14-13 X 1-1/2" long, DP1, Concealor, self-drill fasteners per intermittent clips at supports. The panel sidejoints used a 24 ga. seam cap and were seamed with a mechanical seamer. The seam cap used 2 beads of factory sealant, one bead on each side of cap corners. The panel ends were fastened with (3) 1/4-14 x 1-1/2 long, self-drill, hex head fasteners with washer. The panels were attached and sealed to the perimeter frame. Test was done with panels in horizontal position (no slope).

Test Procedure

The tests were conducted in accordance with the sections as shown in the following:

- ASTM E 283-04 "Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen",
- ASTM E-331-00," Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference"

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Ambient Temp. = 60 deg.F

Barometric Pressure = 29.91" Hg

**ASTM E283
AIR LEAKAGE TEST**

**POSITIVE PRESSURE
(INFILTRATION)**

STATIC PRESSURE DIFFERENTIAL (PSF)	AIR LEAKAGE RATE (CFM/SF)
+6.24	0.017
+15.0	0.022

**NEGATIVE PRESSURE
(EXFILTRATION)**

STATIC PRESSURE DIFFERENTIAL (PSF)	AIR LEAKAGE RATE (CFM/SF)
+6.24	0.020
+15.0	0.030

Results:

As a result of the test pressures, the test specimen exhibited air leakage rates as shown on the above table.

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**ASTM E331
WATER PENETRATION TEST**

Panel Surface Temperature Prior To Test: 57 deg. F

Panel Surface Temperature During Test: 53 deg. F

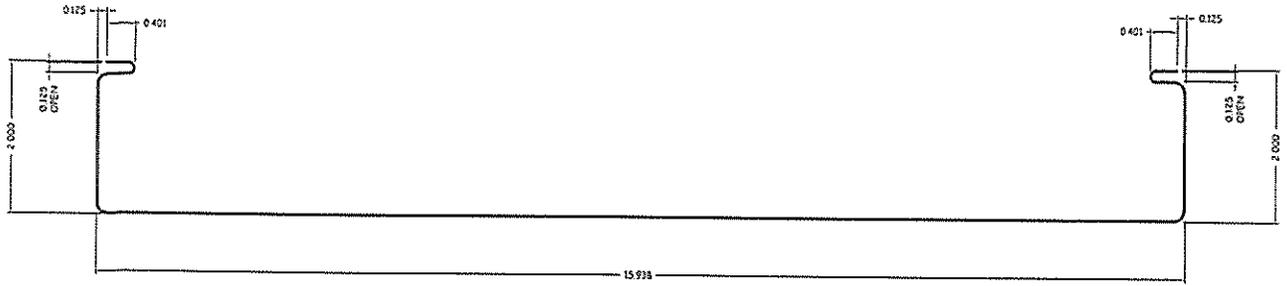
**POSITIVE PRESSURE
(INFILTRATION)**

STATIC PRESSURE DIFFERENTIAL (PSF)	WATER SPRAY RATE (GAL/HR/SF)	TEST DURATION (MIN)	WATER INFILTRATION
+15.0	5	15	None
+20.0	5	15	None
+30.0	5	15	None

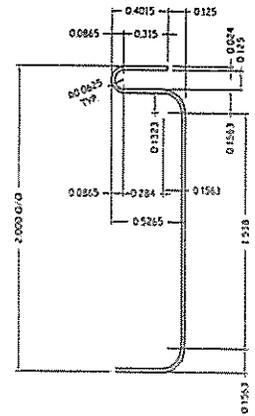
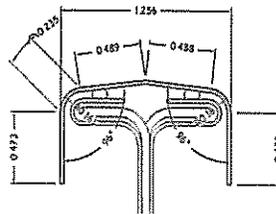
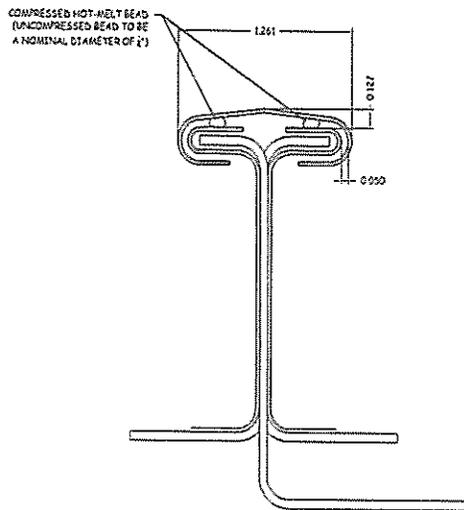
Results:

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

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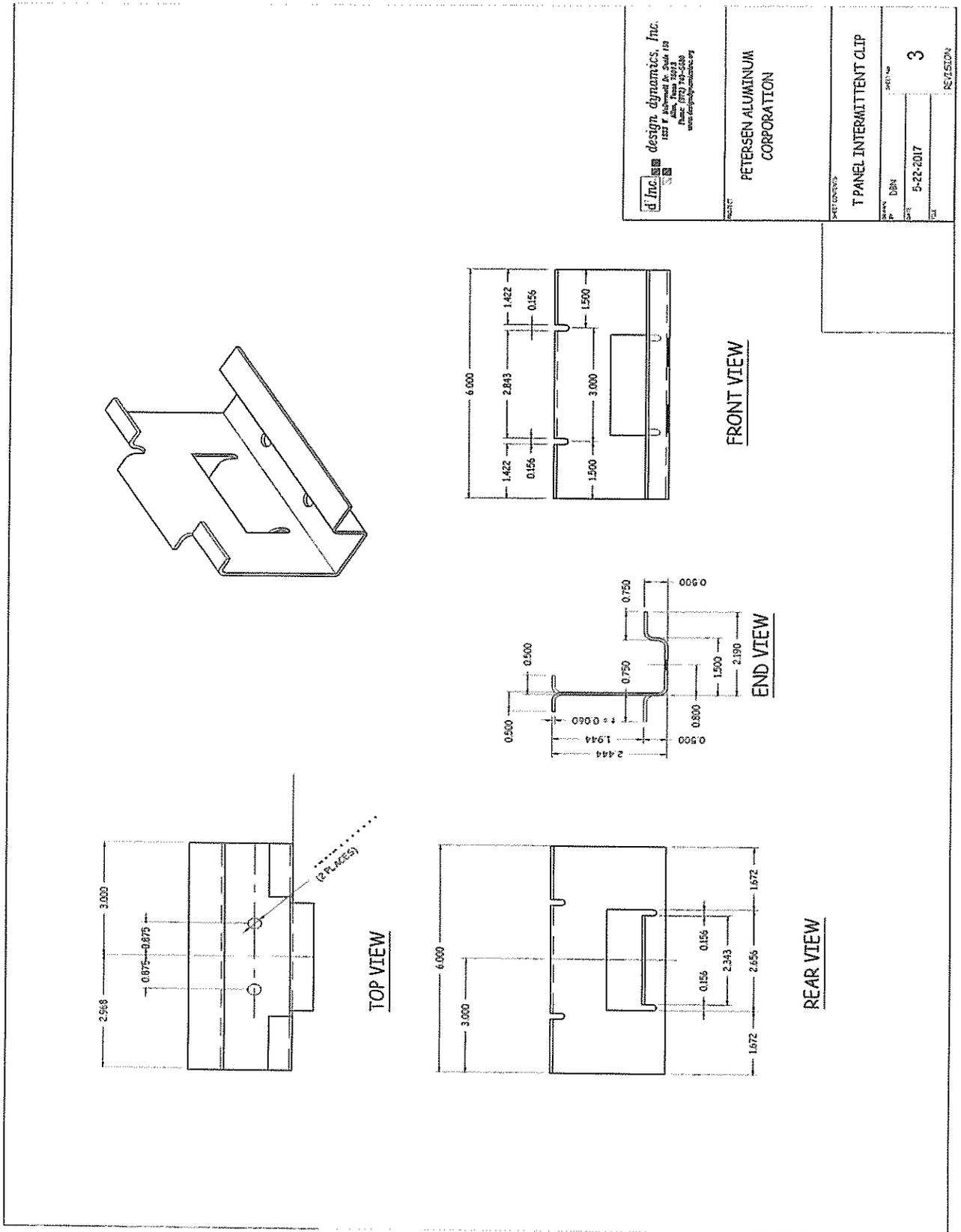


16" T PANEL



ENLARGED SIDE JOINT DETAIL

STUDY AT SIDE JOINT W/ CLIP CAP (AFTER SEAMING)



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PETERSEN ALUMINUM CORPORATION

T PANEL INTERMITTENT CLIP

DATE: 5-22-2017

REVISION: 3

TEST SET-UP

