



# CONSTRUCTION MATERIALS

## TECHNOLOGIES

### LABORATORY TEST REPORT

**Report for:** Sheffield Metals International  
5467 Evergreen Parkway  
Sheffield Village, OH 44054

**Attention:** Adam Mazzella

<b>Product Names:</b> SMI 1.5 Mechanical Seam Standing Seam	<b>Manufacturer:</b> Sheffield Metals International
<b>Project No.:</b> SHMI-005-02-03	<b>Source:</b> Sheffield Metals International
<b>Date Received:</b> Dec. 4, 2017	<b>Date Tested:</b> Jan. 19, 2018

**Purpose:** Determine air leakage and water penetration in accordance with **ASTM E 1680: Standard Test Method for Rate of Air Leakage Through Exterior Metal Roof Panel Systems** and **ASTM E 1646: Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference**, respectively.

**Test Methods:** Testing for rate of air leakage was completed as described in ASTM E 1680-11: Standard Test Method for Rate of Air Leakage Through Exterior Metal Roof Panel Systems followed by testing for water penetration in accordance with ASTM E 1646-95 (2011): Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference.

The test specimen was 56" long (three 18" spans) and 56" wide installed over spaced supports.

**Sampling:** SMI 1.5 MS panels, clips and fasteners were supplied by Sheffield Metals International. All other materials were provided by PRI Construction Materials Technologies LLC and purchased through local distribution.

**Panel Description:** SMI 1.5 MS: Min. 0.029" 3105 H24M aluminum alloy ( $F_y = 22.9$  ksi) preformed, 180° mechanical standing seam panels; 16" wide installed coverage; Profile drawing is contained in Appendix A.

Clips: Two-piece galvanized steel clip; 1.75" long x 24 ga. expansion top; 6" long x 18 ga. base. Clips secured to supports with two (2) #14-13 PH, DP1 screws per clip. Clip drawing is contained in Appendix A.

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**Results:**

Table 1. Summary of Test Results

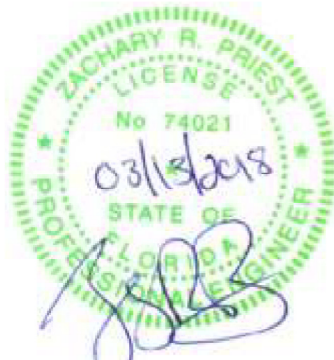
Specimens	Test Method	Test Pressure (psf)	Result	Requirement
SMI 1.5 MS; 18" span; 56" x 56" specimen				
Preload	ASTM E 1680	±15.0	Pass	Report
Air Exfiltration (cfm/ft <sup>2</sup> )	ASTM E 1680	-1.57	0.002	Report
Air Infiltration (cfm/ft <sup>2</sup> )	ASTM E 1680	+1.57	0.002	Report
Water Penetration Resistance 5.0 US gal/ft <sup>2</sup> /h for 15 min ponded water depth 1/2-3/4"	ASTM E 1646	+6.24	Pass	Report

**Statement of Attestation:**

Testing was conducted in accordance **ASTM E 1680: Standard Test Method for Rate of Air Leakage Through Exterior Metal Roof Panel Systems** and **ASTM E 1646: Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference**.

Signed: \_\_\_\_\_

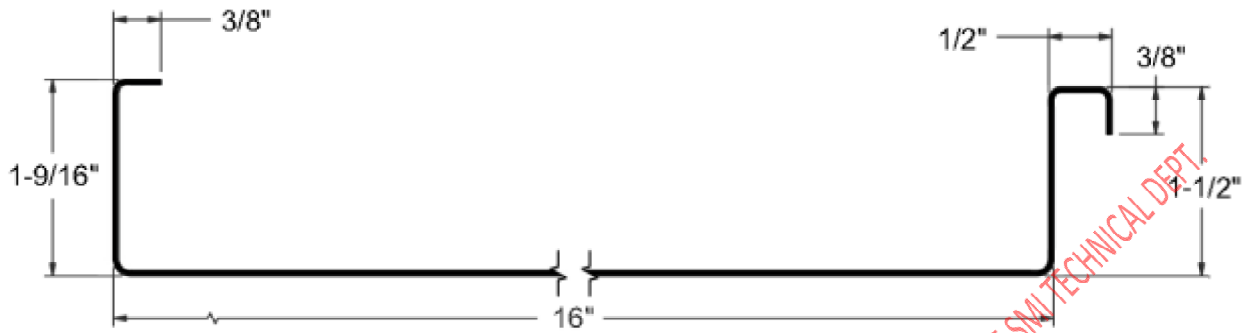
*Zachary Priest*  
 Zachary Priest, P.E.  
 Director



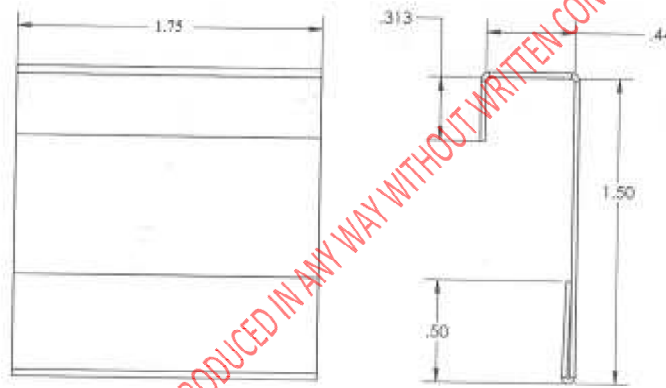
**Report Issue History:**

Issue #	Date	Pages	Revision Description (if applicable)
Original	02/13/2018	4	NA

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**SMI 1.5 Mechanical Seam Standing Seam Panel Profile**

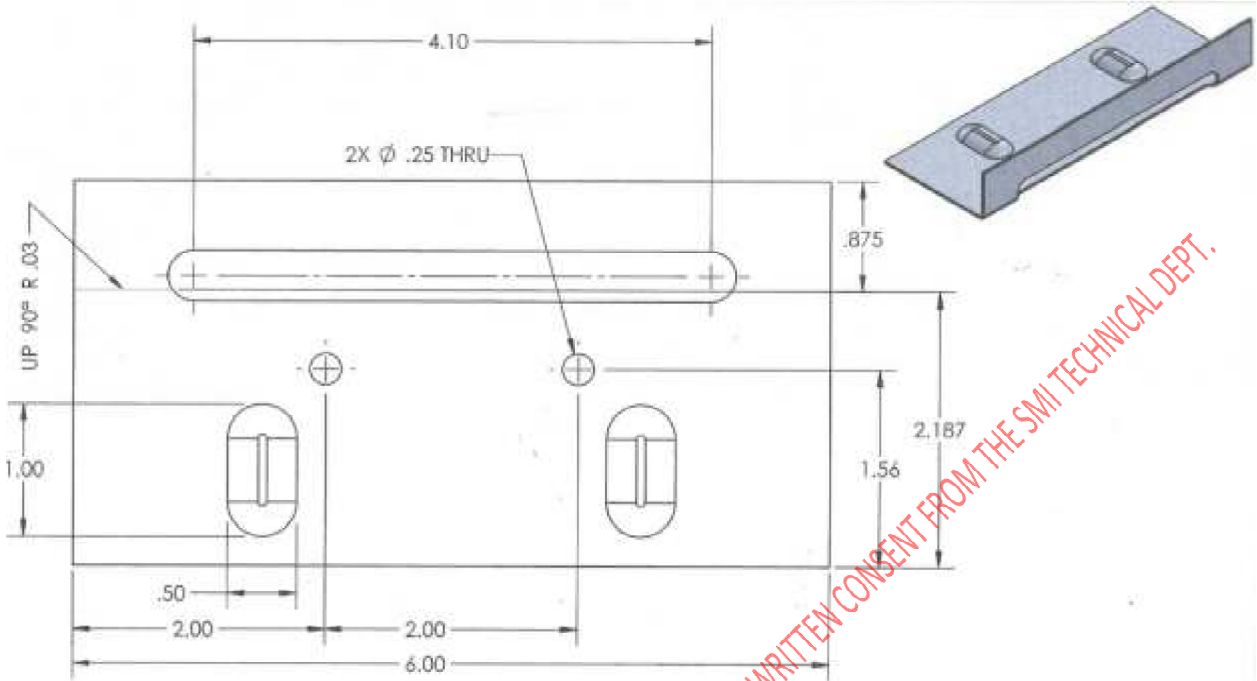


**SMI 1.5 MS Articulating Expansion Top (Top component of Clip; 24 ga. galv. steel)**

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**SMI 1.5 MS Clip Base (18 ga. galvanized steel)**

**END OF REPORT**

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