

Evaluation Report 1.5" Mechanical Seam Metal Roof Assembly

Manufacturer:
Extreme Metal Fabricators, LLC.

2160 SW Poma Drive
Palm City, FL 34990
(772) 872-8034

for

Florida Product Approval

FL 17022.3 R1

Florida Building Code 2010

Per Rule 61G20-3

Method: 1 - D

Category: Roofing

Sub - Category: Metal Roofing

Product: 1.5" Mechanical Seam Roof Panel
Material: Steel
Panel Thickness: 24 gauge
Panel Width: 16"
Support: Wood Deck

Prepared by:

James L. Buckner, P.E., SECB
Florida Professional Engineer # 31242
Florida Evaluation ANE ID: 1916
Project Manager: Youry Demosthenes
Report No. 14-166-1.5MS-S4W-ER
Date: 10 / 24 / 14

Contents:

Evaluation Report Pages 1 – 8

Secure Electronic Seal for Electronic Submittal



A handwritten signature in black ink, appearing to read "James L. Buckner".

Digitally Signed by: James L. Buckner, P.E.

CBUCK, Inc.

1399 N. Killian Drive, Suite 4, West Palm Beach, Florida 33403
Phone: (561)491-9927 Fax: (561)491-9928 Website: www.cbuckinc.net

Manufacturer:	Extreme Metal Fabricators, LLC.
Product Name:	1.5" Mechanical Seam
Product Category:	Roofing
Product Sub-Category	Metal Roofing
Compliance Method:	State Product Approval Rule 61G20-3.005 (1) (d)
Product/System Description:	1.5" Mechanical Seam Roof Panel 2" rib height, 16" wide, 24 gauge steel roof panel mechanically attached to Wood Deck with clips and screws.
Product Assembly as Evaluated:	Refer to Page 4 of this report for product assembly components/materials & standards: <ol style="list-style-type: none">1. Roof Panel2. Panel Clips3. Fasteners4. Underlayment5. Insulation Board (Optional)
Support:	Type: Wood Deck (Design of support and its attachment to support framing is outside the scope of this evaluation.) Description: <ul style="list-style-type: none">• 15/32" or greater plywood,• or Wood plank (min. specific gravity of 0.42)
Slope:	Minimum slope shall be in accordance with manufacturer's recommendations, FBC Section 1507.4.2 and applicable code sections.
Performance:	Wind Uplift Resistance: <ul style="list-style-type: none">• Design Uplift Pressure (ASD): Refer to Table A (Refer to "Table A" attachment details herein)

Performance Standards:

The product described herein has demonstrated compliance with:

- **TAS 125-03** – *Standard Requirements for Metal Roofing Systems*

Code Compliance:

The product described herein has demonstrated compliance with Florida Building Code 2010, Section 1504.3.2.

Evaluation Report Scope:

This product evaluation is limited to compliance with the structural requirements of the Florida Building Code, as related to the scope section to Florida Product Approval Rule 61G20-3.001.

Limitations and Conditions of Use:

- Scope of “Limitations and Conditions of Use” for this evaluation:
This evaluation report for “Optional Statewide Approval” contains technical documentation, specifications and installation method(s) which include “Limitations and Conditions of Use” throughout the report in accordance with Rule 61G20-3.005. Per Rule 61G20-3.004, the Florida Building Commission is the authority to approve products under “Optional Statewide Approval”.
- Option for application outside “Limitations and Conditions of Use”
Rule 61G20-3.005(1)(e) allows engineering analysis for “project specific approval by the local authorities having jurisdiction in accordance with the alternate methods and materials authorized in the Code”. Any modification of the product as evaluated in this report and approved by the Florida Building Commission is outside the scope of this evaluation and will be the responsibility of others.
- Design of support system is outside the scope of this report.
- Fire Classification is outside the scope of Rule 61G20-3, and is therefore not included in this evaluation.
- This evaluation report does not evaluate the use of this product for use in the High Velocity Hurricane Zone code section. (Dade & Broward Counties)

Quality Assurance:

The manufacturer has demonstrated compliance of roof panel products in accordance with the Florida Building Code and Rule 61G20-3.005 (3) for manufacturing under a quality assurance program audited by an approved quality assurance entity through Keystone Certifications, Inc. (FBC Organization ID# QUA 1824).

Components/Materials (by Manufacturer):

Roof Panel:	1.5" Mechanical Seam
Material:	Steel
Thickness:	24 gauge (min.)
Panel Width:	16" (max.) Coverage
Rib Height:	1.5"
Yield Strength:	40 ksi (min.)
Corrosion Resistance:	Per FBC Section 1507.4.3

Roof Panel Clips

CLIP 1 2" Panel Clip *(Used for Attachment Methods 1 & 2)*

Type:	One-piece, fixed clip
Material:	Galvanized Steel
Thickness:	26 gauge (min.)
Yield Strength:	40 ksi (min.)
Dimensions:	1-9/16" (tall) × 1-1/2" (wide) × 2" (long)
Corrosion Resistance:	Per FBC Section 1506.7

CLIP 2 6" Panel Clip *(Used for Attachment Method 3)*

Type:	One-piece, fixed clip
Material:	Galvanized Steel
Thickness:	24 gauge (min.)
Yield Strength:	40 ksi (min.)
Dimensions:	1-9/16" (tall) × 1-1/2" (wide) × 6-1/4" (long)
Corrosion Resistance:	Per FBC Section 1506.7

Fastener:

Type:	Pancake Head Wood Screw
Size :	#10 × 1" (min.)
Corrosion Resistance:	Per FBC Section 1506.6 and 1507.4.4
Standard:	Per ANSI/ASME B18.6.1

Underlayment:

Per roofing manufacturer's guidelines in compliance with FBC Section 1507.4.5

Insulation (Optional):

Type:	Rigid Insulation Board
Thickness:	3" (max.)
Properties:	
Density:	2.25 pcf (lbs/ft ³) min.
Or Compressive Strength:	20 psi min.

Insulation shall comply with FBC Section 1508. When insulation is incorporated, fastener length shall conform to penetrate thru bottom of support a minimum of 3/16".

Installation:

Installation Method:

(Refer to "TABLE A" below and drawings on Pages 6 – 8 of this evaluation report.)

- Clip Spacing: **Refer to "TABLE A" Below**
(along the length of the panel)
- # fasteners per Clip: **Refer to "TABLE A" Below**
- Rib Interlock: **Refer to "TABLE A" Below**
(Panel ribs shall be mechanically seamed per below.)
- Minimum fastener penetration thru bottom of support, 3/16".
- For panel construction at the end of panels, refer to manufacturer's instructions and any site specific design.

TABLE "A"					
	Clip Spacing	Clip Size	# Fasteners per Clip	Panel Seam (min.)	Design Pressure (ASD)
METHOD 1:	16"	2" Clip (26 Ga.)	2	90°	- 118 PSF
METHOD 2:	8"	2" Clip (26 Ga.)	2	90°	- 135 PSF
METHOD 3:	10"	6" Clip (24 Ga.)	4	180°	- 191 PSF

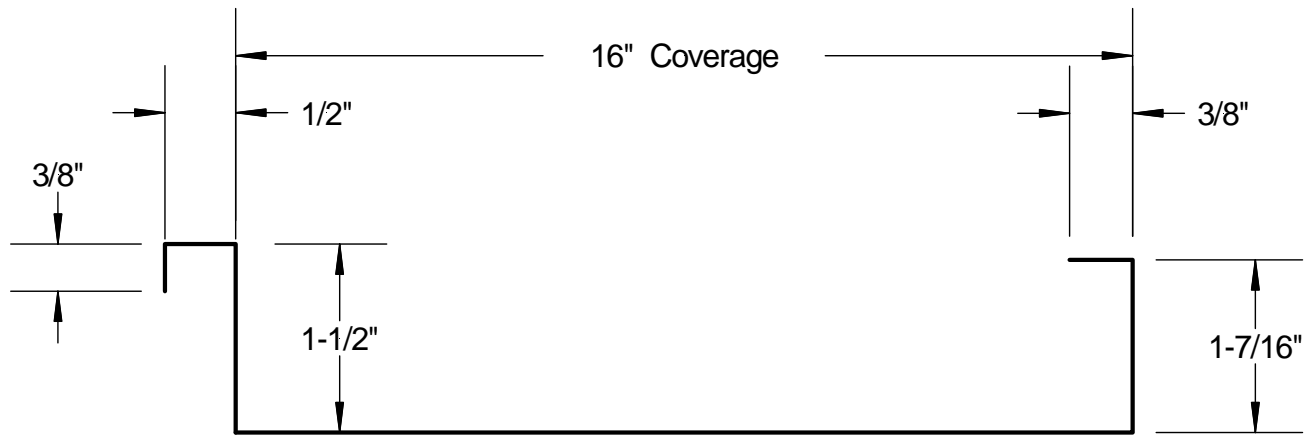
Install the 1.5" Mechanical Seam roof panel assembly in compliance with the installation method listed in this report and applicable code sections of FBC 2010. The installation method described herein is in accordance with the scope of this evaluation report. Refer to manufacturer's installation instructions as a supplemental guide for attachment.

Referenced Data:

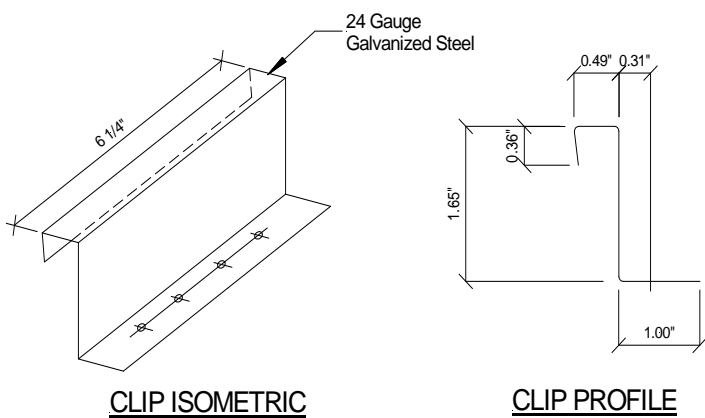
1. TAS 125 – Uplift Test
By Architectural Testing, Inc. - West Palm Beach, FL
(FBC Organization #TST ID: 1527)
Report No.: D8985.01-450-18, Date: 10 / 24 / 14
2. Quality Assurance
Keystone Certifications, Inc. (FBC Organization ID# QUA 1824)
Extreme Metal Fabricators, Inc. Licensee #974
3. Certification of Independence
By James L. Buckner, P.E. @ CBUCK Engineering
(FBC Organization # ANE 1916)

Installation Method Extreme Metal Fabricators, LLC. 1.5" Mechanical Seam (24 Gauge Steel) Roof Panel attached to Wood Deck

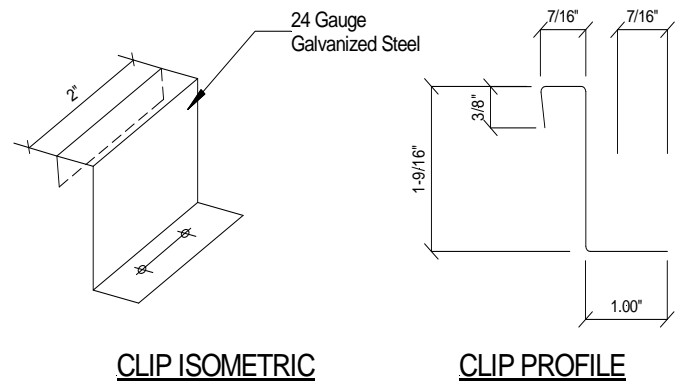
Drawings



Panel Profile



6" Panel Clip Profile

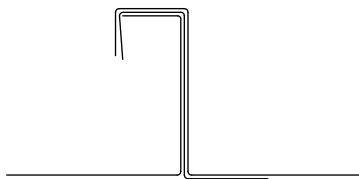
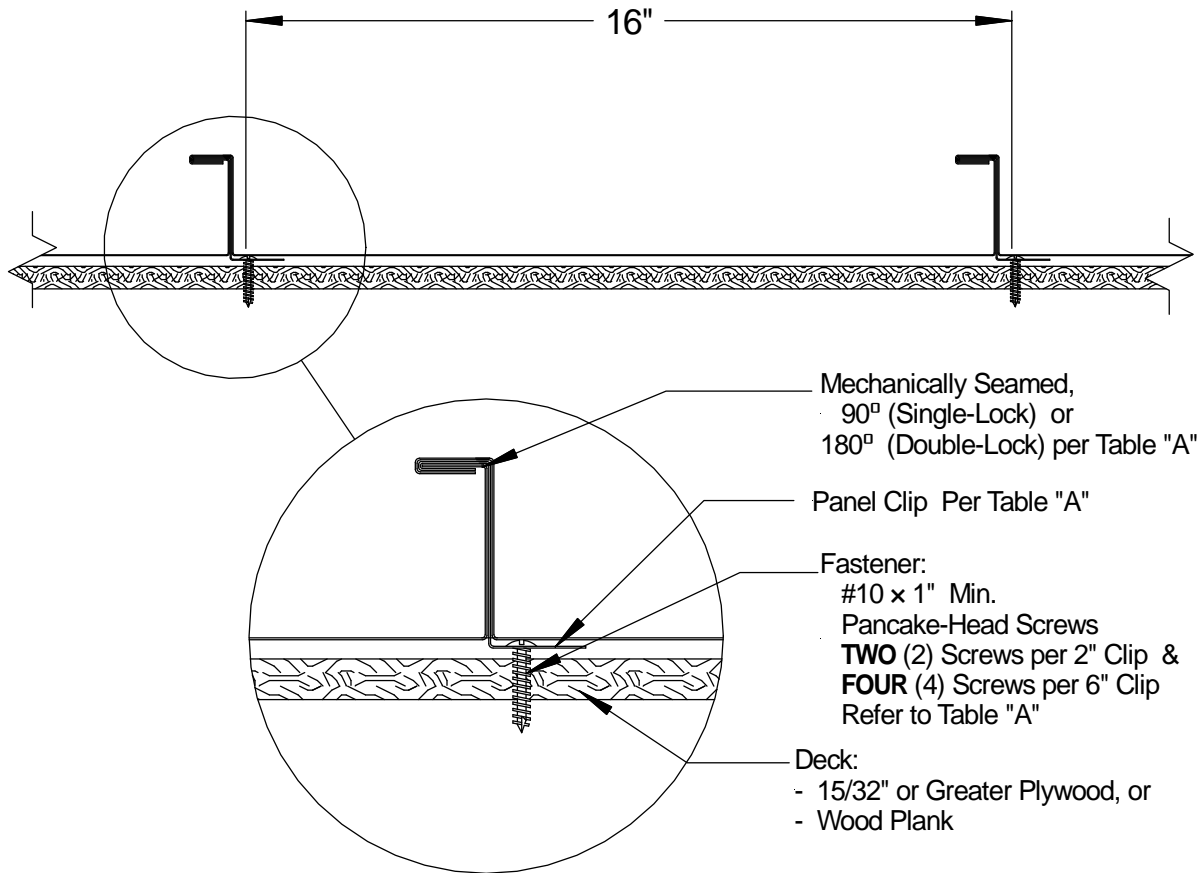


2" Panel Clip Profile

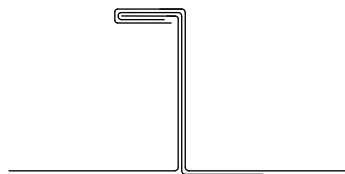
Installation Method

Extreme Metal Fabricators, LLC.

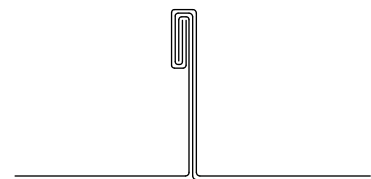
1.5" Mechanical Seam (24 gauge Steel) Roof Panel attached to Wood Deck



BEFORE SEAMING



90° SEAM
(SINGLE-LOCK)

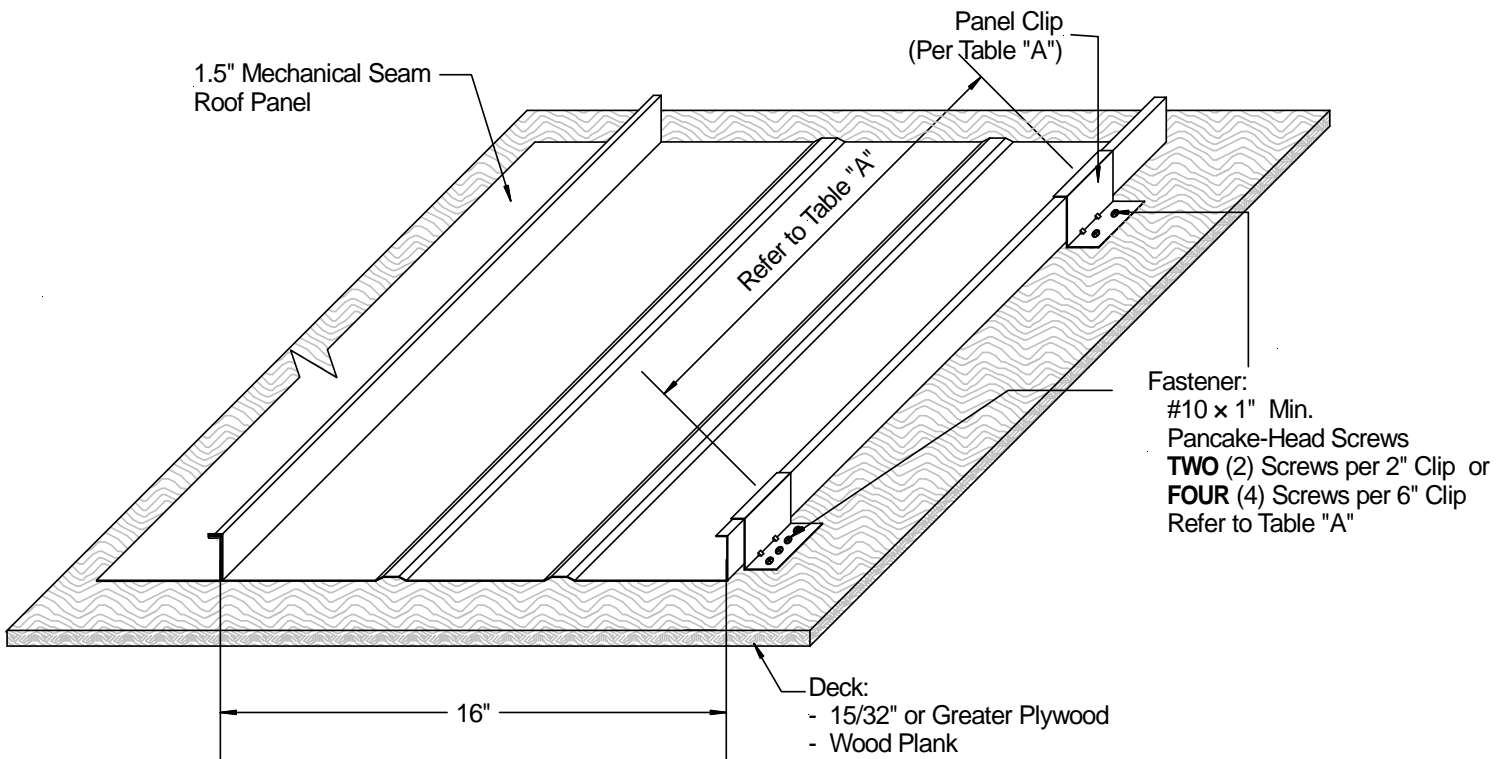


180° SEAM
(DOUBLE-LOCK)

Typical Panel Seams

Installation Method Extreme Metal Fabricators, LLC.

1.5" Mechanical Seam (24 Gauge Steel) Roof Panel attached to Wood Deck



**Typical Roof Assembly
 Isometric View**

(Optional) Rigid Insulation Board per Page 4 of this report

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