

Evaluation Report "5-V Crimp" Metal Roof Assembly

Manufacturer:
Extreme Metal Fabricators, LLC.

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

for

Florida Product Approval

FL 17022.1 R3

Florida Building Code 5th Edition (2014)

Per Rule 61G20-3

Method: 1 - D

Category: Roofing

Sub - Category: Metal Roofing

Product: *5-V Crimp Roof Panel*
Material: *Steel*
Panel Thickness: *26 gauge*
Panel Width: *24"*
Support: *Wood Deck*

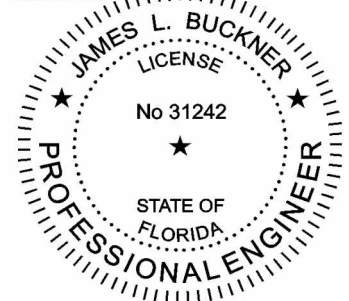
Prepared by:

James L. Buckner, P.E., SECB
Florida Professional Engineer # 31242
Florida Evaluation ANE ID: 1916
Project Manager: Youry Demosthenes
Report No. 15-217-5V-S6W-ER
(Revises 15-176-5V-S6W-ER)
Date: 12 / 18 / 15

Contents:

Evaluation Report Pages 1 – 7

Digitally signed by James L. Buckner, P.E.
Electronically signed and sealed documents
shall comply with the provisions of FAC Rule
61G15-23.



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

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Manufacturer:	Extreme Metal Fabricators, LLC.
Product Name:	5-V Crimp
Product Category:	Roofing
Product Sub-Category	Metal Roofing
Compliance Method:	State Product Approval Rule 61G20-3.005 (1) (d)
Product/System Description:	5-V Crimp Roof Panel, 26 gauge steel, 24" wide panel mechanically attached to Wood Deck with 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. Fasteners3. Underlayment4. 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 compliance with FBC Chapter 15 Section 1507.4.2, applicable code sections and in accordance with manufacturer's recommendations.
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:

- **UL580-06** – *Test for Uplift Resistance of Roof Assemblies*
- **UL 1897-04** – *Uplift test for roof covering systems*
- **TAS 125-03** – *Standard Requirements for Metal Roofing Systems*

Code Compliance:

The product described herein has demonstrated compliance with Florida Building Code 5th Edition (2014), 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: 5-V Crimp
Material: Steel
Thickness: 26 gauge (min.)
Panel Widths: 24" (max.) Coverage
Rib Height: 5/8"
Yield Strength: 40 ksi min.
Corrosion Resistance: Per FBC Section 1507.4.3

Fastener:

FASTENER 1

Used for Attachment Method 1

Type: Hex Washer Head Wood Screw
Size: #9 × 1-1/2" (min.)
Corrosion Resistance: Per FBC Section 1506.6 and 1507.4.4
Standard: Per ANSI/ASME B18.6.1

FASTENER 2

Used for Attachment Method 2, 3 & 4

Type: Hex Washer Head Wood Screw
Size: #10 × 1-1/2" (min.)
Corrosion Resistance: Per FBC Section 1506.6 and 1507.4.4
Standard: Per ANSI/ASME B18.6.1

**Components & Materials:
(by Others)**

Underlayment:

Material and application shall be in compliance with FBC Section 1507.4.5.1 and 1507.4.5.2, applicable codes and in accordance with manufacturer's recommendations.

Insulation (Optional):

Type: Rigid Insulation Board
Thickness: 3" (max.)
Properties:
Density: 2.25 pcf (lbs/ft³) min.
Or Compressive Strength: 20 psi min.

Insulation Notes:

- Rigid Insulation shall meet minimum density OR compressive strength.
- 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 at the end of this evaluation report.)

- **Fastener Spacing: Refer to "TABLE A" Below**
(attached to the tops of the V's for a total of 3 screws across the width of the panel.)
- **Row Spacing: Refer to "TABLE A" Below**
(along the length of the panel)
- **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"				
ALLOWABLE LOADS				
	METHOD 1:	METHOD 2:	METHOD 3:	METHOD 4:
Design Pressure (ASD)*:	- 86 PSF	- 93.5 PSF	- 101 PSF	- 228 PSF
Row Spacing:	16" o.c.	16" o.c.	8" o.c.	6" o.c.
Fastener Spacing (across panel width):	12" o.c.	12" o.c.	12" o.c.	12" o.c.
Fastener Size:	#9	#10	#10	#10
<i>* Allowable design pressure(s) for allowable stress design (ASD) with a margin of safety of 2 to 1.</i>				

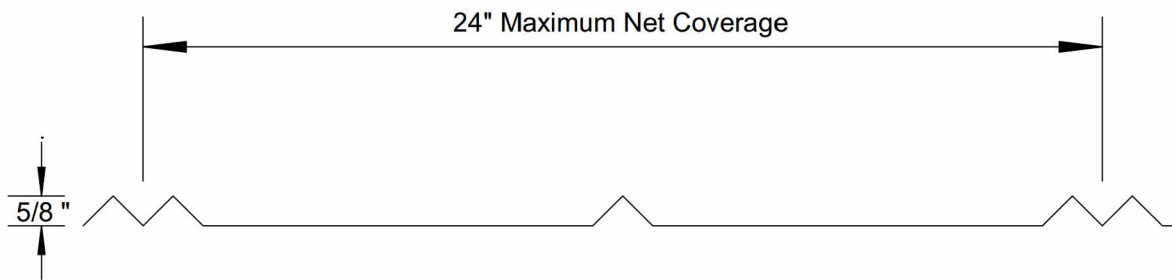
Install the 5-V Crimp roof panel assembly in compliance with the installation method listed in this report and applicable code sections of FBC 5th Edition (2014). The installation method described herein is in accordance with the scope of this evaluation report. Refer to manufacturer's installation instructions as a supplemental guide for attachment.

Referenced Data:

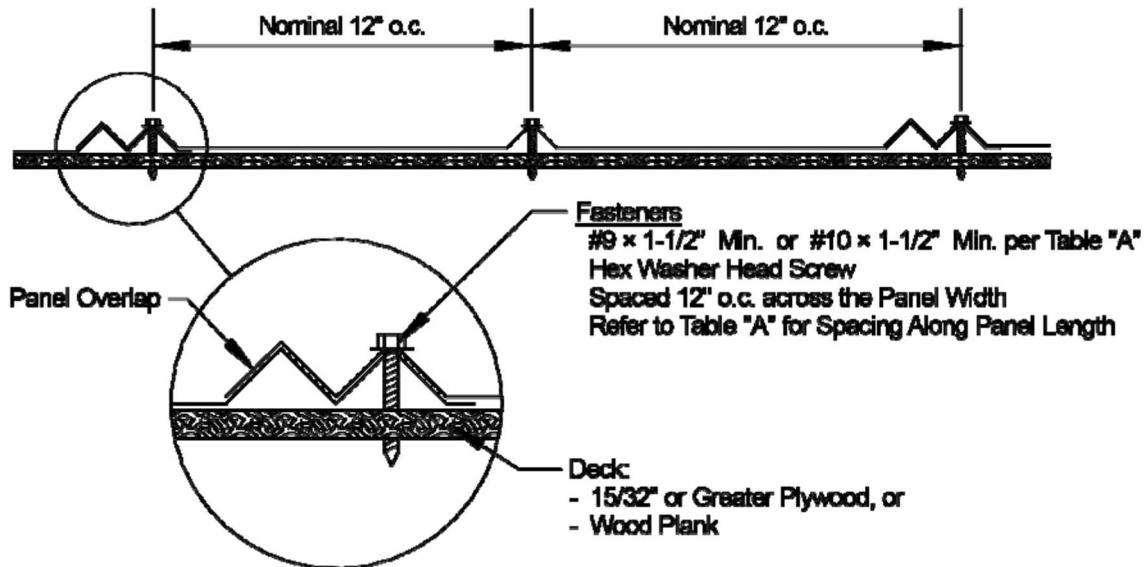
1. UL 580-06 & UL 1897-04 – Uplift Test
 By Architectural Testing, Inc. - West Palm Beach, FL
 (FBC Organization #TST ID: 1527)
 Report No.: D5893.01-450-18, Date: 05 / 02 /14
 Report No.: F3366.01-450-18, Date: 12 / 18 /15
2. TAS 125 – Uplift Test
 By Architectural Testing, Inc. - West Palm Beach, FL
 (FBC Organization #TST ID: 1527)
 Report No.: D5893.02-450-18, Date: 07 / 22 /14
3. Quality Assurance
 Keystone Certifications, Inc. (FBC Organization ID# QUA 1824)
 Extreme Metal Fabricators, Inc. Licensee #974
4. Certification of Independence
 By James L. Buckner, P.E. @ CSTACK Engineering
 (FBC Organization # ANE 1916)

Installation Method Extreme Metal Fabricators, LLC. 5-V Crimp (26 gauge Steel) Roof Panel attached to Wood Deck

Drawings

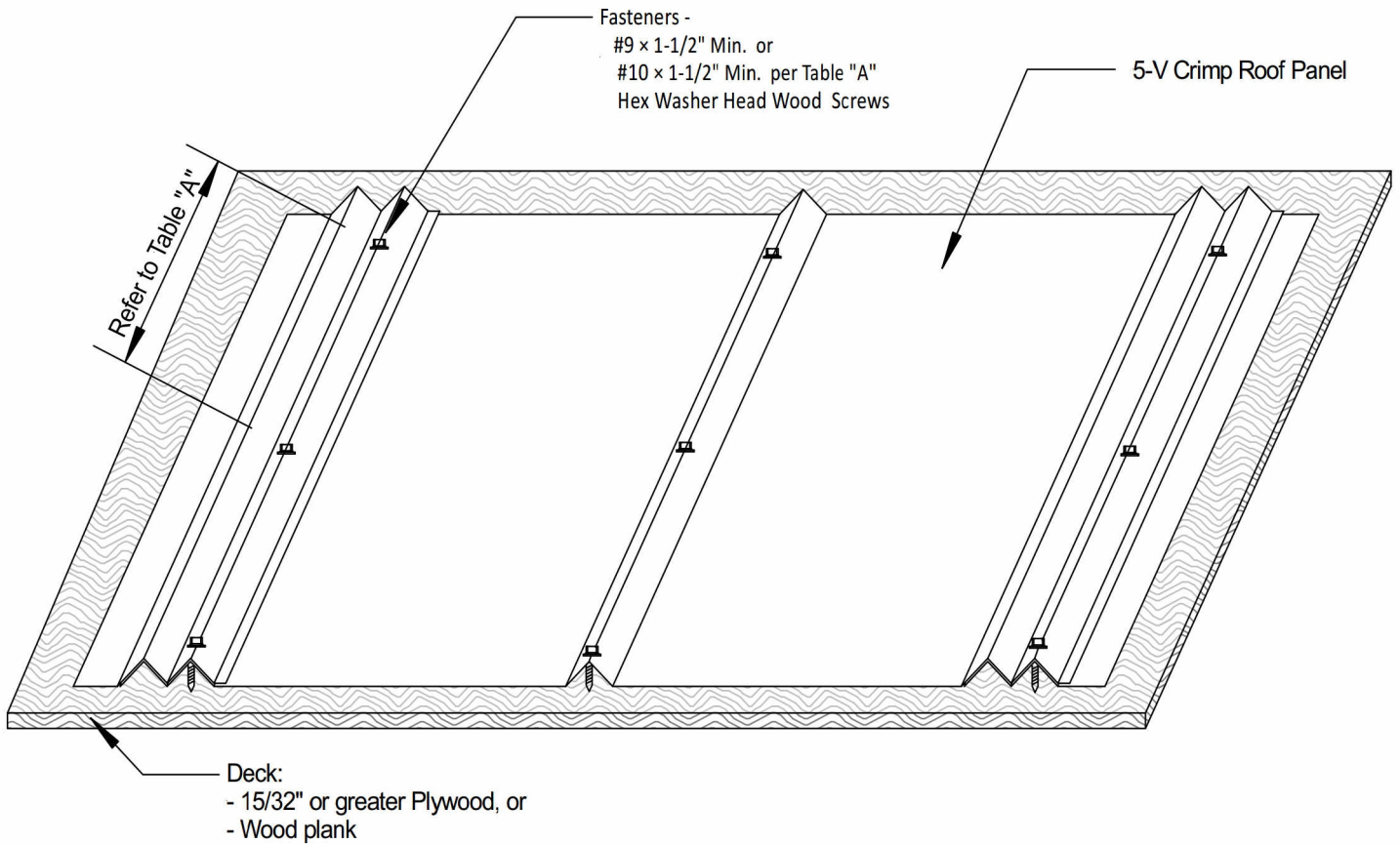


Panel Profile



Typical Assembly Profile View
(Typical Fastening Pattern Across Width - Interior)

Installation Method Extreme Metal Fabricators, LLC. 5-V Crimp (26 gauge Steel) Roof Panel attached to Wood Deck



Typical Roof Assembly Isometric View

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

TABLE "A"				
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