

Evaluation Report
of
Millennium Metals, Inc.
“5-V Crimp” & “Millennium-V”
Metal Roof Assembly
for
Florida Product Approval
FL 7809.1
Florida Building Code 2004
Method: 1 - D
Category: Roofing
Sub - Category: Metal Roofing (Non-Structural)

Product: 5-V Crimp & Millennium-V
Material: Steel
Panel Thickness: 26 Gauge Minimum
Panel Width: 24” (Net Coverage)
Support Type: Wood Deck

Prepared for:
Millennium Metals, Inc.
10200 Eastport Road
Jacksonville, FL 32218

Prepared by:
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Florida Professional Engineer # 31242
Florida Evaluation ANE ID: 1916
Engineer Assistant: Stephen Peters
Report No. 06-306-5V-24-S6W
Date: 9 / 14 / 06

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C-BUCK Engineering

Specialty Structural Engineering

C-Buck, Inc. Florida Certificate of Authorization # 8064

Manufacturer: Millennium Metals, Inc.

Product Name: 5-V Crimp & Millennium-V

Product Category: Roofing

Product Sub-Category: Metal Roofing

Compliance Method: 1-D per 9B-72

Panel Type: Lapped, Non-Structural

Panel Material Standards: Steel, minimum 26 gauge, minimum yield strength, 50 ksi
Material shall comply with Florida Building Code (FBC) 2004, Table 1507.4.3

Panel Dimensions: Thickness: 26 Gauge Minimum
Width: 24" (Net Coverage Width)
Major Rib Height: 7/16" (5 V)
1/2" (Millennium V)

Support Type: Wood Deck
(Design of support system is not included in this evaluation)

Support Description:

- 15/32" or greater plywood, or
- Wood plank

Slope Range: 3 : 12 or greater

Design Uplift Pressure: 113.75 psf (Safety Factor of 2:1)

Underlayment: Minimum underlayment shall be per FBC, 2004, Section 1507.4.5

Fire Classification: Fire Classification is outside the scope of Rule 9B-72, and is therefore not included in this evaluation. Additional approved substrates may be added for Fire Classification purposes.



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- Fastener Description:** Panels shall be attached to the deck with **#10** minimum x penetration through deck 3/16” minimum, hex-head, corrosion resistant, wood screws, per ANSI/ASME B18.6.4 with EPDM bonded steel washers.
- Installation:** Install the “**5V Crimp**” & “**Millennium-V**” to the deck with screw **rows** spaced **12” o.c.** maximum and 3” from all ends along the length of the panel. Within rows, **screws** shall be spaced **6” o.c.** across the width of the panel. Install system in compliance with the attached installation method.
- Quality Assurance:** The manufacturer has demonstrated compliance of roof panel products in accordance with the Florida Building Code and Rule 9B-72.070 (3) for manufacturing under a quality assurance program audited by an approved quality assurance entity through By **Keystone Certifications, Inc.**
- Performance Standards:** Roof assembly tested in accordance with **UL580-94, Rev. 1998** Uplift Resistance Standard.
- Code Compliance:** The product described herein has demonstrated compliance with the **Florida Building Code 2004, (with 2006 Supplements) Section 1504.3.2.**
- Evaluation Report Scope:** This product evaluation is limited to compliance with the structural wind load requirements of the Florida Building Code, as related to Rule 9B-72.
- System Limitations:** The required design wind loads shall be determined for each project per FBC, 2004, Section 1603.1.4. Any rational analysis computations shall be prepared by a qualified design professional, as required by Florida Building Code, Section 105 or 106. The maximum fastener spacing listed herein shall not be exceeded. This product is not approved for use in the High Velocity Hurricane Zone.



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Referenced Data:

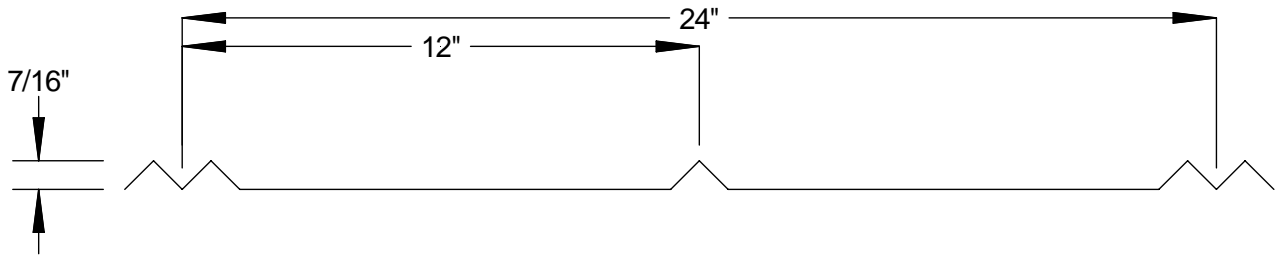
1. UL580 Test
Hurricane Test Laboratory, LLC
Report #: 0232-0910-05, Date: 11/18/05, Sample #1
2. Quality Assurance
By Keystone Certifications, Inc. (QUA 1743)
3. Certification of Independence
By James L. Buckner, P.E. (ANE ID: 1916)
4. Engineering Calculations
By C-Buck Engineering
 - Report #C06-306-5V-24-S6W-PFV-1.2, Dated: 9/14/06
 - Report #C06-306-5V-24-S6W-PFV-5.8, Dated: 9/14/06

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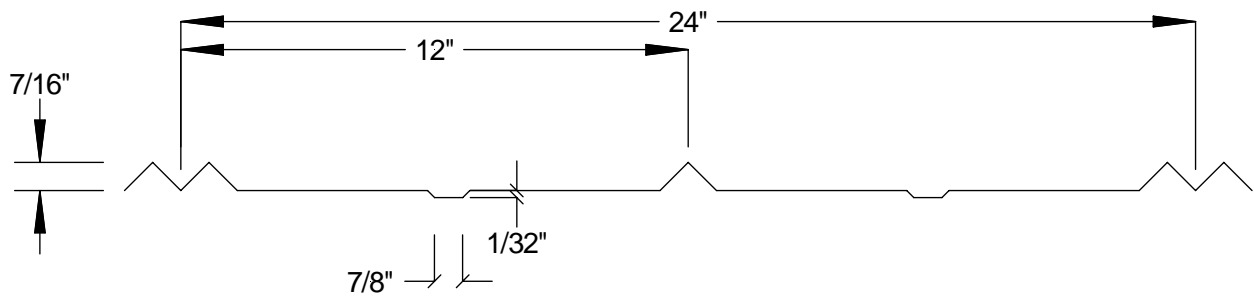
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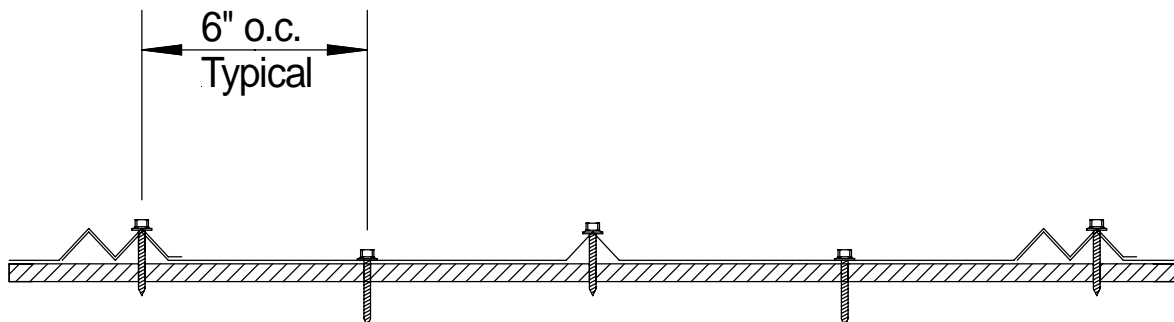
Installation Method Millennium Metals, Inc. “5V Crimp” & “Millennium-V” (26 Ga.) Attached to Wood Deck



“5V Crimp” Panel Profile



“Millennium-V” Panel Profile



Assembly Profile View (Both Panels)
(Typical Fastener Pattern along Row – Interior)

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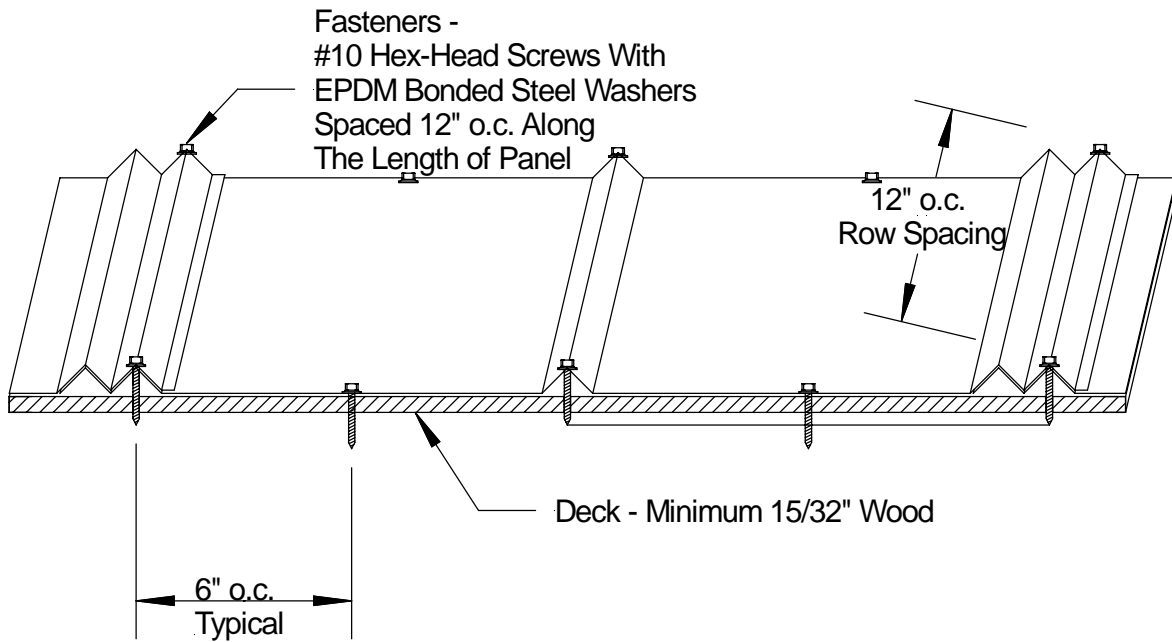
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Installation Method (Continued)

Millennium Metals, Inc.

“5V Crimp” & “Millennium-V” (26 Ga.) Attached to Wood Deck



Typical Assembly Isometric View (Both Panels)