



C-BUCK Engineering

Specialty Structural Engineering

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

Evaluation Report

of

Millennium Metals, Inc.

“Millennium Rib”

Metal Roof Assembly

for

Florida Product Approval

FL 7809.2

Florida Building Code 2004

Method: 1 - D

Category: Roofing

Sub - Category: Metal Roofing (Non-Structural)

Product: *Millennium Rib*

Material: *Steel*

Panel Thickness: *29 Gauge Minimum*

Panel Width: *36” (Net Coverage)*

Support Type: *Wood Deck*

Prepared for:

Millennium Metals, Inc.

10200 Eastport Road

Jacksonville, FL 32218

Prepared by:

James L. Buckner, P.E.

Florida Professional Engineer # 31242

Florida Evaluation ANE ID: 1916

Engineer Assistant: Stephen Peters

Report No. 05-306-MR-36-S9W

Date: 9 / 14 / 06

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Manufacturer: Millennium Metals, Inc.

Product Name: Millennium Rib

Product Category: Roofing

Product Sub-Category: Metal Roofing, (Non-Structural)

Compliance Method: 1-D per 9B-72

Panel Type: Lapped

Panel Material Standards: Steel, minimum 29 gauge, minimum yield strength, 80 ksi
Material shall comply with Florida Building Code (FBC) 2004, Table 1507.4.3

Panel Dimensions: Thickness: 29 Gauge Minimum
Width: 36" (Net Coverage Width)
Major Rib Height: 3/4"

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 through-fastened to the deck with **minimum #10 minimum penetration through deck 3/16"**, hex head, with WSW washer, corrosion resistant, wood screws, per ANSI/ASME B18.6.4.
- Installation:** Install the "Millennium Rib" to the deck with **screw rows through-fastened to the deck 3" from all ends and maximum 16" o.c. thereafter, along the length of the panel. Within rows, screws shall be spaced in a pattern 5", 4", 5", 4", 5", 4", 5", 4" o.c. across the width of the panel, on each side of every major corrugation.**
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..



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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.

Referenced Data:

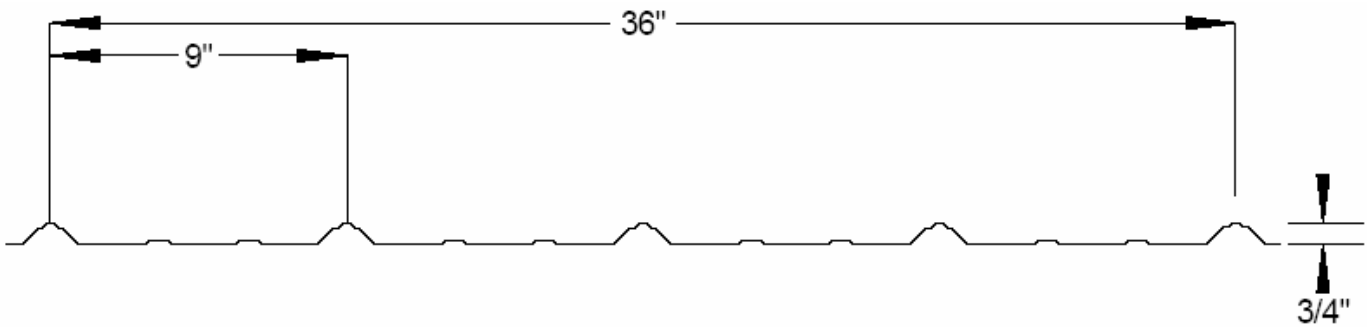
1. UL580 Uplift Test
By Hurricane Test Laboratory, LLC (TST ID 1527)
Report #: 0232-0911-05
Date: 9/27/05
2. Quality Assurance
By Keystone Certifications, Inc. (QUA 1743)
3. Certification of Independence
By James L. Buckner, P.E. (ANE ID 1916)
4. Engineering Calculations
By C-Buck Engineering
 - Report #C06-306-MR-36-S9W-PFV-1.2 Dated: 9/14/06
 - Report #C06-306-MR-36-S9W-PFV-5.8 Dated: 9/14/06

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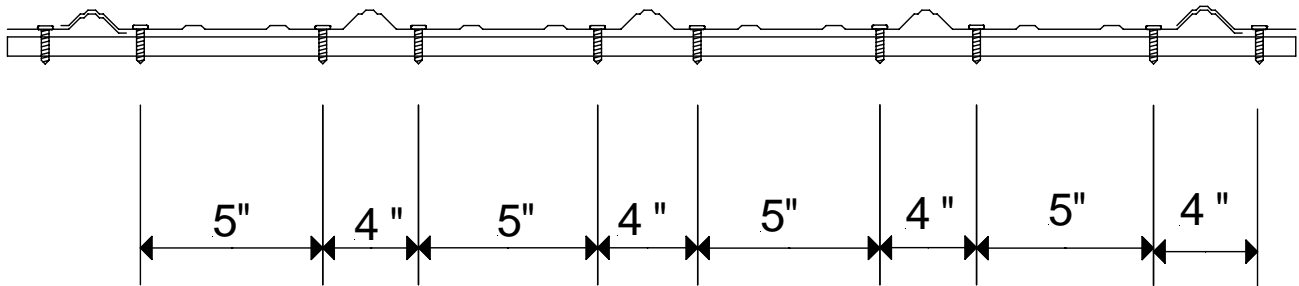
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Installation Method Millennium Metals, Inc. "Millennium Rib" (29 Ga.) Attached to Wood Deck



Panel Profile



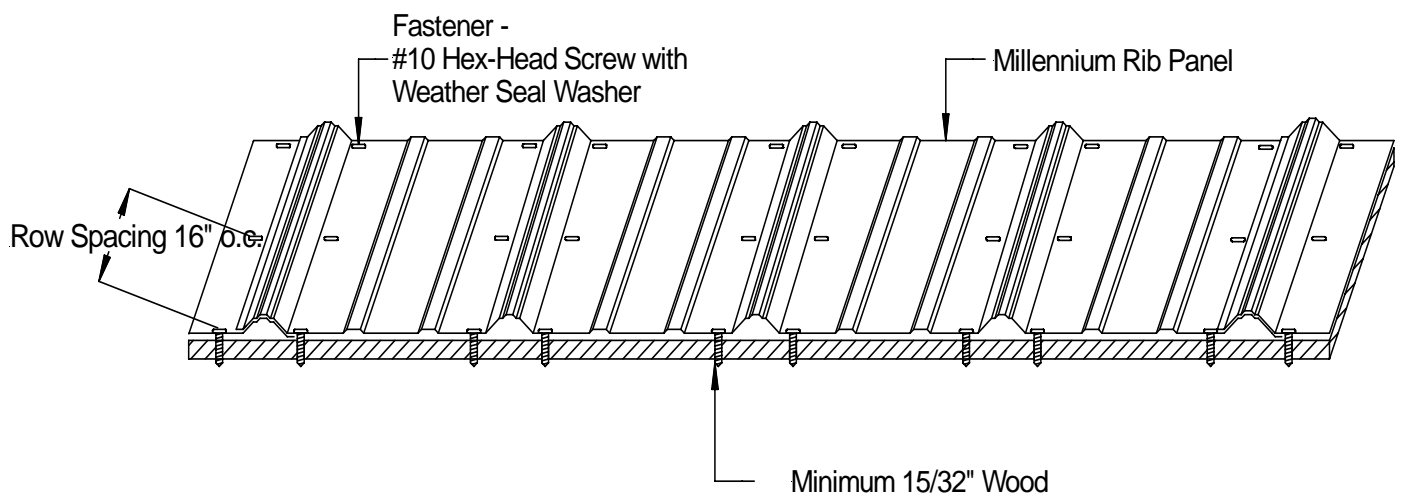
Assembly Profile View
(Typical Fastener pattern along Row- Interior)

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Installation Method (Continued) Millennium Metals, Inc. “Millennium Rib” (29 Ga.) Attached to Wood Deck



Assembly Isometric View