

Evaluation Report "SolarShield Hurricane Rib" Metal Roof Assembly

Manufacturer:
National Homecraft, LLC.

4441 SE 53rd Avenue
Ocala, FL 34480

for

Florida Product Approval

FL 25665.1 R2

Florida Building Code 8th Edition (2023)

Method: 1 - D

Category: Roofing

Sub - Category: Metal Roofing

Product: "Hurricane Rib" Roof Panel

Material: Steel

Panel Thickness: 26 gauge

Support: Wood Deck

Prepared by:

James L. Buckner, P.E., SECB

Florida Professional Engineer # 31242

Florida Evaluation ANE ID: 1916

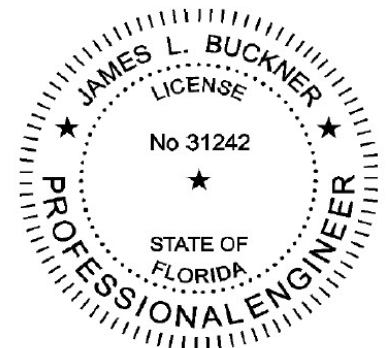
Project Manager: Diana Galloway

Report No. 24-676-HR-S6W-ER

(Revises 21-415-HR-S6W-ER, FL25665.1 R1)

Date: 6/19/2024

This item has been digitally signed and sealed by James L. Buckner, P.E., on this date below. Printed copies of this document are not considered signed and sealed, and the signature must be verified on any electronic copies.



James L. Buckner, P.E.

FL31242

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

Contents:

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Manufacturer:	National Homecraft, LLC. 4441 SE 53rd Avenue Ocala, FL 34480 (866) 998-3324 http://www.nationalhomecraft.com
Product Name:	"Hurricane Rib"
Product Category:	Roofing
Product Sub-Category	Metal Roofing
Compliance Method:	State Product Approval Rule 61G20-3.005 (1) (d)
Product/System Description:	"Hurricane Rib" Roof Panel 26-gauge steel, 36" wide roof panel mechanically attached to Wood Deck with Z-purlins.
Product Assembly as Evaluated:	Refer to Page 4 of this report for product assembly components/materials & standards: 1. Hurricane Rib Roof Panel 2. Fasteners (Roof panel to Z-purlins) 3. Fasteners (Roof panel side lap stitching) 4. Butyl Tape Sealant (Optional per manufacturer) 5. Steel "Z" Purlin 6. Fasteners (Z-purlin to roof deck) 7. Insulation 8. Existing Asphalt Shingle Roof System (Optional) 9. Wood Deck
Support:	Type: Wood Deck (Design of support and its attachment to support framing is outside the scope of this evaluation.) Description: • 15/32 (min.) or greater plywood, • or Wood plank (min. specific gravity of 0.42)
Slope:	Minimum slope shall be in compliance with FBC Chapter 15 based on the type of roof covering, applicable code sections and in accordance with manufacturer's recommendations.
Performance:	Wind Uplift Resistance: • Design Uplift Pressure: - 69.25 PSF (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 1897-15** – *Uplift test for roof covering systems*
- **TAS 125-03** – *Standard Requirements for Metal Roofing Systems*

Standards Equivalency:

The UL 580-94 & UL 1897-98 standard version used to test the evaluated product assembly is equivalent with the prescribed standards in UL 580-06 & UL 1897-15 adopted by the Florida Building Code 8th Edition (2023).

Code Compliance:

The product(s) described herein have demonstrated compliance with the performance standards listed above as referenced in the: Florida Building Code 8th Edition (2023).

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.
- This report is a building code product evaluation per FLPE rule (FAC) 61G15-36 to comply with Florida product approval rule (FAC) 61G20-3. This evaluation report is part of the Florida Building Commission approval for the listed code related criteria. This report by James Buckner, P.E. and CBUCK Engineering is not a design certification of code compliance construction submittal documentation, per FBC section 107, for any individual structure, site specific or permit design.
- Recover installations shall comply with all applicable sections of the current FBC including FBC Section 1511.
- All metal components and fasteners shall be corrosion resistant in accordance with applicable sections of FBC, including but limited to Sections 1504.3.2, 1506.6 and 1507.4.4.
- 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 61G20-3.0005 (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:

Hurricane Rib
 Material: Steel
 Thickness: 26 gauge (min.)
 Panel Widths: 36" (max.) Coverage
 Rib Height: 3/4"
 Yield Strength: 40 ksi min.
 Corrosion Resistance: Per FBC Section 1507.4.3

Fasteners:

Fastener #1, Securement #1: Attach Roof Panel To "Z" Purlin
 Type: Hex-Washer Head Wood Screw
 Size: #10 x 2" x 5/16" HWH WoodZac
 Manufactured by: SFS Intec
Fastener #1, Securement #2: Panel to Panel Side Lap Stitching
 Type: Hex-Washer Head Wood Screw
 Size: #10 x 2" x 5/16" HWH WoodZac
 Manufactured by: SFS Intec
Fastener #2 Attach "Z" Purlins to Wood Deck
 Type: Hex-Washer Head Wood Screw
 Size: #9 x 1-1/2" x 1/4" HWH TruGrip
 Manufactured by: ITW Buildex
Fastener Standards
 Corrosion Resistance: Per FBC Section 1506.6 and 1507.4.4
 Standard: Per ANSI/ASME B18.6.1

"Z" Purlins (Permanently Marked FL 25665.1):

Description: Steel
 Thickness: 20-gauge (min.)
 Size: 5/8" x 1/2" x 2" (min. flange thickness)
 Spacing: 48" o.c.

Butyl Tape Sealant (Per Manufacturers Recommendations):

3/32" x 1/2" Butyl Tape Sealant

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

Insulation:

Type: Rigid Insulation Board
 Thickness: 1-2" (min.) - 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 board is incorporated, fastener length shall conform to penetrate thru bottom of support a minimum of 3/16".

Asphalt Shingle Roof (Optional Existing Roof System):

Asphalt Shingle Roof (up to 2 Layers)

Installation:

Installation Method:

(Refer to drawings at the end of this evaluation report.)

Hurricane Rib Roof Panel to "Z" Purlins:

Fastener Type: **Fastener #1**

- Fastener Spacing: **One (1) fastener on each side of every rib**
(attached to the flats of the corrugations across the width of the panel)
- Row Spacing: **48"**
(along the length of the panel, attached to "Z" Purlins)

Hurricane Rib Roof Panel Side Laps:

Fastener Type: **Fastener #1**

- Side-Lap Stitch spacing: **12" o.c.**
(through plywood deck, along the length of each side-lap corrugation)

Butyl Tape Sealant (Per manufacturers recommendations):

- 3/32" x 1/2" Butyl Tape Sealant applied along panel seams

"Z" Purlins to Wood Deck:

Fastener Type: **Fastener #2**

- Spacing: **12" o.c.**
(through optional existing asphalt shingle roof, attached to wood deck)

Non-Structural, Sandwiched Layers

Insulation Board:

Loose laid over asphalt shingle roof, secured with attachment of "Z" purlin to wood deck.

Asphalt Shingle Roof (Optional Existing Roof System):

Asphalt Shingle Roof installed per applicable sections of FBC. (up to 2 Layers)

General Installation Guidelines:

- 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	
Design Pressure:	- 69.25 PSF
Fastener Spacing/Pattern:	One(1) fastener on each side of every rib
Row Spacing:	48"
Side-Lap Stitch Spacing:	12"
"Z" Purlins Spacing:	48"
"Z" Purlins Fastener Spacing:	12"
Span Condition:	2
Notes: Allowable design pressure(s) for allowable stress design (ASD).	

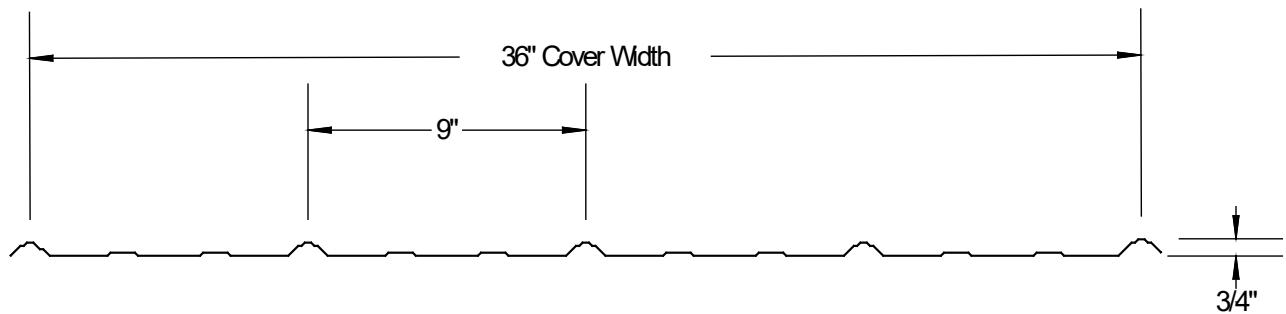
Install the "Hurricane Rib" roof panel assembly in compliance with the installation method listed in this report and applicable code sections of FBC 8th Edition (2023). The installation method described herein is in accordance with the scope of this evaluation report. Refer to manufacturer's installation instructions as a supplemental guide for attachment.

Referenced Data:

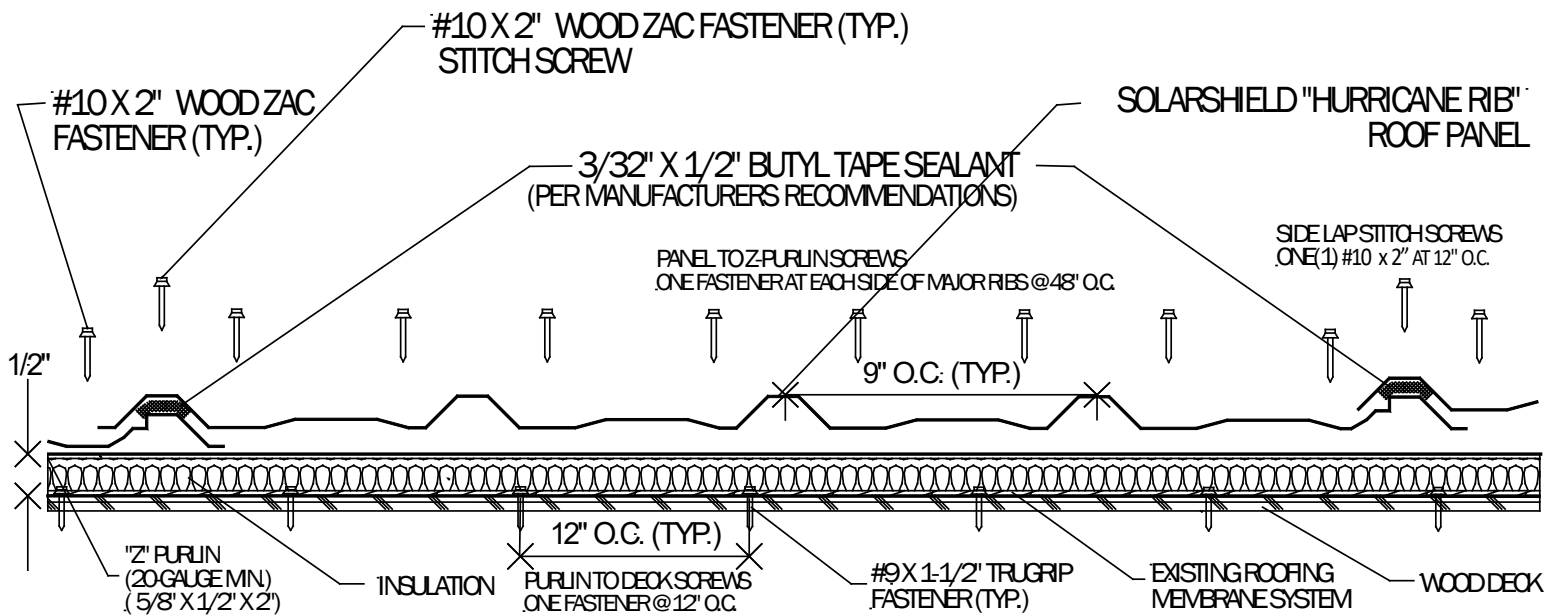
1. TAS 125-03 Uplift Test
By Hurricane Test Laboratories, Inc. (FBC Organization #TST ID: 1527)
Report #0433-0525-06, Specimens #1-3 Date: 4/04/08
2. Quality Assurance
Keystone Certifications, Inc. (FBC Organization ID# QUA 1824)
SolarShield Industries, Inc. Licensee #1154
3. Equivalency of Test Standard Certification
By James L. Buckner, P.E. @ CBUCK Engineering
(FBC Organization # ANE 1916)
4. Certification of Independence
By James L. Buckner, P.E. @ CBUCK Engineering
(FBC Organization # ANE 1916)

Installation Method SolarShield Industries, Inc. "Hurricane Rib" (26 gauge Steel) Roof Panel attached to Wood Deck

Drawings



SolarShield "Hurricane Rib" Panel Profile



Typical Assembly Section View