

Evaluation Report

"SRR"

Metal Roof Assembly

Manufacturer:
Morin – a Kingspan Company
685 Middle Street
Bristol, CT 06010
(860) 857-0900.

for

Florida Product Approval

FL 13442.1 R4

Florida Building Code 7th Edition (2020)

Per Rule 61G20-3

Method: 1 - D

Category: Roofing

Sub - Category: Metal Roofing

Product: "SRR" Roof Panel

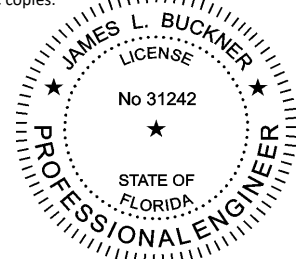
Material: Steel

Support: Steel Deck

Prepared by:

James L. Buckner, P.E., S.E.C.B.
Florida Professional Engineer # 31242
Florida Evaluation ANE ID: 1916
Project Manager: Diana Galloway
Report No. 20-268-SRR-S42S-ER
(Revises 18-136-SRR-S42S-ER, FL13442.1 R3)
Date: 10/15/20

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

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

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Contents:

Evaluation Report

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Manufacturer:	Morin - A Kingspan Company 685 Middle Street Bristol, CT 06010 (860) 857-0900 www.kingspan.com/us/en-us/product-groups/metal-roof-wall-systems		
Product Name:	"SRR"		
Product Category:	Roofing		
Product Sub-Category	Metal Roofing		
Compliance Method:	State Product Approval Rule 61G20-3.005 (1) (d)		
Product/System Description:	"SRR" Roof Panel Standing Seam Steel Roof Panel attached to steel deck with two-piece panel clips.		
Product Assembly as Evaluated:	Refer to Page 4 of this report for product assembly components/materials & standards: 1. Roof Panel 2. Panel Clips 3. Bearing Plates 4. Fasteners 5. Underlayment 6. Dens Deck 7. Insulation		
Support:	Type: Steel Deck (Design of support system is outside the scope of this evaluation.) Description: • 22 Gauge minimum • Yield Strength: 50 ksi minimum		
Slope:	Minimum slope shall be in accordance with manufacturer's recommendations, FBC Section 1507.4.2 and applicable code sections.		
Performance:	Wind Uplift Resistance: • Design Uplift Pressure: Refer to Table "A" (Refer to "Table A" attachment details herein)		
Missile Impact Rating:	Meets criteria for Large Missile Impact resistance per TAS 201: Impact Test Standard: TAS 201-94 Results: Pass Impact Rated Assembly(ies): Refer to Table "A"		

Performance Standards:	The product described herein has demonstrated compliance with: • ASTM E 1592-05 – <i>Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference</i> • TAS 125-03 – <i>Standard Requirements for Metal Roofing Systems</i> • UL580-06 – <i>Test for Uplift Resistance of Roof Assemblies—with Revisions through February 1998</i> • UL 1897-12 – <i>Uplift test for roof covering systems</i> • TAS 201-94 – <i>Impact Test Procedures</i>
Standards Equivalency:	The UL 580-94, UL 1897-98 & ASTM E 1592-01 standard version used to test the evaluated product assembly is equivalent with the prescribed standards in UL 580-06, UL 1897-12 & ASTM E 1592-05 adopted by the Florida Building Code 7th Edition (2020).
Code Compliance:	The product(s) described herein have demonstrated compliance with the performance standards listed above as referenced in the Florida Building Code 7th Edition (2020).
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:	• <u>Scope of “Limitations and Conditions of Use” for this evaluation:</u> 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”. • <u>Option for application outside “Limitations and Conditions of Use”</u> 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. • Large missile rated assemblies are based on a tested clip spacing of 72” o.c. and support spans at 6 ft (72”). Panel thicknesses $\geq$ 22 gauge are exempt from impact testing and deemed to comply per code. • 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 Farabaugh Testing & Engineering (FBC Organization ID#

QUA 7733).

**Components/Materials
(by Manufacturer):**

Roof Panel:

Material: Steel
Thickness: 24 gauge or 22 gauge
Panel Width: 12" (max.) or 16" (max.) Coverage
Rib Height: 2-1/2"
Yield Strength: 40 ksi min.
Corrosion Resistance: In compliance with FBC Section 1507.4.3

Roof Panel Clips:

Product Name: Morin "SRR Hook Clip"
Type: Two-piece, fixed clip
Part #: 146E
Material & Thickness: Clip Base: 0.050" Galvanized Steel
Clip Hook: 0.040" 301 Stainless Steel, 1/2 hard
Yield Strength: 50 ksi min.
Dimensions: 4.5" (long) by 2.84" (wide) by 2.0625" (tall)
and clip hook with nominal radius of 0.50"
Corrosion Resistance: Per FBC Section 1506.7

Bearing Plates

Material & Thickness: Steel, 16 gauge min.
Yield Strength: 50 ksi min.
Dimensions: 6" x 6" min.
Corrosion Resistance: Per FBC Section 1506.7

Fastener:

Type: Truss-Head Self-drilling Screw
Size : #14 – 10
Corrosion Resistance: Per FBC Section 1506.6 and 1507.4.4
Standard: Per SAE J78-1979

Underlayment:

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

Dens Deck:

1/2" thick Georgia-Pacific "Densdeck"

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

Type 1: Rigid Insulation Board
Thickness: 1-1/2" (min.) to 4" (max.)
Properties:
Density: 2.25 pcf (lbs/ft³) 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 3/4".

Installation:

Installation Method:

(Refer to "TABLE A" below and drawings at the end of this report.)

- Clip Spacing: **Refer to "TABLE A" Below**
- # fasteners per Clip: **Refer to "TABLE A" Below**
- Rib Interlock: Mechanically Seamed
- Minimum fastener penetration thru bottom of support, 3 /4".
(through bottom flute of steel deck)
- For panel construction at the end of panels, refer to manufacturer's instructions and any site specific design.

TABLE "A"								
	Panel Thickness	Panel Width	Clip Spacing	# Fasteners per Clip	Insulation	Dens Deck	LG Missile Impact?	Design Pressure (PSF)
1.	24 ga.	16"	60"	2	1-1/2" (min.) Required	Required	Yes	- 28
2.	24 ga.	16"	60"	2	4" (max.) Optional	Optional	No	- 28
3.	24 ga.	16"	24"	2	1-1/2" (min.) Required	Required	Yes	- 43
4.	24 ga.	16"	24"	2	4" (max.) Optional	Optional	No	- 43
5.	22 ga.	16"	60"	2	4" (max.) Optional	Optional	Deemed to Comply	- 42
6.	22 ga.	16"	24"	2	4" (max.) Optional	Optional	Deemed to Comply	- 71
7.	24 ga.	12"	60"	2	4" (max.) Optional	Optional	No	- 38
8.	24 ga.	12"	24"	2	4" (max.) Optional	Optional	No	- 61
9.	24 ga.	12"	24"	3	4" (max.) Optional	Optional	No	- 131
10.	24 ga.	12"	12"	3	4" (max.) Optional	Optional	No	- 176
11.	22 ga.	12"	60"	2	4" (max.) Optional	Optional	Deemed to Comply	- 48
12.	22 ga.	12"	24"	2	4" (max.) Optional	Optional	Deemed to Comply	- 81
13.	22 ga.	12"	30"	3	4" (max.) Optional	Optional	Deemed to Comply	- 153.5
14.	22 ga.	12"	18"	3	4" (max.) Optional	Optional	Deemed to Comply	- 207

Install the "SRR" 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

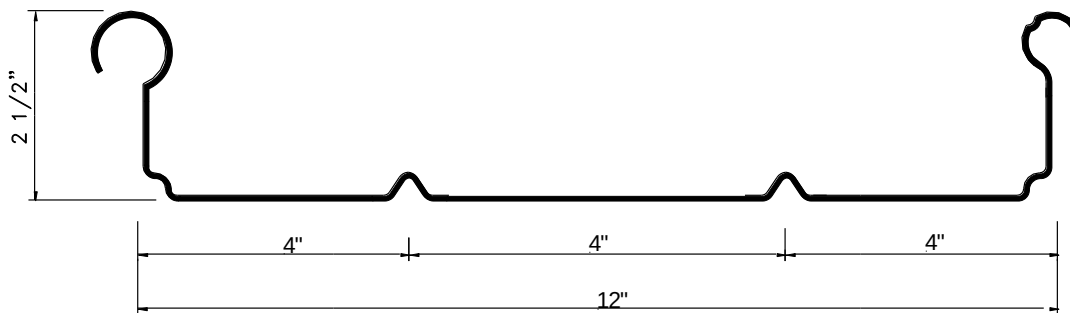
report. Refer to manufacturer's installation instructions as a supplemental guide for attachment.

Referenced Data:

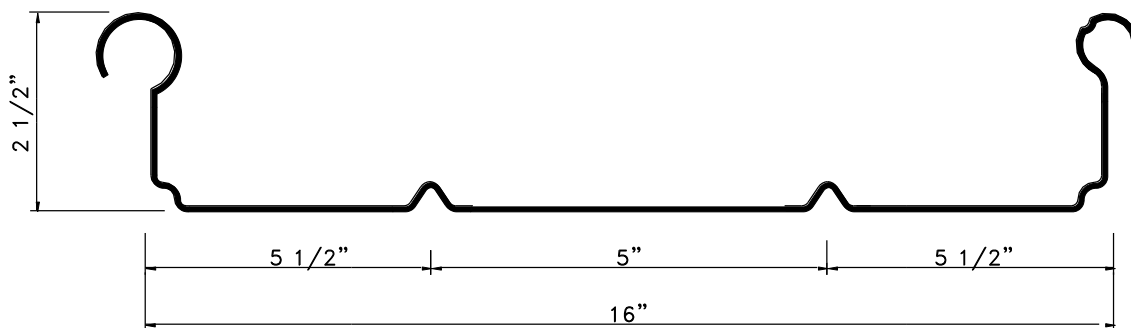
1. ASTM E1592-01 Uplift Test
By Farabaugh Engineering and Testing, Inc. (FBC Organization #TST ID: 1654)
 - Report # T221-07, Report Date: July 23, 2007
 - Report # T218-07, Report Date: July 16, 2007
 - Report # T228-07, Report Date: July 24, 2007
 - Report # T219-07, Report Date: July 20, 2007
2. TAS 125-03 Uplift Test
By Farabaugh Engineering & Testing Inc, Inc. (FBC Organization #TST ID: 1654)
Report # T320-09, Report Date: December 3, 2009
3. UL 580/UL 1897 Uplift Test
By Farabaugh Engineering & Testing Inc, Inc. (FBC Organization #TST ID: 1654)
 - Report # T231-09, Report Date: August 27, 2009
 - Report # T269-09, Report Date: October 22, 2009
4. TAS 201-94 Impact Test
By Architectural Testing, Inc. (FBC Organization ID# TST 1558)
 - Report # 01-46163.01, Report Date: July 21, 2003
5. Engineering Analysis
By CBUCK Engineering
6. Equivalency of Test Standard Certification
By James L. Buckner, P.E. @ CBUCK Engineering (FBC Organization #ANE 1916)
7. Quality Assurance
Farabaugh Testing & Engineering (FBC Organization ID# QUA 7733)
8. Certification of Independence
By James L. Buckner, P.E. @ CBUCK Engineering
(FBC Organization # ANE 1916)

Installation Method Morin - A Kingspan Company "SRR Panel" Steel Roof Panel attached to Steel Deck

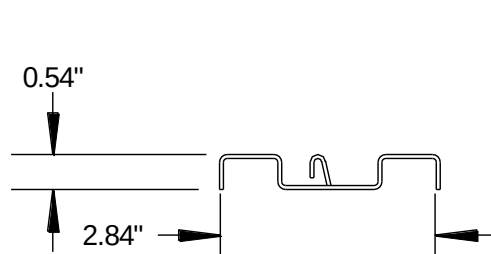
Drawings



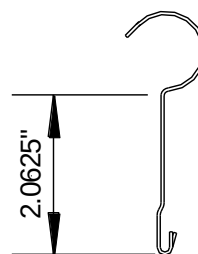
Typical "12" Wide Panel Profile



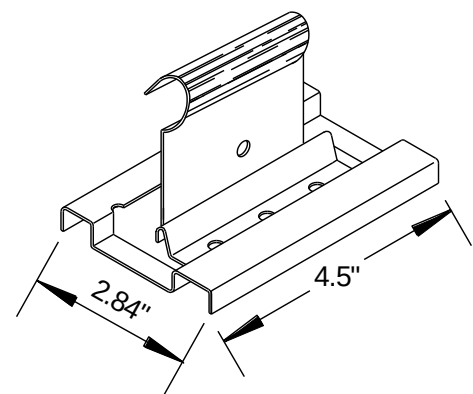
Typical "16" Wide Panel Profile



Panel Clip Base
(Galvanized Steel)



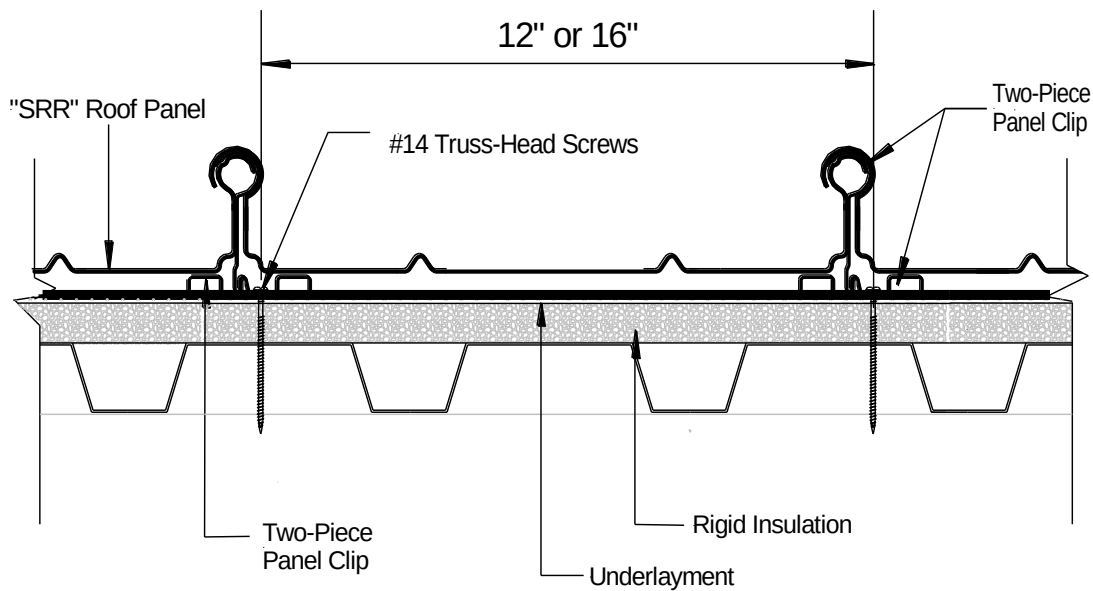
Panel Clip Hook
(Stainless Steel)



Panel Clip
(Hook & Base)

Two-Piece Panel Clip (Part Number 146E)

Installation Method Morin - A Kingspan Company "SRR Panel" Steel Roof Panel attached to Steel Deck



Typical Roof Assembly Isometric View

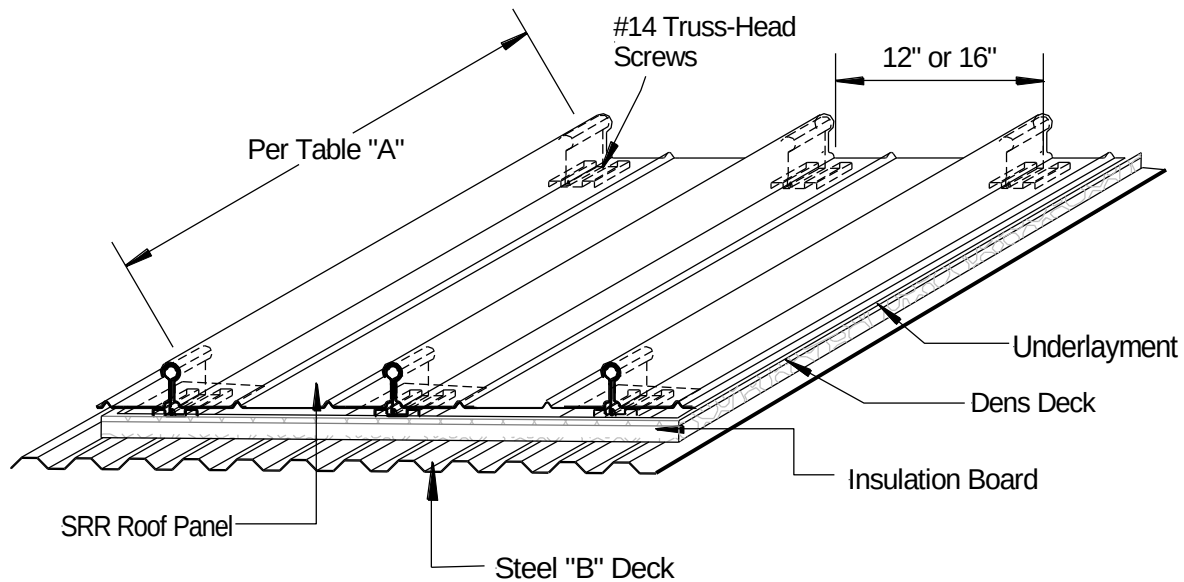
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Morin - A Kingspan Company

"SRR Panel" Steel Roof Panel attached to Steel Deck



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