

Evaluation Report

"SLR"

Metal Roof Assembly

Manufacturer:

Morin – a Kingspan Company

685 Middle Street

Bristol, CT 06010

for

Florida Product Approval

FL 9612.3 R8

Florida Building Code 8th Edition (2023)

Method: 1 - D

Category: Structural Components

Sub - Category: Roof Deck

Product: "SLR" Roof Panel

Material: Steel

Support: Steel Purlins

Prepared by:

James L. Buckner, P.E., S.E.C.B.

Florida Professional Engineer # 31242

Florida Evaluation ANE ID: 1916

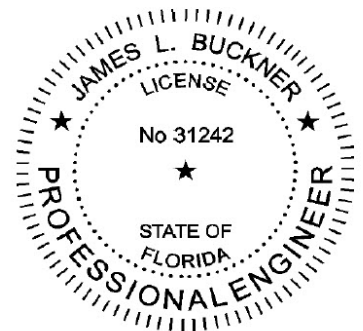
Project Manager: Diana Galloway

Report No. 23-558-SLR-S42P-ER

(Revises 20-268-SLR-S42P-ER, FL 9612.3 R7)

Date: 12/20/2023

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

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Evaluation Report

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Date: 2023.12.20

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CBUCK, Inc. dba CBUCK Engineering, Palm Beach County, Florida

Phone: (561) 491-9927 · Email: cbuck@cbuckinc.net · Website: www.cbuckinc.net

Mailing Address: 1374 Community Dr., Jupiter, FL 33458

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:	"SLR"
Product Category:	Structural Components
Product Sub-Category	Roof Deck
Compliance Method:	State Product Approval Rule 61G20-3 .005 (1) (d)
Product/System Description:	"SLR" Roof Panel Standing Seam Steel Roof Panel attached to steel purlins 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. Fasteners 4. Insulation (Optional)
Support:	Type: Steel Purlins (Design of steel support and its attachment to support framing is outside the scope of this evaluation.) Description: • 16 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)

- Performance Standards:** The product described herein has demonstrated compliance with:
- UL580-06 – *Test for Uplift Resistance of Roof Assemblies—with Revisions through February 1998*
 - UL 1897-15 – *Uplift test for roof covering systems*
 - ASTM E 1592-05 (2017) – *Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference*
- Standards Equivalency:** The UL 580-94, UL 1897-98 & ASTM E 1592-94 standard version used to test the evaluated product assembly is equivalent with the prescribed standards in UL 580-06, UL 1897-15 & ASTM E 1592-05 (2017) adopted by the Florida Building Code 8th Edition (2023) for use as evaluated in this report.
- 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:**
- Diaphragm and axial load capacity is outside the scope of this evaluation.
- Scope of “Limitations and Conditions of Use” for this evaluation:
- This evaluation report for “State 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 “State 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.
 - 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 .00053) for manufacturing under a quality assurance program audited by an approved quality assurance entity through Farabaugh Testing & Engineering (FBC ID# QUA 7733).

Components/Materials (by Manufacturer):

Roof Panel:	"SLR"
Material:	Steel
Thickness:	24 gauge or 22 gauge
Panel Width:	16" (max.) or 20" (max.) Coverage
Rib Height:	2"
Yield Strength:	40 ksi min.
Corrosion Resistance:	In compliance with FBC Section 1507.4.3

Roof Panel Clips:

Product Name:	Morin "SLR Floating Clip"
Type:	Two-piece, floating clip
Part #:	330B
Material & Thickness:	Clip Base: 22 ga. Galvanized Steel Clip Top: 16 ga. Galvanized Steel
Yield Strength:	50 ksi min.
Dimensions:	Clip Top: 4-1/2" (w) x 2-3/8" (h) Clip Base: 1-7/8" (l) x 1-5/8" (w)
Corrosion Resistance:	Per FBC Section 1506.7

Fastener:

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

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

<u>Type 1:</u>	Compressible Blanket Insulation
Thickness:	6" max. before compression

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 the end of this report.)

- Purlin Spacing: **Refer to "TABLE A" Below**
- Two (2) fasteners per Clip (at each purlin intersection)
- Rib Interlock: Mechanically Seamed - Refer to "TABLE A" Below
- Minimum fastener penetration thru bottom of support, 3 /4".
(through flange of steel purlins)

TABLE "A" ALLOWABLE LOADS					
	Panel Thickness	Panel Width	Max. Purlin Spacing	Panel Seam	Design Pressure
METHOD 1	24 ga.	16"	48" (4' - 0")	180°	- 61 PSF
METHOD 2	22 ga.	20"	36" (3' - 0")	90°	-60 PSF
1. Span condition: 3 or more					
2. Allowable design pressure(s) for allowable stress design (ASD).					

Install the "SLR" 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:

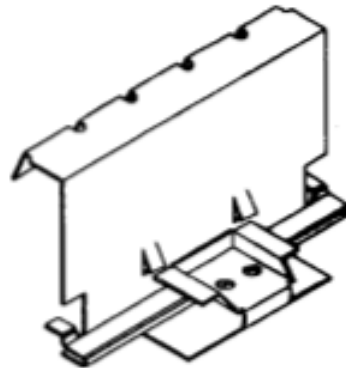
1. ASTM E 1592-94 Uplift Test
By ENCON Consultants, Inc. (FBC Organization ID# TST 6485)
Project No. C484 Date: 6/9/07
2. UL580-94/UL1897-98 Uplift Test
Architectural Testing, Inc. (FBC Organization ID# TST 1558)
Report #55986.01-122-44 Date: 8/29/05
3. Equivalency of Test Standard Certification
By James L. Buckner, P.E. @ CBUCK Engineering
(FBC Organization #ANE 1916)
4. Quality Assurance
Farabaugh Testing & Engineering (FBC Organization ID# QUA 7733)
5. Certification of Independence
By James L. Buckner, P.E. @ CBUCK Engineering
(FBC Organization # ANE 1916)

Installation Method Morin - A Kingspan Company "SLR Panel" Steel Roof Panel attached to Steel Purlins

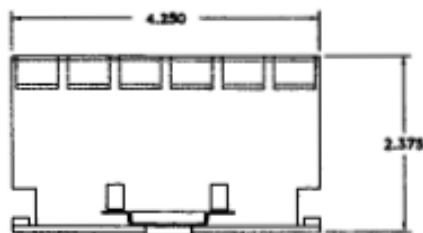
Drawings



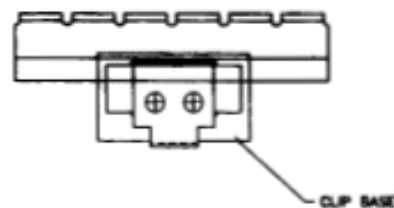
Typical Panel Profile



Isometric View



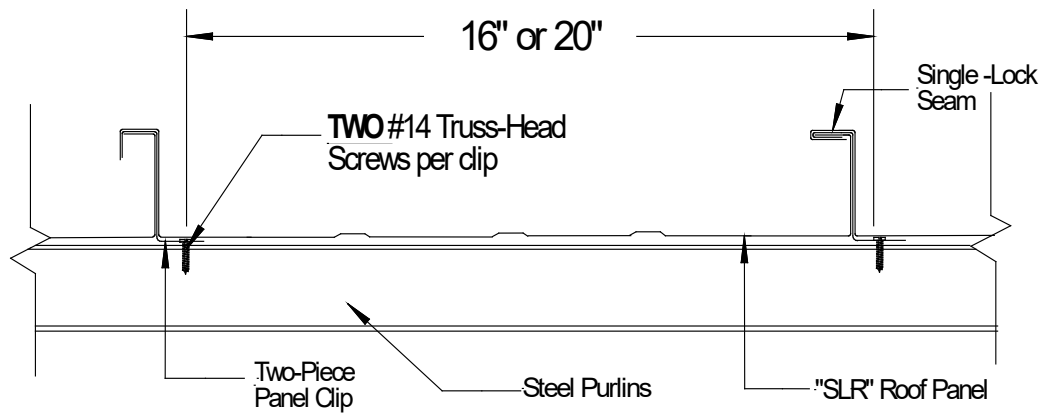
Side View



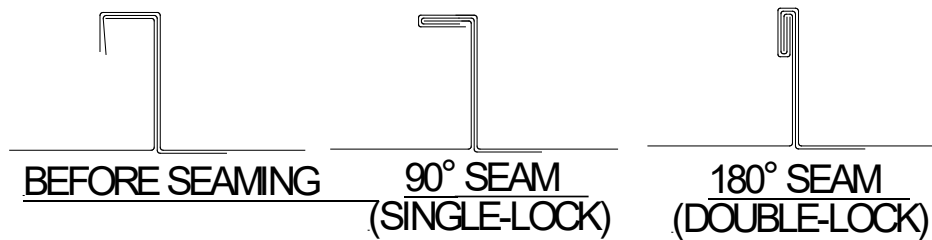
Top View

Two-Piece Panel Clip
(Part Number 330B)

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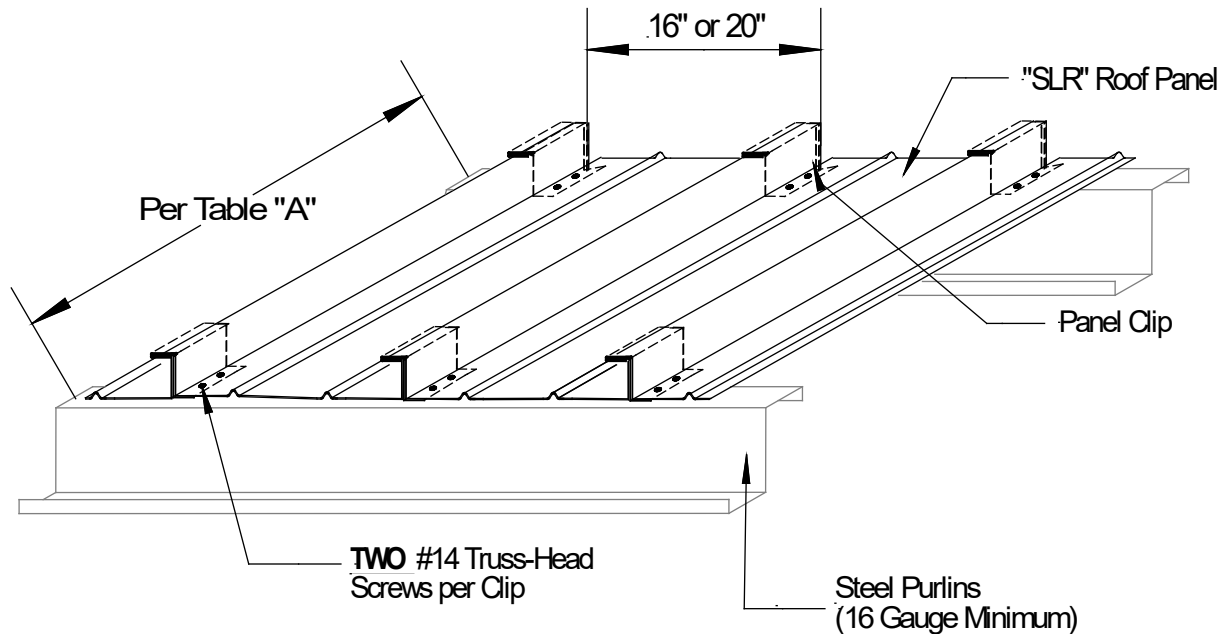
Typical Roof Assembly View – (Single Lock Shown)



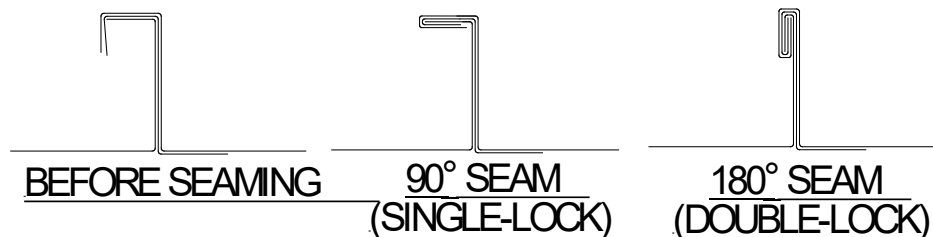
Typical Panel Seams

TABLE "A"					
	Panel Thickness	Panel Width	Max. Purlin Spacing	Panel Seam	Design Pressure
METHOD 1	24 ga.	16"	48" (4' - 0")	180°	- 61 PSF
METHOD 2	22 ga.	20"	36" (3' - 0")	90°	-60 PSF
Span condition: 3 or more					

Installation Method Morin - A Kingspan Company "SLR Panel" Steel Roof Panel attached to Steel Purlins



Typical Roof Assembly Isometric View – (Single Lock Shown)



Typical Panel Seams

TABLE "A"					
	Panel Thickness	Panel Width	Max. Purlin Spacing	Panel Seam	Design Pressure
METHOD 1	24 ga.	16"	48" (4'- 0")	180°	- 61 PSF
METHOD 2	22 ga.	20"	36" (3'- 0")	90°	-60 PSF
Span condition: 3 or more					