

Evaluation Report "Sentrigard ML200" Metal Roof Assembly

Manufacturer:

NB Handy Company

65 10th Street

Lynchburg, VA 24504

800-284-6242

for

Florida Product Approval

FL 42672.1

Florida Building Code 8th Edition (2023)

Method: 1 - D

Category: Roofing

Sub - Category: Metal Roofing

Product: "Sentrigard ML200" Roof Panel

Material: Steel

Panel Thickness: 24 ga.

Panel Width: 2" – 18-7/8"

Panel Seam: Double-Lock

Support: Steel

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.

Prepared by:

James L. Buckner, P.E., SECB

Florida Professional Engineer # 31242

Florida Evaluation ANE ID: 1916

Project Manager: Diana Galloway

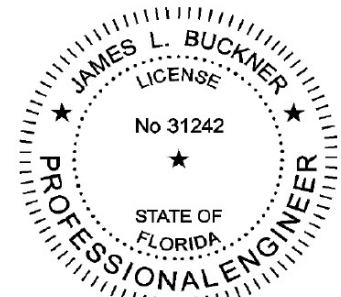
Report No. 23-541-ML200-S4S-hz-ER (New)

Date: 10/11/2023

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Evaluation Report

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James L. Buckner, P.E.
FL31242

Date: 2023.10.11
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CBUCK, Inc. dba CBUCK Engineering

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

Business: 1374 Community Dr., Jupiter, FL 33458

Manufacturer:	NB Handy Company 65 10th Street Lynchburg, VA 24504 800-284-6242 http://www.nbhandycom/
Product Name:	“Sentrigard ML200”
Product Category:	Roofing
Product Sub-Category	Metal Roofing
Compliance Method:	State Product Approval Rule 61G20-3.005 (1) (d)
Product/System Description:	“Sentrigard ML200” Roof Panel 24 ga. Steel roof panel mechanically attached to Steel Deck with floating panel clips & screws.
Product Assembly as Evaluated:	Refer to Page 4 of this report for product assembly components/materials & standards: <ol style="list-style-type: none">1. Roof Panel2. Panel Clip3. Fasteners4. Underlayment5. Cover Board6. Insulation
Support:	Type: Steel Deck - 22 ga minimum - Support Spans = 5'- 0" maximum (Design of support system is outside the scope of this evaluation.) Description: <ul style="list-style-type: none">• Thickness: 22 gauge minimum• Yield strength: 33 ksi minimum
Slope:	Non-HVHZ: In compliance with FBC 1507.4.2 HVHZ: 2:12 min. per FBC 1515.2 Roof 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: <ul style="list-style-type: none">• 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*
- UL 1897-15 - Uplift test for roof covering systems
- TAS 125-03 – *Standard Requirements for Metal Roofing Systems*

Standards Equivalency:

The UL 1897-12 standard version used to test the evaluated product assembly is equivalent with the prescribed standards in UL 1897-15 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) International Building Code 2021.

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".
- All metal components and fasteners shall be corrosion resistant in accordance with applicable sections of FBC, including but not limited to Sections 1504.3.2, 1506.6 and 1507.4.4. For HVHZ areas, all roofing accessories shall comply with FBC Sections 1517.5 and 1517.6.
- All insulation fasteners, membrane fasteners and stress plates shall comply with FBC Section 1520.4 as applicable.
- The design pressures listed herein is applicable to all roof pressure zones. Rational analysis or extrapolation to enhance pressure is not permitted in HVHZ zones.
- Maximum panel lengths, valleys & panel accessories shall comply with Roofing Application Standard RAS 133 as applicable in HVHZ areas.
- Deck shall be in compliance with applicable building code.
- Fire Classification is outside the scope of Rule 61G20-3 and is therefore not included in this evaluation.
- All panels shall be permanently labeled with the manufacturer's name and/or logo.
- This evaluation report approves the product assembly as described in this report for use in the High Velocity Hurricane Zone (HVHZ) code section. (Dade & Broward Counties)
- 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.

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 Org ID# QUA 1824).

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

Roof Panel: **Sentrigard ML200**
Material: Steel
Thickness: 24 ga. (min.)
Panel Widths: 2" – 18-7/8" (max.) Coverage
Rib Height: 2"
Yield Strength: 40 ksi min.
Material Standards: Per FBC 1507.4.3 (Non-HVHZ), 1518.9 (HVHZ)
Corrosion Resistance: Per FBC 1507.4.3(2) (Non-HVHZ), 1518.9 (HVHZ)

Roof Panel Clip: **2000 SNS**
Type: Two-piece, floating clip
Material: Galvanized Steel
Thickness: Top: 22 Gauge min. Base: 22 Gauge min.
Yield Strength: 40 ksi min.
Dimensions: 2" (tall) x 4.3" (long)
Corrosion Resistance: Per FBC Section 1506.7

Fastener:
Type: Pancake-Head Dek Fast Screw
Size: #14-13 x penetrate thru support deck 3/4" min.
Corrosion Resistance: Per FBC 1506.6 & 1507.4.4 (Non-HVHZ), 1518.9 (HVHZ)
Standard: Per ANSI/ASME B18.6.1 (Non-HVHZ), FBC 1517.5 (HVHZ)

Underlayment:

Non-HVHZ:

One of the following per FBC 8th Edition (2023), Section 1507.1.1.

ASTM D226, D1970, D4869, D6757, D8257

Installation shall comply with FBC including Sections 1507.1.1.1, 1507.1.1.2 where applicable and in accordance with roof manufacturer's recommendations.

HVHZ:

One of the following per FBC 8th Edition (2023), Section 1518.2.

ASTM D226, D1970, D4869, D6757, D8257

Installation shall comply with FBC including Sections 1518.2, 1518.2.1, Table, 1518.2.1, 1518.2.2, 1518.2.3, 1518.2.4 where applicable and in accordance with roof manufacturer's recommendations.

Cover Board:

Any 1/2" min. approved coverboard with current approval.

Insulation:

Type: Rigid Insulation Board
Thickness: 3/4"- 4" (max.)
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".

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

Installation:

Installation Method:

(Refer to “**TABLE A**” below and drawings at the end of this evaluation report.)

- Clip Spacing: **Refer to “TABLE A” Below**
(along the length of the panel)
- Two (2) fasteners per Clip
- Rib Interlock: Mechanically seamed 180° (DOUBLE-LOCK)
- Minimum fastener penetration thru bottom of support, 3/4”.
- For panel construction at the end of panels, refer to manufacturer’s instructions and any site specific design.

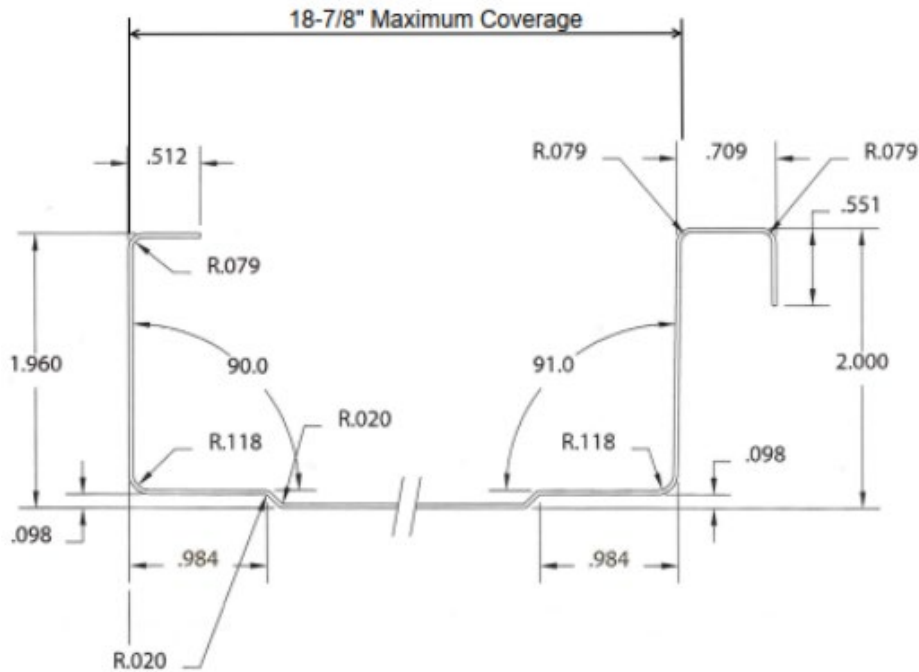
TABLE “A” ALLOWABLE LOADS “Sentrigard ML200” (24 ga. Steel) Roof Panel attached to Steel Deck With Floating Clips								
#	Panel Width (max.)	Deck Thickness (min.)	Panel Clip	Clip Spacing (max.)	# of Fasteners per Clip	Panel Adhesive	Panel Seam (min.)	Design Pressure (ASD)
1	18-7/8”	22 ga	4” Floating Clip	36”	2	NO	Double Lock	- 54.3 PSF
2	18-7/8”	22 ga	4” Floating Clip	6”	2	NO	Double Lock	- 153.5 PSF
Notes: 1. Allowable design pressure(s) for allowable stress design (ASD). 2. The design pressures listed herein is applicable to all roof pressure zones. Rational analysis or extrapolation to enhance pressure is not permitted in HVHZ zones.								

Install the “Sentrigard ML200” 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.

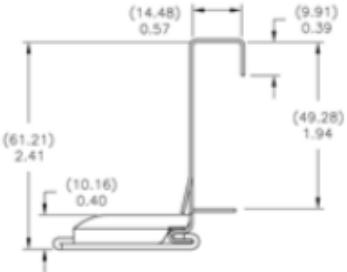
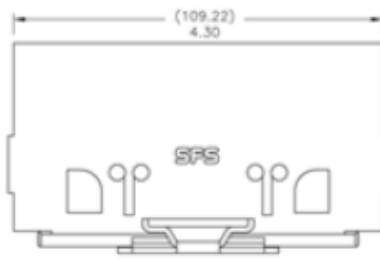
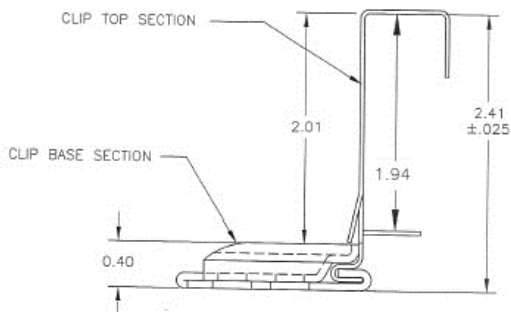
Referenced Data:

1. TAS 125 Uplift Test (Per UL580-06 and UL 1897-12) & ASTM E8
By Force Engineering & Testing (FBC Organization ID# TST 5328)
Report No. 72-0272T-07, Date: 02/4/08
2. Authorization to Use Test Reports
By Metalforming, Inc.
3. TAS 100-95 Wind Driven Rain Test
By Farabaugh Engineering & Testing, Inc. (FBC Organization ID# TST 1654)
Report No. T251-21, Date: 10/09/21
4. Quality Assurance
Keystone Certifications, Inc. (FBC Organization ID# QUA 1824)
NB Handy Company Licensee #420
5. Certification of Independence
By James L. Buckner, P.E. @ CBUCK Engineering
(FBC Organization # ANE 1916)

Installation Method NB Handy Company "Sentrigard ML200" (24 ga. Steel) Roof Panel attached to Steel Deck w/Floating Clips

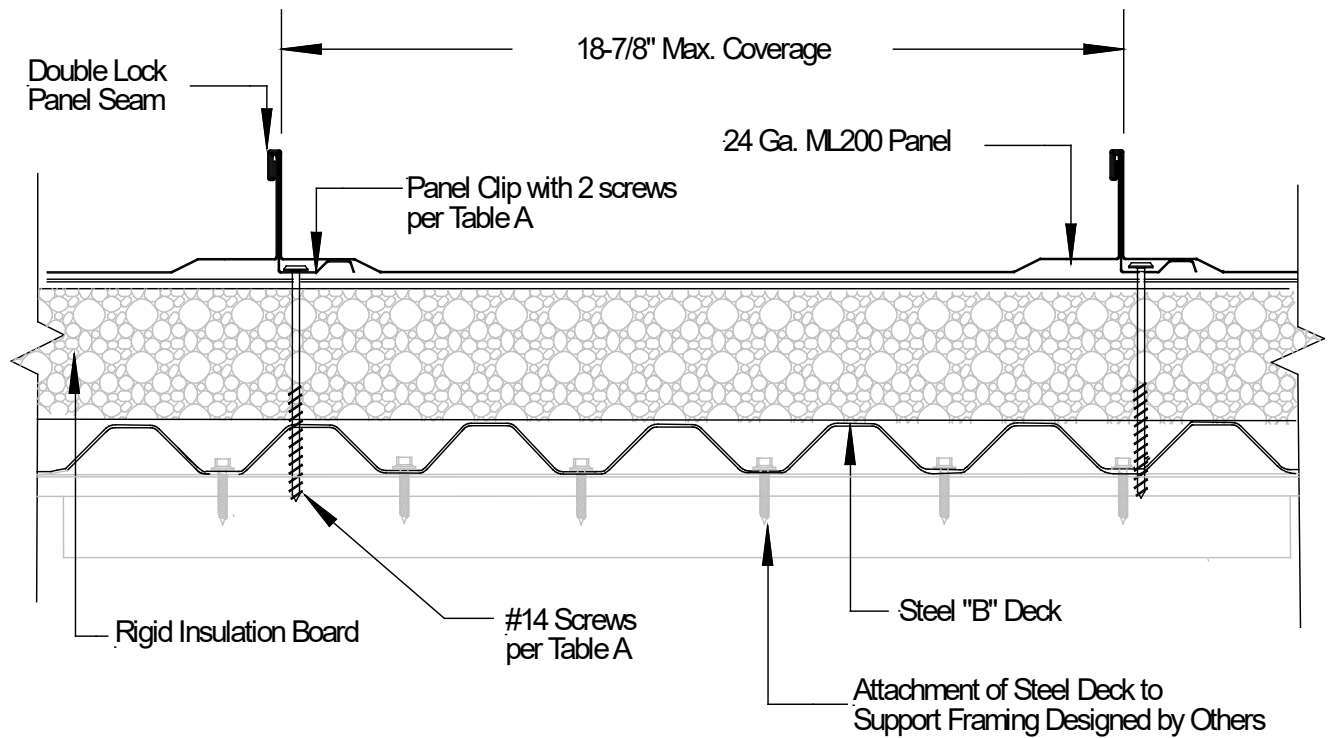


Typical Panel Profile
 (2" – 18-7/8" max. width)



Typical Panel Clip
 SNS2000 Floating Clip (22 ga. Galv. Steel Top & 22 Ga. Galv. Steel Base)

Installation Method NB Handy Company “Sentrigard ML200” (24 ga. Steel) Roof Panel attached to Steel Deck w/Floating Clips



Typical Panel Clip Assembly View

TABLE "A" ALLOWABLE LOADS “Sentrigard ML200” (24 ga. Steel) Roof Panel attached to Steel Deck With Floating Clips								
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