

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 40560.5 R3

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"
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.

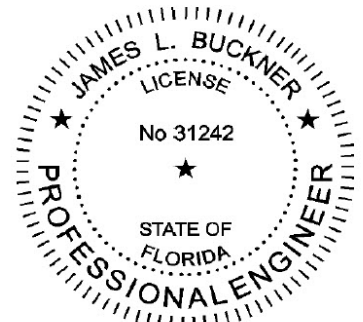
Prepared by:

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-ER.2
(Revises 20-295.2-ML200-S4W-ER, 40560.5 R2)
Date: 10/17/2023

Contents:

Evaluation Report

Pages 1 – 7



James L. Buckner, P.E.
FL31242

Date: 2023.10.17
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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 fixed 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 Panel1. Panel Clip2. Fasteners3. Panel Adhesive4. Ice & Water Shield5. Cover Board (Optional)6. Insulation (Optional)7. Underlayment
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:	Minimum slope shall be: 2 : 12 or greater 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.
- Deck shall be in compliance with applicable building code.
- 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).
- 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 Organization ID# QUA 1824).

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

Roof Panel:

Material: Steel
Thickness: 24 ga. (min.)
Panel Widths: 2" - 18" (max.) Coverage
Rib Height: 2"
Yield Strength: 40 ksi min.
Corrosion Resistance: Per FBC Section 1507.4.3

Sentrigard ML200

Roof Panel Clip:

Type: One-piece, fixed clip
Material: Galvanized Steel
Thickness: 22 Gauge min.
Yield Strength: 40 ksi min.
Dimensions: 2" (tall) x 3" (long)
Corrosion Resistance: Per FBC Section 1506.7

ML200 Clip

Fastener:

Type: Pancake-Head Dp1 Concealer Screw
Size: #14-13 x penetrate thru support deck 1/2" Minimum
Corrosion Resistance: Per FBC 1506.6 & 1507.4.4
Standard: Per ANSI/ASME B18.6.1

Steel Strap (Required with Method 3):

Material: Galvanized Steel
Thickness: 24 Gauge min.
Dimensions: 4-1/2" x 3/4"

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

Panel Adhesive/Sealant (Required with Method 3):

Product Name: Titebond Metal Roof Weathermaster Sealant
Type: One component, elastomeric polymer
Application Size: 3/8" continuous bead
Application Location: along each side of panel steel strap

Ice & Water Shield (Tested):

Type: Ice & Water Shield
Standard: ASTM D4869 Type III or IV

Cover Board (Optional):

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

Insulation (Optional):

Type: Rigid Insulation Board
Thickness: 3" (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 3/16".

Underlayment:

Material and application shall be in compliance with FBC Section 1507.1.1 and in accordance with applicable code sections and manufacturer's recommendations.

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)
- Steel Strap: Per Table A Below
(layered below the center of each panel)
- Panel adhesive: Per Table A Below
(3/8" bead applied on each side of steel strap)
- 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 "Sentrigard ML200" (24 ga. Steel) Roof Panel attached to Steel Deck								
#	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"	22 ga	3" Fixed	24"	2	NO	Double Lock	- 71 PSF
2	18"	22 ga	3" Fixed	12"	2	NO	Double Lock	- 81 PSF
3	18"	22 ga	3" Fixed w/Steel Strap	12"	2	YES	Double Lock	- 105 PSF
Note: Allowable design pressure(s) for allowable stress design (ASD).								

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.

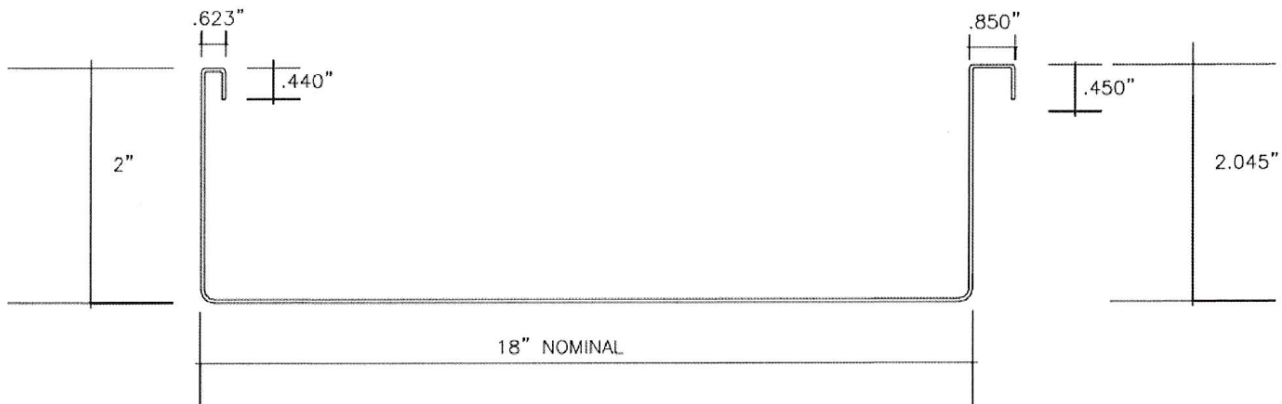
Referenced Data:

1. TAS 125 Uplift Test (Per UL580-06 and UL 1897-12) & ASTM E8
By Farabaugh Engineering & Testing, Inc. (FBC Organization ID# TST 1654)
Report No. T234-21, Specimens #1-4, Date: 08/27/21, Revised 10/18/21
2. Quality Assurance
Keystone Certifications, Inc. (FBC Organization ID# QUA 1824)
NB Handy Company Licensee #420
3. Certification of Independence
By James L. Buckner, P.E. @ CBLUE Engineering
(FBC Organization # ANE 1916)

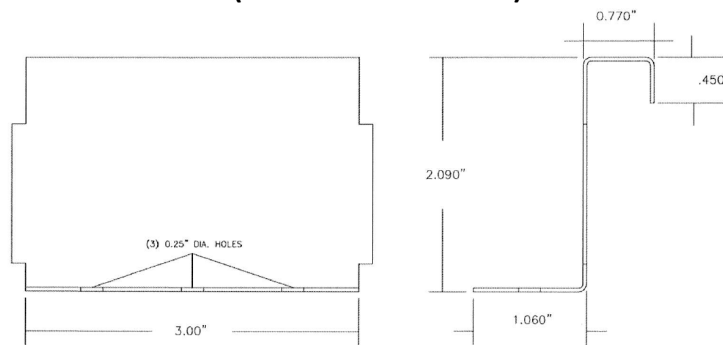
Other Tests (Not Part of This Evaluation Report):

1. 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

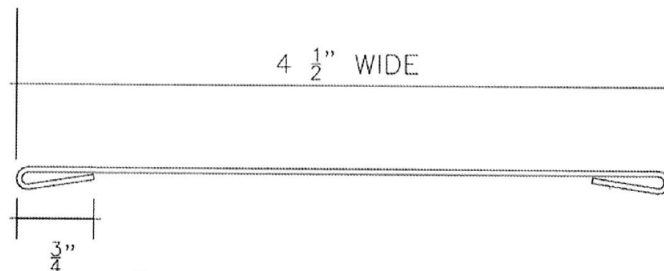
Installation Method NB Handy Company "Sentrigard ML200" (24 ga. Steel) Roof Panel attached to Steel Deck



Typical Panel Profile
 (2" – 18" max . width)



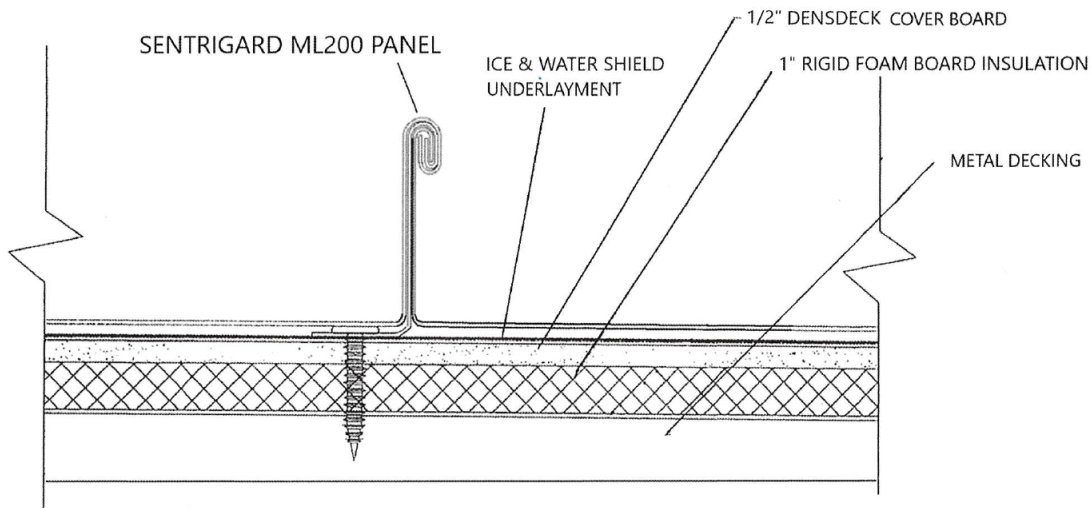
Typical Panel Clip



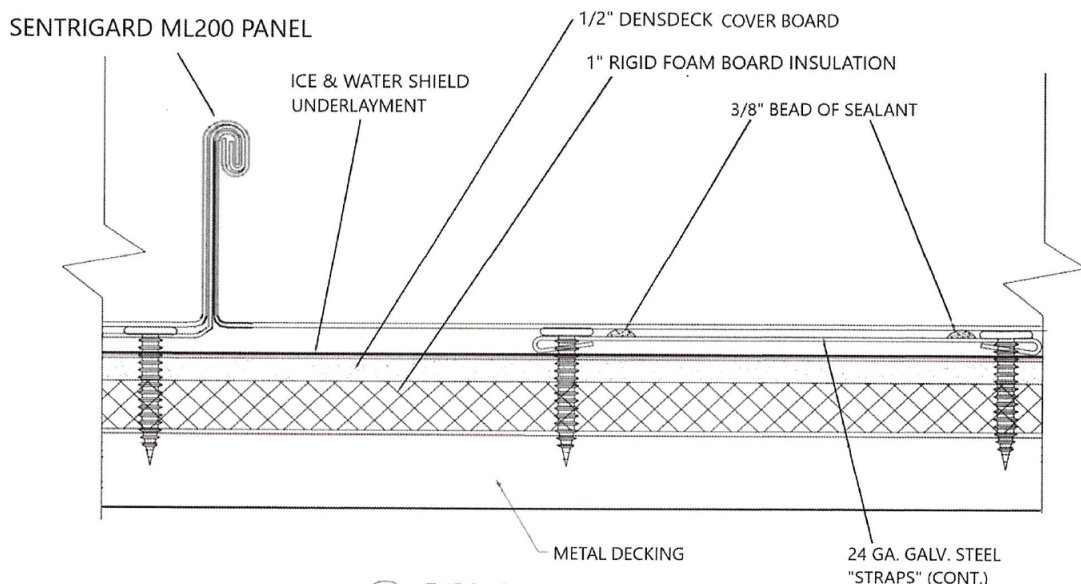
STEEL STRAP DIMENSIONS
 24 GA. GALV. STEEL "STRAP" (CONT.)

Steel Strap

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



Typical Panel Clip Assembly View
(Method 1 & 2)



Typical Panel Clip Assembly View
(Method 3)