Evaluation Report

"Sentrigard ML150 AH"

Metal Roof Assembly

Manufacturer:

NB Handy Company

65 10th Street

Lynchburg, VA 24504

800-284-6242

for

Florida Product Approval

FL 42672.6

Florida Building Code 8th Edition (2023)

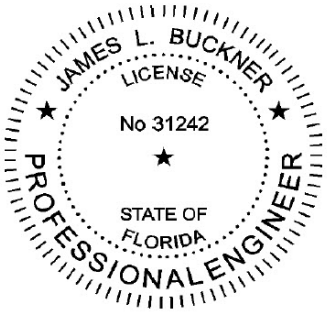
Method:	**1 - D**
Category:	**Roofing**
Sub - Category:	**Metal Roofing**

Product:	"Sentrigard ML150 AH" Roof Panel
Material:	**Aluminum**
Panel Thickness:	0.032" min.
Panel Width:	2" – 16"
Panel Seam:	Double-Lock
Support:	**Wood**

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-ML150 AH-A3W-hz-ER *(New)*
Date: 10/11/2023

Contents:

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

Date: 2023.10.11 '13:47:53 -04'00

Manufacturer:
NB Handy Company
65 10th Street
Lynchburg, VA 24504
800-284-6242
http://www.nbhandycom/

Product Name:
"Sentrigard ML150 AH"

Product Category:
Roofing

Product Sub-Category
Metal Roofing

Compliance Method:
State Product Approval Rule 61G20-3.005 (1) (d)

Product/System Description:
"Sentrigard ML150 AH" Roof Panel
0.032" Aluminum roof panel mechanically attached to Wood Deck with Two-piece Floating panel clips & screws.

Product Assembly as Evaluated:
Refer to Page 4 of this report for product assembly components/materials & standards:

1. Roof Panel
2. Panel Clip
3. Fasteners
4. Underlayment
5. Cover Board (Optional)

Support:
Type:
Wood Deck
(Design of support system is outside the scope of this evaluation.)

Description:
- 15/32" or greater plywood,
- or Wood plank (min. specific gravity of 0.42)

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:
- 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:

- <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".
- 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)
- <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.

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 ML150 AH**
Material:	Aluminum
Thickness:	0.032” (min.)
Panel Widths:	2” – 16” (max.) Coverage
Rib Height:	1-1/2”
Alloy Type:	3105 H-24
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:	**1500 SS**
Type:	Two-piece, Floating clip
Material:	Top: Stainless Steel Base: Galvanized Steel
Thickness:	Top: 26 Gauge min. Base: 16 Gauge min.
Yield Strength:	33 ksi min.
Dimensions:	1-1/2” (tall) x 4.30” (long)
Corrosion Resistance:	Per FBC Section 1506.7
Fastener:	
Type:	Pancake-Head Wood Screw
Size:	#14-13 x penetrate thru support deck 3/16" 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)

Components & Materials: (by Others)

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 (optional)*:*

Any ½” min. approved coverboard with current approval.

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, 3/16".
- For panel construction at the end of panels, refer to manufacturer's instructions and any site-specific design.

TABLE "A" ALLOWABLE LOADS
"Sentrigard ML150 AH" (0.032" Alum) Roof Panel attached to Wood Deck
With 2-Pc 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	16"	15/32"	4" 2-Pc Floating Clip	18"	2	NO	Double Lock	**- 78.5 PSF**
2	16"	15/32"	4" 2-Pc Floating Clip	6"	2	NO	Double Lock	**- 93.5 PSF**

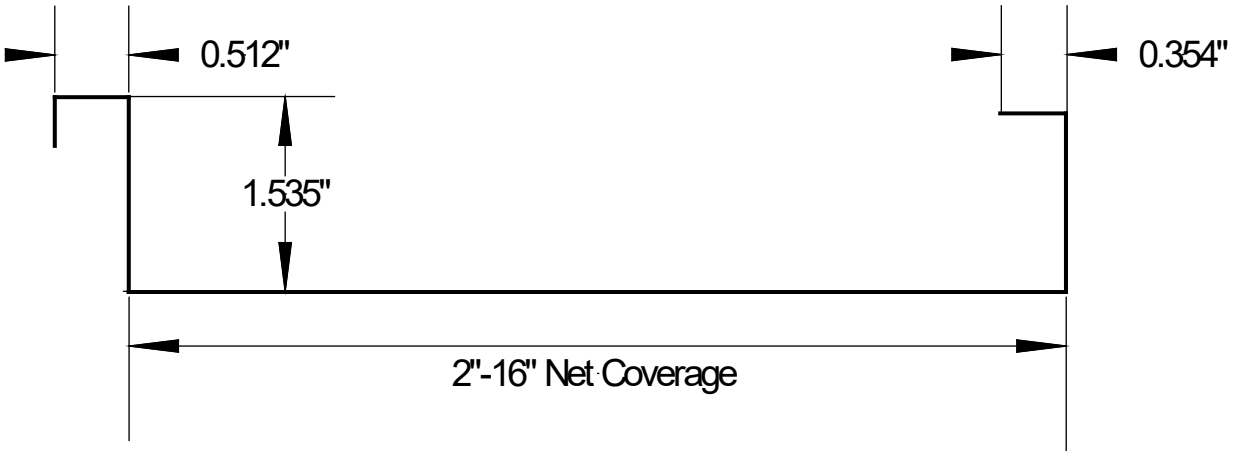
Notes:
1. Allowable design pressure(s) for allowable stress design (ASD).
2. The design pressures listed herein is applicable to all roof pressure zones. Rational analysis or extrapolation to enhance pressure is not permitted in HVHZ zones.

Install the "Sentrigard ML150 AH" 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.

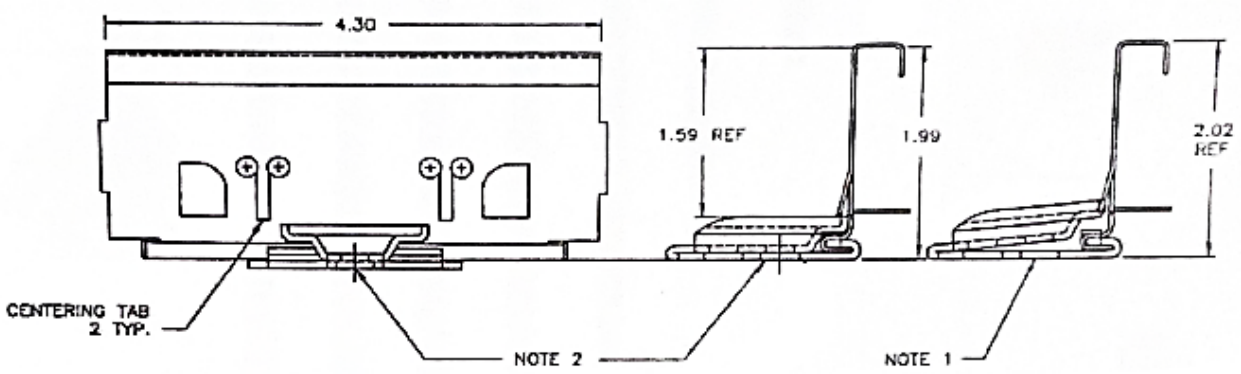
Referenced Data:

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. 261-0324T-11A-C, Date: 11/04/11
2. TAS 100-95 Wind Driven Rain Test
   By Farabaugh Engineering & Testing, Inc. (FBC Organization ID# TST 1654)
   Report No. T157-07A, Date: 04/15/07
3. Quality Assurance
   Keystone Certifications, Inc. (FBC Organization ID# QUA 1824)
   NB Handy Company Licensee #420
4. Certification of Independence
   By James L. Buckner, P.E. @ CBUCK Engineering
   (FBC Organization # ANE 1916)

Installation Method
NB Handy Company
"Sentrigard ML150 AH" (0.032" Alum.) Roof Panel attached to Wood Deck w/2-Pc Floating Clips



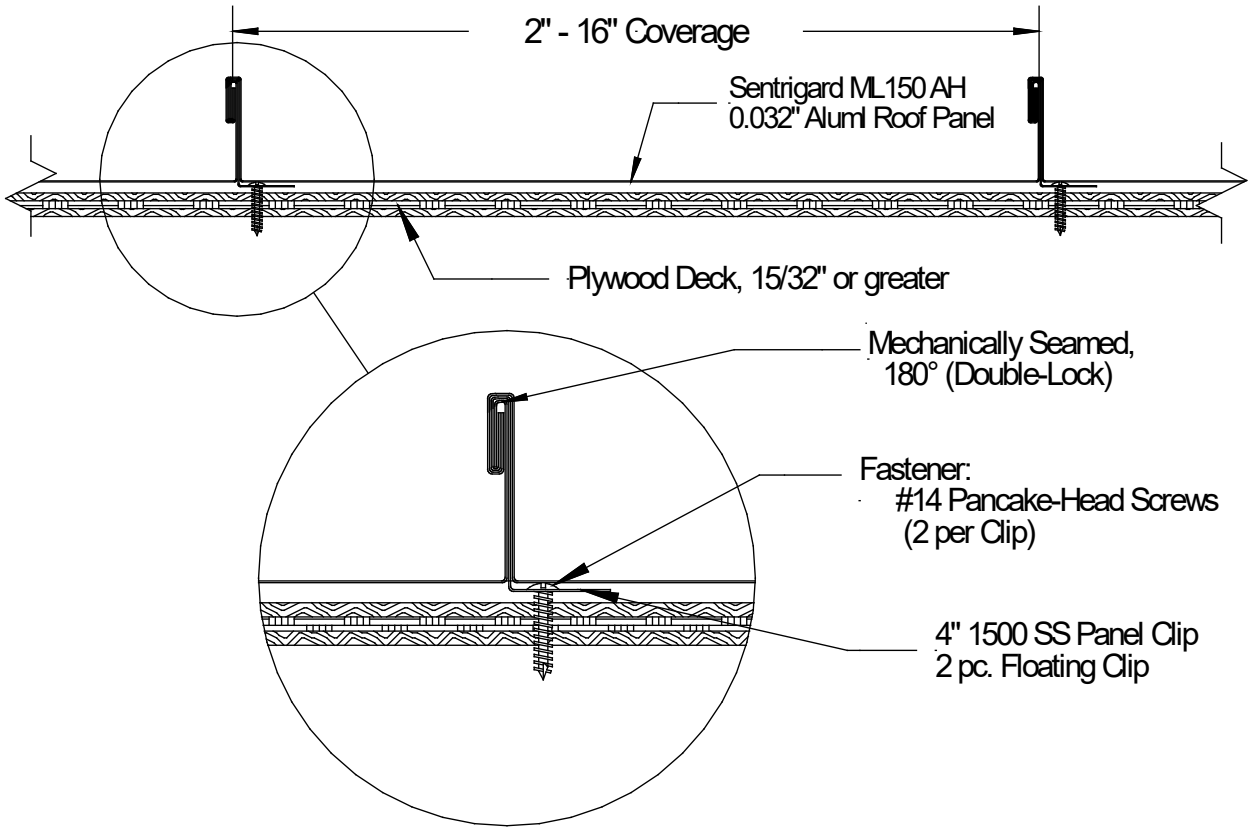
Typical Panel Profile
(2" – 16" max. width)



NOTES
1. ASSEMBLED CONDITION BASE MUST FLOAT BETWEEN TWO CENTERING TABS.
2. VIEWS DEPICT BASE IN FULLY COMPRESSED STATE.

2-Pc Floating Panel Clip
1500 SS (26 ga. Stainless Steel Top & 16 ga. Galv. Steel Base)

Installation Method
NB Handy Company
"Sentrigard ML150 AH" (0.032" Alum.) Roof Panel attached to Wood Deck w/2-Pc Floating Clips



Typical Panel Clip Assembly View

TABLE "A" ALLOWABLE LOADS
"Sentrigard ML150 AH" (0.032" Alum) Roof Panel attached to Wood Deck With 2-Pc Floating Clips

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