

Evaluation Report

of

Bemo USA Corporation

"500"

Metal Roof Assembly

Manufacturer:

Bemo USA Corporation

1755 N. 48th Street

Mesa, AZ 85205

(877) 530-2366

for

Florida Product Approval

FL 18398.1 R4

Florida Building Code 8th Edition (2023)

Method: 1 - D

Category: Structural Components

Sub - Category: Roof Deck

Product: "500" Standing Seam Roof Panel

Material: Steel

Panel Thickness: 22 Gauge

Width: 20" Nominal

Support Type: Steel Supports

Prepared by:

James L. Buckner, P.E.

Florida Professional Engineer # 31242

Florida Evaluation ANE ID: 1916

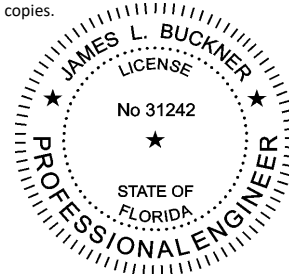
Project Manager: Diana Galloway

Report No. 23-559-500-S2,4P-ER

(Revises 21-418-S2,4P-ER, FL18398.1 R3)

Date: 08/16/2023

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.



Date: 2023.08.16
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Evaluation Report

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Manufacturer: Bemo USA Corporation

1755 N. 48th Street
Mesa, AZ 85205
(877) 530-2366
<http://bemousa.com/>

Product Name: "500" Standing Seam Roof Panel

Product Category: Structural Components

Product Sub-Category: Roof Deck

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

Product/System Description: BEMO "500" Standing Seam Roof Panel, 22 or 24 Gauge Steel, 20" Wide panel attached to steel supports 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 Clip
3. Fasteners
4. Insulation (Optional)

Support: **Type:**
Steel Supports
(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 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" attachment details herein)

Refer to Table "A"

Performance Standards:	The product described herein has demonstrated compliance with: • ASTM E 1592-05(2017) – <i>Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by uniform Static Air Pressure Difference.</i>
Standards Equivalency:	The ASTM E 1592-94 standard version used to test the evaluated product assembly is equivalent with the performance standards prescribed in ASTM E 1592-05(2017) adopted by the Florida Building Code 8th Edition (2023).
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 wind load requirements of the Florida Building Code, as related to Rule 61G20-3.
Limitations and Conditions of Use:	• Diaphragm and axial load capacity is outside the scope of this evaluation. • Design of support system is outside the scope of this report. Support shall be designed by others and shall comply with the FBC Chapters 22 for steel and Chapter 16 for structural loading. • 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. • <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. • 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 Engineering and Testing.

Components/Materials (by Manufacturer):	Roof Panel:	BEMO "500" Roof Panel
	Material:	Steel
	Thickness:	22 gauge (min.) or 24 gauge (min.)
	Panel Width:	20" (Net Coverage)
	Rib Height:	2-1/2"
	Yield Strength:	60 ksi min.
	Corrosion Resistance:	Per FBC Section 1507.4.3
	Roof Panel Clips:	Bemo Sliding Hook Clip
	Type:	Two-Piece, clip
	Material/Thickness:	Clip Stem: 18 ga. Stainless Steel Clip Base: 18 ga. Stainless Steel or Galvanized Steel
	Clip Part #'s:	Stainless Steel Base: BSHC-01 Galvanized Steel Base: BSHC-02
	Dimensions:	3.168" (tall) x 5" (long) x 1.94" (base)
	Yield Strength:	Stainless Steel: 75 ksi min. Galvanized Steel: 50 ksi min.
	Corrosion Resistance:	Per FBC Section 1506.7
	Fastener:	
	Type:	Low Profile Head Self-Drilling Screws
	Size :	#14
	Corrosion Resistance:	Per FBC Section 1506.6 and 1507.4.4
	Standard:	Per SAE J78-1979
Components& Materials: (by Others)	Insulation (Optional):	
	Type:	Compressible Blanket Insulation
	Thickness:	6" max. before compression

Insulation Notes:

- 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 evaluation report.)

- Support spacing: Refer to Table "A" Below
(along the length of the panel and nominally within 3" from panel ends)
- # fasteners per Clip: **Refer to Table "A" Below**
(minimum penetration through steel deck, 3/4")
- Rib Interlock: Mechanically seamed
- Minimum fastener penetration thru bottom of support, 3/4".
(through flange of steel supports)

TABLE "A" BEMO "500" Steel Roof Panel attached to 22 ga. Steel Supports ALLOWABLE LOADS				
	METHOD 1:	METHOD 2:	METHOD 3:	METHOD 4:
Design Pressure:	- 18.1 PSF	- 26.7 PSF	- 26.85 PSF	- 37.1 PSF
Panel Thickness:	24 ga.	24 ga.	22 ga.	22 ga.
Max. Support Spacing:	60" (5'- 0")	24" (2'- 0")	60" (5'- 0")	24" (2'- 0")
#Fasteners per Clip:	2	2	2	2
Span Condition:	3 or more	3 or more	3 or more	3 or more
Notes: • Allowable design pressure(s) for allowable stress design (ASD). • Fastener Attachment to Steel Supports May Be Designed By A Qualified Design Professional As Required By The Florida Building Code For Site Specific Projects. • Diaphragm and axial load capacity are not included in this evaluation.				

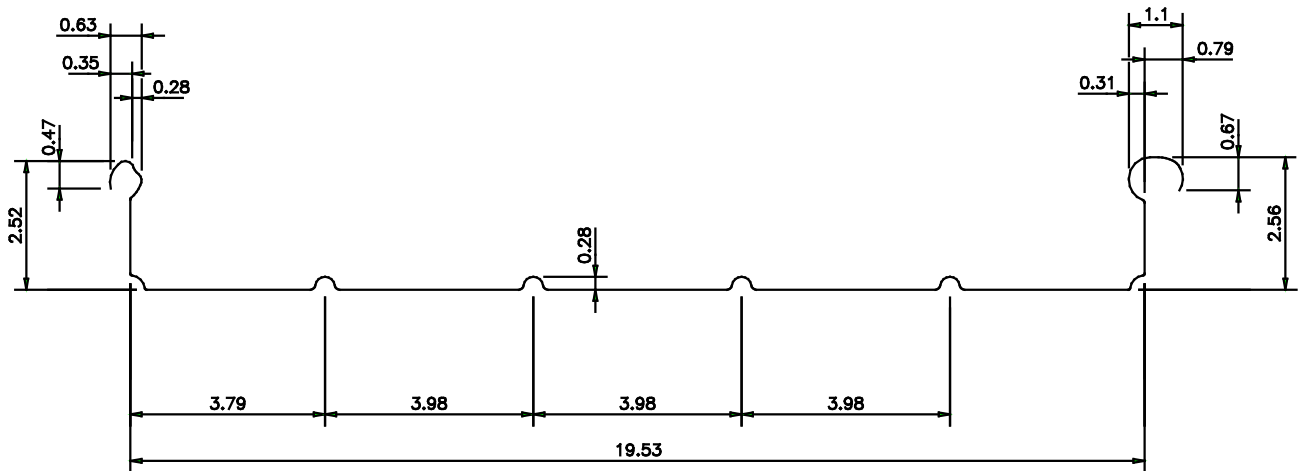
Install the "500" roof panel assembly in compliance with the installation method listed in this report and applicable code sections of FBC 8th Edition (2023). The installation method described herein is in accordance with the scope of this evaluation report. Refer to manufacturer's installation instructions as a supplemental guide for attachment.

Referenced Data:

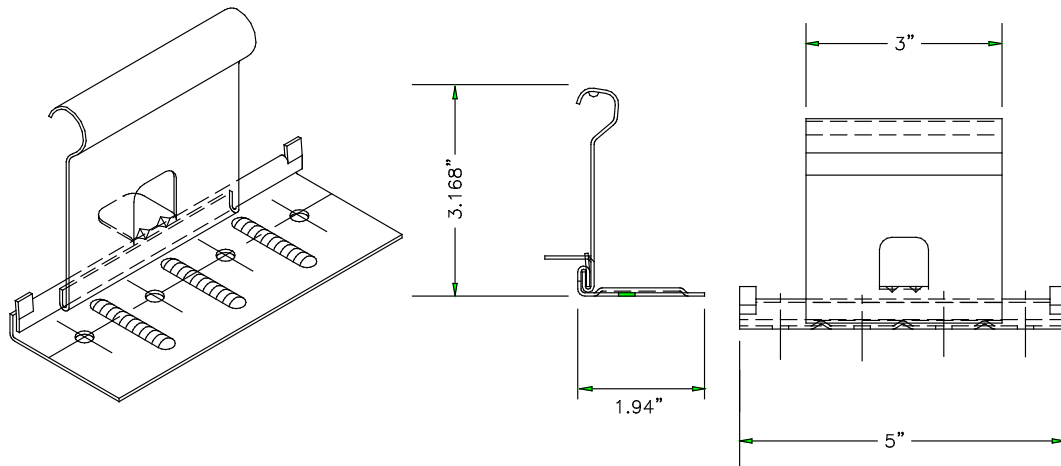
1. ASTM E1592-94 Uniform Static Air Pressure Difference Test
By Farabaugh Engineering and Testing (FBC Organization #TST ID: 1654)
Report T160-98, Report Date: 05/15/98 (22 ga)
Report T149-98, Report Date: 04/23/98 (24 ga)
2. Equivalency of Test Standard Certification
By James L. Buckner, P.E. @ CBUCK Engineering
(FBC Organization # ANE 1916)
3. Quality Assurance
By Farabaugh Engineering and Testing
4. Certification of Independence
By James L. Buckner, P.E. @ CBUCK Engineering
(FBC Organization # ANE 1916)

Installation Method
BEMO USA CORPORATION
"500" Roof Panel (22 or 24 Gauge Steel) Attached to Steel Supports

Profile Drawings



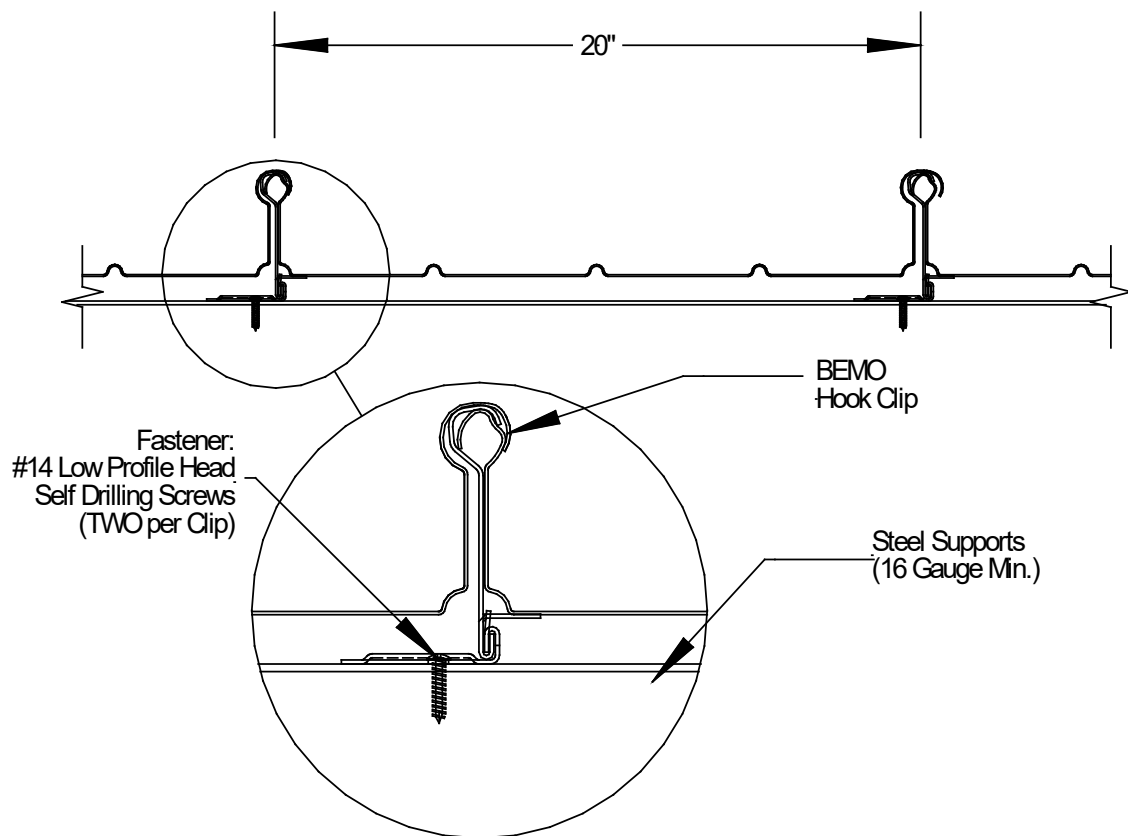
Typical Panel Profile View



Note:
Refer to Manufacturers
Instructions for Sealant
Application

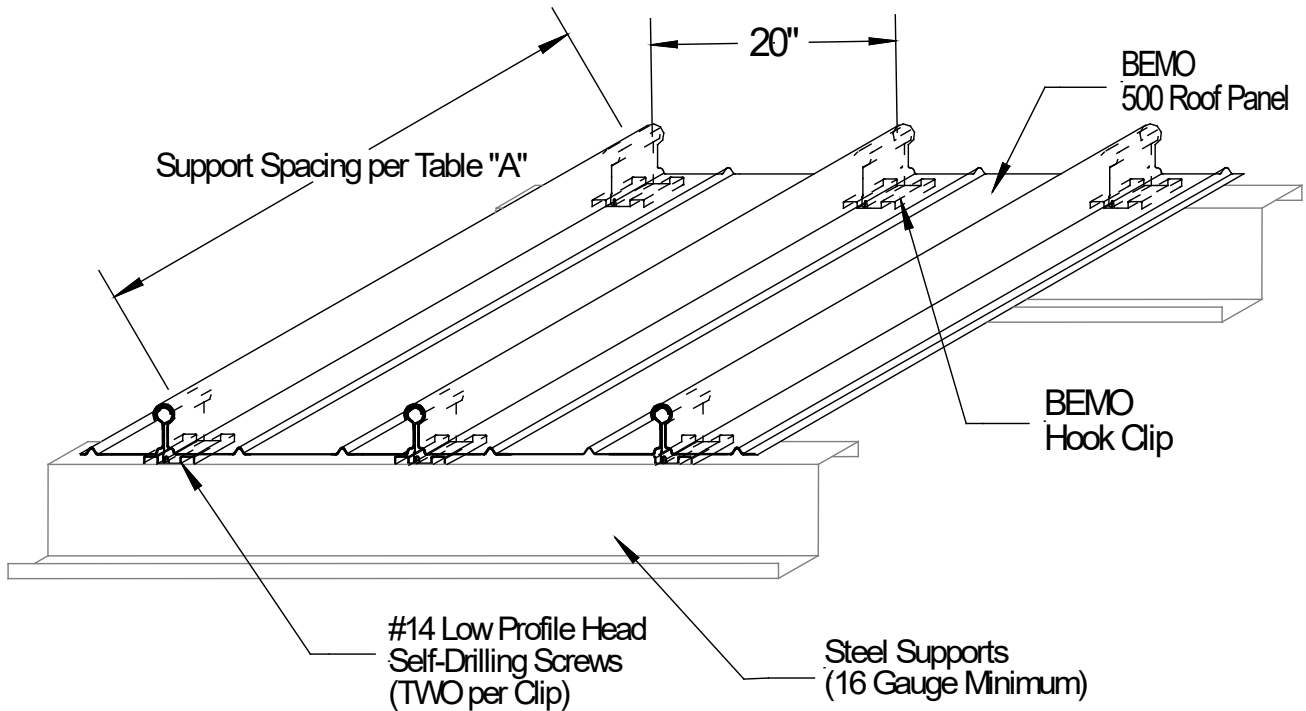
BEMO Hook Clip
(Refer to Page 4 of this report for Additional Data)

Installation Method
BEMO USA CORPORATION
"500" Roof Panel (22 or 24 Gauge Steel) Attached to Steel Supports



Typical Assembly Profile View

Installation Method
BEMO USA CORPORATION
"500" Roof Panel (22 Gauge Steel) Attached to Steel Deck



Typical Assembly Isometric View

TABLE "A"				
BEMO "500" Steel Roof Panel attached to 22 ga. Steel Supports				
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