

Evaluation Report "Englert® Series 2000" Metal Roof Assembly

Manufacturer:

Englert, Inc.

1200 Amboy Avenue
Perth Amboy, NJ 08862
(732) 826-8614

for

Florida Product Approval

FL 11751.5 R8

Florida Building Code 8th Edition (2023)

Method: 1 - D

Category: Roofing

Sub - Category: Metal Roofing

Product: "Series 2000" Roof Panel

Material: Aluminum

Panel Thickness: 0.032"

Panel Width: 18"

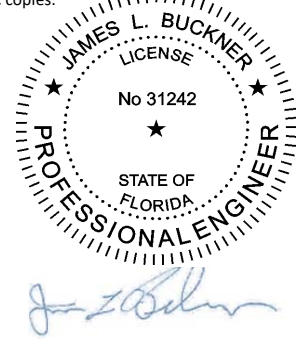
Panel Seam: Snap-Lock

Support: Steel Deck

Prepared by:

James L. Buckner, P.E., SECB
Florida Professional Engineer # 31242
Florida Evaluation ANE ID: 1916
Project Manager: Diana Galloway
Report No. 23-555-S2000-A3S-ER
(Revises 20-234-S2000-A4W-ER.2, FL11751.5 R7)
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.



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Evaluation Report

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Date: 2023.08.16
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Manufacturer:	Englert, Inc. 1200 Amboy Avenue Perth Amboy, NJ 08862 (732) 826-8614 http://www.englertinc.com/
Product Name:	"Series 2000"
Product Category:	Roofing
Product Sub-Category	Metal Roofing
Compliance Method:	State Product Approval Rule 61G20-3.005 (1) (d)
Product/System Description:	"Series 2000" Roof Panel 0.032" Aluminum Snap-Lock 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: 1. Roof Panel 2. Panel Clip 3. Bearing Plate 4. Fasteners 5. Adhesive 6. Underlayment 7. Insulation (Optional)
Support:	Type: Steel Deck (Design of support and its attachment to support framing is outside the scope of this evaluation.) Description: • Thickness: 22 gauge minimum • Yield strength: 40 ksi minimum
Slope:	Minimum slope shall be: 3 : 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: • Design Uplift Pressure: See Table "A" (Refer to "Table A" attachment details herein)

Performance Standards:	The product described herein has demonstrated compliance with: • UL580-06 – <i>Test for Uplift Resistance of Roof Assemblies</i> • UL 1897-15 – <i>Uplift test for roof covering systems</i> • TAS 125-03 – <i>Standard Requirements for Metal Roofing Systems</i>
Standards Equivalency:	The UL 580-94 & UL 1897-98 standard version used to test the evaluated product assembly is equivalent with the prescribed standards in UL 580-06 & UL 1897-15 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 building envelope product is evaluated for compliance with the structural requirements of the Florida Building Code, per the scope sections of 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”. • <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. • 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. • All metal components and fasteners shall be corrosion resistant in accordance with applicable sections of FBC, including but limited to Sections 1504.3.2, 1506.6 and 1507.4.4. • 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 61G20-3.005 (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: Englert Series 2000 Aluminum
Thickness: 0.032" (min.)
Panel Widths: 18" (max.) Coverage
Rib Height: 1-3/4"
Alloy Type: 3105 H14
Corrosion Resistance: Per FBC Section 1507.4.3

Roof Panel Clips:

Product Name: Englert "Series 2000 Clip"
Englert Part #: 05076B (Galv. Steel) or 05076D (Stainless Steel)
Type: One-piece, fixed clip
Material: Galvanized Steel or Stainless Steel
Thickness: 18 gauge
Yield Strength: 40 ksi min.
Dimensions: 1-3/4" (tall) x 3-1/2" (long) x 2-1/2" (wide)
Corrosion Resistance: Per FBC Section 1506.7

Bearing Plate:

Material: Galvanized Steel or Stainless Steel
Thickness: 18 gauge
Yield Strength: 40 ksi min.

Fastener:

Type: Pancake-Head Self Drilling Screw
Size : 1/4" x 8"
Corrosion Resistance: Per FBC Section 1506.6 and 1507.4.4
Standard: Per SAE J78-1979

Seam Adhesive/Sealant:

Product Name: Bostik 70-05A
Type: One component, polyurethane adhesive
Application Size: (1)1/4" - 1/2" bead
Application Location: along female flange the full length of panel
(Refer to drawing Page 8)

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. This evaluation is based on testing with the following underlayment:

Product Name: Englert HT Underlayment
Type: Self-adhered
Thickness: 40 mils

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

Insulation: (Optional)

Type: Rigid Insulation Board
Thickness: 4" (max.)
Properties:
Density: 2.25 pcf (lbs/ft³) min.
Or Compressive Strength: 20 psi min.

Insulation Notes:

- Rigid Insulation shall meet minimum density OR compressive strength.
- 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.)

- Clip Spacing: **Refer to "TABLE A" Below**
(along the length of the panel)
- Two (2) fasteners per Clip
- Rib Interlock: Snap-Lock
(Panel ribs shall be fully engaged to form an integral snap-lock.)
- Seam Adhesive: Refer to Table "A" & Drawing Page 8.
(Apply along female flange the full length of the panel.)
- 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				
	Clip Spacing	#Fasteners per Clip	Seam Adhesive	Design Pressure
METHOD 1	12"	2	Not Required	- 78.75 PSF
METHOD 2	6"	2	Not Required	- 90 PSF
METHOD 3	6"	2	1/4 - 1/2" bead Refer to Dwg Pg 8	-157.5 PSF
Notes: • Allowable design pressure(s) for allowable stress design (ASD).				

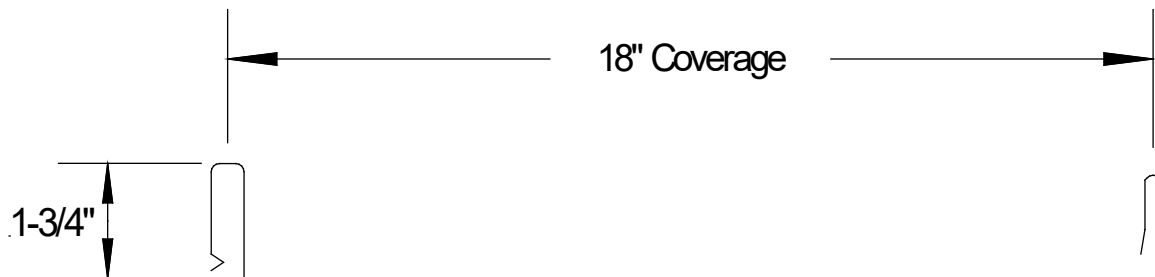
Install the "Series 2000" roof panel assembly in compliance with the installation method listed in this report and applicable code sections of FBC 8th Edition (2023). The installation method described herein is in accordance with the scope of this evaluation report. Refer to manufacturer's installation instructions as a supplemental guide for attachment.

Referenced Data:

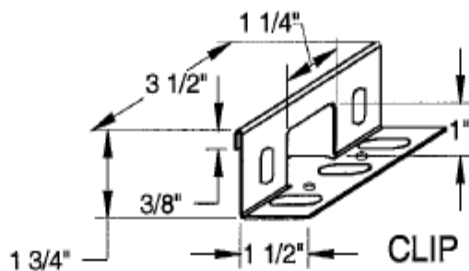
1. TAS 125-03 (UL580/UL1897) Uplift Test
By Architectural Testing, Inc. (FBC Organization ID# TST 1558)
Report #: B8193.01-109-18-r1, Dated: 10 / 16 / 12
2. Quality Assurance
Keystone Certifications, Inc. (FBC Organization ID# QUA 1824)
Englert, Inc. Licensee #420
3. Equivalency of Test Standard Certification
By James L. Buckner, P.E. @ CBUCK Engineering
(FBC Organization # ANE 1916)
4. Engineering Analysis
By CBUCK Engineering
5. Certification of Independence
By James L. Buckner, P.E. @ CBUCK Engineering
(FBC Organization # ANE 1916)

Installation Method
Englert, Inc.
"Series 2000" (0.032" Aluminum) Roof Panel attached to Steel Deck

Drawings

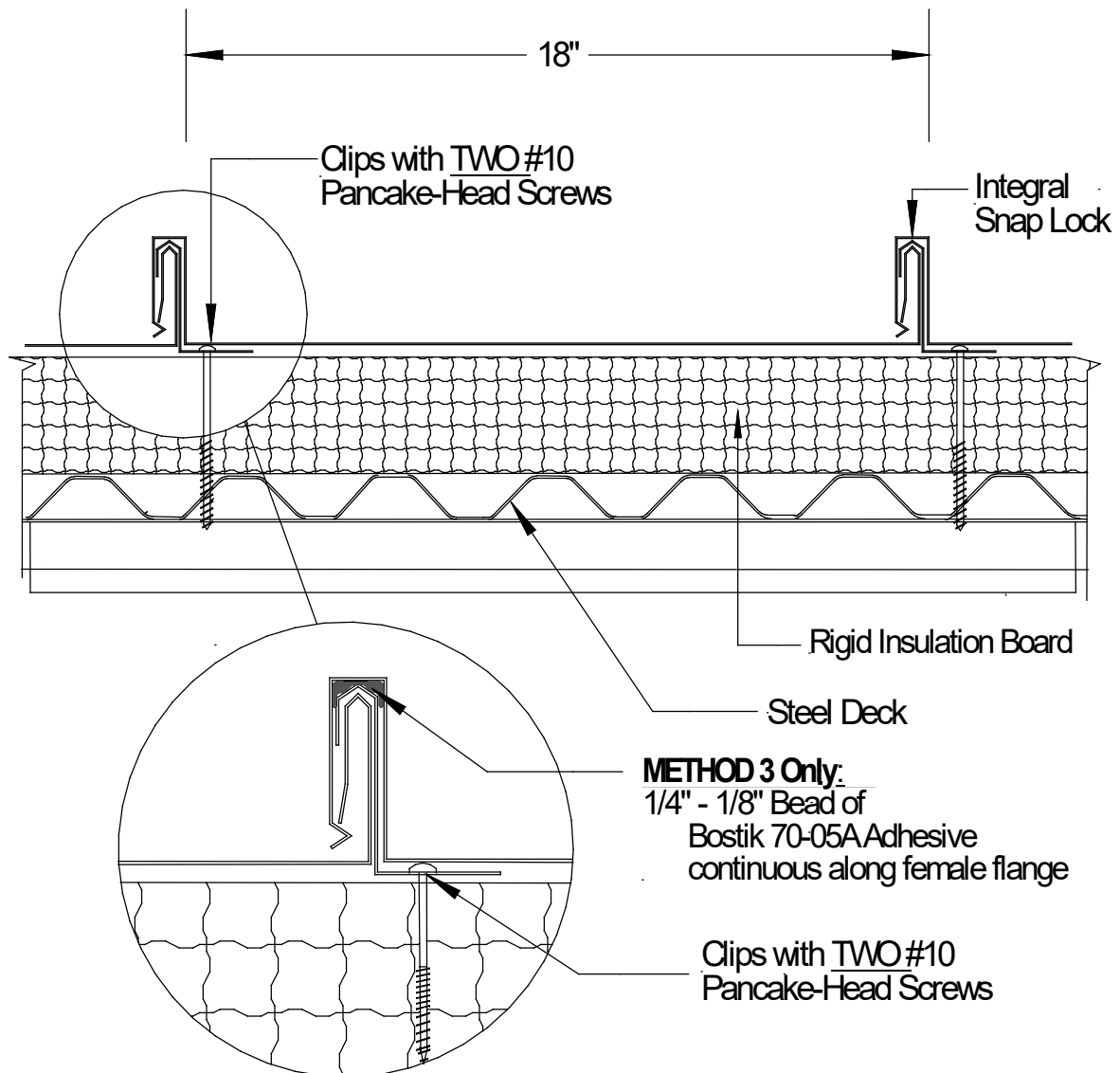


Typical Panel Profile



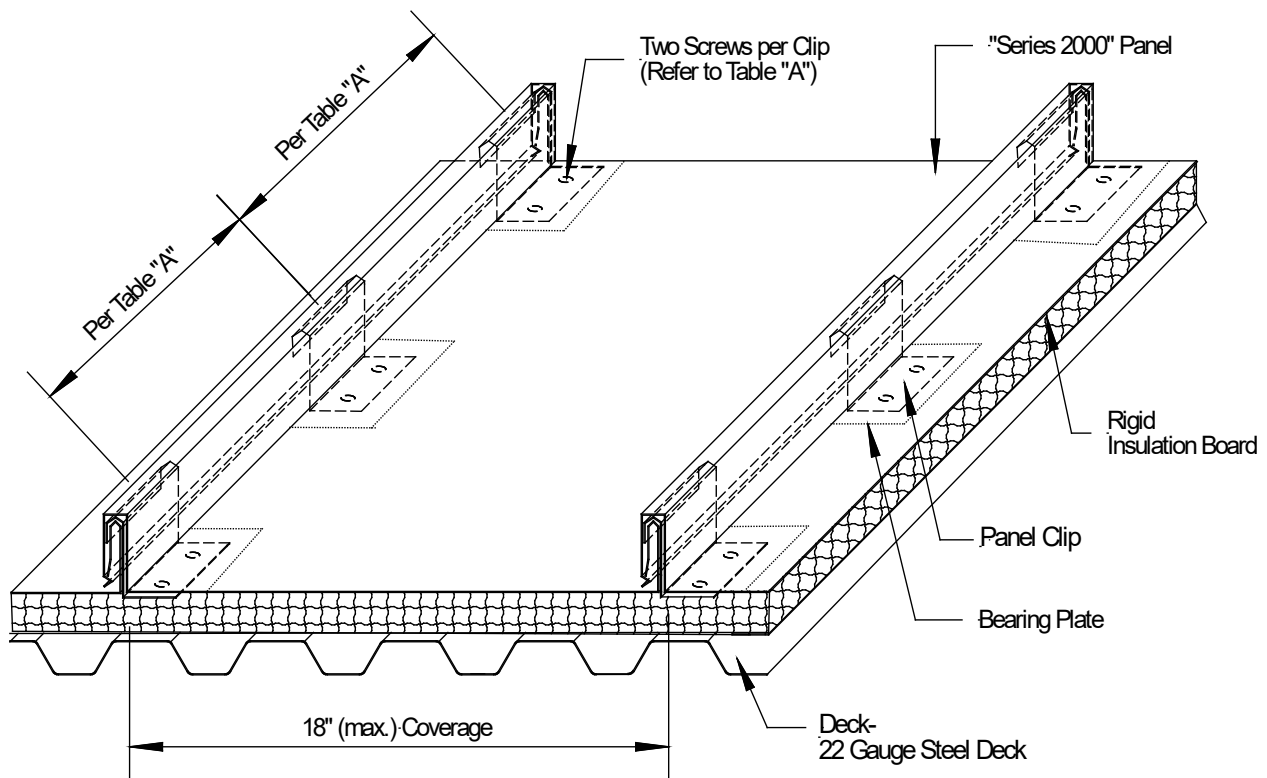
Panel Clip Profile
Englert "Series 2000 Clip"
(Part # 05076B – Galvanized Steel) or
(Part # 05076D – Stainless Steel)

Installation Method
Englert, Inc.
"Series 2000" (0.032" Aluminum) Roof Panel attached to Steel Deck



Typical Assembly Profile View
(Typical Fastening Pattern Across Width)

Installation Method Englert, Inc. "Series 2000" (0.032" Aluminum) Roof Panel attached to Steel Deck



Typical Roof Assembly Isometric View

TABLE "A"				
	Clip Spacing	#Fasteners per Clip	Seam Adhesive	Design Pressure
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