

Evaluation Report "Englert® Series 2500" Metal Roof Assembly

Manufacturer:

Englert, Inc.

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

for

Florida Product Approval

FL 14668.1 R6

Florida Building Code 8th Edition (2023)

Method: 1 - D

Category: Structural Components

Sub - Category: Roof Deck

Product: "Series 2500" Roof Panel

Material: Steel

Panel Thickness: 24 gauge

Panel Width: 16" or 18"

Support: Steel Purlins

Prepared by:

James L. Buckner, P.E., SECB

Florida Professional Engineer # 31242

Florida Evaluation ANE ID: 1916

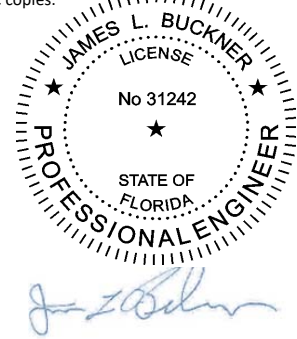
Project Manager: Diana Galloway

Report No. 23-555-S2500-S4P-ER

(Revises 20-234-S2500-S4P-ER, FL14668.1 R4, R5)

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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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:	Englert, Inc. 1200 Amboy Avenue Perth Amboy, NJ 08862 (732) 826-8614 http://www.englertinc.com/		
Product Name:	"Series 2500"		
Product Category:	Structural Components		
Product Sub-Category	Roof Deck		
Compliance Method:	State Product Approval Rule 61G20-3.005 (1) (d)		
Product/System Description:	"Series 2500" Standing Seam Roof Panel 24 gauge steel roof panel attached to 16 gauge Steel Purlins mechanically seamed with two-piece floating panel clips.		
Product Assembly as Evaluated:	Refer to Page 4 of this report for product assembly components/materials & standards: 1. Roof Panel 2. Roof Panel Clips 3. Fasteners 4. (Optional) Insulation		
Support:	Type: Steel Purlins (Design of support system is outside the scope of this evaluation.) Description: • Steel Purlins, 16 Gauge minimum • Yield Strength: 50 ksi minimum		
Slope:	Minimum slope shall be: 1/2 : 12 or greater 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)		
		16" Panel:	
		METHOD 1:	- 47 PSF
		METHOD 2:	- 78 PSF
		18" Panel:	
		METHOD 1:	- 42 PSF
		METHOD 2:	- 62 PSF

Performance Standards:	The product described herein has demonstrated compliance with: • ASTM E 1592-05 – <i>Test Method for Structural Performance of Sheet Metal Roof and Siding Systems By Uniform Static Air Pressure Difference</i> • TAS 125-03 – <i>Standard Requirements for Metal Roofing Systems</i>
Standards Equivalency:	The ASTM E 1592-01 standard version used to test the product meets the prescribed standards in ASTM E 1592-05 standard version 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).
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:	• Diaphragm and axial load capacity is outside the scope of this evaluation. • <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. • 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 61G20-3.0005 (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: Englert Series 2500
Steel
Thickness: 24 gauge (min.)
Panel Widths: 16" (max.) or 18" (max.) Coverage
Rib Height: 2"
Yield Strength: 50 ksi min.
Corrosion Resistance: Per FBC Section 1507.4.3

Roof Panel Clips:

Product Name: Englert "Series 2500 Floating Clip"
Englert Part #s: Clip Top: 05082H
Clip Base: 05082I
Type: Two-piece, floating clip
Material: Clip Top: 24 Gauge Stainless Steel
Clip Base: 18 Gauge Galvanized Steel
Yield Strength: 40 ksi min.
Dimensions: Clip Top: 2-1/4" x 6"
Clip Base: 1-1/4" x 3-5/8"
Corrosion Resistance: Per FBC Section 1506.7

Fastener:

Type: Truss-Head Self-Drilling Sheet Metal Screw
Size : #14 x 1-1/4"
Corrosion Resistance: Per FBC Section 1506.6 and 1507.4.4
Standard: Per FBC 1507.4.4 and SAE J78-1979

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

Insulation (Optional):

Type 1:

Type: Rigid Insulation Board
Thickness: 3" (max.) min.
Properties:
Density: 2.25 pcf (lbs/ft³)
Or Compressive Strength: 20 psi min.

Type 2:

Thickness: Compressible Blanket Insulation
6" max. before compression

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/Purlin Spacing: **Refer to "TABLE A" Below**
- Two (2) fasteners per Clip (at each purlin intersection)
- Rib Interlock: Mechanically Seamed 180° (Double-Lock)
- Minimum fastener penetration thru bottom of supports, 3/4".

TABLE "A" ALLOWABLE LOADS		
	METHOD 1:	METHOD 2:
Design Pressure: 16" Panel:	- 47 PSF	- 78 PSF
Design Pressure: 18" Panel:	- 42 PSF	- 62 PSF
# of Fasteners per Clip:	2	2
Panel Seam:	180°	180°
Clip/Purlin Spacing:	60"	30"
Span Condition:	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.		

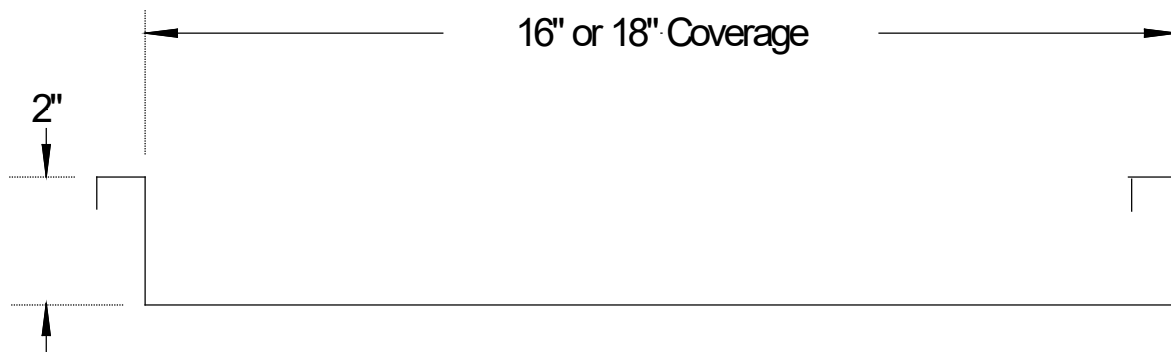
Install the "Series 2500" roof panel assembly in compliance with the installation method listed in this report and applicable code sections of FBC 8th Edition (2023). The installation method described herein is in accordance with the scope of this evaluation report. Refer to manufacturer's installation instructions as a supplemental guide for attachment.

Referenced Data:

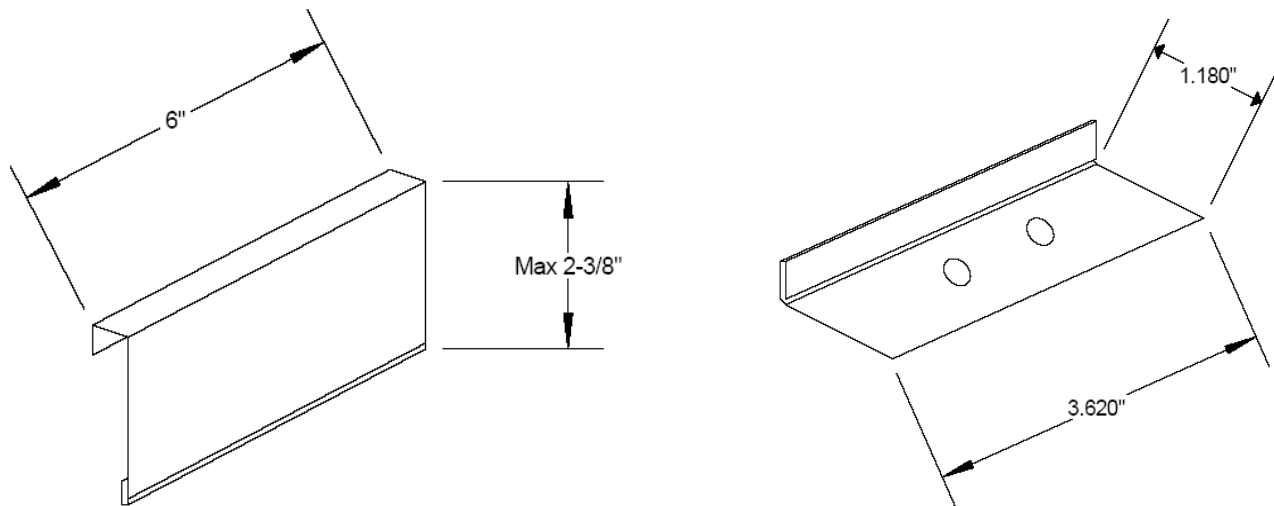
1. ASTM E 1592-01 Uplift Test
By ENCON Technology, Inc.
(FBC Organization ID# TST 6485, valid thru 2/10/12)
Report No. C969, Date: 10/05/00 & 01/29/01
2. Quality Assurance
Keystone Certifications, Inc. (FBC Organization ID# QUA 1824)
Englert, Inc. Licensee #420
3. Equivalency of Test Standard Certification
By James L. Buckner, P.E. @ CBUCK Engineering
4. Certification of Independence
By James L. Buckner, P.E. @ CBUCK Engineering
(FBC Organization # ANE 1916)

Installation Method
Englert, Inc.
"Series 2500" (24 gauge Steel) Roof Panel attached to Steel Purlins

Drawings



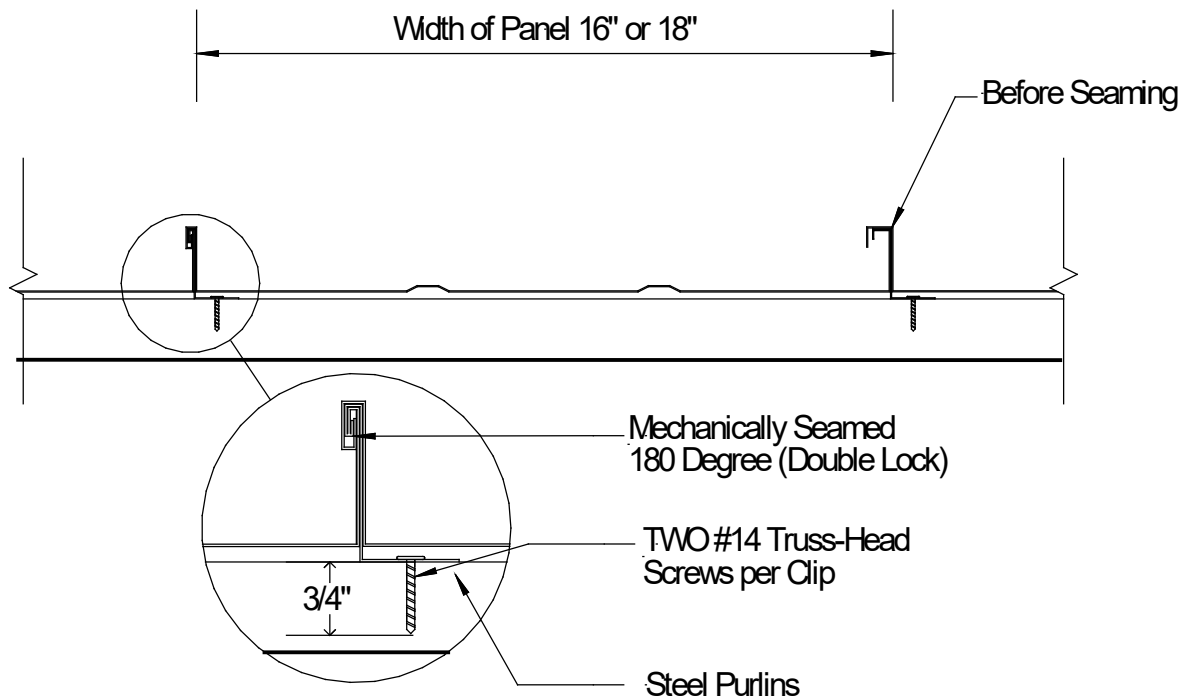
Panel Profile



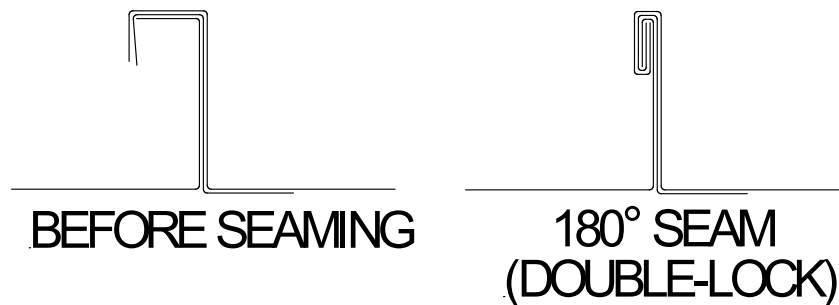
Panel Clip

Englert "Series 2500 Floating Clip" (Top & Base)
(Part # 05082H & 05082I)

Installation Method
Englert, Inc.
"Series 2500" (24 gauge Steel) Roof Panel attached to Steel Purlins

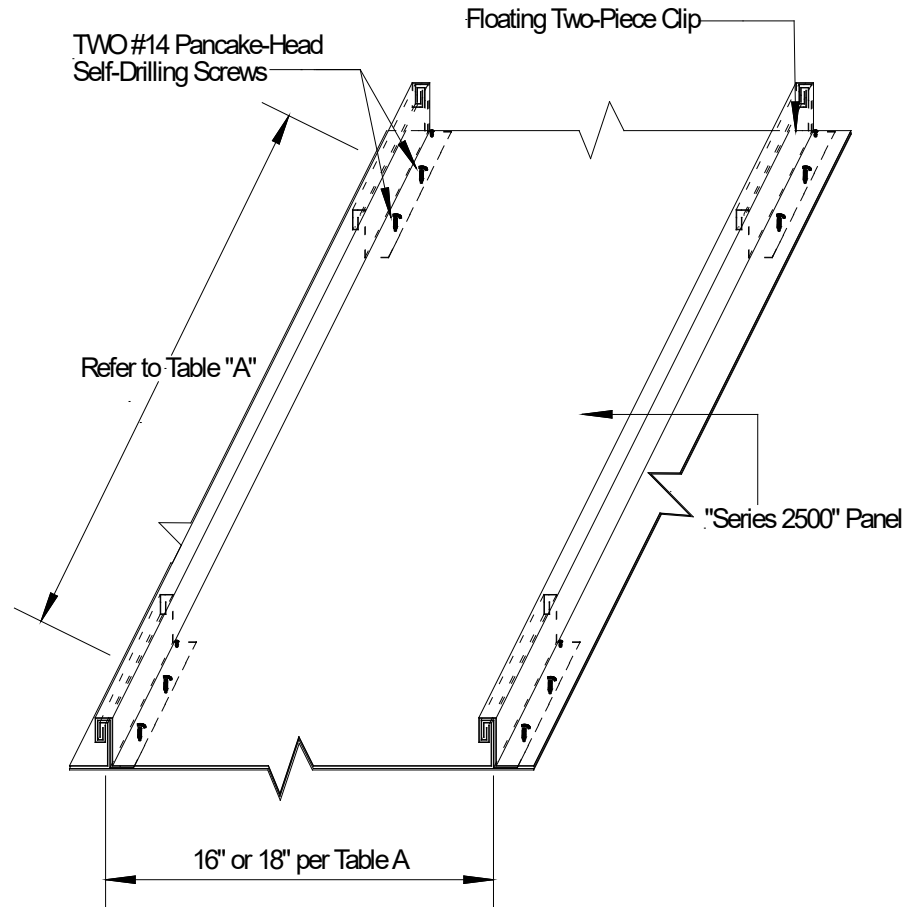


Typical Panel Assembly
Section View



Typical Panel Seams

Installation Method Englert, Inc. "Series 2500" (24 gauge Steel) Roof Panel attached to Steel Purlins



**Typical Roof Assembly
Isometric View**

(Optional) Rigid Insulation Board or compressible blanket insulation per Page 4 of this report

TABLE "A"		
	METHOD 1:	METHOD 2:
Design Pressure: 16" Panel:	- 47 PSF	- 78 PSF
Design Pressure: 18" Panel:	- 42 PSF	- 62 PSF
# of Fasteners per Clip:	2	2
Panel Seam:	Double Lock	Double Lock
Clip/Purlin Spacing:	60"	30"
Span Condition:	3 or more	3 or more