

## 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 11752.1 R3**

### Florida Building Code 6th Edition (2017)

**Method: 1 - D**

**Category: Roofing**

**Sub - Category: Metal Roofing**

**Product: "Series 2500" Roof Panel**

**Material: Steel**

**Panel Thickness: 24 gauge**

**Panel Width: 16"**

**Support: Wood Deck**

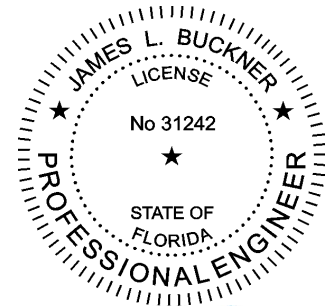
### Prepared by:

James L. Buckner, P.E., SECB  
Florida Professional Engineer # 31242  
Florida Evaluation ANE ID: 1916  
Project Manager: Diana Galloway  
Report No. 17-135-S2500-S4W-ER  
(Revises 15-126-S2500-S4W-ER, FL11752.1 R2)  
Date: 9 / 16 / 17

### Contents:

Evaluation Report                      Pages 1 – 8

Facsimile of digital copy signed by  
James L. Buckner, P.E.  
Electronically signed and sealed documents shall  
comply with the provisions of FAC Rule 61G15-23.



A handwritten signature in blue ink, appearing to read "James L. Buckner".

2017.10.11 13:33:36 -04'00'

<b>Manufacturer:</b>	<b>Englert, Inc.</b> 1200 Amboy Avenue Perth Amboy, NJ 08862 (732) 826-8614 <a href="http://www.englertinc.com/">http://www.englertinc.com/</a>
<b>Product Name:</b>	<b>"Series 2500"</b>
<b>Product Category:</b>	Roofing
<b>Product Sub-Category</b>	Metal Roofing
<b>Compliance Method:</b>	State Product Approval Rule 61G20-3.005 (1) (d)
<b>Product/System Description:</b>	"Series 2500" Roof Panel 24 gauge steel standing seam roof panel mechanically attached to Wood Deck with panel clips & screws.
<b>Product Assembly as Evaluated:</b>	Refer to Page 4 of this report for product assembly components/materials & standards: <ol style="list-style-type: none"><li>1. Roof Panel</li><li>2. Panel Clip</li><li>3. Fasteners</li><li>4. Underlayment</li><li>5. Insulation (Optional)</li></ol>
<b>Support:</b>	<b>Type:</b> Wood Deck (Design of support and its attachment to support framing is outside the scope of this evaluation.)  <b>Description:</b> <ul style="list-style-type: none"><li>• 19/32" or greater plywood,</li><li>• or Wood plank (min. specific gravity of 0.42)</li></ul>
<b>Slope:</b>	Minimum slope shall be: 1/2 : 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.
<b>Performance:</b>	Wind Uplift Resistance: <ul style="list-style-type: none"><li>• Design Uplift Pressure: (Refer to "Table A" attachment details herein)</li></ul> <b>METHOD 1: - 78 PSF</b> <b>METHOD 2: - 118 PSF</b>

**Performance**

**Standards:**

The product described herein has demonstrated compliance with:

- UL580-06 – *Test for Uplift Resistance of Roof Assemblies*
- UL 1897-12 – *Uplift test for roof covering systems*
- TAS 125-03 – *Standard Requirements for Metal Roofing Systems*
- ASTM E 1592-05 – *Test Method for Structural Performance of Sheet Metal Roof and Siding Systems By Uniform Static Air Pressure Difference*

**Standards Equivalency:**

The UL 580-94, UL 1897-98 & ASTM E1592-01 standard version used to test the evaluated product assembly is equivalent with the prescribed standards in UL 580-06, UL 1897-12 & ASTM E1592-05 adopted by the Florida Building Code 6th Edition (2017).

**Code Compliance:**

The product(s) described herein have demonstrated compliance with the performance standards listed above as referenced in the current Florida Building Code.

**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".
- 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.
- 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:** Englert Series 2500  
Material: Steel  
Thickness: 24 gauge (min.)  
Panel Widths: 16" (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 #: Clip Top: 05082H  
Clip Base: 05082I  
Type: Two-piece, floating clip  
Material: Galvanized Steel  
Thickness: 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 Wood Screw  
Size : #14  
Corrosion Resistance: Per FBC Section 1506.6 and 1507.4.4  
Standard: Per ANSI/ASME B18.6.1

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

**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.

**Insulation (Optional):**

Type: Rigid Insulation Board  
Thickness: 3" (max.)  
Properties:  
Density: 2.25 pcf (lbs/ft<sup>3</sup>) 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 3/16".

**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		
	METHOD 1	METHOD 2
<b>Design Pressure:</b>	<b>- 78 PSF</b>	<b>- 118 PSF</b>
Clip Spacing:	30"	8"
# of Fasteners per Clip:	2	2
Panel Seam:	180°	180°
Notes: <ul style="list-style-type: none"> <li>• Allowable design pressure(s) for allowable stress design (ASD).</li> </ul>		

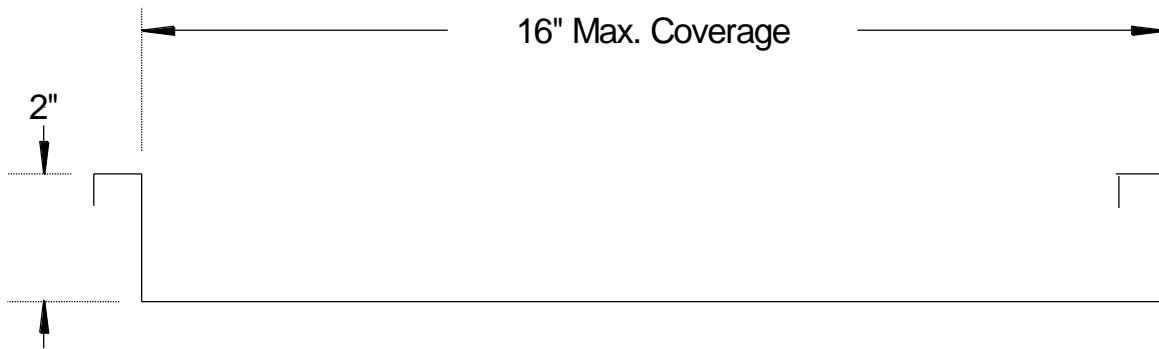
Install the "Series 2500" roof panel assembly in compliance with the installation method listed in this report and applicable code sections of FBC 6th Edition (2017). The installation method described herein is in accordance with the scope of this evaluation report. Refer to manufacturer's installation instructions as a supplemental guide for attachment.

**Referenced Data:**

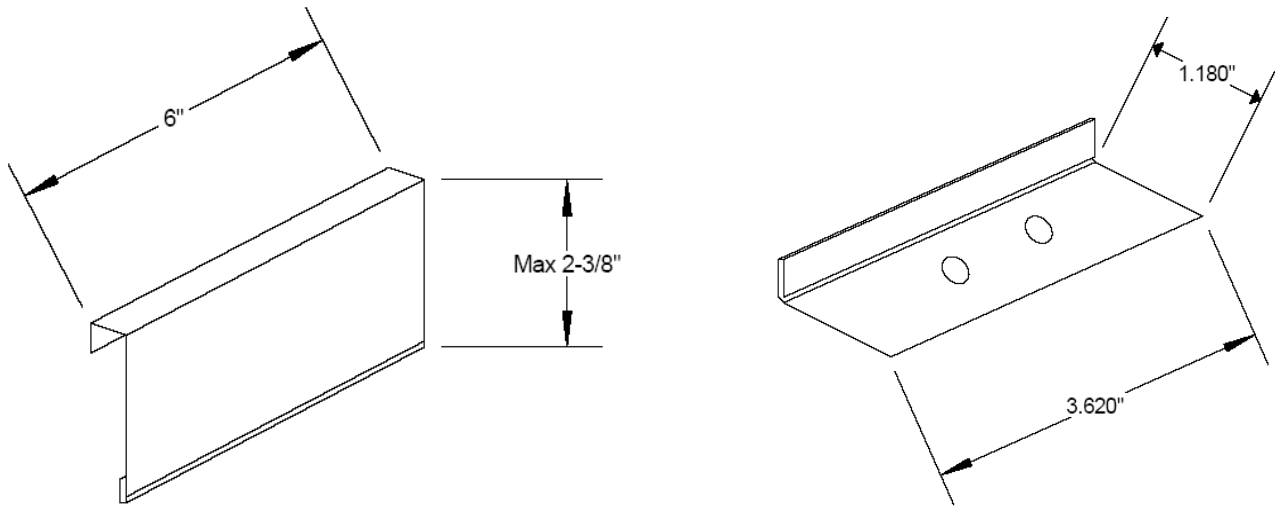
1. TAS 125 Uplift Test  
By Hurricane Test Laboratory, LLC (FBC Organization ID# TST 1527)  
Report #0155-0903-06, Date: 10/2/06
2. ASTM E 1592 Uplift Test  
By ENCON Consultants, Inc. (FBC Organization ID# TST 6485)  
Project No. C969 Date: 10/5/00
3. Quality Assurance  
Keystone Certifications, Inc. (FBC Organization ID# QUA 1824)  
Englert, Inc. Licensee #420
4. Equivalency of Test Standard Certification  
By James L. Buckner, P.E. @ CBUCK Engineering  
(FBC Organization # ANE 1916)
5. Certification of Independence  
By James L. Buckner, P.E. @ CBUCK Engineering  
(FBC Organization # ANE 1916)
6. Engineering Analysis  
By CBUCK Engineering

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

Drawings

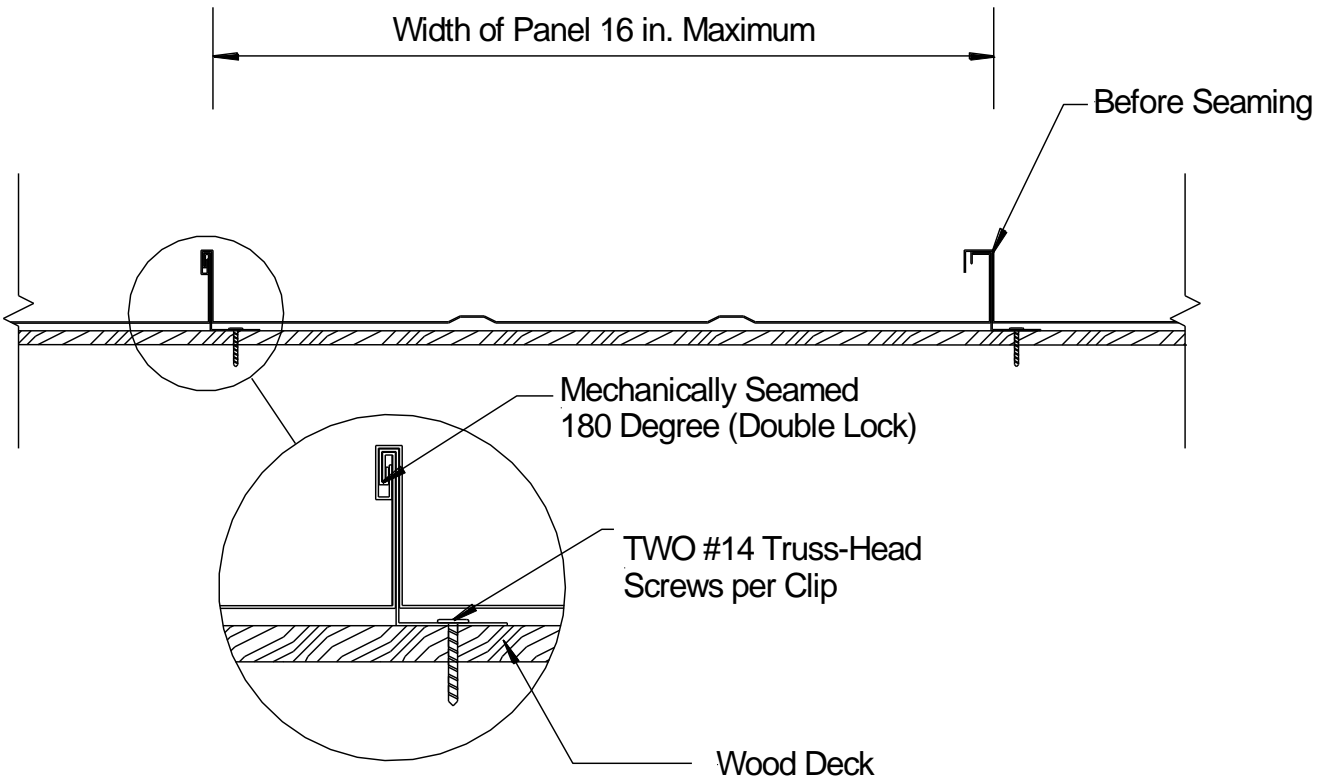


**Typical Panel Profile**

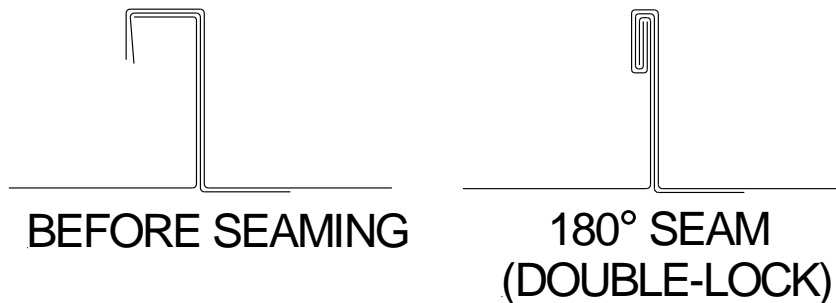


**Panel Clip Profile  
Englert "Series 2500 Floating Clip" (Top & Base)  
(Part # 05082H & 05082I)**

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

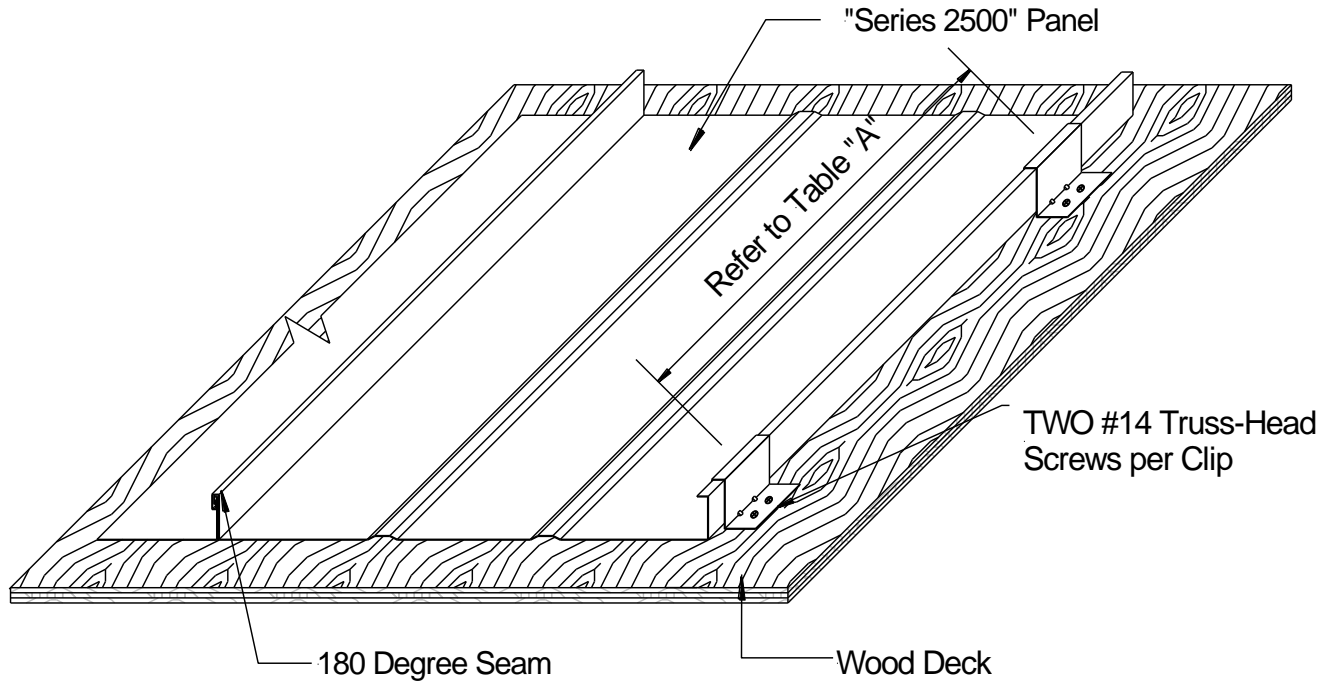


**Typical Assembly Profile View**  
**(Typical Fastening Pattern Across Width)**



**Typical Panel Seams**

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



**Typical Roof Assembly**  
**Isometric View**

**(Optional)** Rigid Insulation Board per Page 4 of this report

TABLE "A"		
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