



# CBUCK Engineering

Specialty Structural Engineering

CBUCK, Inc. Florida Certificate of Authorization # 8064

## Evaluation Report

*of*

**Berridge Manufacturing Company**

**“S-Tile”**

**Metal Roof Assembly**

*for*

**Florida Product Approval**

**# FL 11422.15**

**Florida Building Code 2007**

**Per Rule 9B-72**

**Method: 1 - D**

**Category: Roofing**

**Sub - Category: Metal Roofing**

**Product: “S-Tile” Roof Panel**

**Material: Steel**

**Panel Thickness: 24 Gauge**

**Panel Width: 32-11/16”**

**Support Type: Wood Deck**

**Prepared for:**

**Berridge Manufacturing Company**

1720 Maury Road

Houston, TX 77026

**Prepared by:**

**James L. Buckner, P.E.**

Florida Professional Engineer # 31242

Florida Evaluation ANE ID: 1916

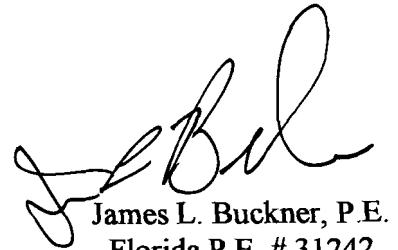
Project Manager: Diana Galloway

Report No. 08-136-STile-32-S4W-ER

Date: 9 / 1 / 08

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James L. Buckner, P.E.  
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<b>Manufacturer:</b>	<b>Berridge Manufacturing Company</b>
<b>Product Name:</b>	<b>“S Tile” Panel</b>
<b>Product Category:</b>	Roofing
<b>Product Sub-Category</b>	Metal Roofing
<b>Compliance Method:</b>	State Product Approval Rule 9B-72.070 (1) (d)
<b>Panel Description:</b>	“S-Tile”, Lapped, Steel Roof Panel attached to Wood Deck
<b>Panel Material / Standards:</b>	Material: Steel Yield Strength: 40 ksi minimum Corrosion Resistance: Material shall comply with the Florida Building Code (FBC), 2007 Section 1507.4.3.
<b>Panel Dimension(s)</b>	Thickness: 24 Gauge minimum Width: 32-11/16” (Maximum coverage) Rib Height: 1-1/2 ” Tile Step: 14”
<b>Support Type:</b>	<b>Wood Deck</b> (Design of support system is not included in this evaluation)
<b>Support Description:</b>	<ul style="list-style-type: none"><li>• 15/32” or greater plywood, or</li><li>• Wood plank</li></ul>
<b>Slope Range:</b>	Minimum slope shall comply with FBC 2007, including Sections 1507.4.2, 1504.7 and in accordance with the Manufacturers recommendations.
<b>Underlayment:</b>	Underlayment shall be per manufacturer’s guidelines as required in FBC Section 1507.4.5.
<b>Insulation:</b>	<b>(Optional)</b> Rigid Insulation Board, 3” maximum thickness and with a density of 2.25 pcf (lbs/ft <sup>3</sup> ) minimum or a compressive strength of 25 psi minimum.
<b>Fire Classification:</b>	Fire Classification is outside the scope of Rule 9B-72, and is therefore not included in this evaluation. Additional approved substrates may be added for Fire Classification purposes.

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**Attachment Component Description:**

**Panel to Deck Fasteners**

Size: #9 – 15 x 1”

Type: Hex-Head wood screw with a weather sealing washer

Corrosion Resistance: Per FBC Section 1507.6.6 and 1507.4.4

Standard: Per ANSI/ASME B18.6.1

**Panel to Panel, Stitch Fasteners**

Size: #12 - 14 x 3/4”

Type: Hex-Head self tapping, self- drilling screw with a weather sealing washer

Corrosion Resistance: Per FBC Section 1507.6.6 and 1507.4.4

Standard: Per SAE 178-1979

**Installation:**

**Berridge “S-Tile” Roof Panel to Wood Deck:**

**Panel to Deck:**

- **Row spacing: 14” o.c.**  
(at every tile step, along the length)
- **Fastener spacing along the row: 13” o.c. max.**  
(in every other tile step valley, beginning with a fastener placed in the first valley, 4-1/2” from the panel end)

Minimum fastener penetration or embedment into deck, 3/16”.

**Panel to Panel, Stitching:**

- **Sidelap spacing 14” o.c. min**  
(at every tile step, along the length of the side laps)

Refer to the drawings on Pages 5 and 6 of this evaluation report.

Install the system in compliance with the attached installation method.

Refer to manufacturer’s installation instructions as a supplemental guide for attachment.

**Design Uplift Pressure:** - 84.25 PSF ( Safety Factor of 2 : 1 )

**Missile Impact Resistance:** Meets criteria for small missile impact resistance per FBC Section 1504.7.  
(Based on material thickness)

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- Quality Assurance:** The manufacturer has demonstrated compliance of roof panel products in accordance with the Florida Building Code and Rule 9B-72.070 (3) for manufacturing under a quality assurance program audited by an approved quality assurance entity through **Underwriter's Laboratories, Inc.** (FBC Organization #: QUA 1743)
- Performance Standards:** The product described herein has demonstrated compliance with:
- **UL580-94** – *Test for Uplift Resistance of Roof Assemblies—with Revisions through February 1998*
- Code Compliance:** The product described herein has demonstrated compliance with the Florida Building Code 2007, Section 1504.3.2
- 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 9B-72.
- System Limitations:** The required design wind loads shall be determined for each project per FBC, 2007, Section 1609. Any rational analysis computations shall be prepared by a qualified design professional and in compliance with FBC 2007, Sections 104, 105, 106. The maximum fastener spacing listed herein shall not be exceeded. This report does not evaluate use of this product in the High Velocity Hurricane Zone.
- Referenced Data:**
1. UL580 Uplift Test  
By Hurricane Test Laboratory, LLC (TST 1527)  
Report #0307-0115-06, Report Test Date: 2/24/06-4/21/06  
Sample#1 & 3
  2. Quality Assurance  
Underwriters Laboratories, Inc. (FBC Organization #QUA ID:1743)
  3. Certification of Independence  
By James L. Buckner, P.E. @ CBUCK Engineering  
(FBC Organization# ANE ID: 1916)

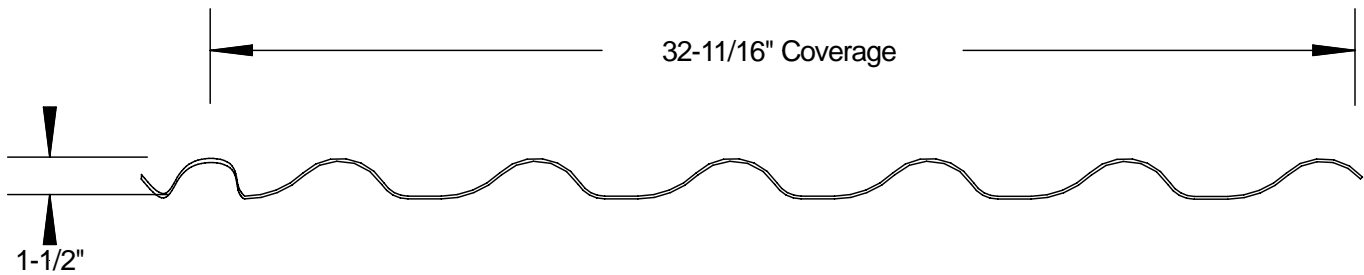
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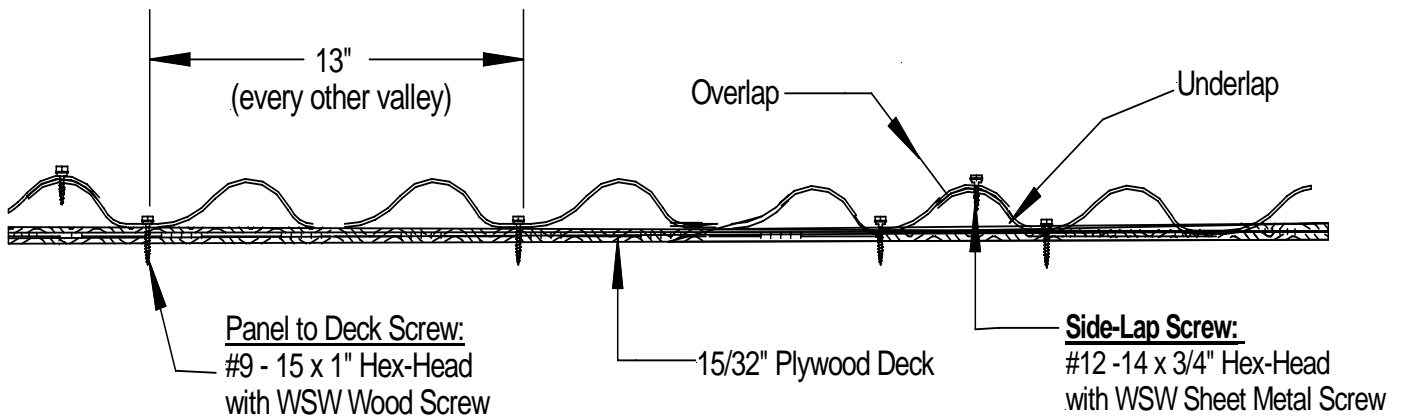
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## Installation Method Berridge Manufacturing Company "S-Tile" (24 Gauge) Roof Panel Attached to Wood Deck

### Profile Drawings



**Typical Panel Profile View**



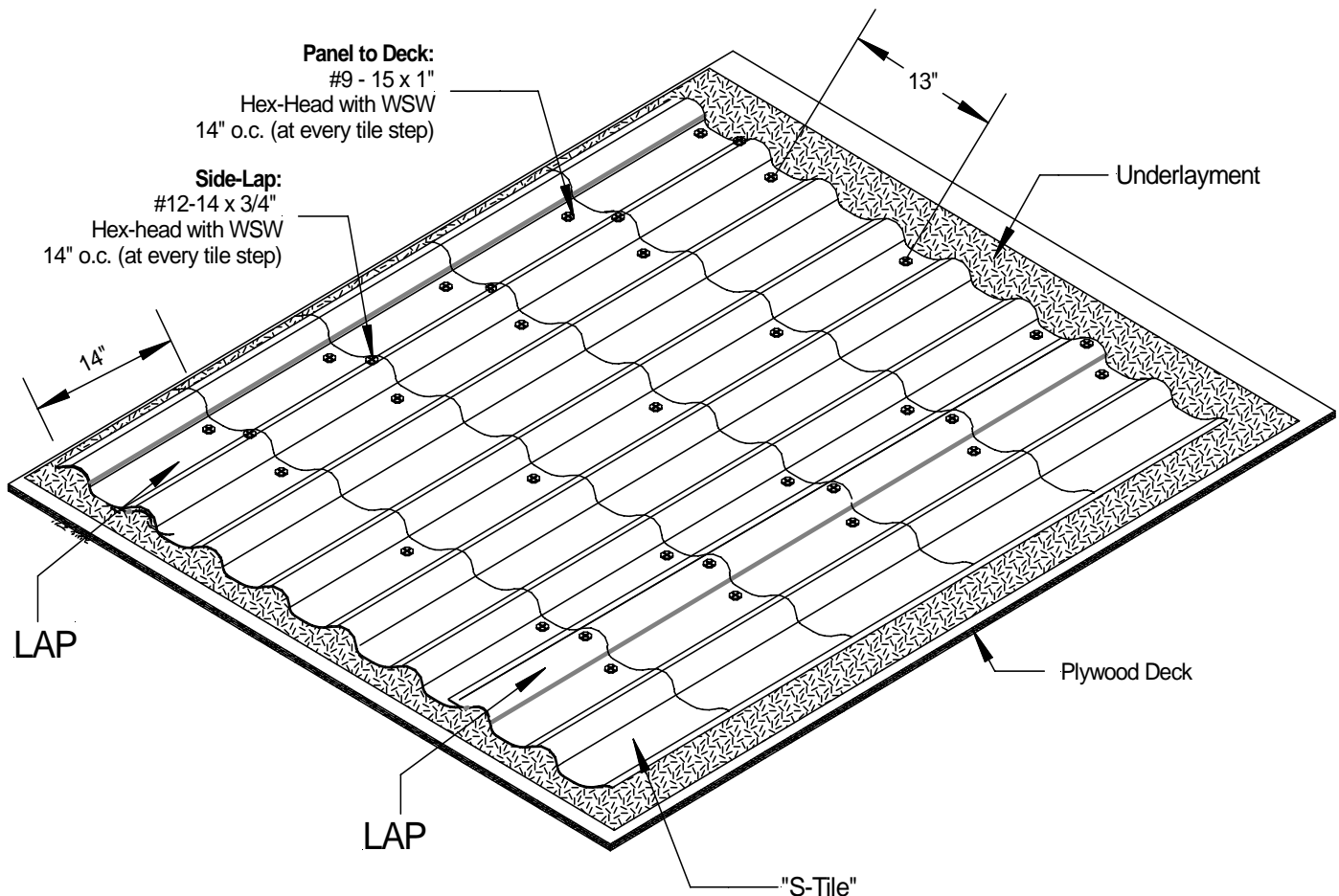
**Typical Assembly Profile View  
Fastener Pattern Across Row - Interior**

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## Installation Method Berridge Manufacturing Company "S-Tile" (24 Ga. Steel) Roof Panel Attached to Wood Deck



Typical Assembly Isometric View

**Optional Insulation:** Rigid Insulation Board, maximum thickness of 3" and shall be a minimum density of 2.25 pcf (lbs/ft<sup>3</sup>) or a compressive strength of 25 psi minimum.