

Evaluation Report
of
Berridge Manufacturing Company
“Spanish Tile”

Metal Roof Assembly

for

Florida Product Approval

FL 4619.1

Florida Building Code 2004

Method: 1 - D

Category: Roofing

Sub - Category: Non-Structural Metal Roofing

Product: *Spanish Tile Assembly*
Material: *Steel*
Material Thickness: *24 Gauge Minimum*
Support Type: *Wood Deck*

Prepared for:

Berridge Manufacturing Company

6515 Fratt Road

San Antonio, TX 78218

Prepared by:

James L. Buckner, P.E.

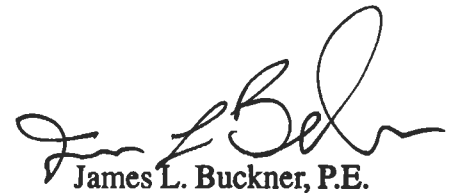
Florida Professional Engineer # 31242

Florida Evaluation ANE ID: 1916

Engineer Assistant: Gil Samson

Report No. 05-220-ST-S4W

Date: 6 / 7 / 05



James L. Buckner, P.E.

Florida P.E. # 31242

6/8/05

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Manufacturer:	Berridge Manufacturing Company
Product Name:	Spanish Tile Assembly
Assembly Components:	Deep Vee Component (Continuous) Primary Roof Membrane Spanish Tile Component (Discontinuous)
Material Type:	Steel, minimum 24 gauge, minimum yield strength 40 ksi
Material Standards:	Material shall comply with Table 1507.4.3
Product Dimensions:	Deep Vee Panel: 9" Maximum Coverage Width Spanish Tile: 17.25" Long x 8.125" Wide x 2.0" High, Maximum
Support Type:	Wood Deck (Design of support system is not included in this evaluation)
Support Description:	Plywood or wood plank – 15/32" or greater, per Section 2308.10.8
Slope Range:	2 : 12 to 12 : 12
Underlayment:	Minimum underlayment shall be per Section 1507.4.5
Fire Classification:	Additional approved substrates may be added for Fire Classification purposes.
Deep Vee Panel Installation:	Install the "Deep Vee Panel" to the deck with #9 x minimum penetration through the deck 3/16", hex-washer head, self-tapping, corrosion resistant, wood screws. Across the width of the panel, screws shall be located in the flats of each panel, 1-1/2" away from rib centerline. Screw rows shall be spaced maximum 24" o.c. along the length of the panel.
Spanish Tile Installation:	Install the "Spanish Tiles" over Deep Vee Panels with <u>ONE Head Screw</u>: # 8 x minimum penetration 3/4", hex-washer head, self-drilling, corrosion resistant screw located 1/2" from the head, through a factory formed hole, and <u>ONE Nose Screw</u>: # 10 x minimum penetration 3/4", hex-washer head, self-drilling screw located 1" from the nose of the tile, centered on the tile. Tiles shall be separated by 1" across the width. Install system in compliance with the attached installation method.



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Performance Standards: Roof assembly tested in accordance with UL580-94 Uplift Resistance Standard for Continuous Metal Roof Systems and TAS102-95 Static Uplift Resistance Standard for Mechanically Attached Tile Systems.

Code Compliance: The product described herein has demonstrated compliance with the **Florida Building Code 2004, Section 1507.4.**

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 installation method described herein is valid for the following criteria: Roof Zones 1,2,3 included, Overhang Zones 2,3 **NOT** included, Maximum Mean Roof Height: 40', Slope Range: 2:12 to 12:12, Maximum Wind Velocity Contour: 146 mph, Exposure: B or C, Importance Factor: 1.0, Enclosure Class: Partially Enclosed, Topographical Factor: 1.0, and Directional Factor: 0.85. Any rational analysis computations shall be prepared by a qualified design professional, as required by Florida Building Code, Section 105. This product is not approved for use in the High Velocity Hurricane Zone.

Referenced Data:

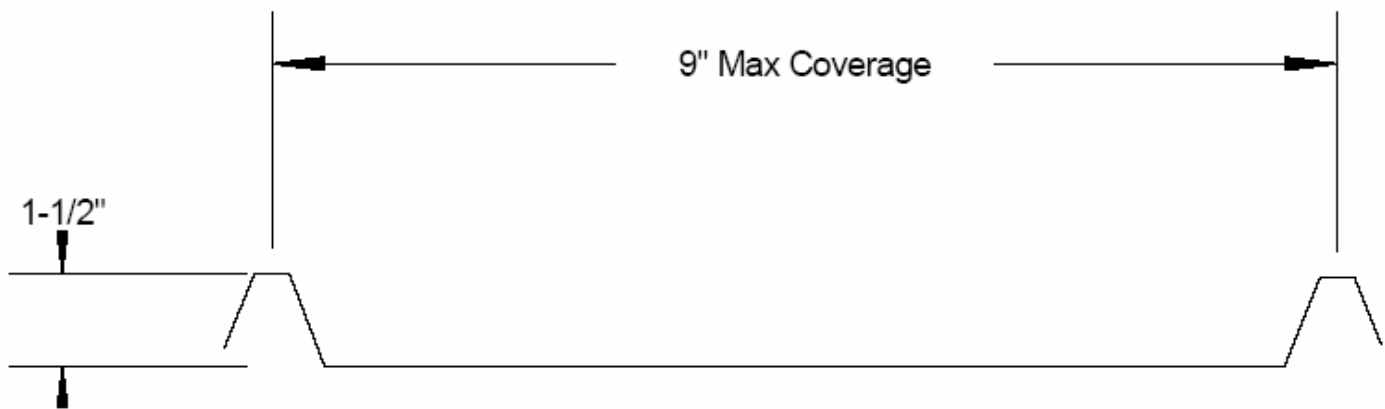
1. Certification of Independence
2. Quality Assurance
Underwriters Laboratories, Inc. – Q.A. System ID: 1743
3. UL580 Test
Deep Vee Panel (Continuous Component)
Hurricane Test Laboratories, Inc.
Report No.: 0307-0126-04, Date: 3/9/04
4. TAS102 Test
Spanish Tile (Discontinuous Component)
PRI Asphalt Technologies, Inc.
Report No.: BMC-003-02-01, Date: 5/24/05

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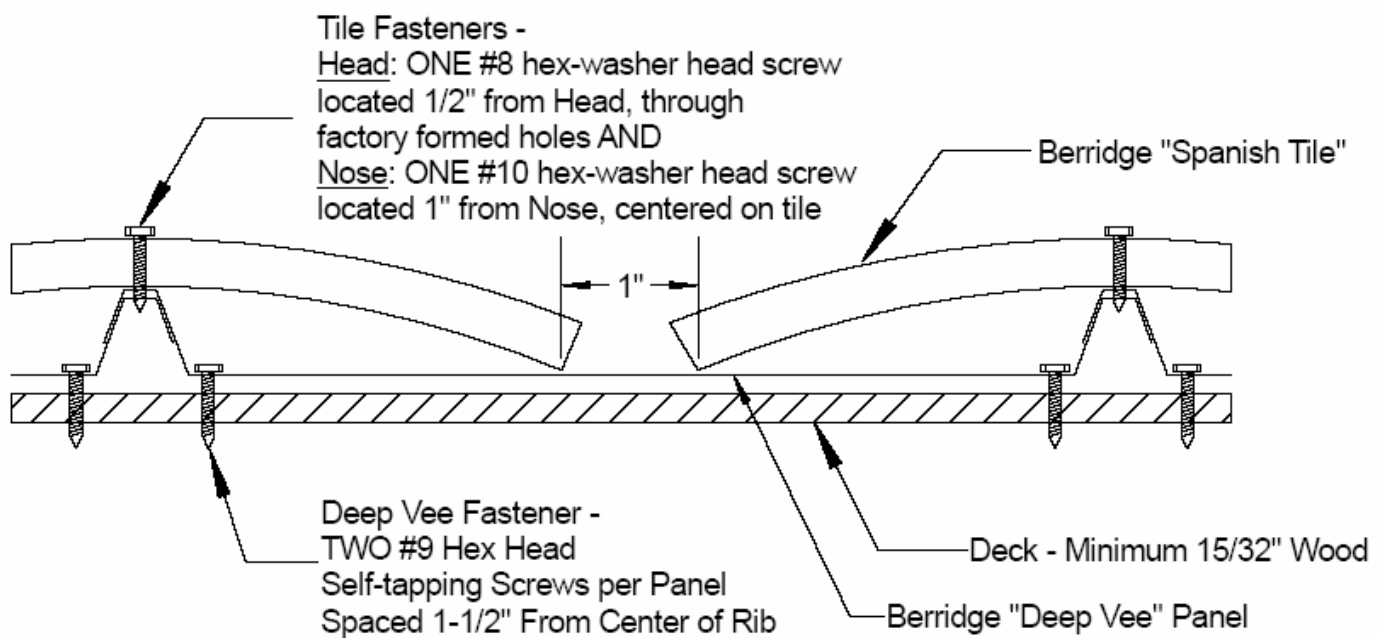
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Installation Method Berridge Manufacturing Company Spanish Tile Attached to Deep Vee Panel over Wood Deck



Deep Vee Panel Profile

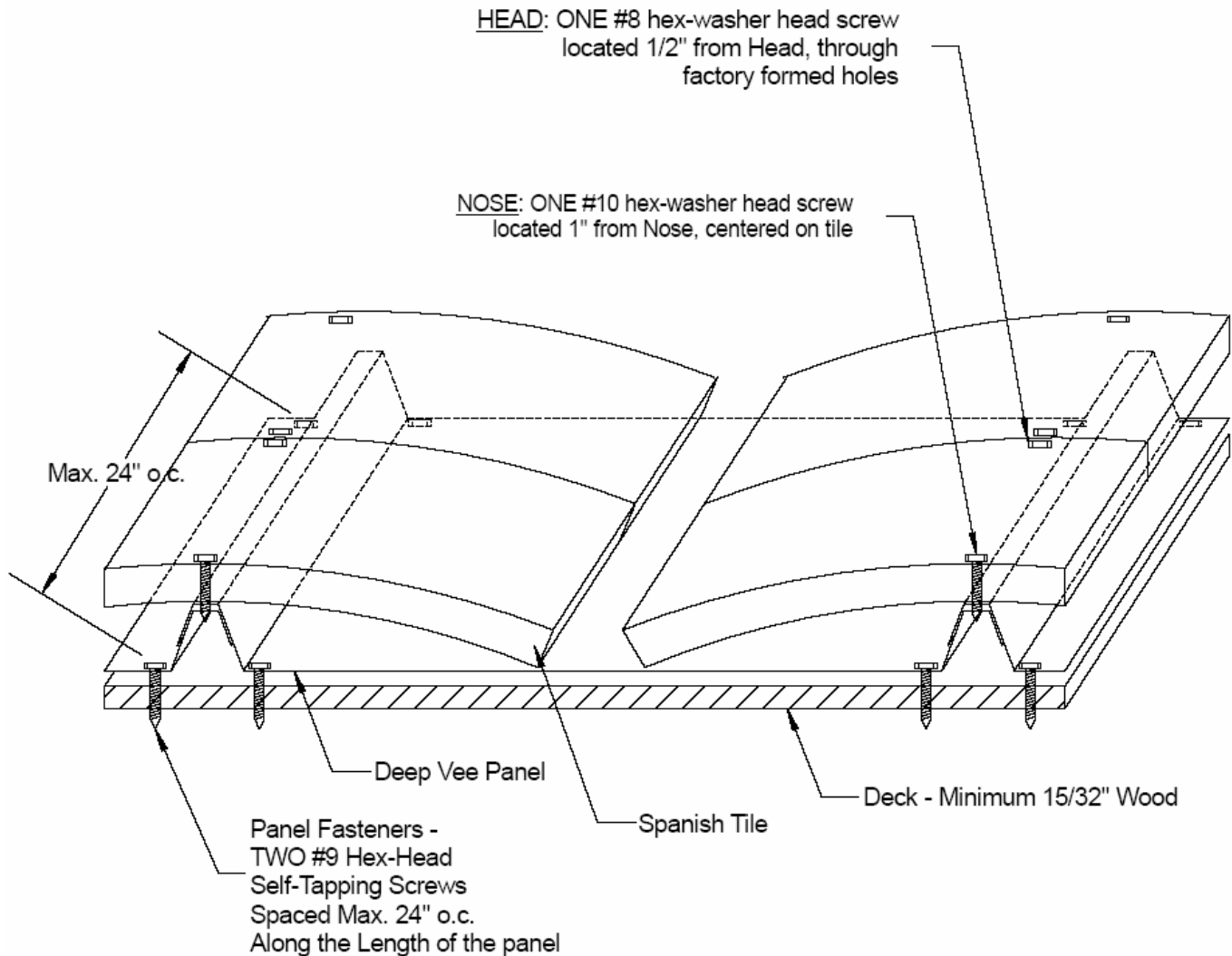


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Assembly Profile Installation Method (Continued) Berridge Manufacturing Company Spanish Tile Attached to Deep Vee Panel over Wood Deck



Assembly Isometric View

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Supplemental Engineering Data

Deep Vee Panel (Continuous Component) Based on UL580 Test

Deep Vee Panel (Continuous Component)		
Fasteners	Fastening Pattern	Allowable Design Pressure (With 2:1 Safety Factor)
#9 Hex-Washer Head Screws	Average Screw Spacing, 4.5" o.c. Row Spacing, 24" o.c.	131 psf

Spanish Tile (Discontinuous Component) Allowable Design Values per TAS 102-95

Aerodynamic Multipliers - λ (ft ³)	
Tile Profile	λ Direct Deck Application
Spanish Tile	0.218

Restoring Moments Due To Gravity - M_g (ft-lbf)						
Tile Profile	2:12	3:12	4:12	5:12	6:12	7:12
Spanish Tile	0.82	0.81	0.79	0.77	0.73	0.69

Attachment Resistance Expressed as a Moment - M_f (ft-lbf)		
Tile Profile	Fastener	Attachment Resistance
Spanish Tile	Head: ONE #8 Screw	128.50
	Nose: ONE #10 Screw	