

Evaluation Report MMR "Tile Shingle" Panel Metal Roof Assembly

Manufactured by
Modern Metal Roofing
1442 Amy Lane
Franklin, IN 46131
for

Florida Product Approval
FL 40559-R1

Florida Building Code 8th 2023

Method: 1 - D

Category: Roofing

Sub - Category: Metal Roofing

Product: "Tile Shingle"

Material: Steel

Panel Thickness: 24 gauge

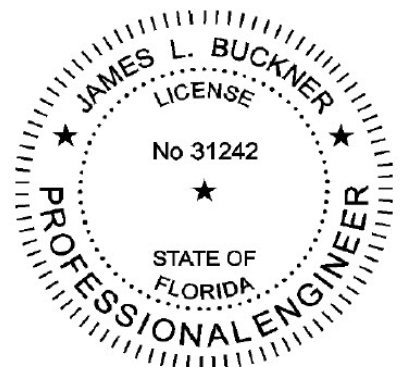
Prepared by:

James L. Buckner, P.E., S.E.C.B.
Florida Professional Engineer # 31242
Florida Evaluation ANE ID: 1916
Report No. 23-599-Tile-S4B-ER8
Date: 8/20/2023

Contents:

Evaluation Report Pages 1 – 8

This item has been digitally signed and sealed by James L. Buckner, P.E., on this date below. Printed copies of this document are not considered signed and sealed, and the signature must be verified on any electronic copies.



James L. Buckner, P.E.
FL31242

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Manufacturer:	Modern Metal Roofing
Product Name:	"Tile Shingle"
Product Category:	Roofing
Product Sub-Category	Metal Roofing
Compliance Method:	State Product Approval Rule 9N-3.005 (1) (d)
Product/System Description:	"Tile Shingle" Roof Panel 24 gauge steel roof panel, with the appearance of a classic Spanish tile roof attached to structural rafters using a wood batten system.
Product Assembly as Evaluated:	Refer to Page 4 of this report for product assembly components/materials & standards: 1. Roof Panel 2. Fasteners 3. Wood Battens 4. Underlayment
Support:	Roof Deck: Function: For underlayment support Type: Plywood per FBC Chapter 23 Thickness: 15/32" (As tested and Evaluated) Rafter/Truss Top Chord (For roof structural attachment): Function: Typical Roof Rafter or Wood Truss Top Chord Type: Dimensional Lumber Size: 2" x 4" min. Density: 0.39" min. Spacing: 24" o.c. (As tested and Evaluated) (Design of support and its attachment to support framing is outside the scope of this evaluation.)
Slope:	4:12 or greater (Slopes between 4:12 and 3:12 shall be approved by Modern Metal Roofing) 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: - 65.75 PSF Based on: Batten spacing: 14" Rafter spacing: 24" (Refer to attachment details herein)

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- Performance Standards:** The product described herein has demonstrated compliance with:
- **UL580-06** – *Test for Uplift Resistance of Roof Assemblies—with Revisions through February 1998*
 - **UL 1897-12** – *Uplift test for roof covering systems*
- 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 installed as described herein demonstrates compliance with the
Florida Building Code 8th Edition (2023)
International Building Code 2018
- Evaluation Report Scope:** This product evaluation demonstrates compliance of this product with the structural requirements of the Florida Building Code of products which comprises the building envelope and structural frame, as related 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”.
 - 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)
 - 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.

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Quality Assurance: The manufacturer has demonstrated compliance of roof panel products in accordance with the Florida Building Code and Rule 9N-3.0005 (3) for manufacturing under a quality assurance program audited by an approved quality assurance entity through Farabaugh Engineering & Testing, Inc. (FBC Organization ID# QUA 7733).

**Components/Materials
& Standards:**

Roof Panel:

Material:	Steel
Thickness:	24 Gauge
Panel Length:	42-3/4" (Nominal)
Panel Width:	16-7/8" (Nominal)
Rib Height:	3-1/8" (Nominal)
Yield Strength:	40 ksi minimum
Steel Designation:	CS-Type B
Corrosion Resistance:	In compliance with FBC Section 1507.4.3: ASTM A653 G90 galvanized steel

"Tile Shingle"

Battens:

Type:	Dimensional Lumber
Size:	2" x 2" min.
Density:	0.39" min.
Spacing:	14" o.c. (As tested and Evaluated)

Fasteners:

Roof Panel to Battens

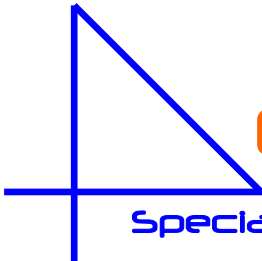
Type:	Hex-Head Screw with WSW
Size :	#9 – 15 x 2"
Corrosion Resistance:	Per FBC Section 1507.4.4 and 1506.6
Standard:	Per ANSI/ASME B18.6.1

Battens to Rafters

Type:	Wood Deck Screws
Size :	#10 x 3-1/2
Embedment:	1-1/2" min. into Wood Rafter Top Chord
Corrosion Resistance:	Per FBC Section 1506.6
Standard:	Per ANSI/ASME B18.6.1

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.



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Installation:

MMR “Tile Shingle” Roof Panel System

(Refer to drawings on Pages 6-8 of this evaluation report.)

- Fastener Spacing:
Five(5) fasteners per shingle panel
(along the batten rows, across the panel profile)
Refer to drawings on “Page 7-8” of this report.
- Rib Interlock: Lapped
- Batten Spacing: 14” o.c.

Install the MMR “Tile Shingle” roof panel assembly in compliance with the installation methods listed in this report and applicable code sections of FBC 8th 2023. The installation methods 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. UL580/1897 Uplift Test
By Farabaugh Engineering & Testing, Inc. (FBC Organization ID# TST 1654)
Report # T386-10, Dated 12/17/19
2. Quality Assurance
By Farabaugh Engineering & Testing, Inc. (FBC Organization ID# QUA 7733)
3. Certification of Independence
By James L. Buckner, P.E. @ CBUCK Engineering
(FBC Organization # ANE 1916)

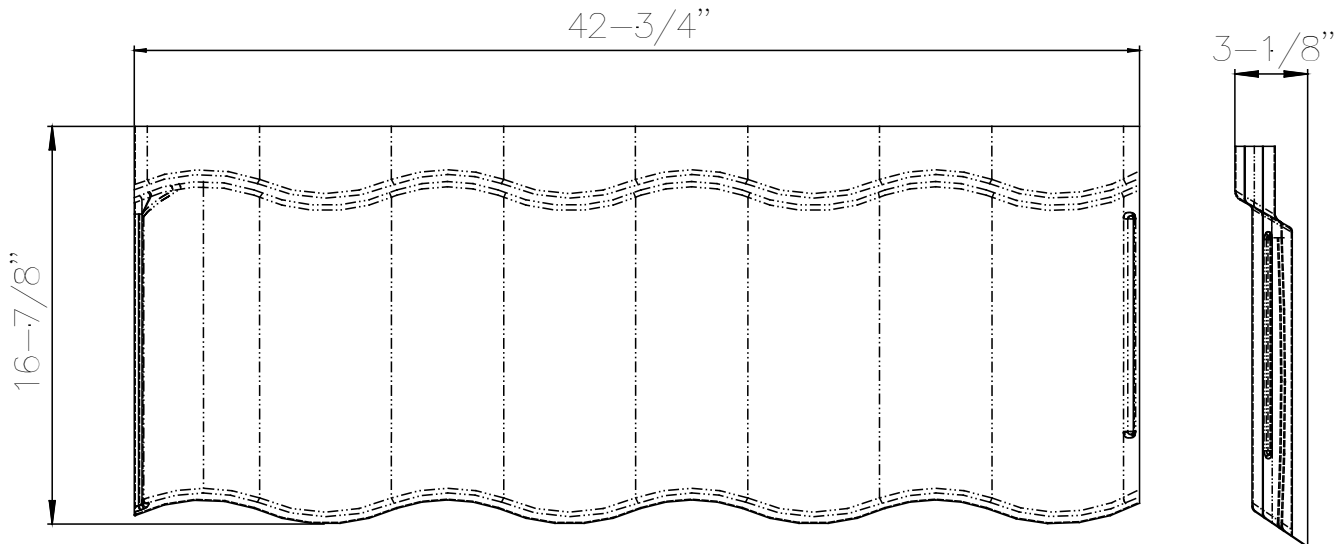
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Installation Method Modern Metal Roofing "Tile Shingle" Roof Panel

Profile Drawings



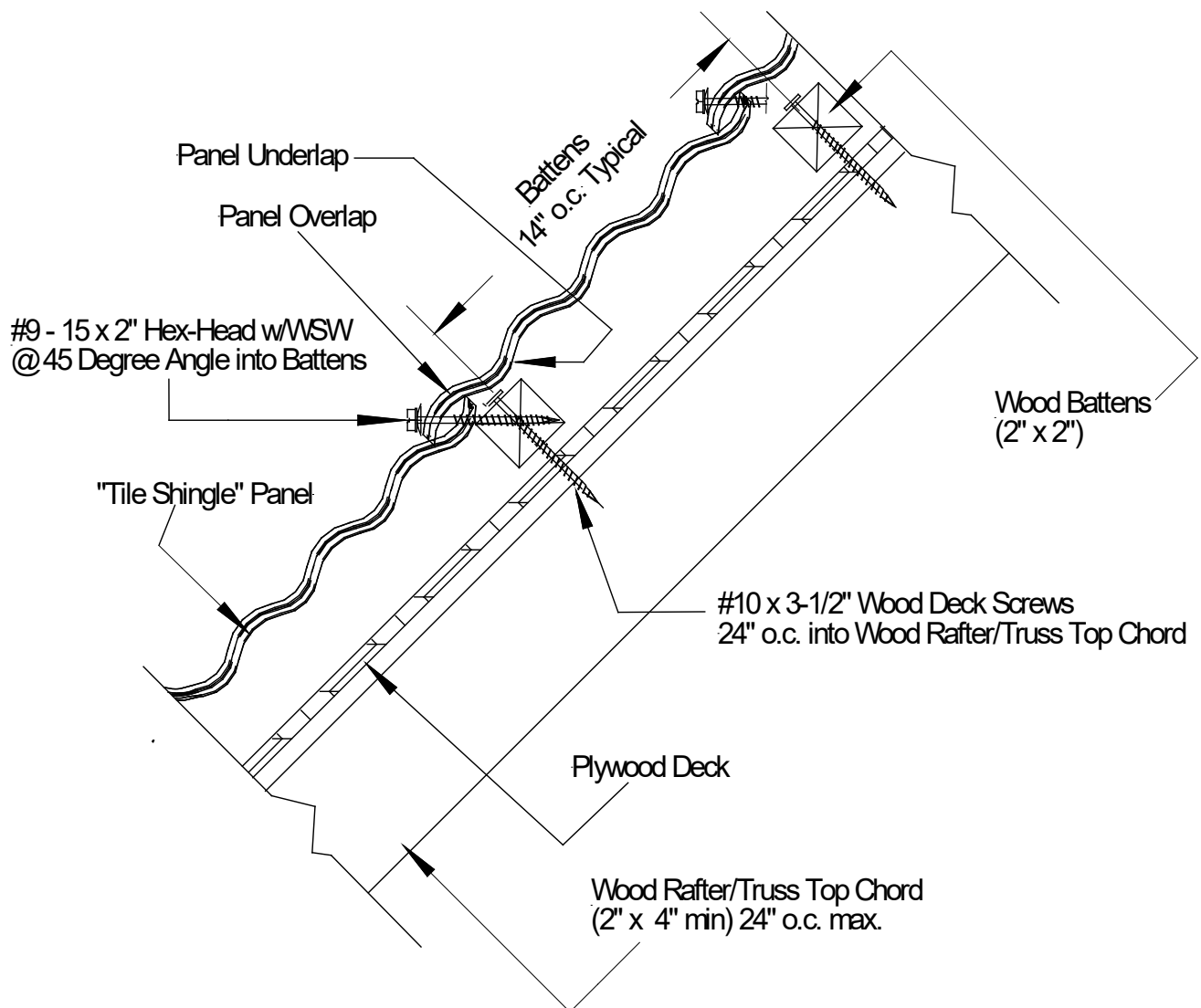
Typical "Tile Shingle" Panel
Panel Profile View

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Installation Method Modern Metal Roofing "Tile Shingle" (24 Gauge) Roof Panel System



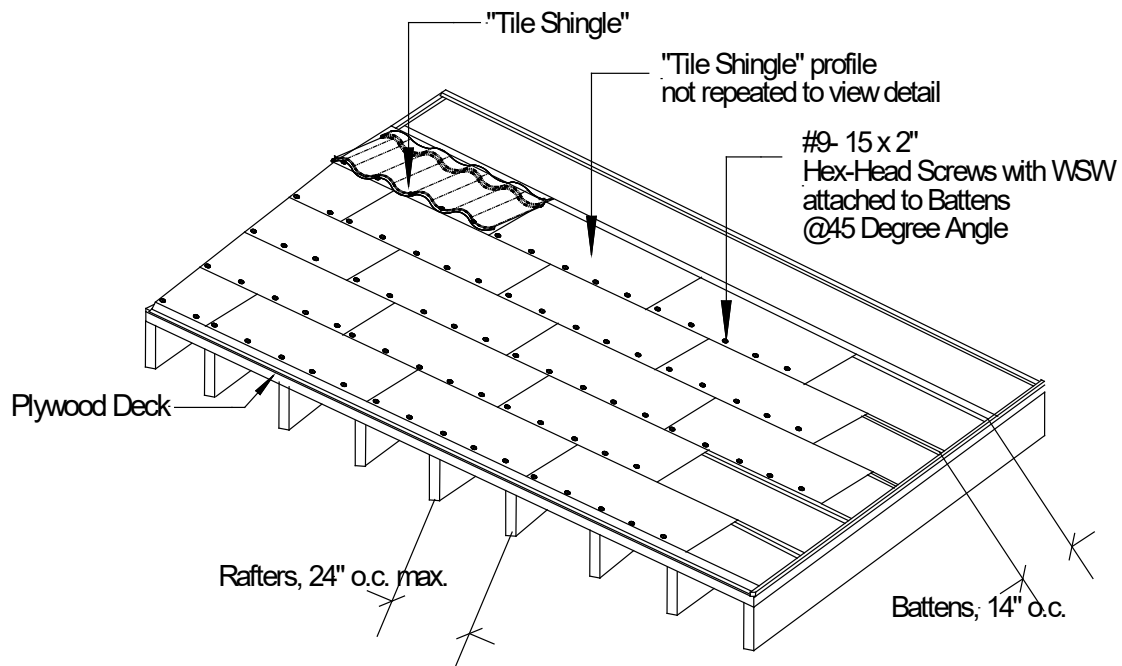
Typical Assembly Side View

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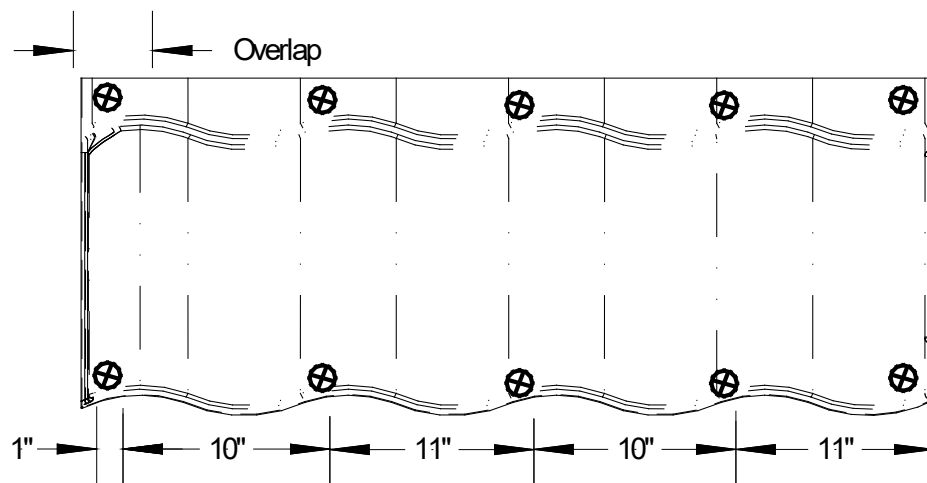
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Installation Method Modern Metal Roofing "Tile Shingle" (24 Gauge) Roof Panel System



Typical Assembly Isometric View
& Shingle Panel Layout



Typical Fastener Spacing Along Panels