

## Evaluation Report "Grande Tile" Metal Roof Assembly

### Manufacturer:

### Green American Home

(A division of Isaiah Industries)

8510 Industry Park Drive

Piqua, OH 45356

for

### Florida Product Approval

### # FL 14949.1 R2

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

Method: 1 - D

Category: Roofing

Sub - Category: Metal Roofing

Product: "Grande Tile" Roof Panel

Material: Steel

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. 17-130-GT-S4W-ER

(Revises 11-178-GT-S4W-ER, F" L14949.1 R1)

Date: 07/09/17

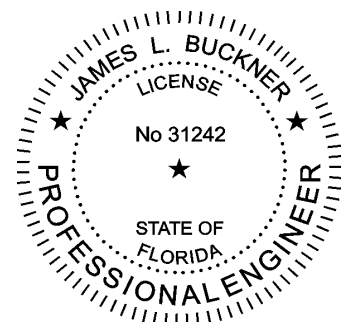
### Contents:

Evaluation Report

Pages 1 – 9

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".

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<b>Manufacturer:</b>	<b>Green American Home</b> (A division of Isaiah Industries) 8510 Industry Park Drive Piqua, OH 45356 (888) 705-5656 <a href="https://www.greenamericanhome.com/">https://www.greenamericanhome.com/</a>						
<b>Product Name:</b>	<b>Grande Tile</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>	"Grande Tile" Steel roof panel, with a barrel tile appearance, mechanically attached to Wood Deck.						
<b>Product Assembly as Evaluated:</b>	Refer to Page 4 of this report for product assembly components/materials & standards: <table><tr><td>1. Roof Panel</td><td>Grande Tile</td></tr><tr><td>2. Fasteners</td><td>#9 HWH Screws</td></tr><tr><td>3. Underlayment</td><td>Per Roofing Manufacturer's Guidelines</td></tr></table>	1. Roof Panel	Grande Tile	2. Fasteners	#9 HWH Screws	3. Underlayment	Per Roofing Manufacturer's Guidelines
1. Roof Panel	Grande Tile						
2. Fasteners	#9 HWH Screws						
3. Underlayment	Per Roofing Manufacturer's Guidelines						
<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>• 15/32" or greater plywood,</li><li>• or Wood plank (min. specific gravity of 0.42)</li></ul>						
<b>Slope:</b>	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.						
<b>Performance:</b>	Wind Uplift Resistance: <ul style="list-style-type: none"><li>• Design Uplift Pressure: <b>METHOD 1: - 54 PSF</b> (Refer to "Table A" attachment details herein) <b>METHOD 2: - 137 PSF</b></li></ul>						

**Performance Standards:**

The product described herein has demonstrated compliance with:

- UL 580-06 – *Test for Uplift Resistance of Roof Assemblies—with Revisions through February 1998*
- UL 1897-12 – *Uplift test for roof covering systems*
- TAS 125-03 – *Standard Requirements for Metal Roofing 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 1897-12 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 building envelope product is evaluated for compliance with the structural wind load 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.
- 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)

**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 **Farabaugh Testing & Engineering** (FBC Organization ID# QUA 7733).

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

**Roof Panel:**

Material:  
Thickness:  
Panel Width:  
Rib Height:  
Tile Step:  
Yield Strength:  
Corrosion Resistance:

**Grande Tile**

Steel  
24 gauge (min.)  
44-1/4" nominal (max.) Coverage  
1-5/8" nominal  
13-3/4" nominal  
40 ksi min.  
Per FBC Section 1507.4.3

**Fastener:**

Type:  
Size :  
Min..Penetration thru Deck:  
Corrosion Resistance:  
Standard:

**Panel to Deck**

Hex Washer Head Screw w/WSW  
#9 - 14 x 1-1/2" (or length to meet min. penetration)  
3/16" min.thru bottom of wood deck  
Per FBC Section 1506.6 and 1507.4.4  
Per ANSI/ASME B18.6.1

**Fastener:**

Type:  
Size :  
Min..Penetration thru Deck:  
Corrosion Resistance:  
Standard:

**Panel to Panel, Side Lap Stitch & Thru Deck**

Hex Washer Head Screw w/WSW  
#9 - 14 x 2-1/2" (or length to meet min. penetration)  
3/16" min. thru bottom of wood deck  
Per FBC Section 1506.6 and 1507.4.4  
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.

**Installation:**

**Installation Method:**

(Refer to "TABLE A" below and drawings at the end of this evaluation report.)

- Attach panel to deck fasteners in tile step valleys, along the length of the panel and thru the wood deck.
- Attach panel to panel stitch fasteners at every tile step, along the length of the side laps and thru the wood deck.
- 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>- 54 PSF</b>	<b>- 137 PSF</b>
Row Fastener Spacing/Pattern:	See Detail "1" Same Every Row	See Details "2A" & "2B" Alternating Rows
Row Spacing:	13-3/4"	13-3/4"
Side Lap Stitching:	13-3/4" At every tile step	13-3/4" At every tile step
Notes:		
<ul style="list-style-type: none"> <li>• Allowable design pressure(s) for allowable stress design (ASD).</li> </ul>		

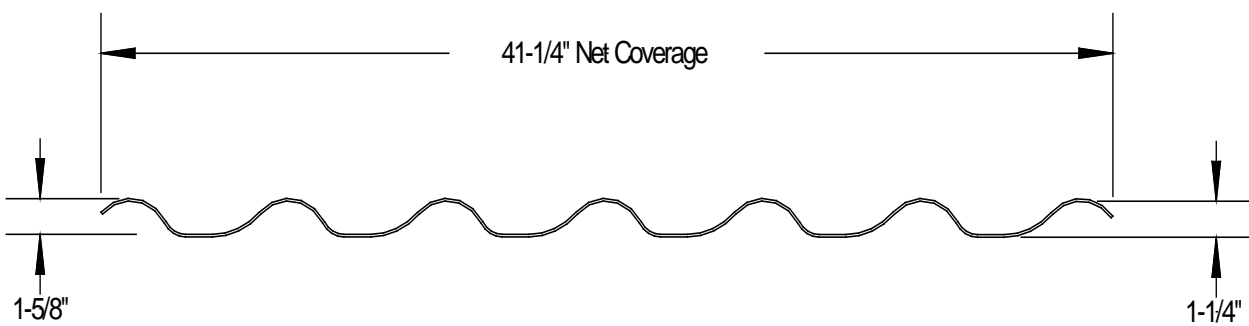
Install the "Grande Tile" roof panel assembly in compliance with the installation method listed in this report and applicable code sections of FBC 6th Edition (2017). The installation method described herein is in accordance with the scope of this evaluation report. Refer to manufacturer's installation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

**Referenced Data:**

1. TAS 125-03 (Per UL 580 & UL 1897) Uplift Test  
 By Hurricane Test Laboratories, LLC (FBC Organization# ID: TST 1527)  
 Report # 0197-0916-05, Date: 2/10/06, Test Specimen(s) # 1,3, 4
2. Quality Assurance  
 By Farabaugh Testing & Engineering (FBC Organization ID# QUA 7733)
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  
Green American Home  
"Grande Tile" (24 gauge Steel) Roof Panel attached to Wood Deck**

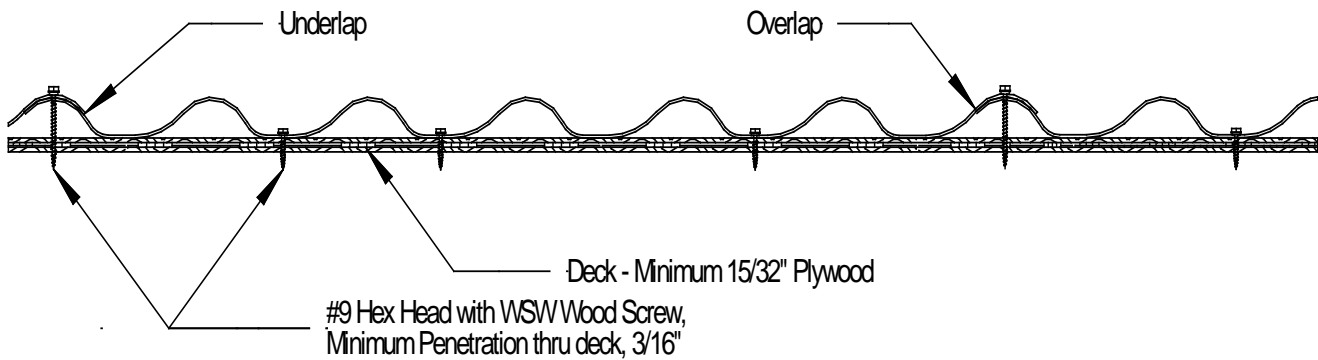
Drawings



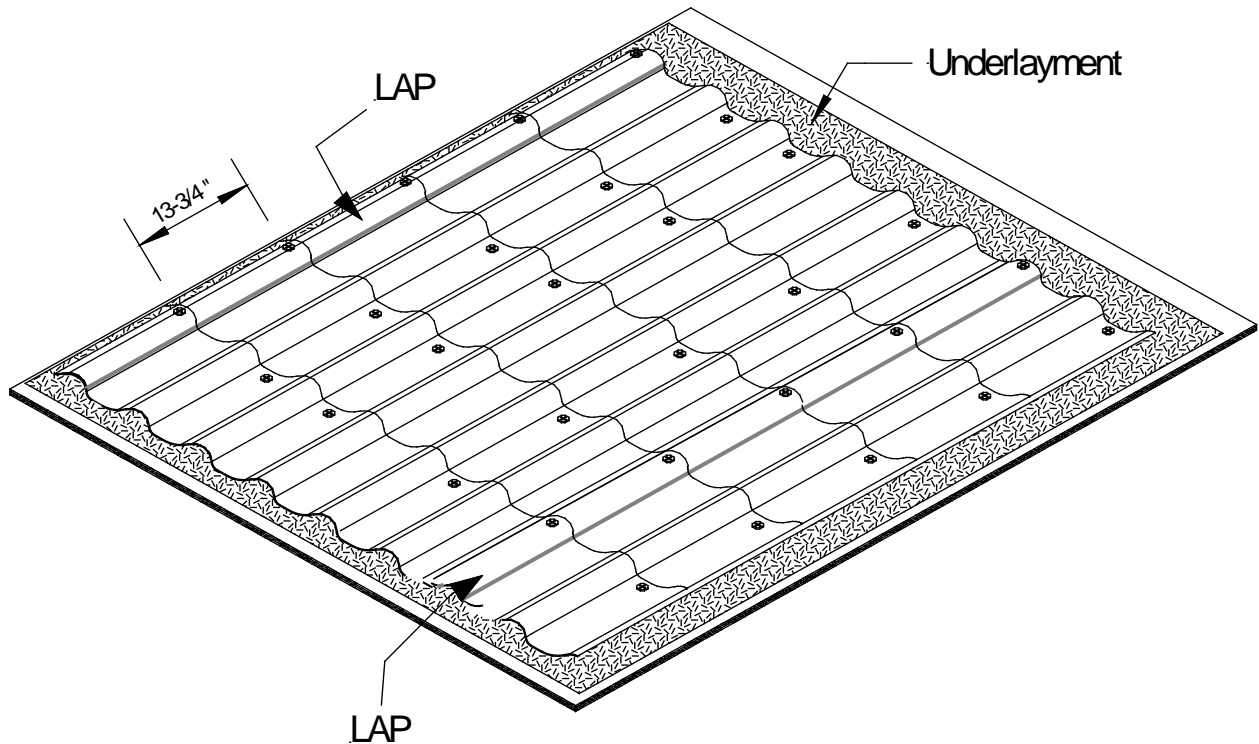
**Typical Panel Profile**

**Installation Method  
Green American Home  
"Grande Tile" (24 gauge Steel) Roof Panel attached to Wood Deck**

**METHOD 1:**



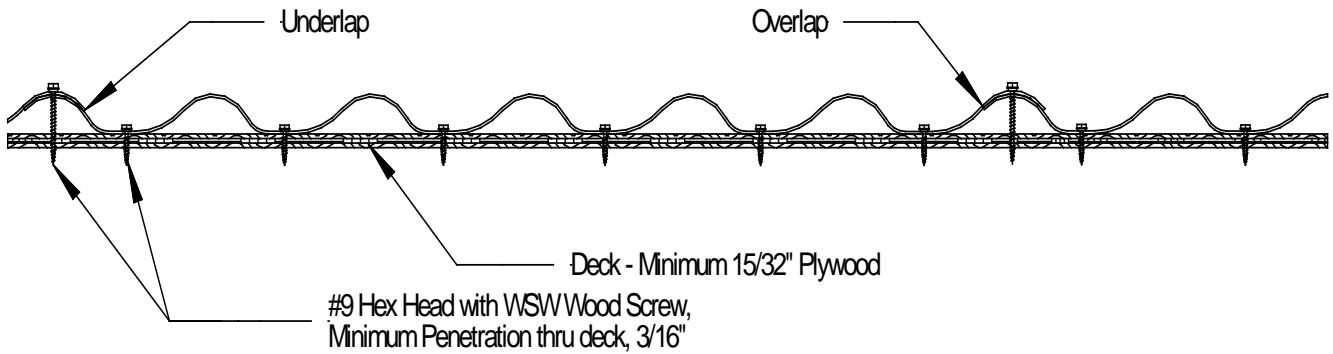
**Detail "1" - Assembly Profile View  
(Typical Fastener Pattern Across Row)**



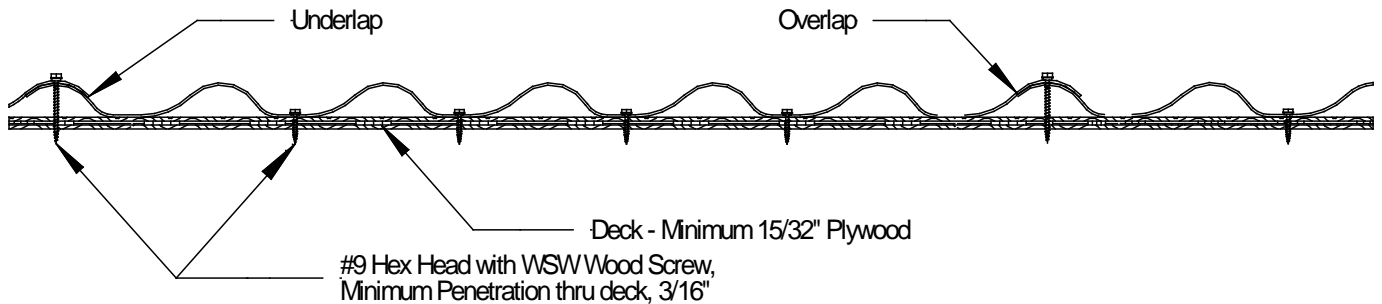
**Typical Roof Assembly Isometric View**

**Installation Method  
Green American Home  
"Grande Tile" (24 gauge Steel) Roof Panel attached to Wood Deck**

**METHOD 2:**



**Detail "2A" - Assembly Profile View**  
(Typical Fastener Pattern Across Alternate ODD Rows)

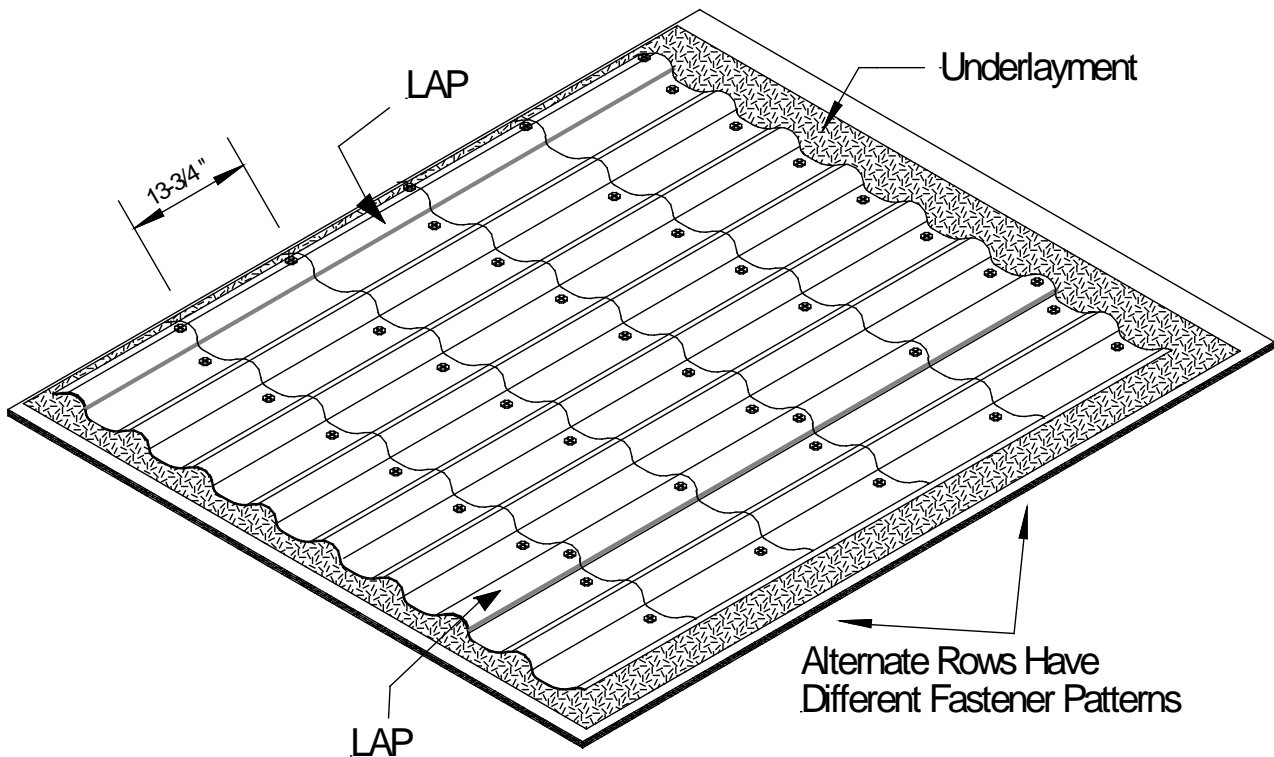


**Detail "2B" - Assembly Profile View**  
(Typical Fastener Pattern Across Alternate EVEN Rows)



## Installation Method Green American Home "Grande Tile" (24 gauge Steel) Roof Panel attached to Wood Deck

### METHOD 2:



**Typical Roof Assembly Isometric View**

TABLE "A"		
	METHOD 1:	METHOD 2:
<b>Design Pressure:</b>	- 54 PSF	- 137 PSF
Row Fastener Spacing/Pattern:	See Detail "1" Same Every Row	See Details "2A" & "2B" Alternating Rows
Row Spacing:	13-3/4"	13-3/4"
Side Lap Stitching:	13-3/4" At every tile step	13-3/4" At every tile step