

Evaluation Report
"Grande Tile"
Metal Roof Assembly

Manufacturer:

Green American Home

(A division of Isaiah Industries)

8510 Industry Park Drive

Piqua, OH 45356

(800) 543-8938

for

Florida Product Approval

FL 14949.2

Florida Building Code 2010

Per Rule 9N-3

Method: 1 - D

Category: Roofing

Sub - Category: Metal Roofing

Product: "Grande Tile" Roof Panel

Material: Aluminum

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. 11-178-GT-A4W-ER

Date: 11 / 24 / 11

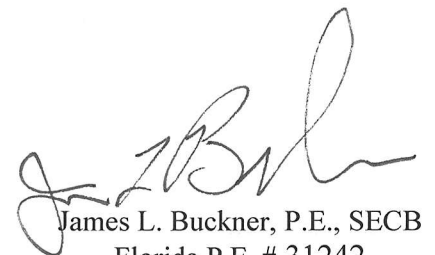
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CBUCK, Inc.

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Phone: (561)491-9927 Fax: (561)491-9928 Website: www.cbuckinc.net

A handwritten signature in black ink, appearing to read 'J. L. Buckner'.

James L. Buckner, P.E., SECB
Florida P.E. # 31242
10/28/11

Manufacturer:	Green American Home						
Product Name:	Grande Tile						
Product Category:	Roofing						
Product Sub-Category	Metal Roofing						
Compliance Method:	State Product Approval Rule 9N-3.005 (1) (d)						
Product/System Description:	“Grande Tile” Aluminum roof panel, with a barrel tile appearance, mechanically attached to Wood Deck.						
Product Assembly as Evaluated:	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						
Support:	Type: Wood Deck (Design of support and its attachment to support framing is outside the scope of this evaluation.) Description: <ul style="list-style-type: none">• 19/32” or greater plywood,• or Wood plank (min. specific gravity of 0.42)						
Slope:	Minimum slope shall be in accordance with FBC Section 1507.4.2, applicable code sections and manufacturer’s recommendations.						
Performance:	Wind Uplift Resistance: <ul style="list-style-type: none">• Design Uplift Pressure: (Refer to “Table A” attachment details herein) METHOD 1: - 92 PSF METHOD 2: - 107 PSF						

- 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 1897-04 – *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 1897-04 adopted by the Florida Building Code 2010.
- Code Compliance:** The product described herein has demonstrated compliance with Florida Building Code 2010, Section 1504.3.2.
- 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 9N-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 9N-3.005. Per Rule 9N-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 9N-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.
 - Fire Classification is outside the scope of Rule 9N-3, and is therefore not included in this evaluation.
 - This evaluation report does not evaluate the use of this product for compliance 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 9N-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:
Alloy Type:
Corrosion Resistance:

Grande Tile

Aluminum
0.032" (min.)
44-1/4" nominal (max.) Coverage
1-5/8" nominal
13-3/4" nominal
3105-H14
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

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

Underlayment:

Per roofing manufacturer's guidelines in compliance with FBC Section 1507.4.5

Installation:

Installation Method:

(Refer to "TABLE A" below and drawings on Pages 6-8 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"		
	METHOD 1:	METHOD 2:
Design Pressure:	- 92 PSF	- 107 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

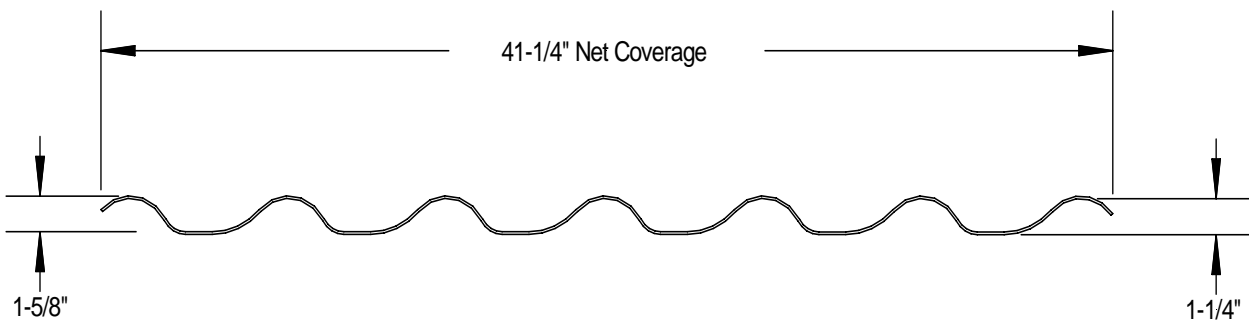
Install the "Grande Tile" roof panel assembly in compliance with the installation method listed in this report and applicable code sections of FBC 2010. The installation method described herein is in accordance with the scope of this evaluation report. Refer to manufacturer's installation instructions 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 # 0197-1110-05/0197-0417-06, Date: 2/19/07,
2. Quality Assurance
By Farabaugh Testing & Engineering (FBC Organization ID# QUA 7733)
3. Certification of Independence
By James L. Buckner, P.E. @ CBLUE Engineering
(FBC Organization # ANE 1916)

**Installation Method
Green American Home
"Grande Tile" (0.032" Alum) Roof Panel attached to Wood Deck**

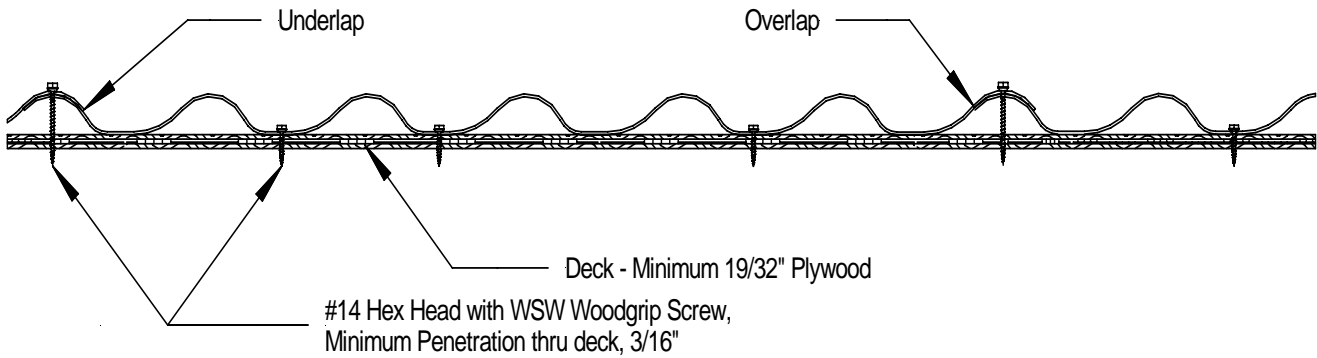
Drawings



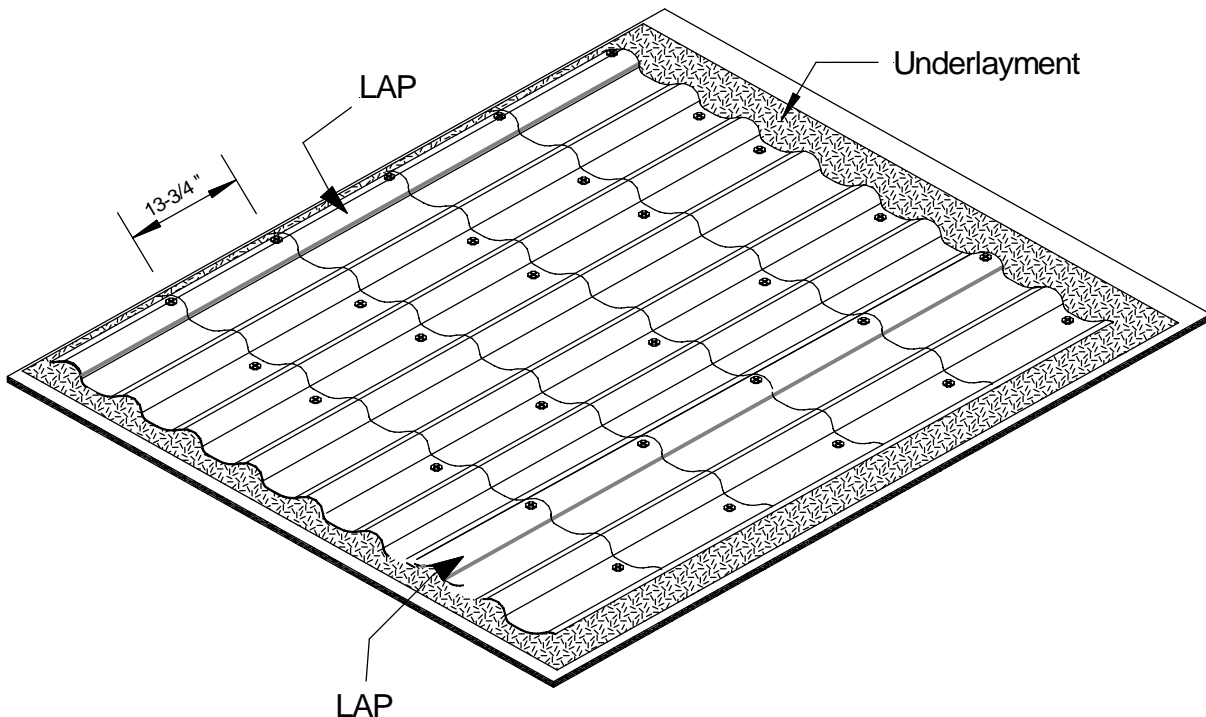
Typical Panel Profile

**Installation Method
Green American Home
"Grande Tile" (0.032" Alum) Roof Panel attached to Wood Deck**

METHOD 1:



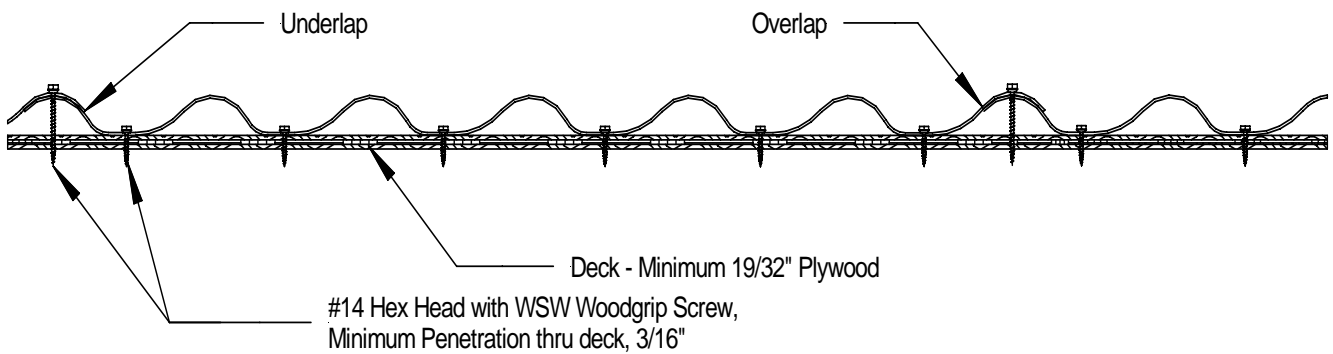
**Detail "1" - Assembly Profile View
(Typical Fastener Pattern Across Row)**



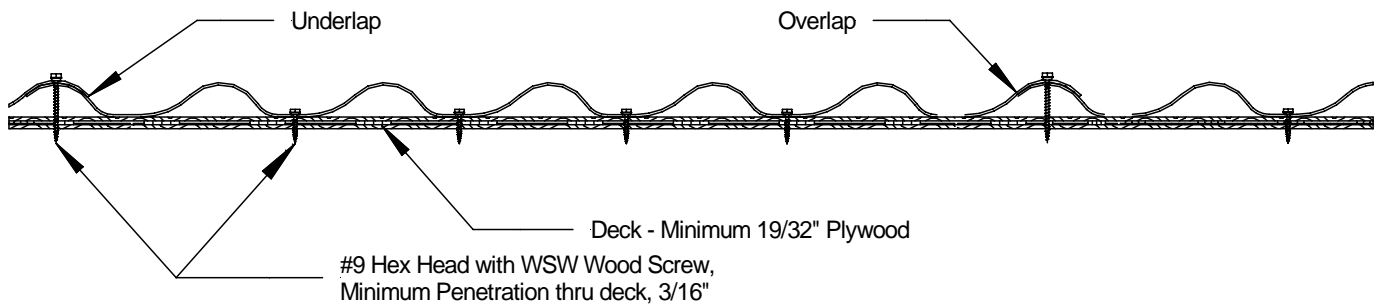
Typical Roof Assembly Isometric View

**Installation Method
Green American Home
"Grande Tile" (0.032" Alum) Roof Panel attached to Wood Deck**

METHOD 2:



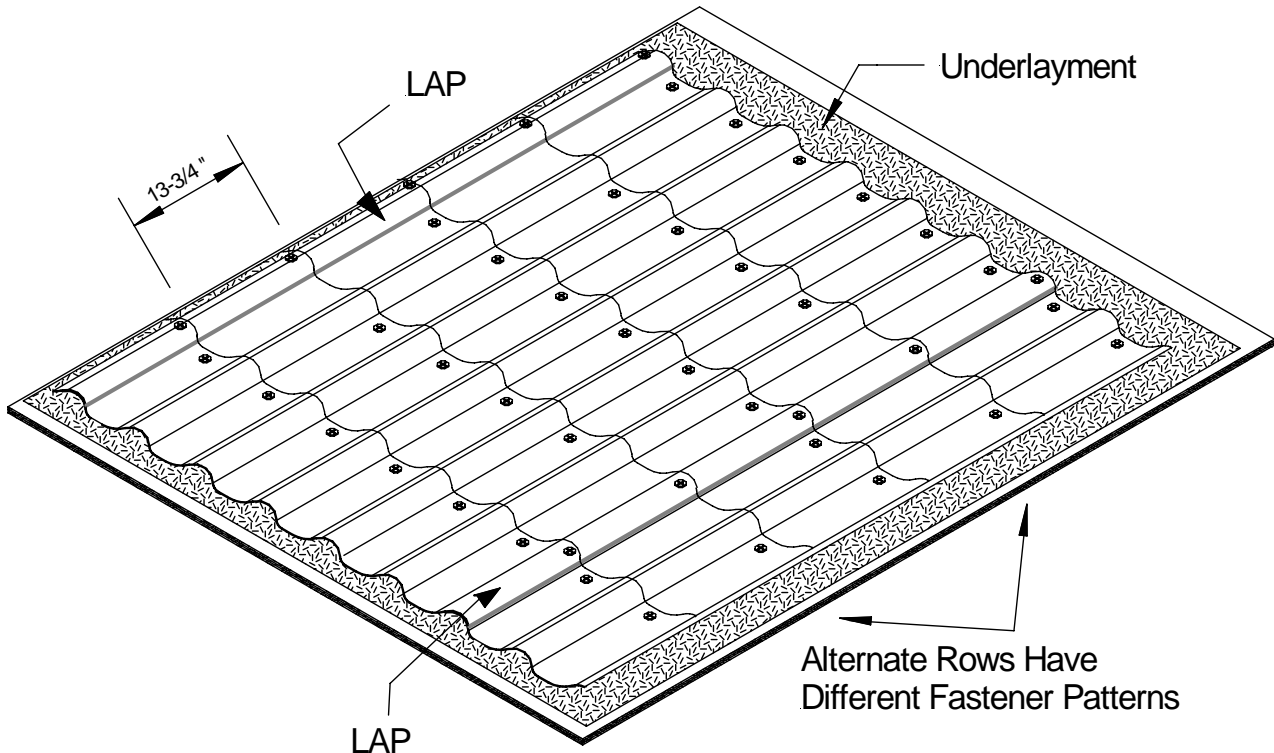
Detail "2A" - Assembly Profile View
(Typical Fastener Pattern Across Alternate ODD Rows)



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

Installation Method Green American Home "Grande Tile" (0.032" Alum) Roof Panel attached to Wood Deck

METHOD 2:



Typical Roof Assembly Isometric View

TABLE "A"		
	METHOD 1:	METHOD 2:
Design Pressure:	- 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