Evaluation Report

GRT Wood Deck Tile System

plus Insulation Board to Roofing-waterproofing on Concrete Deck

Manufacturer:

Greenrise Technologies
1500 Medical Center Pkwy, Suite 2A
Murfreesboro, TN 37129
615-907-7460 / info@greenrisetech.com

for

Florida Product Approval

FL 46910.3 R1

Florida Building Code 8th Edition (2023)
Per Rule 61G20-3
Method: 2 - B
Category: Roofing
Sub - Category: Roofing Accessories that are an Integral Part of the Roof System

Product: GRT Wood Deck Tile System
Description: Insulated Paver system elevated above roof system
Support: Concrete Deck

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
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No 31242
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Prepared by:
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Florida Professional Engineer # 31242
Florida Evaluation ANE ID: 1916
Report No. 03_25-722_Wood-HVHZ_ER8
(Revises Report No. 03_24-652_Wood-HVHZ_ER8)
Date: 03/23/2025

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Manufacturer: **Greenrise Technologies**

Product Name: GRT Wood Deck Tile System

Product Category: Roofing

Product Sub-Category: Roofing Accessories that are an Integral part of the Roofing System

Compliance Method: State Product Approval Rule 61G20-3.005 (2) (b)

System Description: The GRT Wood Deck Tile System is designed to mitigate wind uplift. The system can be used On flat or sloped roof decks. Made for outdoor use, these tiles are available in a variety of colors and textures.

Evaluated Models: GRT Wood Deck Tile – nominal 2' x 2' x 1-1/2 "

Evaluated Use: Insulated Pedestal paver system elevated above roof membrane & concrete deck

Product Assembly as Evaluated: Refer to Page 4 of this report for product assembly components/materials & standards:

Layers from Top to Bottom
- GRT Wood Deck Tile - mechanical connection to Pedestal
- GRT Pedestals - adhered
- Owen Corning Foamular NGX 600 insulation board - Adhered
- Henry Company Waterproofing/Roofing Membrane -adhered to deck
- Structural concrete deck - support for paver assembly

Support:

Type:
Concrete Deck plus Henry Company Roofing NOA 19-0828.03

Description:
Deck Material: Structural Concrete
Compressive Strength: 2,500 psi. Minimum

Henry Company , **Henry Company 790-11,**
Rubberized asphalt waterproofing/roofing membrane per Miami-Dade
NOA 19-0828.03 - System Type: F(1), Reinforced
(or new NOA #, same system –"Henry A Carlisle Company")

(Design of support is outside the scope of this evaluation.)

System Slope: 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.

Performance:

Wind Uplift Resistance:

Full assembly load path Uplift Resistance, Multiple 2' x 2" x 1-1/2 " Pavers
Load Path = Top of Paver down to attachment to concrete deck
Pedestal maximum height evaluated in this report = 15 inches

	Allowable Design Resistance
*Design Uplift Pressure:	**- 80 PSF LB/Sq FT Pressure**

Supplemental Uplift Data:

*Design Capacity of one corner of paver to top of pedestal connection	**- 160 LB Force**
*Design Capacity bottom of pedestal load Path thru Insulation & Henry system to the concrete deck	**- 475 LB Force**

** Allowable design pressure(s) for allowable stress design (ASD) with a margin of safety of 2 to 1.*

Code Performance:

The following test protocol was performed to demonstrate compliance with the intent of the code:

- Modified TAS 114 Appendix D – Test Procedure for Simulated Uplift Pressure Resistance for a **Roof Assembly** (as defined in FBC 8th sec 1502 & 1513)
- Modifications to address load path components attached to both mechanically and adhered. HVHZ Authority per TAS 114 – D, section 4.2, to meet the intent of the HVHZ Protocol.
- Primary Code Basis = FBC 8th, sec 1708.2.
- Supporting code sections, used in analysis to meet the code intent and set the performance level, include HVHZ sec 1512.2.

Code Compliance:

The product described herein has demonstrated compliance with:
Florida Building Code 8th Edition (2023), per Section 1708.2
for use in the HVHZ and outside HVHZ.

Evaluation Report Scope:

This product evaluation is limited to compliance with the structural requirements of the Florida Building Code, as related to the scope section of Florida Product Approval Rule (FAC) 61G20-3.001.

Components/Materials (As Evaluated):

GRT Wood Deck Tile

Size: 24 in x 24 in x 1-1/2 in (nominal)
Material: Ipe / Tabebula sp. type wood
Weight: 23.5 LB nominal

GRO Pedestal & Kit

Materials: Pedestal - ID = GRT Fixed Head,
Adjustable Height : 1 – 15 inches
This Report Evaluated Pedestal Height = 15 inches max.
polypropylene blend,
compressive Strength=> 3,000 PSF
other pieces -various materials

Pedestal Base to Insulation Board

Adhesive: 3M™ Polyurethane Adhesive Sealant 550

Insulation Board: Owen Corning
Foamular NGX 600 (XPS) Rigid Foam Insulation
Extruded Polystyrene (XPS)
Thickness = 2 inch max.

Insulation Board to Henry membrane:

Adhesive: 3M™ Polyurethane Adhesive Sealant 550
Application 1/4" wide beads spread 6 inches apart

Membrane Waterproofing Roofing

Mfg; Henry Company
Description: **Henry 790-11, Reinforced**
Rubberized asphalt waterproofing/roofing
Miami-Dade: **NOA 19-0828.03** - **System Type: F (1) , Reinforced**
(or New NOA #, same system = Name change to:
"Henry A Carlisle Company")

Note: NOA Waterproofing Requires Field Flood Integrity Test, Per FBC 8th, (2023), section 1519.16.6 In accordance with ASTM D5957.

Limitations and Conditions of Use:

Scope of "Limitations and Conditions of Use" for this evaluation:

- A copy of the Field Waterproofing integrity test report described herein the Miami-Dade waterproofing NOA # in this report, in accordance with Florida Building Code section 1519.16.6, ASTM D5957 shall be provided to the Building Official for review at time of final inspection.
  Note "The flood test shall take place after the installation of the waterproofing and prior to the installation of any above membrane Paver components".
- Contractor shall submit to the Building Official for review the system specifications and details. Submission of these documents, as well as the proper application and installation of all materials shall be the sole responsibility of the contractor.
- All work shall be performed by a Contractor licensed to do roofing/waterproofing and be a Manufacturer Trained 'Qualified Applicator' approved by Henry Company. Henry Company shall supply a list of approved applicators to the authority having jurisdiction.
- All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform with Roofing Application Standard RAS 111 and the wind load requirements of applicable Building Code.
- All products listed herein shall have a quality assurance audit in accordance with the Florida Building Code and Rule 6lG20-3 of the Florida Administrative Code.

Material Labeling:

- Greenrise products listed herein shall be identified, on products and/or containers/packaging, with the Florida product approval number and the manufacturer's name or logo, per the intent of code section 1523.5 and Rule 61G20-3.
- Owens Corning product model – Foamular NGX 600 (XPS) Rigid Foam Insulation, shall be identified on containers/packaging, with the manufacturer's name or logo and product identification, per the intent of code section 1523.5 and Rule 61G20-3.
- 3M™ Company product - 3M™ Polyurethane Adhesive Sealant 550, shall be identified on containers/packaging, with the manufacturer's name or logo and product identification, per the intent of code section 1523.5 and Rule 61G20-3.
- Henry Company waterproofing roofing system, NOA 19-0828.03, System Type F(1), Reinforced, shall be Labeled per the NOA. (or new NOA #, same system –"Henry A Carlisle Company")

Editorial suggestions by this report Evaluator:

The Contractor is advised to retain wrappers & containers with Labeling information and/or dated photo documentation, described above, during the project construction phase, for review/inspections by the Authority Having Jurisdiction.

The Building Owner is advised to retain envelope Florida Product Approval & NOA reports, along with labeling documentation for use in cost determinations for insurance coverage. Also the Florida Dept various programs for insurance discounts & credits for wind mitigation items. Good documentation is important to benefit from these programs.

- Refer to the last page of the referenced Miami-Dade NOA's for additional "General Limitations" that are a part of this evaluation report.
- The Scope of this evaluation is limited to structural uplift properties.
  Design of support system is outside the scope of this report. Deck shall be in compliance with applicable building code.
- Fire Classification is outside the scope of Rule 61G20-3, and is therefore not included in this evaluation. refer to a current Approved Roofing Materials Directory for fire ratings of this product.
- This evaluation report approves the product assembly as described in this report for use in the High Velocity Hurricane Zone (HVHZ) code section. (Dade & Broward Counties)
- <u>Scope of "Limitations and Conditions of Use" for this evaluation:</u>
  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".
- <u>Option for application outside "Limitations and Conditions of Use"</u>
  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.

Quality Assurance

The manufacturer has demonstrated compliance of roof paver products in accordance with the Florida Building Code and Rule 61G20-3.005 (3) for manufacturing under a quality assurance program audited by an approved quality assurance entity through**:**
Nemo Cert, LLC (INSPECT) (FBC Organization ID# QUA12361).

Referenced Data:

1. TAS 114-11 Appendix D, Uplift Resistance Test
   By Atlantic Caribbean Roof Consulting, LLC.
   (FBC Organization #TST ID: 4671)
   Report #: ACRC 21-028, Date: 12 / 22 /21
2. Quality Assurance
   Nemo Cert, LLC (INSPECT) (FBC Organization ID# QUA12361)
3. Certification of Independence
   By James L. Buckner, P.E. @ CBUCK Engineering
   (FBC Organization # ANE 1916)

Properties: ASTM D635-14 Standard Test Method
By PRI Construction Materials Technologies LLC
(FBC Organization #TST ID: 5878)
Project No.: 2331T0008 Date Dec 2,2021

Installation:

Installation Method:

- Surface Preparation:
  The surface intended to be adhered to must be clean, dry and free of all dirt and contaminants.
  Refer to Refer to additional details within this report

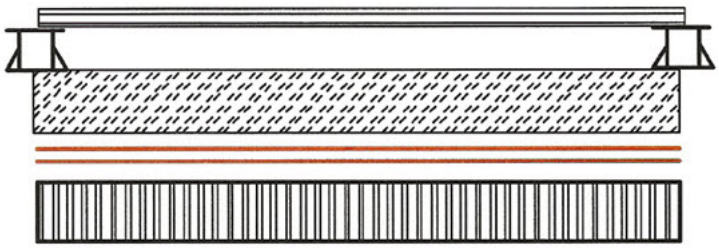
Installation shall comply with this report, applicable code sections of FBC 8th Edition (2023) subject to the Limitations and Conditions of Use listed in this Evaluation Report and manufacturer's installation instructions as a supplemental guide for attachment.

Installation Method

A GRT Wood Deck Tile, nominal 24" x 25"x 1-1/2" nominal
is set over the top of the GRT Pedestals at every corner
Fastened is with GRT Fastening Kit (screw and 3/16" x 1 -1/2 inch washer)
to the top head of the GRT pedestals.

GRT Pedestals bottom base is fully adhered to the top of Owen Corning Foamular 600 board with
3M™ Polyurethane Adhesive Sealant 550 applied
at rate of 5.0 fl. Oz. per pedestal (~ 1/4 inch thick)
Owens Corning Foamular 600 Extruded Polystyrene Insulation board bottom is adhered to the
top of the Henry Protection Course using
3M™ Polyurethane Adhesive Sealant 550,
applied in 1/4 inch wide beads spaced 6 inches apart.

HENRY modifiedPlus G100s/s Protection course set in hot 790-11 Rubberized asphalt applied at a rate of 125 mil thick over a reinforcing Henry Polyester Fabric set in 790-11 hot Rubberized asphalt base course, applied at a rate of 90 mil thick over the primed concrete deck.
Structural concrete deck primed with Henry 910-01 Asphalt Primer.



GRT Wood Deck Tile
GRT Pedestal
3M 550
Owens Corning Insulation Board
3M 550
Henry Waterproofing/Roofiing
Concrete Deck

Waterproofing/Roofing: **Henry 790-11 System Type: F (1) Reinforced - NOA 19-0828.03**
(or New NOA #, same system = Name change to: "Henry A Carlisle Company")

Refer to manufacturer's installation instructions for additional information