

Evaluation Report

"El Trebol S"

Roof Tile Assembly

Manufacturer:

Clover Tile USA, LLC

2144 SW 99 Ave

Miami, FL 33165

for

Florida Product Approval

FL 47264.1

Florida Building Code 9th Edition (2026)

(HVHZ)

Method: 1 - D

Category: Roofing

Sub - Category: Roofing Tiles

Product: "El Trebol S"

Material: Clay

Panel Description: Barrel Roof Tile

Support: Wood Deck

Prepared by:

James L. Buckner, P.E., SECB

Florida Professional Engineer # 31242

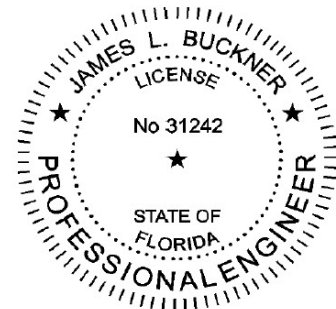
Florida Evaluation ANE ID: 1916

Project Manager: Diana Galloway

Report No. 26-806-ElTrebol-RT-HZ-ER *(New)*

Date: 09/30/2026

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

2026.10.15 11:21:30 -04'00'

Contents:

Evaluation Report

Pages 1 – 7

Manufacturer:	Clover Tile USA, LLC 2144 SW 99 Ave Miami, FL 33165 (786) 438-7032
Product Name:	"El Trebol S"
Product Category:	Roofing
Product Sub-Category	Roofing Tiles
Compliance Method:	State Product Approval Rule 61G20-3.005 (1) (d)
Product/System Description:	"El Trebol S" Roof Tile Barrel style, Type II- Low Profile, Interlocking, clay tile, adhered to Wood Deck with approved adhesives.
Product Assembly as Evaluated:	Refer to Page 4 of this report for product assembly components/materials & standards: 1. Roof Tile 2. Roofing Tile Fastener or Adhesive 3. Underlayment
Support:	Type: Wood Deck (Design of support and its attachment to support framing is outside the scope of this evaluation.) Description: • 15/32" or 19/32" or greater plywood (19/32" min. new construction in HVHZ) • or Wood plank (min. specific gravity of 0.42)
Slope:	Minimum slope shall be: (Non-HVHZ) Per FRSA/TRI Alliance December 2023(12-23): Florida High Wind Concrete and Clay Roof Tile Installation Manual, Seventh Edition where the V_{asd} is determined in accordance with Section 1609.3.1. (HVHZ): 2:12 In compliance with FBC Chapter 15 based on the type of roof covering, applicable code sections and in accordance with manufacturer's recommendations.

**Performance
Standards:**

The product described herein has demonstrated compliance with:

- **TAS 100-23** - *Test Procedure For Wind And Wind Driven Rain Resistance Of Discontinuous Roof Systems*
- **TAS 101-95** – *Test Procedure For Static Uplift Resistance Of Mortar Or Adhesive Set Tile Systems*
- **TAS 102-95** – *Test Procedure For Static Uplift Resistance Of Mechanically Attached, Rigid Roof Systems*
- **TAS 102(A)-95** – *Test Procedure For Static Uplift Resistance Of Mechanically Attached, Clipped, Rigid, Roof Systems*
- **ASTM C 1167-11(2017)** - *Specification for Clay Roof Tiles*

Code Compliance:

The product(s) described herein have demonstrated compliance with the performance standards listed above as referenced in the:

Florida Building Code 9th Edition (2026)

Florida Building Code 9th Edition (2026), HVHZ

**Evaluation Report
Scope:**

This building envelope product is evaluated for compliance with the structural requirements of the Florida Building Code, per the scope sections of 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.
- Installations in Non-HVHZ shall comply with FBC Section 1507.3, FRSA/TRI Alliance December 2023(12-23): Florida High Wind Concrete and Clay Roof Tile Installation Manual, Seventh Edition and the manufacturer's instructions as a supplemental guide. Installations in the HVHZ shall comply with RAS 120.
- Design wind load requirements shall be conducted in accordance with FBC Section 1609.3.1 in the non-HVHZ and RAS 127 in the HVHZ, using a moment based system.
- Fasteners shall be corrosion resistant in accordance with applicable sections of FBC. Inside HVHZ fasteners shall comply with FBC Section 1517.5
- Installations located within 3000 feet of a saltwater coastline shall comply with FBC Section 1711 in accordance with authorities having jurisdiction.
- 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.
- All tiles shall be permanently labeled with the manufacturer's name and/or logo.

**Limitations and
Conditions of Use
Cont'd:**

- 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)

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.

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 Keystone Certifications, Inc. (FBC Organization ID# QUA 1824).

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

Roof Tile: El Trebol S
Material: Clay
Style: Low Profile S
Dimensions: 11.25" x 17.62" x 2 1/4"; Nom. weight X 5.49 lb
Material Standard: ASTM C 1167

Fastener Option:

Type: Pan-Head Sheet Metal Screw
Size : #8 x 2"
Corrosion Resistance: Per FBC Section 1506.6 and 1507.4.4
Standard: Per SAE J78-1979

Adhesive Option 1:

Product Name: Tile Bond
Manufactured by: DuPont de Nemours, Inc.
Type: Single-Component Adhesive
Material: Polyurethane froth
Current Approvals: Florida Building Code: FL#22525.1 R7
Miami-Dade County: NOA# 22-0614.05

Adhesive Option 2:

Product Name: APOC Polyset® AH-160 (HFC)
(fka Polyset® AH-160, ICP AH-160)
Manufactured by: ICP Construction, Inc.
Type: Two-Component Adhesive
Material: Polyurethane froth
Current Approvals: Florida Building Code: FL#6332.1 R13
Miami-Dade County: NOA# 23-0614.01

Underlayment:

Underlayment material and application shall be in compliance with FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual, Seventh Edition where the basic wind speed, V_{asd} is determined in accordance with Section 1609.3.1 per FBC Section 1507.3.3.

For adhesive set attachment of tile with ICP Adhesives Polyset AH-160 or in the HVHZ, the minimum underlayment shall be Hot Mop 30/90 installed as described in RAS 118 Section 3.01.

Installation:

Installation Method:

(El Trebol "S" and its components shall be installed in compliance with Roofing Application Standard RAS 118, RAS 119 and RAS 120.)

Attachment

Calculations Data for ADHERED Applications:

TABLE "A" Average Weight (W) and Dimensions (l x w)			
Tile Profile	Weight-W (lbf)	Length-l (ft)	Width-w (ft)
El Trebol "S"	5.49	1.46	0.927

TABLE "B" Aerodynamic Multipliers λ (ft ³)	
Tile Profile	λ (ft ³) Direct Deck
El Trebol "S"	0.28

TABLE "C" Restoring Moments Due to Gravity – M_g (ft.-lbf)					
Tile Profile	2":12" Direct Deck	3":12" Direct Deck	4":12" Direct Deck	5":12" Direct Deck	6":12" Direct Deck
El Trebol "S"	3.97	3.91	3.84	3.75	3.65

TABLE "D" Attachment Resistance Expressed as a Moment - M_f (ft.-lbf) for Single Patty Adhesive Set Systems		
Tile Profile	Tile Application ³	Minimum Attachment
El Trebol "S"	Polyset AH 160™	58.57 ¹
	Polyset AH 160™	16.72 ²
	Tile Bond	58.59 ³
1. Patty placement of 63 grams of ICP Adhesives Polypro AH 160™. 2. Patty placement of 12 grams of ICP Adhesives Polypro AH 160™. 3. Patty placement of 12.5 grams of DuPont de Nemours, Inc. Tile Bond Roof Tile Adhesive		

Note: Minimum dimensions and weight for adhesive application

Install the "El Trebol S" roof tile assembly in compliance with the installation method listed in this report, FRSA/TRI Alliance December 2023(12-23): Florida High Wind Concrete and Clay Roof Tile Installation Manual, Seventh Edition and applicable code sections of FBC 9th Edition (2026). 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.

**Attachment
Calculations Data for
FASTENED
Applications:**

TABLE "A2" Average Weight (W) and Dimensions (l x w)			
Tile Profile	Weight-W (lbf)	Length-l (ft)	Width-w (ft)
El Trebol "S"	5.42	1.46	0.927

TABLE "B2" Aerodynamic Multipliers λ (ft ³)		
Tile Profile	Direct Deck (ft ³)	Batten Application
El Trebol "S"	K = 0.28	K= 0.30

TABLE "C2" Restoring Moments Due to Gravity – M _g (ft.-lbf)						
Tile Profile	2":12" Direct Deck	3":12" Direct Deck	4":12" Direct Deck	5":12" Direct Deck	6":12" Direct Deck	7":12" Direct Deck
El Trebol "S"	3.92	3.87	3.79	3.70	3.60	3.49

TABLE "D2" Minimum Characteristic Resistance Load -F (lbf)	
Tile Profile	(F) Direct Deck
El Trebol "S"	10.62

TABLE "E2" Attachment Resistance Expressed as a Moment - M _f (ft.-lbf) for Single Patty Adhesive Set Systems		
Tile Profile	Tile Application ¹	Minimum Attachment
El Trebol "S"	Mechanically Fastened	11.71
1. (2) #8 x 2" Pan head Sheet Metal Screws		

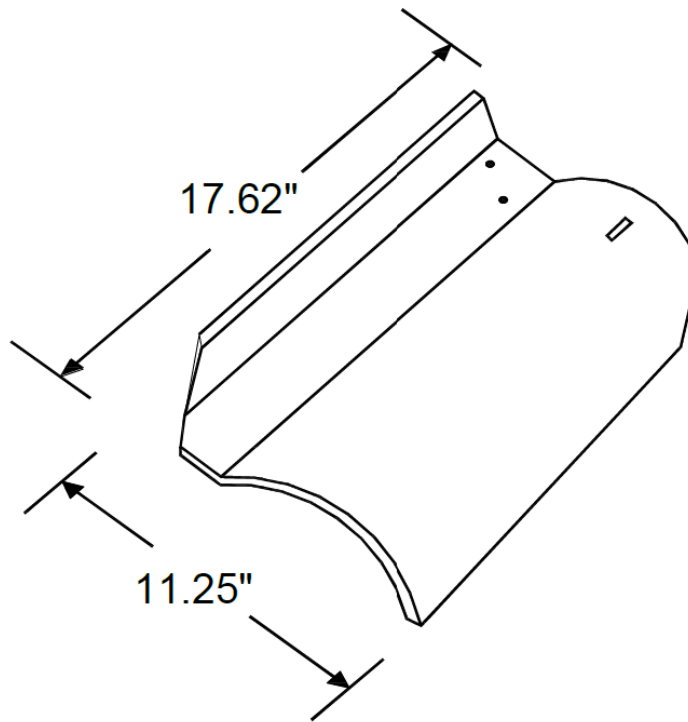
Install the "El Trebol S" roof tile assembly in compliance with the installation method listed in this report, FRSA/TRI Alliance December 2023(12-23): Florida High Wind Concrete and Clay Roof Tile Installation Manual, Seventh Edition and applicable code sections of FBC 9th Edition (2026). The installation 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 101-95** – *Test Procedure For Static Uplift Resistance Of Mortar Or Adhesive Set Tile Systems*
By QAI Laboratories
Report No. MED-1190b,c, f Date: 4/11/24
2. **TAS 102-95** – *Test Procedure For Static Uplift Resistance Of Mechanically Attached, Rigid Roof Systems*
By QAI Laboratories
Report No. MED-1190e, Date: 4/11/24
3. **ASTM C 1167-11(2017)** - *Specification for Clay Roof Tiles*TAS 101-95 Uplift Test
By QAI Laboratories
Report No. MED-1190e, Date: 4/11/24
4. **TAS 100-23 Wind Driven Rain Test**
By QAI Laboratories
Report No. MED-1190g-h, Date: 4/11/24
5. Quality Assurance
Keystone Certifications, Inc. (FBC Organization ID# QUA 1824)
Clover Tiles Licensee #1613
6. Certification of Independence
By James L. Buckner, P.E. @ CBUCK Engineering

**Profile Drawings
Clover Tile USA, LLC
"El Trebol S" Clay Roof Tile**

Drawings



Typical Roof Tile Profile