



EVALUATION REPORT

FLORIDA BUILDING CODE, 8TH EDITION(2023)

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Manufacturing Plants: Colombia

Quality Assurance: A+ Engineering Testing Lab. LLC

SCOPE

Category: Roofing
Subcategory: Roofing Tiles
Code Edition: Florida Building Code, 8th Edition (2023) including High-Velocity Hurricane Zones (HVHZ)
Code Sections: 1507.3.4, 1507.3.7, 1523.6.5.2, 1523.6.5.2.2
Properties: Physical Properties, Static Uplift Resistance

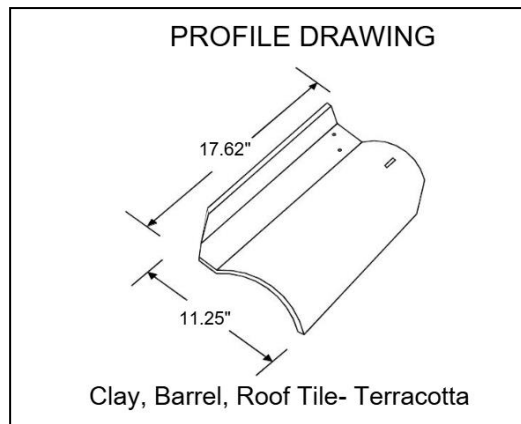
REFERENCES

<u>Entity</u>	<u>Report No.</u>	<u>Standard</u>	<u>Year</u>
QAI, Technical Report	MED-1190g-h	TAS 100	2024
QAI, Technical Report	MED-1190a	ASTM C 1167	2024
QAI, Technical Report	MED-1190b-c and f	TAS 101	2024
QAI, Technical Report	MED-1190d-e	TAS 102	2024

PRODUCT DESCRIPTION

El Trebol, Clay, Barrel Roof Tile

Profile: ASTM C 1167, TAS 101, low profile, S Clay Roof Tile
Description: TAS 101 Type II- Low Profile, Interlocking, class II clay tile,
Dimensions: 11.25" x 17.62" x 2 1/4"; Nominal weight X 5.49 lb





APPLICATION METHOD

Installation for EI Trebol, S Clay Roof Tile	
Slope:	Limited to slopes 2:12 or greater in the HVHZ; Outside the HVHZ, shall be in accordance with the recommendations of the FRSA/TRI <i>Florida High Wind Concrete and Clay Roof Tile Installation Manual</i> , Sixth Edition or RAS 120.
Roof Deck:	Solid or closely fitted min. 15/32-inch plywood sheathing for new and existing construction. at max. 24 in. span; In the HVHZ, new construction shall be min. 19/32 in. plywood at max. 24 in. span; Designed by others in accordance with FBC requirements.
Underlayment:	Installed in accordance with FBC requirements. 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.
Attachment:	EI Trebol, 'S' and its components shall be installed in strict compliance with Roofing Application Standard RAS 118, RAS 119 and RAS 120. Data For Attachment Calculations

Table 1: Average Weight (W) and Dimensions (l x w)

Tile Profile	Weight-W (lbf)	Length-l (ft)	Width-w (ft)
EI Trebol, 'S'	5.49	1.46	0.927

Table 2: Aerodynamic Multipliers– λ (ft³)

Tile Profile	λ (ft ³) Direct Deck
EI Trebol 'S'	0.28

Table 3: Restoring Moments due to Gravity - M_g (ft.-lbf)

Tile Profile	2":12"	3":12"	4":12"	5":12"	6":12"	7":12" or greater
	Direct Deck	Direct Deck	Direct Deck	Direct Deck	Direct Deck	Direct Deck
EI Trebol 'S'	3.97	3.91	3.84	3.75	3.65	3.53

**Table 4: Attachment Resistance Expressed as a Moment - M_r (ft.-lbf)
for Single Patty Adhesive Set Systems**

Tile Profile	Tile Application ³	Minimum Attachment Resistance
EI Trebol 'S'	Polyset AH 160™	58.57 ¹
	Polyset AH 160™	16.72 ²
	Tile Bond	58.59 ³

1. Paddy placement of 63 grams of ICP Adhesives Polypro AH 160™.
2. Paddy placement of 12 grams of ICP Adhesives Polypro AH 160™.
3. Paddy placement of 12.5 grams of DuPont de Nemours, Inc. Tile Bond Roof Tile Adhesive

Notes: 1) Minimum dimensions and weight for adhesive application



LIMITATIONS

- 1) Fire Classification is not within the scope of this evaluation.
- 2) Installation of the evaluated products shall comply with FBC Section 1507.3, FRSA/TRI *Florida High Wind Concrete and Clay Roof Tile Installation Manual*, Sixth Edition and the manufacturer's published application instructions. Installations in the HVHZ shall comply with RAS 120. Where discrepancies exist between these sources, the more restrictive detail shall prevail.
- 3) Design wind load requirements shall be conducted in accordance with FBC Section 1609.5.3 in the non-HVHZ and RAS 127 in the HVHZ, using a moment based system.
- 4) All tiles shall bear the imprint or indelible label "El Trebol, Made in Colombia".
- 5) In the HVHZ, a static field uplift test shall be conducted in accordance with TAS 106.
- 6) All products listed in this report shall be manufactured under a quality assurance program in compliance with Rule 61G20-3.

COMPLIANCE STATEMENT

The products evaluated herein by Jose J. Roldan P.E. have demonstrated compliance with the Florida Building Code, 8th Edition (2023) including High-Velocity Hurricane Zones (HVHZ) as evidenced in the referenced documents submitted by the named manufacturer.

Jose J Roldan, State of Florida, Professional Engineer,
License No. 61827
This item has been digitally signed and sealed by Jose
J Roldan P.E.
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JOSE J ROLDAN



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CERTIFICATION OF INDEPENDENCE

A+ Engineering Testing Lab LLC does not have, nor will it acquire, a financial interest in any company manufacturing or distributing products under this evaluation.

A+ Engineering Testing Lab LLC is not owned, operated, or controlled by any company manufacturing or distributing products under this evaluation.

Jose J. Roldan P.E. does not have, nor will acquire, a financial interest in any company manufacturing or distributing products under this evaluation.

Jose J. Roldan P.E. does not have, nor will acquire, a financial interest in any other entity involved in the approval process of the product.

END OF REPORT

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