



**EVALUATION REPORT**

**FLORIDA BUILDING CODE, 8<sup>TH</sup> EDITION (2023)**

**Manufacturer:** VEREA CLAY TILE *Issued February 28, 2024*  
 7275 NW 61 Street  
 Miami, FL  
 (786) 641-9154  
[www.VereaClayTile.com](http://www.VereaClayTile.com)

**Manufacturing Plants:** Mesía (La Coruña), Spain

**Quality Assurance:** Keystone Certifications, Inc. (QUA1824)

**SCOPE**

**Category:** Roofing  
**Subcategory:** Roofing Tiles  
**Code Edition:** Florida Building Code, 8<sup>th</sup> Edition (2023) including High-Velocity Hurricane Zones (HVHZ)  
**Code Sections:** 1507.3.4, 1507.3.8, 1523.6.5.2, 1523.6.5.2.2, 1523.6.5.2.3  
**Properties:** Physical Properties

**REFERENCES**

<u>Entity</u>	<u>Report No.</u>	<u>Standard</u>	<u>Year</u>
American Test Lab of South Florida Inc (TST3782)	RT0131.01-14	TAS 101	1995
American Test Lab of South Florida Inc (TST3782)	RT0311.01-14	TAS 101	1995
American Test Lab of South Florida Inc (TST3782)	RT0517.01-11	TAS 101	1995
American Test Lab of South Florida Inc (TST3782)	RT0202.01-23	ASTM C 1167	2011(2017)
American Test Lab of South Florida Inc (TST3782)	RT0202.02-23	ASTM C 1167	2011(2017)
American Test Lab of South Florida Inc (TST3782)	RT0202.03-23	ASTM C 1167	2011(2017)
American Test Lab of South Florida Inc (TST3782)	RT1108.01-23	ASTM C 1167	2011(2017)
American Test Lab of South Florida Inc (TST3782)	RT1108.02-23	ASTM C 1167	2011(2017)
American Test Lab of South Florida Inc (TST3782)	RT1108.03-23	ASTM C 1167	2011(2017)

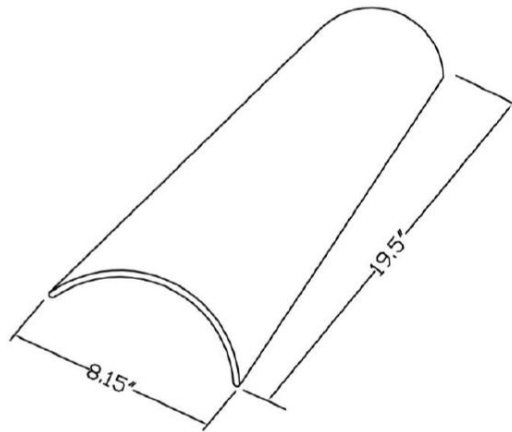
**PRODUCT DESCRIPTION**

**Clay Barrel Roof Tile** ASTM C 1167, Type I-High Profile, Grade 1 two-piece clay roof tile.

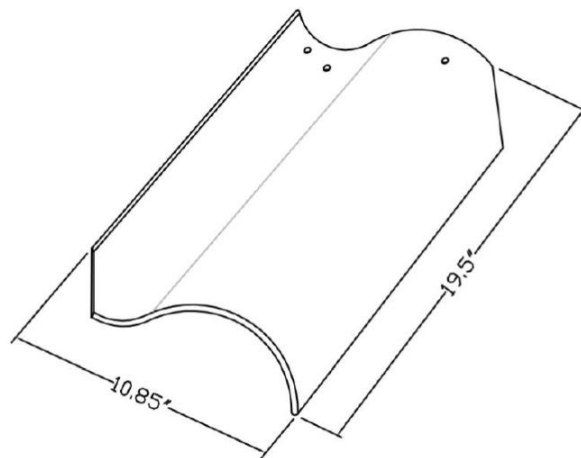
**Clay Spanish "S" Roof Tile** ASTM C 1167, Type I-High Profile, Grade 1 clay roof tile.

**Clay Flat Roof Tile** ASTM C 1167, Type III-Flat Profile, Grade 1 clay roof tile.

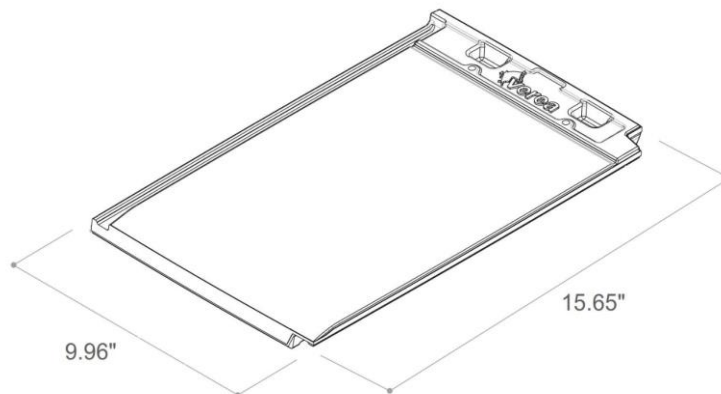
**Figure 1. Clay Barrel Roof Tile**



**Figure 2. Clay Spanish "S" Roof Tile**



**Figure 3. Clay Flat Roof Tile**



**APPLICATION METHOD**

<b>System #1 - Installation for Clay Barrel Roof Tile</b>	
Slope:	Limited to slopes 3:12 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> , Seventh 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, the underlayment shall be Hot Mop 30/90 installed as described in RAS 118 Section 3.01.
Attachment:	<p>Installed in accordance with FBC requirements.</p> <p>For mortar set attachment of tile with Quikrete Roof Tile Mortar FL-15, the pan tiles shall be installed with a 8.5-inch o.c. spread set in a minimum 10-inch trowel of mortar placed under the center of the barrel. Cap tiles shall be installed with one-half of a 10" trowel of mortar placed on each inside edge of the pan tile where the cap overlaps.</p> <p>For adhesive set attachment of tile with ICP Adhesives Polyset AH-160, the pan tiles shall be installed with a 11-inch o.c. spread set in a full bed of foam adhesive placed under the center of the barrel. Cap tiles shall be installed with one-half of the foam placed on each inside edge of the pan tile where the cap overlaps.</p>

<b>Data for Attachment Calculations</b>									
Roof Tile	Nominal Weight (W) and Dimensions (l x w)			Aerodynamic Multipliers $\lambda$ (ft <sup>3</sup> )	Restoring Moments due to Gravity - M <sub>g</sub> (ft-lbf) Direct Deck				
	W (lbf)	L (ft)	w (ft)		Direct Deck Application	3":12"	4":12"	5":12"	6":12"
Barrel	5.5	1.63	0.68	0.26	4.11	4.01	3.87	3.69	3.47

<b>Attachment Resistance Expressed as a Moment for Single Patty Adhesive and Mortar Set Systems</b>							
Roof Tile	Pan Tiles			Cap Tiles			M <sub>f</sub> (ft-lbf)
	Adhesive	Patty Size <sup>1</sup>	Patty Weight <sup>1</sup>	Adhesive	Patty Size <sup>1</sup>	Patty Weight <sup>1</sup>	
Barrel	ICP Adhesives Polyset AH-160	2"x10"	34.6g	ICP Adhesives Polyset AH-160	1"x10"	17.3g	118.3
Barrel	Quikrete Roof Tile Mortar, FL-15	NA	NA	Quikrete Roof Tile Mortar, FL-15	NA	NA	45.4

Notes: 1) Minimum dimensions and weight for adhesive application

Attachment Resistance Expressed as a Moment for Mechanically Attached Systems			
Roof Tile	Fastener	Direct Deck Min. 15/32" plywood M <sub>f</sub> (ft-lbf)	Direct Deck Min. 19/32" plywood M <sub>f</sub> (ft-lbf)
Barrel	2-10d Ring Shank Nails	28.6	41.2
Barrel	2-10d Ring Shank Nails <sup>1</sup>	33.1	48.1
Barrel	1-10d Smooth or Screw Shank Nails	5.1	6.8
Barrel	2-10d Smooth or Screw Shank Nails	6.9	9.2
Barrel	1 #8 Screw	20.7	20.7
Barrel	2 #8 Screw	43.2	43.2
Barrel	1-10d Smooth or Screw Shank Nails (Field Clip)	23.1	23.1
Barrel	1-10d Smooth or Screw Shank Nails (Eave Clip)	29.3	29.3
Barrel	2-10d Smooth or Screw Shank Nails (Field Clip)	27.6	27.6
Barrel	2-10d Smooth or Screw Shank Nails (Eave Clip)	38.1	38.1

Notes: 1) Installation with a 4" tile headlap and fasteners are located a min. 2-1/2" from head of tile.

System #2 - Installation for Clay Spanish "S" Roof Tile	
Slope:	Limited to slopes 3:12 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> , Seventh 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, the underlayment shall be Hot Mop 30/90 installed as described in RAS 118 Section 3.01.
Attachment:	Installed in accordance with FBC requirements. For adhesive set attachment of tile with ICP Adhesives Polyset AH-160, the tiles shall be set in a minimum 10-inch long x 2-inch wide adhesive patty placed directly on the 90# underlayment, under the flange of the tile, starting between 2 and 3-inches from the head of the tile. Tiles shall be set with a minimum 3-inch headlap and 2-inch side lap.

Data for Attachment Calculations									
Roof Tile	Nominal Weight (W) and Dimensions (l x w)			Aerodynamic Multipliers $\lambda$ (ft <sup>3</sup> )	Restoring Moments due to Gravity - M <sub>g</sub> (ft-lbf) Direct Deck				
	W (lbf)	L (ft)	w (ft)		Direct Deck Application	3":12"	4":12"	5":12"	6":12"
Spanish "S"	8.0	1.63	0.90	0.31	6.36	6.21	6.01	5.74	5.40

Attachment Resistance Expressed as a Moment for Single Patty Adhesive Set Systems				
Roof Tile	Tile Attachment			M <sub>f</sub> (ft-lbf)
	Adhesive	Patty Size <sup>1</sup>	Patty Weight <sup>1</sup>	
Spanish "S"	ICP Adhesives Polyset AH-160	2"x10"	24.5g	58.6

Notes: 1) Minimum dimensions and weight for adhesive application

Attachment Resistance Expressed as a Moment for Mechanically Attached Systems			
Roof Tile	Fastener	Direct Deck Min. 15/32" plywood M <sub>f</sub> (ft-lbf)	Direct Deck Min. 19/32" plywood M <sub>f</sub> (ft-lbf)
Spanish "S"	2-10d Ring Shank Nails	28.6	41.2
Spanish "S"	2-10d Ring Shank Nails <sup>1</sup>	33.1	48.1
Spanish "S"	1-10d Smooth or Screw Shank Nails	5.1	6.8
Spanish "S"	2-10d Smooth or Screw Shank Nails	6.9	9.2
Spanish "S"	1 #8 Screw	20.7	20.7
Spanish "S"	2 #8 Screw	43.2	43.2
Spanish "S"	1-10d Smooth or Screw Shank Nails (Field Clip)	23.1	23.1
Spanish "S"	1-10d Smooth or Screw Shank Nails (Eave Clip)	29.3	29.3
Spanish "S"	2-10d Smooth or Screw Shank Nails (Field Clip)	27.6	27.6
Spanish "S"	2-10d Smooth or Screw Shank Nails (Eave Clip)	38.1	38.1

Notes: 1) Installation with a 4" tile headlap and fasteners are located a min. 2-1/2" from head of tile.

System #3 - Installation for Clay Flat Roof Tile	
Slope:	Limited to slopes 3:12 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> , Seventh 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, the underlayment shall be Hot Mop 30/90 installed as described in RAS 118 Section 3.01.
Attachment:	Installed in accordance with FBC requirements. For adhesive set attachment of tile with ICP Adhesives Polyset AH-160, the tiles shall be set in a minimum 10-inch long x 2-inch wide adhesive patty placed directly on the 90# underlayment, underneath the right half of the tile. Tiles shall be set with a minimum 2.125-inch headlap.

Data for Attachment Calculations									
Roof Tile	Nominal Weight (W) and Dimensions (l x w)			Aerodynamic Multipliers $\lambda$ (ft <sup>3</sup> )	Restoring Moments due to Gravity - M <sub>g</sub> (ft-lbf) Direct Deck				
	W (lbf)	L (ft)	w (ft)	Direct Deck Application	3":12"	4":12"	5":12"	6":12"	≥7":12"
Flat	6.4	1.30	0.83	0.21	3.77	3.71	3.63	3.54	3.44

Attachment Resistance Expressed as a Moment for Single Patty Adhesive Set Systems				
Roof Tile	Tile Attachment			M <sub>f</sub> (ft-lbf)
	Adhesive	Patty Size <sup>1</sup>	Patty Weight <sup>1</sup>	
Flat	ICP Adhesives Polyset AH-160	2"x10"	24.6g	38.7

Notes: 1) Minimum dimensions and weight for adhesive application

**LIMITATIONS**

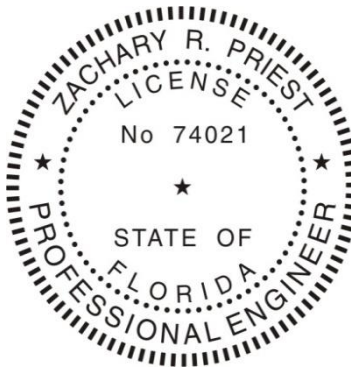
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- 1) Fire Classification is not within the scope of this evaluation.
- 2) Installation of the evaluated products shall comply with FBC Section 1507.3, FRSA/TRI *Florida High Wind Concrete and Clay Roof Tile Installation Manual*, Seventh Edition and 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) In the HVHZ, a static field uplift test shall be conducted in accordance with TAS 106.
- 5) All tiles shall bear the imprint or indelible label "VEREA SPAIN CE".
- 6) All products listed in this report shall be manufactured under a quality assurance program in compliance with Rule 61G20-3.

**COMPLIANCE STATEMENT**

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The products evaluated herein by Zachary R Priest P.E. have demonstrated compliance with the Florida Building Code, 8<sup>th</sup> Edition (2023) including High-Velocity Hurricane Zones (HVHZ) as evidenced in the referenced documents submitted by the named manufacturer.



**This item has been digitally signed and sealed by Zachary R. Priest, PE, on 2/28/2024.**

**Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.**

  
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Zachary R. Priest, P.E.  
Florida Registration No. 74021  
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**CERTIFICATION OF INDEPENDENCE**

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CREEK Technical Services, LLC does not have, nor will it acquire, a financial interest in any company manufacturing or distributing products under this evaluation.

CREEK Technical Services, LLC is not owned, operated, or controlled by any company manufacturing or distributing products under this evaluation.

Zachary R. Priest, P.E. does not have, nor will acquire, a financial interest in any company manufacturing or distributing products under this evaluation.

Zachary R. Priest, 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**