



EVALUATION REPORT

FLORIDA BUILDING CODE 8TH EDITION (2023)

Manufacturer: EAGLE ROOFING PRODUCTS FLORIDA LLC *Issued August 15, 2023*
 1575 E CR 478
 Sumterville, FL 33585
 (800) 400-4235
<http://www.eagleroofing.com>

Manufacturing Plants: Sumterville, FL

Quality Assurance: Architectural Testing, Inc. (QUA1844)

SCOPE

Category: Roofing
Subcategory: Roofing Tiles
Code Edition: Florida Building Code, 8th Edition (2023) including High-Velocity Hurricane Zones (HVHZ)
Code Sections: 1507.3, 1523.6.5.2
Properties: Physical Properties, Attachment Requirements, Wind Driven Rain, Static Uplift Resistance

REFERENCES

<u>Entity</u>	<u>Report No.</u>	<u>Standard</u>	<u>Year</u>
American Test Lab of South Florida Inc (TST3782)	RT0610.01-14	TAS 112	1995
American Test Lab of South Florida Inc (TST3782)	RT0610.02-14	ASTM C 1492	2003(2016)
American Test Lab of South Florida Inc (TST3782)	RT0610.03-14	TAS 112	1995
American Test Lab of South Florida Inc (TST3782)	RT0610.03-14	ASTM C 1492	2003(2016)
American Test Lab of South Florida Inc (TST3782)	RT0603.01-13	TAS 101/TAS 102	1995
PRI Construction Materials Technologies (TST5878)	ERPF-057-02-01	TAS 101/TAS 102	1995
PRI Construction Materials Technologies (TST5878)	ERPF-058-02-01	TAS 101/TAS 102	1995
PRI Construction Materials Technologies (TST5878)	ERPF-059-02-01	TAS 100	2023
PRI Construction Materials Technologies (TST5878)	ERPF-060-02-01	TAS 100	2023
PRI Construction Materials Technologies (TST5878)	ERPF-061-02-01	TAS 100	2023
PRI Construction Materials Technologies (TST5878)	ERPF-072-02-01 Rev 1	TAS 101/TAS 102	1995
PRI Construction Materials Technologies (TST5878)	ERPF-072-02-02.2 Rev 1	TAS 101/TAS 102	1995
PRI Construction Materials Technologies (TST5878)	ERPF-072-02-03.1 Rev 1	TAS 101/TAS 102	1995
PRI Construction Materials Technologies (TST5878)	ERPF-085-02-01	TAS 101/TAS 102	1995
PRI Construction Materials Technologies (TST5878)	ERPF-085-02-02	TAS 101/TAS 102	1995
PRI Construction Materials Technologies (TST5878)	ERPF-085-02-03	TAS 101/TAS 102	1995
PRI Construction Materials Technologies (TST5878)	ERPF-088-02-01	TAS 101/TAS 102	1995
PRI Construction Materials Technologies (TST5878)	ERPF-088-02-02	TAS 101/TAS 102	1995
PRI Construction Materials Technologies (TST5878)	ERPF-088-02-03	TAS 101/TAS 102	1995

PRODUCT DESCRIPTION

Capistrano

Profile: ASTM C 1492, TAS 112, high profile, concrete roof tile
Description: TAS 112 type 1a, high profile, interlocking class III concrete tile
Dimensions: 17.0" x 12.25" x 3.0"

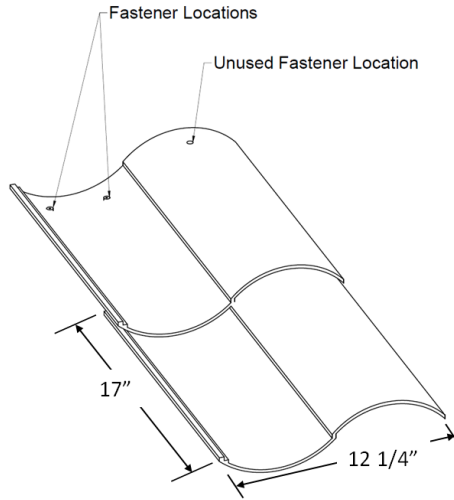


Figure 1. Capistrano

Malibu

Profile: ASTM C 1492, TAS 112, medium profile, concrete roof tile
Description: TAS 112 type 1b, low profile, interlocking class III concrete tile
Dimensions: 17.0" x 12.375" x 2.125"

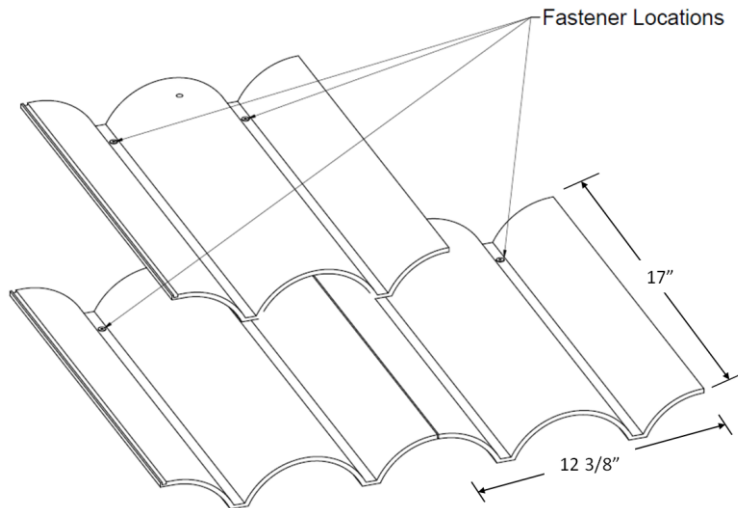


Figure 2. Malibu

Bel Air

Profile: ASTM C 1492, TAS 112, flat profile, concrete roof tile
Description: TAS 112 type 3a, flat profile, interlocking class III concrete tile
Dimensions: 17.0" x 12.375" x 1.25"

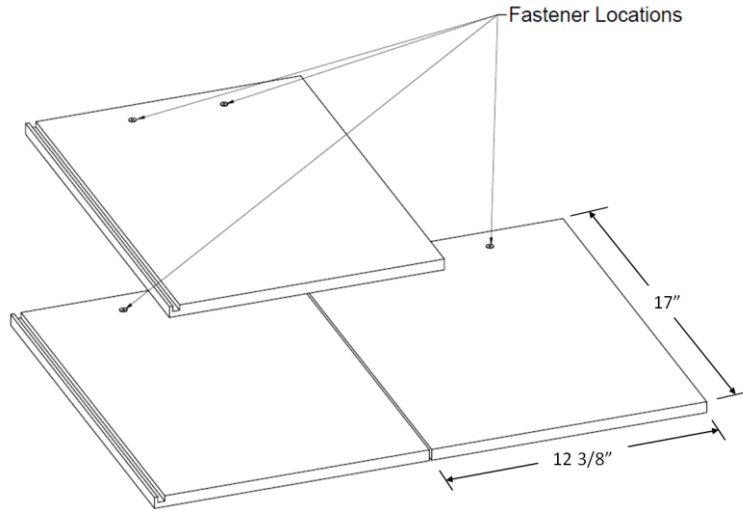
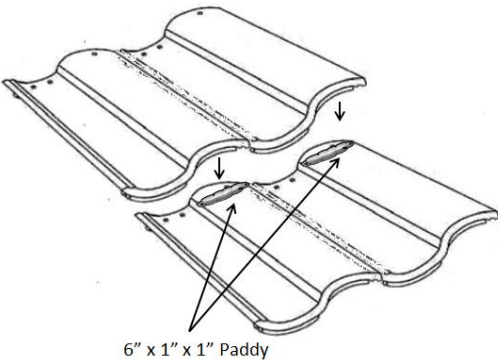
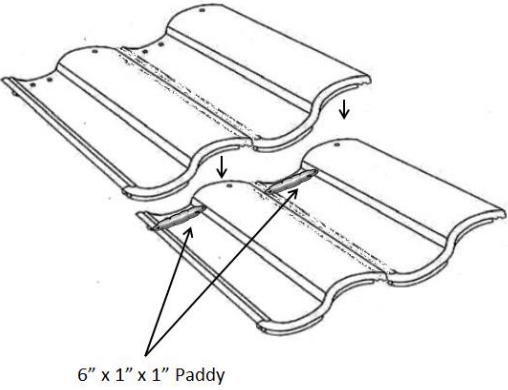
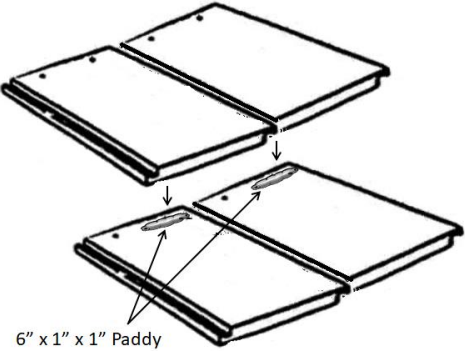
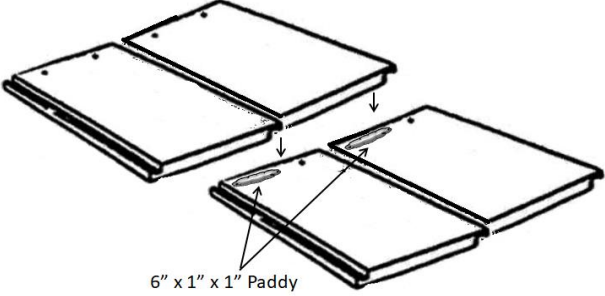


Figure 3. Bel Air

APPLICATION METHOD

Eagle Hybrid Installation for Capistrano, Malibu, and Bel Air Concrete 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, RAS 199 or RAS 118.
Roof Deck:	Solid or closely fitted min. 15/32-inch, 32/16 span rated, CDX plywood sheathing for new and existing construction at max. 24-inch span; In the HVHZ, new construction shall be min. 19/32-inch, 40/20 span rated, CDX plywood at max. 24-inch span; Designed by others in accordance with FBC requirements.
Underlayment:	Installed in accordance with FBC requirements.
Attachment:	All tiles shall be secured into the factory located fastener holes by two (2) #8 x min. 3-inch Simpson Strong-Tie Quik Drive WSCD Roofing Tile Screws with sufficient length to penetrate through the plywood deck a minimum 1/2-inch. A minimum 6-inch x1-inch x 1-inch paddy of DuPont TILE BOND™ shall be placed atop any fasteners within the 3-inch head lap of the “bottom” tiles as shown in the figures below. The “upper” tiles shall be set immediately into the adhesive paddy. All penetrations in the underlayment shall be sealed in accordance with RAS 118 (HVHZ) and FRSA/TRI <i>Florida High Wind Concrete and Clay Roof Tile Installation Manual</i> , Seventh Edition Revised (non-HVHZ).
 <p>6" x 1" x 1" Paddy</p>	 <p>6" x 1" x 1" Paddy</p>
<p>Figure 4. Adhesive Paddy Location for Capistrano - Following the tile profile from halfway across the tile to the edge of the upper right side.</p>	<p>Figure 5. Alternate Adhesive Paddy Location for Capistrano - Following the tile profile from halfway across the tile to the edge of the upper left side.</p>
 <p>6" x 1" x 1" Paddy</p>	 <p>6" x 1" x 1" Paddy</p>
<p>Figure 6. Adhesive Paddy Location for Malibu and Bel Air (shown) - Following the tile profile from halfway across the tile to the edge of the upper right side.</p>	<p>Figure 7. Alternate Adhesive Paddy Location for Malibu and Bel Air (shown) - Following the tile profile from halfway across the tile to the edge of the upper left side.</p>

Eagle Hybrid Installation for Capistrano, Malibu, and Bel Air Concrete Roof Tile Fastened to Battens

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, RAS 119 or RAS 118.
Roof Deck:	Solid or closely fitted min. 15/32-inch, 32/16 span rated, CDX plywood sheathing for new and existing construction at max. 24-inch span; In the HVHZ, new construction shall be min. 19/32-inch, 40/20 span rated, CDX plywood at max. 24-inch span; Designed by others in accordance with FBC requirements.
Batten:	Eagle’s Scalloped Batten fastened with minimum 0.113” x 2-3/8” ring shank nails placed maximum 18-inch o.c.
Attachment:	All tiles shall be secured to the batten through the factory located fastener holes by two (2) #8-11 x min. 2.5-inch Simpson Strong-Tie Quik Drive SSWSCB Roofing Tile Screws. A minimum 6-inch x1-inch x 1-inch paddy of DuPont TILE BOND™ shall be placed within the 3-inch head lap along the upper left side of the “bottom” tiles as shown in the figures below. The “upper” tiles shall be set immediately into the adhesive paddy.

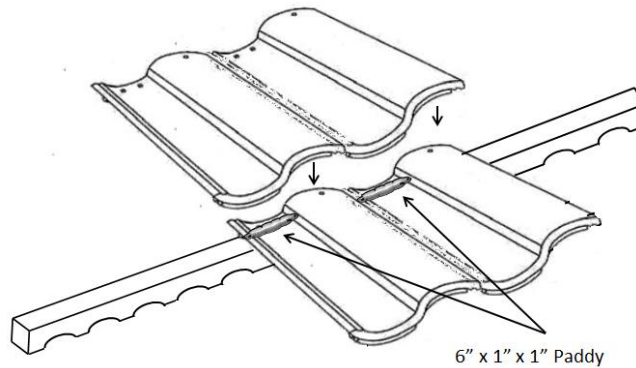


Figure 8. Adhesive Paddy Location for Capistrano Tiles Fastened over Battens-
 Following the tile profile from halfway across the tile to the edge of the upper left side.

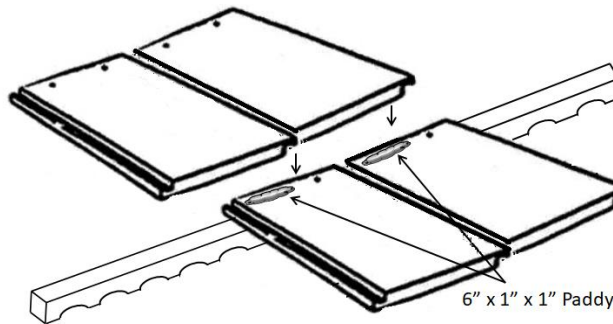


Figure 9. Adhesive Paddy Location for Malibu and Bel Air (shown) Tiles Fastened over Battens-
 Following the tile profile from halfway across the tile to the edge of the upper left side.

Eagle Hybrid Installation for Capistrano Concrete Roof Tile Adhered to Battens

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, RAS 119 or RAS 118.
Roof Deck:	Solid or closely fitted min. 15/32-inch, 32/16 span rated, CDX plywood sheathing for new and existing construction at max. 24-inch span; In the HVHZ, new construction shall be min. 19/32-inch, 40/20 span rated, CDX plywood at max. 24-inch span; Designed by others in accordance with FBC requirements.
Batten:	Eagle's Scalloped Batten fastened with minimum 0.113" x 2-3/8" ring shank nails placed maximum 18-inch o.c.
Attachment:	All tiles shall be adhered to the batten with a single 6-inch x1-inch x 1-inch paddy of DuPont TILE BOND™ positioned on the batten and under the tile from the upper midpoint to the left hand side of the tile as shown below. A minimum 6-inch x1-inch x 1-inch paddy of DuPont TILE BOND™ shall be placed atop the tile from the upper midpoint to the left hand side of the tile within the 3-inch head lap of the tiles as shown below. The subsequent course of tiles shall be set immediately into the adhesive paddy.

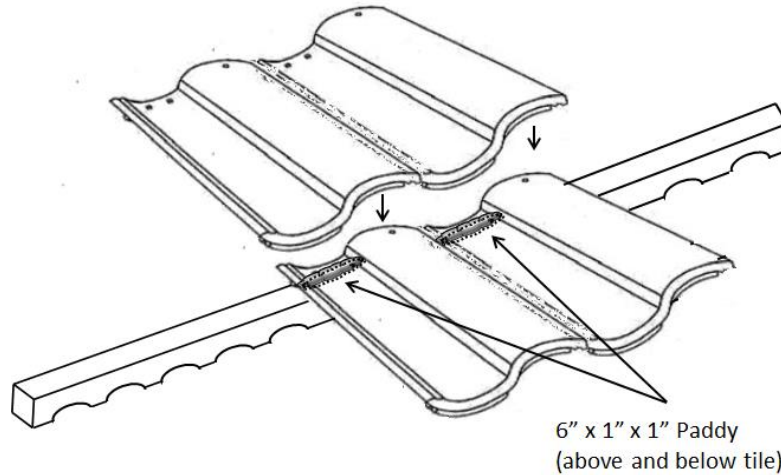


Figure 10. Adhesive Paddy Location for Capistrano Tiles Adhered over Battens-
 Following the tile profile from halfway across the tile to the edge of the upper right side under the tile to the batten, then following the tile profile from halfway across the tile to the edge of the upper right side above the tile.

Eagle Hybrid Installation for Malibu and Bel Air Concrete Roof Tile Adhered to Battens

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, RAS 119 or RAS 118.
Roof Deck:	Solid or closely fitted min. 15/32-inch, 32/16 span rated, CDX plywood sheathing for new and existing construction at max. 24-inch span; In the HVHZ, new construction shall be min. 19/32-inch, 40/20 span rated, CDX plywood at max. 24-inch span; Designed by others in accordance with FBC requirements.
Batten:	Eagle's Scalloped Batten fastened with minimum 0.113" x 2-3/8" ring shank nails placed maximum 18-inch o.c.
Attachment:	All tiles shall be adhered to the batten with a single 6-inch x1-inch x 1-inch paddy of DuPont TILE BOND™ positioned on the batten and under the tile from the upper midpoint to the right hand side of the tile as shown below. A minimum 6-inch x1-inch x 1-inch paddy of DuPont TILE BOND™ shall be placed atop the tile from the upper midpoint to the left hand side of the tile within the 3-inch head lap of the tiles as shown below. The subsequent course of tiles shall be set immediately into the adhesive paddy.

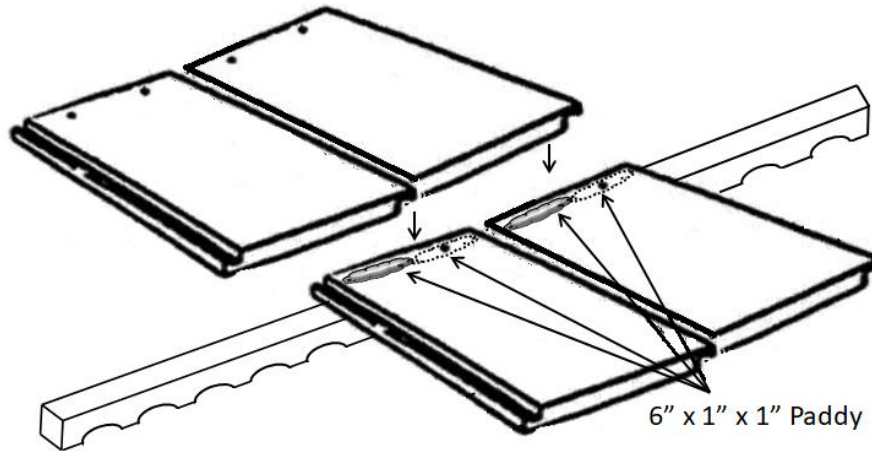


Figure 11. Adhesive Paddy Location for Malibu and Bel Air (shown) Tiles Adhered over Battens-
 Following the tile profile from halfway across the tile to the edge of the upper right side under the tile to the batten, then following the tile profile from halfway across the tile to the edge of the upper left side above the tile.

Data for Attachment Calculations for Direct to Deck Applications									
Roof Tile	Nominal Weight (W) and Dimensions (l x w)			Aerodynamic Multipliers λ (ft ³)	Restoring Moments due to Gravity - M_g (ft-lbf) Direct Deck				
	W (lbf)	L (ft)	w (ft)	Direct Deck Application	3":12"	4":12"	5":12"	6":12"	$\geq 7":12"$
Capistrano	9.7	1.42	1.02	0.32	6.83	6.75	6.65	6.52	6.38
Malibu	9.2	1.42	1.03	0.32	6.47	6.37	6.24	6.09	5.93
Bel Air	11.8	1.42	1.03	0.32	7.35	7.25	7.11	6.95	6.76

Data for Attachment Calculations for Batten Applications									
Roof Tile	Nominal Weight (W) and Dimensions (l x w)			Aerodynamic Multipliers λ (ft ³)	Restoring Moments due to Gravity - M_g (ft-lbf) Direct Deck				
	W (lbf)	L (ft)	w (ft)	Batten Application	3":12"	4":12"	5":12"	6":12"	$\geq 7":12"$
Capistrano	9.7	1.42	1.02	0.30	6.96	6.88	6.74	6.58	6.40
Malibu	9.2	1.42	1.03	0.30	6.36	6.26	6.14	5.99	5.83
Bel Air	11.8	1.42	1.03	0.30	7.69	7.59	7.46	7.29	7.11

Attachment Resistance Expressed as a Moment for Direct to Deck Applications								
Hybrid installation system								
Roof Tile	Tile Fastener ¹			Headlap Adhesive				M_f (ft-lbf)
	Type	Count	Size	Adhesive	Paddy Size ²	Paddy Weight ²	Paddy Location	
Capistrano	Screw	2	#8	DuPont TILE BOND™	6"x1"x1"	13.7g	Upper Right (Fig. 4)	47
	Screw	2	#8	DuPont TILE BOND™	6"x1"x1"	13.7g	Upper Left (Fig. 5)	67
Malibu	Screw	2	#8	DuPont TILE BOND™	6"x1"x1"	13.7g	Upper Right (Fig. 6)	73
	Screw	2	#8	DuPont TILE BOND™	6"x1"x1"	13.7g	Upper Left (Fig. 7)	87
Bel Air	Screw	2	#8	DuPont TILE BOND™	6"x1"x1"	13.7g	Upper Right (Fig. 6)	66
	Screw	2	#8	DuPont TILE BOND™	6"x1"x1"	13.7g	Upper Left (Fig. 7)	93

- Notes: 1) Simpson Strong-Tie Quik Drive WSCD Roof Tile Screw shall be min. 3-inch with sufficient length to penetrate through the plywood deck a min. 0.5-inch
2) Minimum dimensions and weight for adhesive application

Attachment Resistance Expressed as a Moment for Batten Applications								
Hybrid installation system								
Roof Tile	Tile Fastener ¹			Headlap Adhesive				M _f (ft-lbf)
	Type	Count	Size	Adhesive	Paddy Size ²	Paddy Weight ²	Paddy Location	
Capistrano	Screw	2	#8	DuPont TILE BOND™	6"x1"x1"	13.7g	Upper Left	74
Malibu	Screw	2	#8	DuPont TILE BOND™	6"x1"x1"	13.7g	Upper Left	84
Bel Air	Screw	2	#8	DuPont TILE BOND™	6"x1"x1"	13.7g	Upper Left	63

Notes: 1) Simpson Strong-Tie Quik Drive SSWSCB Roofing Tile Screw shall be min. 2.5-inch length
 2) Minimum dimensions and weight for adhesive application

Attachment Resistance Expressed as a Moment for Batten Applications									
Adhered hybrid installation system									
Roof Tile	Tile Adhesive				Headlap Adhesive				M _f (ft-lbf)
	Adhesive	Paddy Size ¹	Paddy Weight ¹	Paddy Location	Adhesive	Paddy Size ¹	Paddy Weight ¹	Paddy Location	
Capistrano	DuPont TILE BOND™	6"x1"x1"	13.7g	Upper Left	DuPont TILE BOND™	6"x1"x1"	13.7g	Upper Left	33
Malibu	DuPont TILE BOND™	6"x1"x1"	13.7g	Upper Right	DuPont TILE BOND™	6"x1"x1"	13.7g	Upper Left	23
Bel Air	DuPont TILE BOND™	6"x1"x1"	13.7g	Upper Right	DuPont TILE BOND™	6"x1"x1"	13.7g	Upper Left	34

Notes: 1) Minimum dimensions and weight for adhesive application

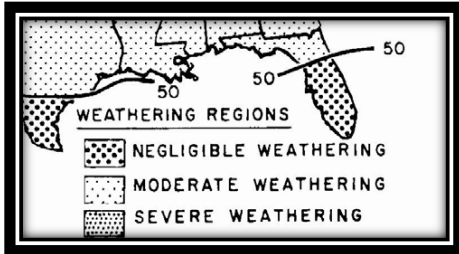
LABELING

- 1) All tiles shall bear the identifiable marking of the manufacturer's name or logo as follows:



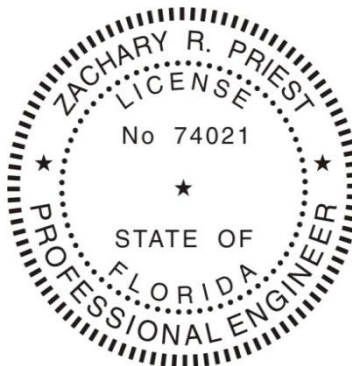
LIMITATIONS

- 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*, Seventh Edition Revised and the manufacturer's published application instructions. Installations in the HVHZ shall comply with RAS 118.
- 3) All products listed in this report shall be manufactured under a quality assurance program in compliance with Rule 61G20-3.
- 4) Installation of the evaluated products shall be limited to projects in areas subjected to weathering indices of 50 or greater as illustrated in ASTM C 1492-03(2016), figure 1 (see below).



COMPLIANCE STATEMENT

The products evaluated herein by Zachary R Priest 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.



This item has been digitally signed and sealed by Zachary R. Priest, PE, on 8/15/2023.

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Zachary R. Priest, P.E.
Florida Registration No. 74021
Organization No. ANE9641

CERTIFICATION OF INDEPENDENCE

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

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END OF REPORT