



EVALUATION REPORT

FLORIDA BUILDING CODE, 6TH EDITION (2017)

Manufacturer: VARITILE INC.
 6 Denny Rd. Ste. 200
 Wilmington, DE 19809
 (541) 948-3887
www.varitile.com

Issued August 13, 2018

Manufacturing: Belgium

Quality Assurance: UL LLC (QUA9625)

SCOPE

Category: Roofing
Subcategory: Metal Roofing
Code Sections: 1504.3.1, 1504.3.2, 1518.9, 1523.1.1, 1523.6.5.2.4
Properties: Wind Resistance, Wind-Driven Rain, Physical Properties

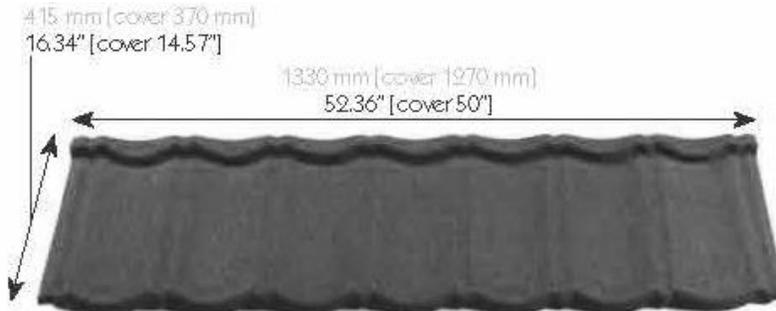
REFERENCES

<u>Entity</u>	<u>Report No.</u>	<u>Standard</u>	<u>Year</u>
PRI Construction Materials Technologies (TST5878)	MTTE-001-02-01	ASTM G 155	2005a
		TAS 110	2000
PRI Construction Materials Technologies (TST5878)	MTTE-002-02-01	ASTM B 117	2016
		TAS 110	2000
PRI Construction Materials Technologies (TST5878)	MTTE-010-02-01	ASTM E 8	2016a
PRI Construction Materials Technologies (TST5878)	VRT-008-02-01	UL 1897	2012
PRI Construction Materials Technologies (TST5878)	VRT-011-02-01	TAS 125	2003
		UL 580	2006
		UL 1897	2012
PRI Construction Materials Technologies (TST5878)	VRT-011-02-02	TAS 100	1995
PRI Construction Materials Technologies (TST5878)	VRT-012-02-01	TAS 125	2003
		UL 580	2006
		UL 1897	2012
PRI Construction Materials Technologies (TST5878)	VRT-012-02-02	TAS 100	1995
UL LLC (TST9628)	ER38141-01	ICC-ES AC10	2014
		ICC-ES AC166	2012

PRODUCT DESCRIPTION

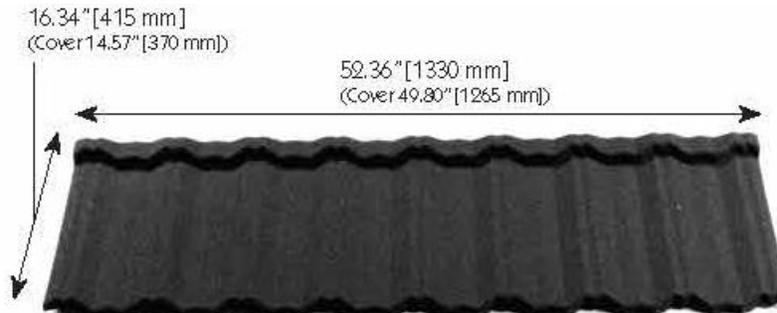
Bond (7 pan)

Profile: Beavertail Tile; 14.57 in. x 50 in. coverage
Description: Preformed, fastened, stoned-coated steel panels
Material: Min. 26 ga. ASTM A792 AZ50; F_y = min. 50 ksi; Shall conform with FBC Section 1507.4.3



Classic

Profile: Metal panel; 14.57 in. x 49.8 in. coverage
Description: Preformed, fastened, stoned-coated steel panels
Material: Min. 26 ga. ASTM A792 AZ50; F_y = min. 50 ksi; Shall conform with FBC Section 1507.4.3



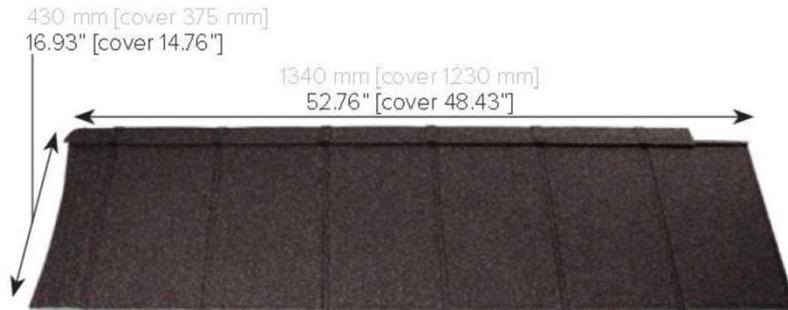
Gallo

Profile: Metal panel; 14.57 in. x 46.65 in. coverage
Description: Preformed, fastened, stoned-coated steel panels
Material: Min. 26 ga. ASTM A792 AZ50; F_y = min. 50 ksi; Shall conform with FBC Section 1507.4.3



iPanel (non-HVHZ only)

Profile: Shingle; 14.76 in. x 48.43 in. coverage
Description: Preformed, fastened, stoned-coated steel panels
Material: Min. 26 ga. ASTM A792 AZ50; F_y = min. 50 ksi; Shall conform with FBC Section 1507.4.3



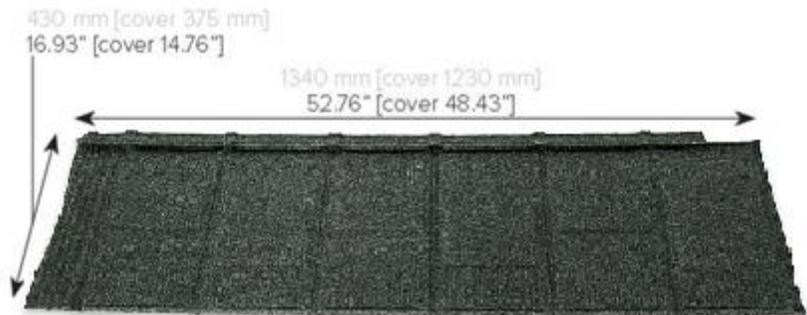
iShake (non-HVHZ only)

Profile: Shake; 14.76 in. x 48.43 in. coverage
Description: Preformed, fastened, stoned-coated steel panels
Material: Min. 26 ga. ASTM A792 AZ50; F_y = min. 50 ksi; Shall conform with FBC Section 1507.4.3



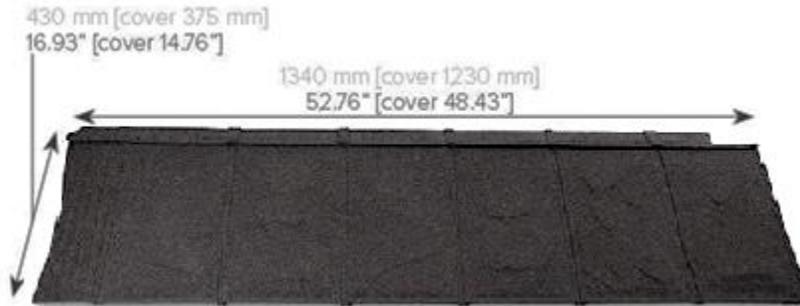
iShingle (non-HVHZ only)

Profile: Shingle; 14.76 in. x 48.43 in. coverage
Description: Preformed, fastened, stoned-coated steel panels
Material: Min. 26 ga. ASTM A792 AZ50; F_y = min. 50 ksi; Shall conform with FBC Section 1507.4.3



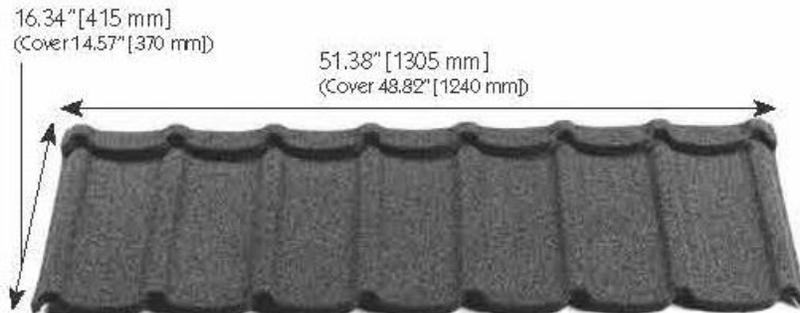
iSlate (non-HVHZ only)

Profile: Slate; 14.76 in. x 48.43 in. coverage
Description: Preformed, fastened, stoned-coated steel panels
Material: Min. 26 ga. ASTM A792 AZ50; F_y = min. 50 ksi; Shall conform with FBC Section 1507.4.3



Mistral

Profile: Metal panel; 14.57 in. x 48.82 in. coverage
Description: Preformed, fastened, stoned-coated steel panels
Material: Min. 26 ga. ASTM A792 AZ50; F_y = min. 50 ksi; Shall conform with FBC Section 1507.4.3



Riviera

Profile: Metal panel; 14.57 in. x 47.76 in. coverage
Description: Preformed, fastened, stoned-coated steel panels
Material: Min. 26 ga. ASTM A792 AZ50; F_y = min. 50 ksi; Shall conform with FBC Section 1507.4.3



Shake

Profile: Wood shake; 14.57 in. x 49.8 in. coverage
Description: Preformed, fastened, stoned-coated steel panels
Material: Min. 26 ga. ASTM A792 AZ50; F_y = min. 50 ksi; Shall conform with FBC Section 1507.4.3



Viksen

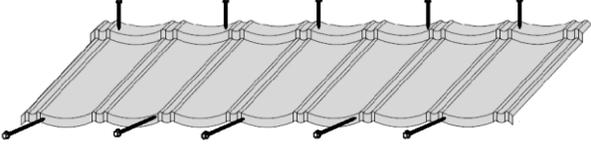
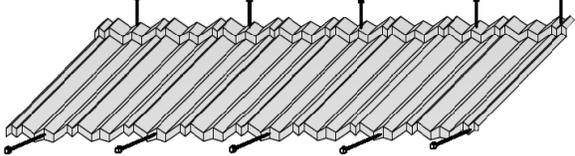
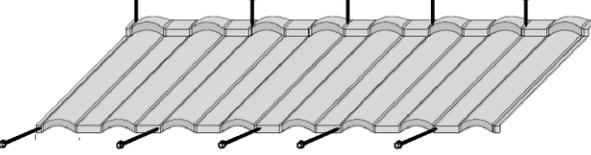
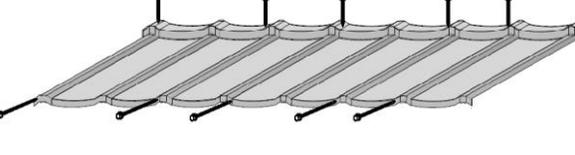
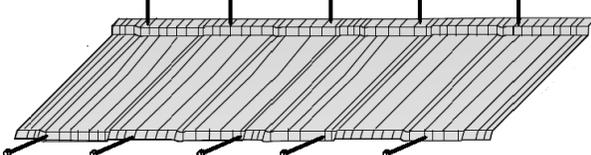
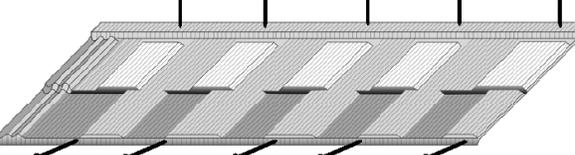
Profile: Wood shingle; 14.57 in. x 49.61 in. coverage
Description: Preformed, fastened, stoned-coated steel panels
Material: Min. 26 ga. ASTM A792 AZ50; F_y = min. 50 ksi; Shall conform with FBC Section 1507.4.3



APPROVED ASSEMBLIES

System 1 – 10 Fasteners – Bond (7 pan), Classic, Gallo, Mistral, Shake, or Viksen									
Slope:	3:12 or greater								
Roof Deck:	Solid or closely fitted min. 15/32 in. 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. In the HVHZ, the minimum underlayment shall be ASTM D 226, Type II installed as described in RAS 115 Section 4. At the eave and rake edges, the underlayment shall be folded down to cover the edge of the sheathing.								
Attachment:	Bond (7 pan), Classic, Gallo, Mistral, Shake or Viksen panels installed with five (5) #10-15 x 2-1/2" WoodGrip HiLo HWH wood screws along the back shelf of each panel and five (5) #10-15 x 2-1/2" WoodGrip HiLo HWH wood screws through the nose of each panel as shown on following page. Panels applied with 14-1/2 in. exposure and overlapped adjacently 2-1/2 in. Fasteners must be corrosion resistant in accordance with section 1507.4.4.								
Maximum Design Pressures:	-101.25 psf <i>Pressure calculated using 2:1 margin of safety per 1504.9</i>								
Maximum Mean Roof Heights for Gable/Hip Roofs Slopes 2:12 – 12:12									
Exposure	⁹ Basic Wind Speed (mph)								
	120	130	140	150	160	170	180	190	200
Zone 1 – Field									
B	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
C	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
D	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
Zone 2 – Perimeter									
B	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
C	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	38 ft
D	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	50 ft	27 ft	19 ft
Zone 3 – Corner									
B	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	42 ft	NA
C	60 ft	60 ft	60 ft	60 ft	48 ft	27 ft	19 ft	NA	NA
D	60 ft	60 ft	60 ft	42 ft	20 ft	NA	NA	NA	NA
Notes:	1) Exposure category for the structure location shall be as defined in the Florida Building Code 2) Limitations are based on the exposed area of 10ft ² or less 3) Topographic factors such as escarpments or hills are not included in the above assessment 4) Applicable for Enclosed Buildings without overhangs 5) NA = "Not Allowed" 6) $K_d = 0.85$ 7) Projects with mean roof heights of greater than 60 ft shall be evaluated by a licensed design professional 8) See page 13 for details for dimensions and locales of Zone 1, 2, and 3 9) V_{ult} is shown in the above table. Design pressures are calculated using $V_{asd} = V_{ult}\sqrt{0.6}$ per 1609.3.1. 10) For Hip roofs between 2:12 and 5.6:12, Zone 3 shall be treated as Zone 2.								

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System 1 – 10 Fasteners – Bond (7 pan), Classic, Gallo, Mistral, Shake, or Viksen	
Bond	Classic
	
Gallo	Mistral
	
Shake	Viksen
	



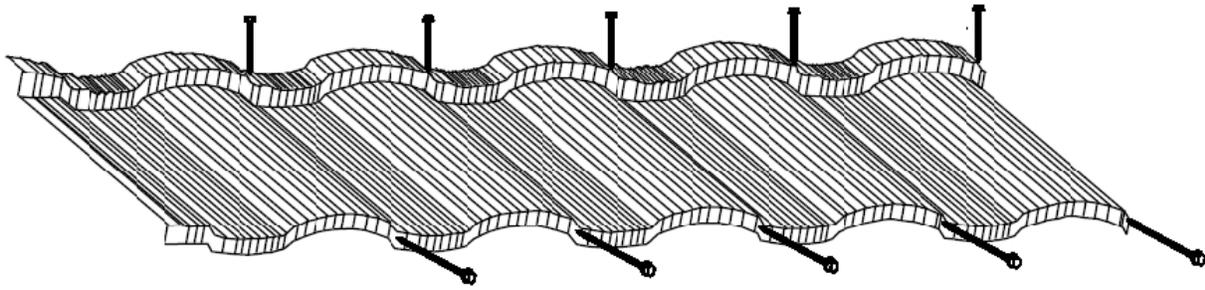
System 2 – 16 Fasteners – Bond (7 pan), Classic, Gallo, Mistral, Shake, or Viksen									
Slope:	3:12 or greater								
Roof Deck:	Solid or closely fitted min. 15/32 in. plywood sheathing for new and existing construction at max. 24 in. span; In the HVHZ, new construction shall be min. 19/32 in. plywood at max. 24 in. span; Designed by others in accordance with FBC requirements.								
Underlayment:	Installed in accordance with FBC requirements. In the HVHZ, the minimum underlayment shall be ASTM D 226, Type II installed as described in RAS 115 Section 4. At the eave and rake edges, the underlayment shall be folded down to cover the edge of the sheathing.								
Attachment:	Bond (7 pan), Classic, Gallo, Mistral, Shake or Viksen panels installed with eight (8) #10-15 x 2-1/2" WoodGrip HiLo HWH wood screws along the back shelf of each panel and eight (8) #10-15 x 2-1/2" WoodGrip HiLo HWH wood screws through the nose of each panel as shown on following page. Panels applied with 14-1/2 in. exposure and overlapped adjacently 2-1/2 in. Fasteners must be corrosion resistant in accordance with section 1507.4.4.								
Maximum Design Pressures:	-112.5 psf <i>Pressure calculated using 2:1 margin of safety per 1504.9</i>								
Maximum Mean Roof Heights for Gable/Hip Roofs									
Slopes 2:12 – 12:12									
Exposure	Basic Wind Speed (mph)								
	120	130	140	150	160	170	180	190	200
Zone 1 – Field									
B	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
C	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
D	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
Zone 2 – Perimeter									
B	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
C	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
D	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	48 ft	27 ft
Zone 3 – Corner									
B	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	42 ft
C	60 ft	60 ft	60 ft	60 ft	60 ft	46 ft	26 ft	19 ft	NA
D	60 ft	60 ft	60 ft	60 ft	38 ft	19 ft	NA	NA	NA
Notes:	1) Exposure category for the structure location shall be as defined in the Florida Building Code 2) Limitations are based on the exposed area of 10ft ² or less 3) Topographic factors such as escarpments or hills are not included in the above assessment 4) Applicable for Enclosed Buildings without overhangs 5) NA = "Not Allowed" 6) $K_d = 0.85$ 7) Projects with mean roof heights of greater than 60 ft shall be evaluated by a licensed design professional 8) See page 13 for details for dimensions and locales of Zone 1, 2, and 3 9) V_{ult} is shown in the above table. Design pressures are calculated using $V_{asd} = V_{ult}\sqrt{0.6}$ per 1609.3.1. 10) For Hip roofs between 2:12 and 5.6:12, Zone 3 shall be treated as Zone 2.								
<i>Continued on next page</i>									



System 2 – 16 Fasteners – Bond (7 pan), Classic, Gallo, Mistral, Shake, or Viksen	
Bond	Classic
Gallo	Mistral
Shake	Viksen



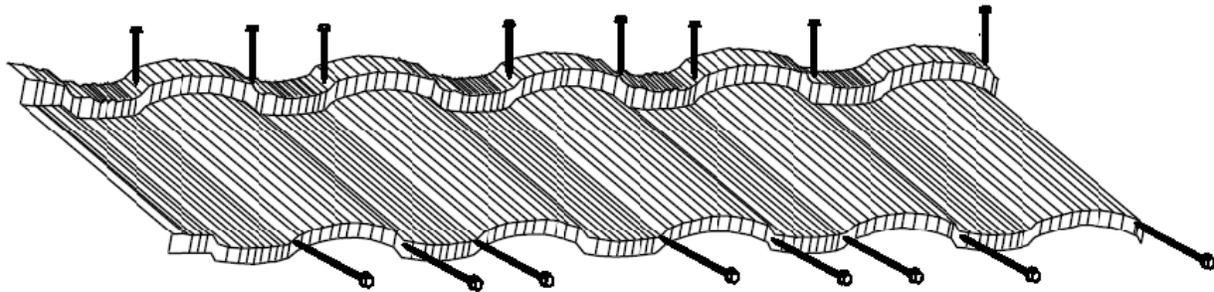
System 3 – 10 Fasteners – Riviera	
Slope:	3:12 or greater
Roof Deck:	Solid or closely fitted min. 15/32 in. plywood sheathing for new and existing construction at max. 24 in. span; In the HVHZ, new construction shall be min. 19/32 in. plywood at max. 24 in. span; Designed by others in accordance with FBC requirements.
Underlayment:	Installed in accordance with FBC requirements. In the HVHZ, the minimum underlayment shall be ASTM D 226, Type II installed as described in RAS 115 Section 4. At the eave and rake edges, the underlayment shall be folded down to cover the edge of the sheathing.
Attachment:	Riviera panels installed with five (5) #10-15 x 2-1/2" WoodGrip HiLo HWH wood screws along the back shelf of each panel and five (5) #10-15 x 2-1/2" WoodGrip HiLo HWH wood screws through the nose of each panel. Panels applied with 14-1/2 in. exposure and overlapped adjacently 2-1/2 in. Fasteners must be corrosion resistant in accordance with section 1507.4.4.
Maximum Design Pressures:	-108.75 psf <i>Pressure calculated using 2:1 margin of safety per 1504.9</i>



Maximum Mean Roof Heights for Gable/Hip Roofs
Slopes 2:12 – 12:12

Exposure	⁹ Basic Wind Speed (mph)								
	120	130	140	150	160	170	180	190	200
Zone 1 – Field									
B	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
C	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
D	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
Zone 2 – Perimeter									
B	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
C	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	52 ft
D	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	40 ft	22 ft
Zone 3 – Corner									
B	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	52 ft	36 ft
C	60 ft	60 ft	60 ft	60 ft	60 ft	38 ft	22 ft	NA	NA
D	60 ft	60 ft	60 ft	60 ft	31 ft	19 ft	NA	NA	NA

System 4 – 16 Fasteners – Riviera	
Slope:	3:12 or greater
Roof Deck:	Solid or closely fitted min. 15/32 in. 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. In the HVHZ, the minimum underlayment shall be ASTM D 226, Type II installed as described in RAS 115 Section 4. At the eave and rake edges, the underlayment shall be folded down to cover the edge of the sheathing.
Attachment:	Riviera panels installed with eight (8) #10-15 x 2-1/2" WoodGrip HiLo HWH wood screws along the back shelf of each panel and eight (8) #10-15 x 2-1/2" WoodGrip HiLo HWH wood screws through the nose of each panel as shown on following page. Panels applied with 14-1/2 in. exposure and overlapped adjacently 2-1/2 in. Fasteners must be corrosion resistant in accordance with section 1507.4.4.
Maximum Design Pressures:	-187.5 psf <i>Pressure calculated using 2:1 margin of safety per 1504.9</i>



Maximum Mean Roof Heights for Gable/Hip Roofs
Slopes 2:12 – 12:12

Exposure	Basic Wind Speed (mph)								
	120	130	140	150	160	170	180	190	200
Zone 1 – Field									
B	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
C	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
D	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
Zone 2 – Perimeter									
B	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
C	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
D	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
Zone 3 – Corner									
B	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
C	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
D	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	55 ft

- Notes:
- 1) Exposure category for the structure location shall be as defined in the Florida Building Code
 - 2) Limitations are based on the exposed area of 10ft² or less
 - 3) Topographic factors such as escarpments or hills are not included in the above assessment
 - 4) Applicable for Enclosed Buildings without overhangs
 - 5) NA = "Not Allowed" 6) $K_d = 0.85$
 - 7) Projects with mean roof heights of greater than 60 ft shall be evaluated by a licensed design professional
 - 8) See page 13 for details for dimensions and locales of Zone 1, 2, and 3
 - 9) V_{ult} is shown in the above table. Design pressures are calculated using $V_{asd} = V_{ult}\sqrt{0.6}$ per 1609.3.1.
 - 10) For Hip roofs between 2:12 and 5.6:12, Zone 3 shall be treated as Zone 2.

System 5 – iPanel, iShake, iShingle or iSlate (non-HVHZ only)

Slope:	3:12 or greater
Roof Deck:	Solid or closely fitted min. 15/32 in. plywood sheathing for new and existing construction at max. 24 in. span; Designed by others in accordance with FBC requirements.
Underlayment:	Installed in accordance with FBC requirements.
Attachment:	iPanel, iShake, iShingle or iSlate panels installed with ten (10) #10 x 1.5 in. HWH dual thread fasteners with 0.5 in. O.D. sealing washers located 1 in. down from the top of the panel and approximately 5 in. on center between edge fasteners. Edge fasteners installed 2 in. from each edge. Fasteners must be corrosion resistant in accordance with section 1507.4.4 and penetrate through the sheathing a min. 3/8 in.
Maximum Design Pressures:	-97.5 psf <i>Pressure calculated using 2:1 margin of safety per 1504.9</i>

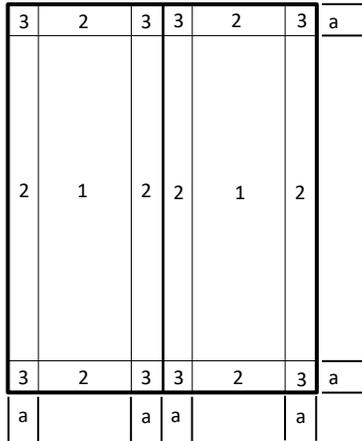


Maximum Mean Roof Heights for Gable/Hip Roofs
Slopes 2:12 – 12:12

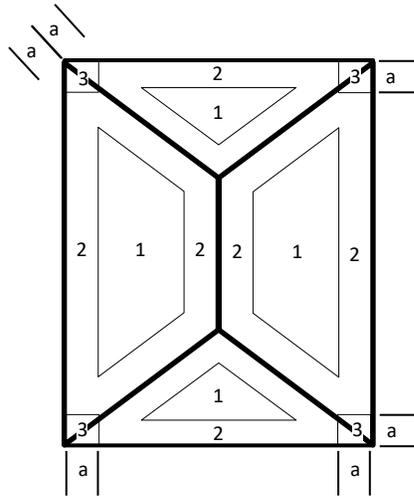
Exposure	Basic Wind Speed (mph)								
	120	130	140	150	160	170	180	190	200
Zone 1 – Field									
B	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
C	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
D	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
Zone 2 – Perimeter									
B	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft
C	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	52 ft	31 ft
D	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	40 ft	22 ft	NA
Zone 3 – Corner									
B	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	52 ft	36 ft	NA
C	60 ft	60 ft	60 ft	60 ft	40 ft	22 ft	NA	NA	NA
D	60 ft	60 ft	60 ft	35 ft	19 ft	NA	NA	NA	NA

- Notes:
- 1) Exposure category for the structure location shall be as defined in the Florida Building Code
 - 2) Limitations are based on the exposed area of 10ft² or less
 - 3) Topographic factors such as escarpments or hills are not included in the above assessment
 - 4) Applicable for Enclosed Buildings without overhangs
 - 5) NA = "Not Allowed" 6) $K_d = 0.85$
 - 7) Projects with mean roof heights of greater than 60 ft shall be evaluated by a licensed design professional
 - 8) See page 13 for details for dimensions and locales of Zone 1, 2, and 3
 - 9) V_{ult} is shown in the above table. Design pressures are calculated using $V_{asd} = V_{ult} \sqrt{0.6}$ per 1609.3.1.
 - 10) For Hip roofs between 2:12 and 5.6:12, Zone 3 shall be treated as Zone 2.

Gable



Hip



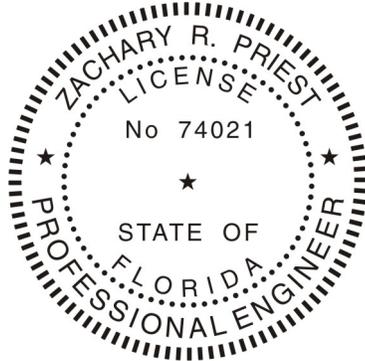
Dimension “a” shall be 10% of the least horizontal dimension or (0.4 x *Mean Roof Height*), whichever is smaller, but not less than either 4% of the least horizontal dimension or 3ft.

LIMITATIONS

1. Fire classification is not within the scope of this evaluation.
2. The roof deck and the roof deck attachment shall be designed by others to meet the minimum design loads established for components and cladding and in accordance with FBC requirements.
3. Reroofing shall be in accordance with FBC Section 1511 or Section 1521 within the HVHZ.
4. Installation of the evaluated products shall comply with this report, the FBC and RAS 133 in the HVHZ and the manufacturer’s published application instructions. Where discrepancies exist between these sources, the more restrictive and FBC compliant installation detail shall prevail.
5. 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 Zachary R. Priest, P.E. have demonstrated compliance with the Florida Building Code, 6th Edition (2017) as evidenced in the referenced documents submitted by the named manufacturer.



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.

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