Florida Building Code Edition 2020

High-Velocity Hurricane Zone Uniform Permit Application Form.

Section E (Tile Calculations)

For Moment based tile systems, choose either Method 1 or 2. Compare the values for M_r with the values from M_f values. If the M_f values are greater than or equal to the M_r values, for each area of the roof, then the tile attachment method is acceptable.

Method 1 "Moment Based Tile Calculations per RAS 127"

(P_1: _____ x λ _____ = _____) - M_g: _____ = M_{r1} _____ Product Approval M_f _____

(P_2: _____ x λ _____ = _____) - M_g: _____ = M_{r2} _____ Product Approval M_f _____

(P_3: _____ x λ _____ = _____) - M_g: _____ = M_{r3} _____ Product Approval M_f _____

Method 2 "Simplified Tile Calculations Per Table Below"

Required Moment of Resistance (M_r) From Table Below _____ Product Approval M_f _____

M_r Required Moment Resistance*					
Mean Roof Height → Roof Slope ↓	**15'**	**20'**	**25'**	**30'**	**40**
2:12	**34.4**	**36.5**	**38.2**	**39.7**	**42.2**
0:00	**32.2**	**34.4**	**36.0**	**37.4**	**39.8**
4:12	**30.4**	**32.2**	**33.8**	**35.1**	**37.3**
5:12	**28.4**	**30.1**	**31.6**	**32.8**	**34.9**
6:12	**26.4**	**28.0**	**29.4**	**30.5**	**32.4**
7:12	**24.4**	**25.9**	**27.1**	**28.2**	**30.0**

* Must be used in conjunction with a list of moment based tile systems endorsed by the Broward County Board of Rules and Appeals.

For Uplift based tile systems use Method 3. Compare the values for F' with the values for F_1. If the F' values are greater than or equal to the F_r values, for each area of the roof, then the tile attachment method is acceptable.

Method 3 "Uplift Based Tile Calculations Per RAS 127"

(P_1: _____ x L _____ = _____ x w: = _____) - W: _____ x cos θ _____ = F_{r1} _____ Product Approval F' _____

(P_2: _____ x L _____ = _____ x w: = _____) - W: _____ x cos θ _____ = F_{r2} _____ Product Approval F' _____

(P_3: _____ x L _____ = _____ x w: = _____) - W: _____ x cos θ _____ = F_{r3} _____ Product Approval F' _____

Where to Obtain Information		
Description	**Symbol**	**Where to find**
Design Pressure	P1 or P2 or P3	RAS 127 Table 1 or by engineering analysis prepared by PE based on ASCE 7
Mean Roof Height	H	Job Site
Roof Slope	θ	Job Site
Aerodynamic Multiplier	λ	Product Approval
Restoring Moment due to Gravity	M_g	Product Approval
Attachment Resistance	M_f	Product Approval
Required Moment Resistance	M_g	Calculated
Minimum Attachment Resistance	F'	Product Approval
Required Uplift Resistance	Fr	Calculated
Average Tile Weight	W	Product Approval
Tile Dimensions	L = length W = width	Product Approval
All calculations must be submitted to the building official at the time of permit application.		