

Forensic Engineering Consultants, Inc.

TILE ATTACHMENT CALCULATIONS

Project Name Gomez Residence - Gazebo **FEC Report No.:** RSI-TL-26.001
Project Address 1104 SW 69 Avenue
 Pinecrest, FL - 33156

Deck Substrate	Wood	Non-Insulated	Mean Roof Height	14.0 Feet
Configuration	Steep Slope		Roof Area (Approx.)	Sq.Ft.
Category	II		Roof Width	30.0 Feet
Exposure Condition	C		Perimeter Width	3.0 Feet
Building Type	Non-Enclosed		Parapet Height	0.0 Feet
Base Wind Speed	175 mph		Sloped Roof Type	Hipped

Slope V 4.0 Slope H 12.0 Slope Angle° 18.43

Uplift Pressures $q_z = 0.00256 K_z K_{zt} K_d K_e V^2$ $P = q_z (GC_p - GC_{pi})$

q_z	K_z	K_{zt}	K_d	K_e	V	GC_p	GC_{pi}	
56.644	0.850	1.000	0.85	1.00	175	-1.80	0.55	Field
						-2.40	0.55	Perimeter
						-2.60	0.55	Corner

Field (Zone 1)	$P_{1 ult.}$	-133.11 psf	$P_{1 asd}$	-79.87 psf
Perimeter (Zone 2)	$P_{2r ult.}$	-167.10 psf	$P_{2r asd}$	-100.26 psf
Corner (Zone 3)	$P_{3r ult.}$	-178.43 psf	$P_{3r asd}$	-107.06 psf

Proposed Tile System Westlake Royal Saxony Tile
Product Approval No. 24-0320.02
Attachment Method Polyset AH-160 (Medium Patty weight of 18 grams)

Aerodynamic Multiplier λ 0.315
Restoring Moment M_g 7.51 ft-lbf
Attachment Resistance M_r 60 ft-lbf

Overturning Moment	$M_a =$	$P_i \times \lambda$	Field	25.16 ft-lbf
			Perimeter	31.58 ft-lbf
			Corner	33.72 ft-lbf

Required Moment of Resistance	$M_r =$	$M_a - M_g$	Field	17.65 ft-lbf
			Perimeter	24.07 ft-lbf
			Corner	26.21 ft-lbf

Since $M_f > M_r$ O.K.

These calculations have been done in accordance with ASCE 7-22 & FBC 2023, based on information provided by contractor. The installation of these tiles with the attachment method specified above, at the subject roof is acceptable. The tile system must be installed in accordance with the FBC & manufacturer's recommendations. Ensure that roof system meets drainage, insulation and fire rating requirements of the Florida Building Code.

Sincerely
 Forensic Engineering Consultants, Inc.

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