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Client: Crown Building Products of Florida, LLC
6018 S.W. Highway 72
Arcadia, Florida 34266
Att. Mr. Juan Prestamo

Report Date: 9/12/14
ATLSF Report #: RT0912.01-14

Re: Calculations for Aerodynamic Multiplier per FBC, Section 1518.8.4.5
Calculations for Weight and Restoring Moment Due to Gravity per TAS 101-95 Sections 10.2 & 10.2, TAS 102-95 & 102A-95 Sections 9.1 & 9.2.

Service Authorized by:	Juan Prestamo
Manufacturer:	Crown Building Products of Florida, LLC
Model:	Windsor, Flat, Concrete Roof Tile
Imprint:	WINDSOR CROWN
Nominal Dimensions (in.), (l x w x h), provided by supplier:	17.0 x 13.0 x N/P
Nominal Thickness (in.), provided by Supplier:	0.59
Nominal Weight (lbf): as provided by supplier:	11.7
Classification per TAS 112-95:	Type 3a- Flat Profile, Interlocking
Purpose:	New Product Approval
Comments:	Attachment Resistance Expressed as a Moment Data to be obtained from Tile Roof Institute data on file.

ATLSF Accreditations & Certifications:	Miami-Dade: 13-0228.09 A2LA: 2650.01 testing FBC Organization #: TST3782

Calculations:

1. Weight (W):
   $W = m \times \frac{1 \text{ lbf s}^2/\text{ft}}{32.174 \text{ lbm}} \times 32.2 \text{ ft/s}^2$
   $W = 11.7 \times 1.0008$ $W = 11.709$ lbf

2. Restoring Moment Due to Gravity (M_g):
   $M_g = W \times \cos(\theta - \alpha) \times L_g$

   Direct Deck Application

Pitch	Equation	Restoring Moment Due to Gravity (M_g)
2:12	$M_g = 11.709 \times \cos(9.462 - 4.412) \times 0.708$	$M_g = 8.26$
3:12	$M_g = 11.709 \times \cos(14.036 - 4.412) \times 0.708$	$M_g = 8.17$
4:12	$M_g = 11.709 \times \cos(18.435 - 4.412) \times 0.708$	$M_g = 8.04$
5:12	$M_g = 11.709 \times \cos(22.620 - 4.412) \times 0.708$	$M_g = 7.87$
6:12	$M_g = 11.709 \times \cos(26.565 - 4.412) \times 0.708$	$M_g = 7.67$
7:12	$M_g = 11.709 \times \cos(30.256 - 4.412) \times 0.708$	$M_g = 7.46$

   Batten Application

Pitch	Equation	Restoring Moment Due to Gravity (M_g)
2:12	$M_g = 11.709 \times \cos(9.462 - 5.119) \times 0.708$	$M_g = 8.27$
3:12	$M_g = 11.709 \times \cos(14.036 - 5.119) \times 0.708$	$M_g = 8.19$
4:12	$M_g = 11.709 \times \cos(18.435 - 5.119) \times 0.708$	$M_g = 8.07$
5:12	$M_g = 11.709 \times \cos(22.620 - 5.119) \times 0.708$	$M_g = 7.91$
6:12	$M_g = 11.709 \times \cos(26.565 - 5.119) \times 0.708$	$M_g = 7.72$
7:12	$M_g = 11.709 \times \cos(30.256 - 5.119) \times 0.708$	$M_g = 7.50$

3. Aerodynamic Multiplier (λ): Direct Deck Application
   $\lambda = 0.156 \times b \times l^2$
   $\lambda = 0.156 \times 1.000 \times 1.417^2$ $\lambda = .313$

4. Aerodynamic Multiplier (λ): Batten Application
   $\lambda = 0.144 \times b \times l^2$
   $\lambda = 0.144 \times 1.000 \times 1.417^2$ $\lambda = .289$

The calculations provided in report ATLSF #: RT0912.01-14 has been performed in full accordance with the requirements of Miami-Dade County, with no deviations.

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End of report.

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