PRI Construction Materials Technologies LLC

6412 Badger Drive
Tampa, FL 33610
813.621.5777
https://www.pri-group.com/

Laboratory Test Report

Report for:	Vito Mariano Basecrete Technologies 7969 Moyer Ave Sarasota, FL 34240
Product Name(s):	Basecrete
Project No.:	2436T0001
Date(s) Tested:	Mar. 22 – August 3, 2022
Test Methods:	ICC-ES AC39 (Approved June 2017)
Results Summary:	Meets requirements for walking deck and nonclassified roof covering under Section 3.1 Cementitious Coating Systems

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Purpose:

Evaluate ***Basecrete*** for compliance with the requirements of the following **ICC-ES AC39** ***Acceptance Criteria for Walking Decks*** **(Approved June 2017)** subsections noted below as a cementitious coating system:

- **4.1.2 Weatherometer Test**
- **4.1.3 Accelerated Aging Test**
- **4.1.4 Freeze-thaw Test**
- **4.1.5 Bond-Strength Test**
- **4.1.6 Abrasion Test**
- **4.1.7 Percolation Test**
- **4.1.8 Water-absorption Test**
- **4.1.9 Chemical-resistance Test**
- **4.1.11 Wind Uplift for Fully Bonded Cementitious Coating Systems**
- **4.1.12 Impact Resistance**

The Basecrete waterproofing systems is prepared by combining Basecrete Flexible Waterproofing Bondocat and Dry Mix Compound. The mixture is applied in two 1/16" thick coats for a total of 1/8" thickness

Test Methods:

Testing was completed in accordance with Section 4.1 Test Methods of ICC-ES AC39. Briefly, the following methods were used for each subsection as stated below.

4.1.2 Weatherometer Test: Weathering was conducted in accordance ASTM G 155 *Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-metallic Materials* for a minimum of 2,000 hours under the conditions of Cycle 1, daylight filter with irradiance of 0.35 W/(m^2·nm) at 340 nm. The cycle is 102 minutes of light at 63°C and 18 minutes of light and water spray.

4.1.3 Accelerated Aging Test: Bond Strength specimens were subjecting to accelerated aging in accordance ASTM D 756-93 *Standard Practice for Determination of Weight and Shape Changes of Plastics under Accelerated Service Conditions* under Procedure D and Procedure E.

4.1.4 Freeze-thaw Test: Bond Strength specimens were subjected to freeze-thaw in accordance ASTM C 67 *Standard Test Method for Sampling and Testing Brick and Structural Clay Tile*. The specimens were sealed on the back and all edges, and frozen with the concrete decking immersed in water to a depth of 0.25-inch.

4.1.5 Bond-strength Test: Bond strength tests were to be conducted in accordance with ASTM C 297 *Standard Test Method for Flatwise Tensile Strength of Sandwich Construction*.

4.1.6 Abrasion Test: Testing was conducted in accordance with ASTM C 501 *Standard Test Method for Relative Resistance to Wear of Unglazed Ceramic Tile by the Taber Abrasion as* ASTM D 1242 has been withdrawn by ASTM and is no longer in practice. ASTM C 501 is codified in the International Building Code for roofing products by way of ASTM C 957. Samples were tested after conditioning a minimum 24h at 73°C and 50%RH. Specimens were tested at 73.4±3.6°C and 50±2%RH, using wheel CS-17 with 1,000g for 1,000 cycles with the vacuum nozzle set at 1/8-inch height. Wheels were resurfaced every 500 cycles.

4.1.7 Percolation Test: Percolation tests were conducted by mounting a 1-inch (25.4 mm) or larger diameter tube on the surface of at least three specimens that have been abraded to remove the finish coat. The tube was centered over the abraded surface and sealed. The tube was then filled with distilled water to a height of 48 inches (1219 mm). The water column was maintained at 75°F ± 5°F (23.8°C ± 2.8°C) at 50 percent ± 5 percent relative humidity for a period of 48 hours.

4.1.8 Water-absorption Test: Water-absorption tests were conducted in accordance with ASTM D 570 *Standard Test Method for Water Absorption of Plastics* using a minimum of five (5) 1" x 3" bars. After curing, specimens were dried in an oven for 24h at 50°C and then cooled in a desiccator and immediately weighed to the 0.001g. The specimens were then immersed in distilled water maintained at 73°F for 24h. At the end of 24+0.5h, the surface water was blotted and the specimen weight was recorded to the nearest 0.001g.

4.1.9 Chemical-resistance Test: Chemical- resistance tests were conducted on surfacing material. The tests were conducted in accordance with ASTM D 2299 *Recommended Practice For Determining Relative Stain Resistance of Practice* by immersing specimens in the specified liquids and placing the samples in oven at 50°C for 16h. ASTM D 2240-15 *Standard Test Method for Rubber Property-Durometer Hardness* was used to determine the specimen hardness after exposure.

4.1.10 Concentrated Load Test: A 1-inch-diameter (25.4 mm) steel plate with rounded edges having a 0.015-inch (0.38 mm) radius was used to apply a 300-pound (1.34 kN) load. Surface penetration was measured to the nearest hundredth of an inch. The load

was imposed on the plate centered on the specimen. The superimposed load was reduced to zero and reloaded a minimum of four additional times with penetration and residual readings taken each time without removing the plate.

4.1.11 Wind-uplift Test: Under Section 4.1.11.1 wind-uplift is not required for fully bonded systems meeting a minimum 10psi Bond Strength as set forth in Section 4.1.5.

4.1.12 Impact Resistance: Testing was conducted in accordance with "Resistance to Foot Traffic Test" in Section 5.5 of FM 4470 *Approved Standard for Class 1 Roof Covers*.

Sampling: The following materials were received by PRI.

Product	Source	Date	Sampling
Basecrete Flexible Waterproofing Bondcoat	Sarasota, FL	Feb. 21, 2022	Basecrete
Basecrete Dry Mix Compound	Sarasota, FL	Feb. 21, 2022	Basecrete

The above components were verified to be manufactured by Basecrete Technologies in Sarasota, FL.

Results:

Property	Test Method	Results							Requirement
4.1.2 - After Exposure for 2,000h per ASTM G 155									
Visual Inspection, (Pass/Fail) Examined under 5x magnification	AC39 4.2.2	Pass							No crazing, cracking, spalling, or other surface deteriorations
4.1.3 – 4.1.5 Accelerated Aging Tests, Freeze-Thaw Test, and Bond-Strength Test									
Bond Strength (psi) 5 specimens; 2" x 2"; Concrete; Test: 73.4±3.6°F & 50±2% RH;	ASTM C 297	1	2	3	4	5	**Avg.**	St. Dev.	
	Control	110	118	134	93	127	**116**	16	≥ 10
	After Accelerated Aging	586	321	448	260	237	**370**	146	≥ 10
	After Freeze-Thaw	419	475	650	431	440	**423**	46	≥ 10
4.1.6 - Abrasion Test (ASTM D 1242 is withdrawn; replaced with ASTM C 501/C 957)									
Abrasion Resistance, (mils) 1000 cycles using 1000g and CS-17 wheel; Test: 73.4±3.6°F & 50±2% RH;	ASTM C 501/ C 957	1	2	3					
		7	11	6					≤ 40
4.1.7 – Percolation Test									
Percolation, (in.) 48in. column of DI water for 48h; Test: 73.4±3.6°F & 50±2% RH;	AC39	1	2	3					
		0.1	0.1	0.1					≤ 0.5

Property	Test Method	Results							Requirement
4.1.8 – Water-Absorption Test									
Water Absorption, (% wt.) Cond. 24 at 50°C; Immersed in DI water for 24+0.5h at 73.4±3.6°F;	ASTM D 570	1	2	3	4	5	**Avg.**	St. Dev.	
		10.0	10.2	10.3	9.9	9.9	**10.1**	0.2	≤ 15
4.1.9 – Chemical Resistance Test									
Chemical Resistance, *[Report changes]* Immersed for 16h at 50°C;	ASTM D 2299	Comments					Shore A Hardness ASTM D 2240		
Unexposed Control		-					100		N/A
Industrial detergent solution (20% by vol.)		No Change					100		Report.
Ammonia solution (5% by vol.)		No Change					100		Report.
Salt solution (20% by vol.)		No Change					100		Report.
Muriatic acid (10% by vol.)		No Change					100		Report.
Chlorine solution (10% by vol.)		No Change					100		Report.
Ethylene glycol anti-freeze		No Change					100		Report.
Kerosene		No Change					100		Report.
Turpentine		No Change					100		Report.
Paint thinner		No Change					100		Report.
4.1.10 Concentrated Load Test									
Concentrated Load Test, Substrate – concrete 300lb load on 1" Ø steel plate cycled 5x;	AC39 4.12	1	2	3	4	5			Pass = No tearing or cracking
	Penetration (in.)	0.055	0.039	0.033	0.032	0.029			Report.
	Deformation (in.)	0.034	0.042	0.044	0.048	0.048			Report.
	Observation	Pass	Pass	Pass	Pass	Pass			Pass
4.1.12 Foot Traffic Resistance									
Foot Traffic Resistance Substrate – concrete 200lb load on 3"x3" steel plate cycled 5x;	FM 4470	1	2	3	4	5			Pass = No tearing or cracking
	Penetration (in.)	0.054	0.045	0.044	0.043	0.039			Report.
	Deformation (in.)	0.043	0.047	0.047	0.053	0.051			Report.
	Observation	Pass	Pass	Pass	Pass	Pass			Pass

Statement of Compliance:

The product was tested has demonstrated compliance to the requirements of the following **ICC-ES AC39** ***Acceptance Criteria for Walking Decks*** **(Approved June 2017)** subsections:

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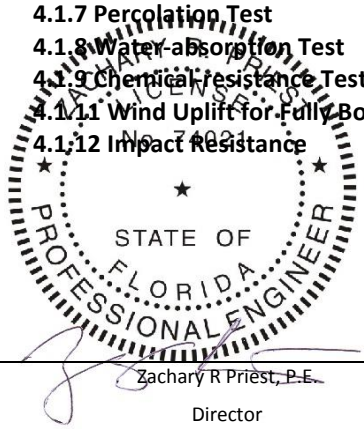

Signed: _____

Zachary R Priest, P.E.
Director

Report Issue History:

Issue #	Date	Pages	Revision Description (if applicable)
Original	08/03/2022	5	NA

END OF REPORT