STONE LABORATORY TEST REPORT

Report No.: 23-0102.01-R0
Test Date(s): 09/12/23 – 11/10/23
Initial Report Date: 12/08/23
Retention Date: 11/10/27

Prepared for: Jacobs Stone Products, Inc.
1210 W. Pierce Street
San Saba, TX 76877

Product: Natural Stone Product – Chapel Buff

Scope: The Natural Institute (NSI) was contracted by Jacobs Stone products, Inc. to perform physical properties evaluations for one natural limestone product (Chapel Buff). The scope of testing included absorption, density, compressive strength, modulus of rupture, abrasion resistance, flexural strength, slip resistance, and freeze-thaw durability. All testing was performed at the NSI laboratory located in Oberlin, Ohio.

Methods: The products were evaluated in accordance with the following test method(s):

ASTM C568/C568M-15, *Standard Specification for Limestone Dimension Stone*

ASTM C97/C97M-18, *Standard Test Method for Absorption and Bulk Specific Gravity of Dimension Stone*

ASTM C170/C170M-17, *Standard Test Method for Compressive Strength of Dimension Stone*

ASTM C99/C99M-18*, Standard Test Method for Modulus of Rupture of Dimension Stone*

ASTM C1353/C1353M-20, *Standard Test Method for Abrasion Resistance of Dimension Stone Subjected to Foot Traffic Using a Rotary Platform Abraser*

ASTM C880/C880M-18e1, *Standard Test Method for Flexural Strength of Dimension Stone*

ASTM C666/C666M-15, *Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing*

ANSI A326.3-2021 – *American National Standard Test Method for Measuring Dynamic Coefficient of Friction of Hard Surface Flooring Materials*

Test Materials: Test materials were provided by Jacobs Stone products, Inc. on 09/08/23, designated as Chapel Bluff, and were received in good condition for testing. Specimens were tested as received other than preconditioning as required by the applicable test method(s) prior to testing. Representative test materials shall be retained by the NSI for a period of four years.

Test Witness Record

Name	Company
Clint Eads	NSI
Roger Lawson	NSI
Scott D. Scallorn	NSI

Test Procedure(s): Unless otherwise stated, all specimen conditioning and testing was conducted in standard laboratory conditions. Test photos are located on pages 17-22 of this report. Equipment calibration certificates are available upon request.

ASTM C97 – Absorption and Density Evaluation

The absorption and density evaluations were conducted in accordance with the procedures detailed in ASTM C97. The specimens were oven-dried at 60°C to a stable mass condition (minimum 48 hours), reacclimated to ambient lab temperature and weighed on an Ohaus digital balance (SN: B614316489) for determination of dry condition mass. They were then immersed in filtered water for 48 hours prior to individual removal, surface drying with a damp cloth and determination of wet condition mass. The specimens were then suspended in the water within a wire cage and weighed for determination of immersed condition mass. Absorption (%) and bulk specific gravity were calculated for each specimen as per the equations in ASTM C97, Section 9. Test results were averaged for the series and evaluated against the performance criteria presented in ASTM C568, Table 1.

ASTM C170 – Compressive Strength Evaluation

The compressive strength evaluation was conducted on a Test Mark compression tester (SN: 160618) in accordance with the procedures detailed in ASTM C170. Dry condition specimens were oven-dried at 60°C for a minimum of 48 hours and cooled to ambient prior to testing. Wet condition specimens were immersed in water for 48 hours prior to individual removal and testing. Compressive strength was calculated for each specimen as per the equation in ASTM C170, Section 10.1. Test results were averaged for the series and evaluated against the performance criteria presented in ASTM C568, Table 1.

ASTM C99 – Modulus of Rupture Evaluation

The Modulus of Rupture (MoR) evaluation was conducted on an ATS Universal Test Machine (SN: 16-14900-1) employing a 12.5-kip load cell (SN: 561414A) in accordance with the procedures detailed in ASTM C99. Specimens were tested in both oven-dry and wet conditions. Dry condition specimens were oven-dried at 60°C for a minimum of 48 hours and cooled to ambient prior to testing. Wet condition specimens were immersed in water for 48 hours prior to individual removal and testing. Specimens were supported at a test span of 7.0 in. and loaded at midspan until failure. Flexural strength was calculated for each specimen as per the equation in ASTM C99, Section 11.1. Test results were averaged for the series and evaluated against the performance criteria presented in ASTM C568, Table 1.

ASTM C1353 – Abrasion Resistance Evaluation

The abrasion resistance evaluation was conducted in accordance with the procedures detailed in ASTM C1353. The specimens were oven-dried at 60°C for a minimum of 48 hours and cooled prior to determination of pre-abrasion mass on an Ohaus digital balance (SN: B614316489) The specimens were then evaluated on a Taber Industries rotary platform abraser (SN: 20161679) employing H-22 Calibrade abrasive wheels with 1,000 grams of downward force applied to each for a total of 1000 wear cycles. Upon completion of cycling, post-exposure mass was determined for each specimen. Employing the bulk specific gravity results obtained from ASTM C97 evaluation, Index of Abrasion was calculated for each specimen as per the equation in ASTM C1353, Section 9.1. Test results were averaged for the series and evaluated against the performance criteria presented in ASTM C568, Table 1.

ASTM C666 – Freeze-Thaw Resistance

The freeze-thaw exposure cycling was conducted in modified ESPEC EPX-4H environmental conditioning chamber (SN: 0140212) in accordance with ASTM C666, Procedure B (Freeze-in-Air, That-in-Water). The specimens were subjected to a total of 100 exposure cycles each consisting of lowering the temperature of wetted specimens from 40°F to 0°F in an air-surround condition and returning to 40°F in an immersed condition. Upon completion of each 25-cycle exposure increment, five specimens were removed from cycling and visually evaluated for breakage of other readily visible deleterious effects. The removed specimens were immersed in water for 48 hours prior to individual removal and testing in flexure as per ASTM C880 (detailed below).

ASTM C880 – Flexural Strength

The Flexural strength evaluation was conducted on an ATS Universal Test Machine (SN: 16-14900-1) employing a 12.5-kip load cell (SN: 561414A) in accordance with the procedures detailed in ASTM C880. Pretest specimen dimensions were measured with a 6" x 0.0005" Digital Caliper (SN: B22206393). Control series (no exposure cycling) specimens were tested in both oven-dry and wet conditions. Post-exposure series specimens were tested after 25, 50, 75, and 100 cycle completion and in wet condition only. Dry condition specimens were oven-dried at 60°C for a minimum of 48 hours and cooled to ambient prior to testing. Wet condition specimens were immersed in water for 48 hours prior to individual removal and testing. Specimens were supported at a test span of 12.5 in. and loaded at quarter point (6.25 in. loading span) until failure. Flexural strength was calculated for each specimen as per the equation in ASTM C880, Section 10.1. Test results for both wet and dry condition control series were averaged for each test series and the post-exposure mean flexural strength of each test series was further evaluated against

both the comparative zero-cycle wet condition control series and the preceding freeze-thaw exposure series for evaluation of potential strength loss.

ANSI A326.3 – Dynamic Coefficient of Friction (DCoF) Evaluation

The DCoF evaluation was conducted in accordance with the procedures detailed in ANSI A326.3, sections 7 & 8. Specimens were evaluated with a BOT 3000E tribometer (ICN NSI00002) in wet condition (employing a 0.05% SLS solution). Four perpendicular passes were conducted, and test values averaged for each specimen. Individual specimen results were averaged for the test series and evaluated against the ANSI A326.3, Section 3.1 recommended wet condition performance criteria of 0.42.

Specimen Details

Test Method	Quantity	Nominal Dimensions	Description
ASTM C97	5	2.25 in. cubes	Light Grey Natural Limestone Product with Darker Grey Veining
ASTM C170	20 Total Perpendicular, Wet: 5 Perpendicular, Dry: 5 Parallel, Dry: 5 Parallel, Wet: 5	2.25 in. cubes	
ASTM C99	10 Total Perpendicular, Wet: 5 Perpendicular, Dry: 5	4 in. x 8 in. x 2.25 in. thickness	
ASTM C1353	3	4 in. square x 0.375 in. thickness	
ASTM C880	10 Total Perpendicular, Wet: 5 Perpendicular, Dry: 5	4 in. x 15 in. x 1.25 in. thickness	
ANSI A326.3	3	12 in. square x 1.0 in. thickness	
AS TM C666 (ASTM C880)	20 Total <u>Perpendicular:</u> 25 Cycle: 5 50 Cycle: 5 75 Cycle: 5 100 Cycle: 5	4 in. x 15 in. x 1.25 in. thickness	

Test Results

ASTM C97 – Absorption & Density Evaluation

Specimen No.	Measured Mass (g)			Absorption (%)	Bulk Specific Gravity	Density (lbs/ft^3)
	Oven-Dry	48-Hour Wetted	Immersed Suspended			
1	496.78	498.40	313.71	0.33	2.690	167.9
2	456.41	457.40	287.78	0.22	2.691	168.0
3	487.18	488.46	307.37	0.26	2.690	167.9
4	494.94	495.99	312.43	0.21	2.696	168.3
5	472.43	473.43	297.87	0.21	2.691	168.0
Series Average				**0.25**	**2.692**	**168.0**
Standard Deviation				0.05	0.003	0.16
Coefficient of Variation (%)				20.20	0.093	0.10

ASTM C1353 – Abrasion Resistance Evaluation

Specimen No.	Bulk Specific Gravity	Mass (g)			Wear Cycles Completed	Index of Abrasion
		Initial	End	Loss		
1	2.69	342.80	339.98	2.82	1,000	35.1
2		263.54	260.60	2.94		33.6
3		257.98	254.90	3.08		32.1
Series Average						**33.6**
Standard Deviation						1.5
Coefficient of Variation (%)						4.4

ANSI A326.3 - Dynamic Coefficient of Friction

Brushed Finish (Wet Condition)

Specimen No.	Test Orientation				Wet Condition DCOF
	0°	90°	180°	270°	
Wet - 1	0.85	0.89	0.92	0.94	0.90
Wet - 2	0.94	0.94	0.88	0.90	0.92
Wet - 3	0.89	0.92	0.86	0.87	0.87
Series Average					**0.90**
Standard Deviation					0.03
Coefficient of Variation (%)					3.5

ASTM C170 – Compressive Strength Evaluation – Wet Condition, Perpendicular Loading

Specimen No.	Test Condition	Specimen Dimensions (in)		Loading Area (in^2)	Failure Load (lb_f)	Compressive Strength (psi)
		Length	Width			
PP-W-1	Loaded Perpendicular to stone rift plane Wet Condition	2.23	2.28	5.08	56,750	11,170
PP-W-2		2.21	2.28	5.05	66,760	13,220
PP-W-3		2.23	2.27	5.07	72,560	14,310
PP-W-4		2.08	2.28	4.75	86,130	18,130
PP-W-5		2.02	2.01	4.06	46,960	20,000
Series Average						**15,370**
Standard Deviation						3,621
Coefficient of Variation (%)						23.6

ASTM C170 – Compressive Strength Evaluation – Dry Condition, Perpendicular Loading

Specimen No.	Test Condition	Specimen Dimensions (in)		Loading Area (in^2)	Failure Load (lb_f)	Compressive Strength (psi)
		Length	Width			
PP-D-1	Loaded Perpendicular to stone rift plane Dry Condition	2.23	2.21	4.92	82,950	16,860
PP-D-2		2.25	2.22	4.98	75,520	15,160
PP-D-3		2.21	2.22	4.91	99,130	20,190
PP-D-4		2.30	2.17	4.98	64,370	12,930
PP-D-5		2.07	2.25	4.64	83,100	17,910
Series Average						**16,610**
Standard Deviation						2,748
Coefficient of Variation (%)						16.5

aASTM C170 – Compressive Strength Evaluation – Wet Condition, Parallel Loading

Specimen No.	Test Condition	Specimen Dimensions (in)		Loading Area (in^2)	Failure Load (lb_f)	Compressive Strength (psi)
		Length	Width			
LL-W-1	Loaded Parallel to stone rift plane Wet Condition	2.28	2.23	5.08	53,280	10,490
LL-W-2		2.27	2.23	5.06	69,310	13,700
LL-W-3		2.28	2.22	5.07	61,690	12,170
LL-W-4		2.28	2.23	5.08	53,250	10,480
LL-W-5		2.24	2.23	4.99	66,820	13,390
Series Average						**12,050**
Standard Deviation						1,535
Coefficient of Variation (%)						12.7

ASTM C170 – Compressive Strength Evaluation – Dry Condition, Parallel Loading

Specimen No.	Test Condition	Specimen Dimensions (in)		Loading Area (in^2)	Failure Load (lb_f)	Compressive Strength (psi)
		Length	Width			
LL-D-1	Loaded Parallel to stone rift plane Dry Condition	2.22	2.28	5.07	56,400	11,120
LL-D-2		2.24	2.28	5.10	68,470	13,430
LL-D-3		2.20	2.28	5.01	80,490	16,070
LL-D-4		2.27	2.22	5.04	70,900	14,070
LL-D-5		2.25	1.99	4.48	48,640	10,860
Series Average						**13,110**
Standard Deviation						2,168
Coefficient of Variation (%)						16.5

ASTM C99 – Modulus of Rupture Evaluation – Wet Condition, Perpendicular Loading

Specimen Details		Support Span (in)	Specimen Dimensions (in)		Failure Load (lb_f)	Modulus of Rupture (psi)
No.	**Test Condition**		**Width**	**Depth**		
PP-W-1	Loaded Perpendicular to stone rift plane Wet Condition	7.0	4.04	2.35	3,940	1,860
PP-W-2			3.96	2.27	4,650	2,390
PP-W-3			4.01	2.38	4,187	1,940
PP-W-4			3.96	2.28	3,903	1,990
PP-W-5			3.95	2.27	3,627	1,870
Series Average						**2,010**
Standard Deviation						219
Coefficient of Variation (%)						10.9

ASTM C99 – Modulus of Rupture Evaluation – Dry Condition, Perpendicular Loading

Specimen No.	Test Conditions	Support Span (in)	Specimen Dimensions (in)		Failure Load (lb_f)	Modulus of Rupture (psi)
			Width	**Depth**		
PP-D-1	Loaded Perpendicular to stone rift plane Dry Condition	7.0	3.94	2.32	3,553	1,760
PP-D-2			3.99	2.28	3,703	1,880
PP-D-3			3.95	2.32	3,191	1,580
PP-D-4			4.05	2.33	3,868	1,850
PP-D-5			4.07	2.24	3,663	1,880
Series Average						**1,790**
Standard Deviation						127
Coefficient of Variation (%)						7.1

ASTM C880 – Flexural Strength Evaluation – Wet Condition, Perpendicular Loading

Specimen Details		Support Span (in)	Specimen Dimensions (in)		Failure Load (lb_f)	Flexural Strength (psi)
No.	**Test Condition**		**Width**	**Depth**		
PP-W-1	Loaded Perpendicular to stone rift plane Wet Condition	12.5	3.96	1.26	1,128	1,680
PP-W-2			3.99	1.26	1,129	1,670
PP-W-3			3.98	1.27	739	1,090
PP-W-4			3.96	1.27	963	1,420
PP-W-5			3.94	1.30	560	780
Series Average						**1,330**
Standard Deviation						389
Coefficient of Variation (%)						29.2

ASTM C880 – Flexural Strength Evaluation – Dry Condition, Perpendicular Loading

Specimen No.	Test Conditions	Support Span (in)	Specimen Dimensions (in)		Failure Load (lb_f)	Flexural Strength (psi)
			Width	**Depth**		
PP-D-1	Loaded Perpendicular to stone rift plane Dry Condition	12.5	3.93	1.13	671	1,250
PP-D-2			3.96	1.26	1,126	1,680
PP-D-3			3.94	1.27	989	1,450
PP-D-4			3.98	1.28	1,176	1,700
PP-D-5			4.02	1.27	816	1,190
Series Average						**1,450**
Standard Deviation						236
Coefficient of Variation (%)						16.3

ASTM C666 – Post Freeze-Thaw Flexural Strength
Test Condition: Perpendicular Rift, 25-Cycle (Wet)

Specimen Details		Support Span (in)	Specimen Dimensions (in)		Failure Load (lb_f)	Flexural Strength (psi)
No.	**Test Condition**		**Width**	**Depth**		
PP-FT25-1	Loaded Perpendicular to stone rift plane Post 25-Cycles Freeze-Thaw Exposure Wet Condition	12.5	3.99	1.29	854	1,210
PP-FT25-2			3.95	1.20	584	970
PP-FT25-3			3.96	1.18	717	1,220
PP-FT25-4			3.94	1.18	664	1,130
PP-FT25-5			3.95	1.15	734	1,320
Series Average						**1,170**
Standard Deviation						131
Coefficient of Variation (%)						11.2

- ***No 25-cycle specimen showed readily visible signs of degradation post-exposure.***

Post Freeze-Thaw Comparative Flexural Strength Evaluation (25 Cycles C666, Proc. B)

Evaluation Condition		Result (% Change)
Perpendicular stone rift plane	Against Wet Condition Control	-12.0
	Against Preceding Freeze-Thaw Exposure Set	N/A

ASTM C666 – Post Freeze-Thaw Flexural Strength
Test Condition: Perpendicular Rift, 50-Cycle (Wet)

Specimen Details		Support Span (in)	Specimen Dimensions (in)		Failure Load (lb_f)	Flexural Strength (psi)
No.	**Test Condition**		**Width**	**Depth**		
PP-FT50-1	Loaded Perpendicular to stone rift plane Post 50-Cycles Freeze-Thaw Exposure Wet Condition	12.5	4.05	1.18	726	1,220
PP-FT50-2			3.98	1.17	777	1,330
PP-FT50-3			3.99	1.18	670	1,130
PP-FT50-4			3.98	1.27	588	860
PP-FT50-5			3.93	1.18	795	1,370
Series Average						**1,180**
Standard Deviation						203
Coefficient of Variation (%)						17.2

- ***No 50-cycle specimen showed readily visible signs of degradation post-exposure.***

Post Freeze-Thaw Comparative Flexural Strength Evaluation (50 Cycles C666, Proc. B)

Evaluation Condition		Result (% Change)
Perpendicular stone rift plane	Against Wet Condition Control	-11.3
	Against Preceding Freeze-Thaw Exposure Set	+0.9

ASTM C666 – Post Freeze-Thaw Flexural Strength
Test Condition: Perpendicular Rift, 75-Cycle (Wet)

Specimen Details		Support Span (in)	Specimen Dimensions (in)		Failure Load (lb_f)	Flexural Strength (psi)
No.	**Test Condition**		**Width**	**Depth**		
PP-FT75-1	Loaded Perpendicular to stone rift plane Post 75-Cycles Freeze-Thaw Exposure Wet Condition	12.5	3.93	1.18	625	1,080
PP-FT75-2			3.97	1.18	690	1,180
PP-FT75-3			4.00	1.15	774	1,380
PP-FT75-4			3.95	1.27	1,072	1,580
PP-FT75-5			3.94	1.15	904	1,620
Series Average						**1,370**
Standard Deviation						238
Coefficient of Variation (%)						17.4

- ***No 75-cycle specimen showed readily visible signs of degradation post-exposure.***

Post Freeze-Thaw Comparative Flexural Strength Evaluation (75 Cycles C666, Proc. B)

Evaluation Condition		Result (% Change)
Perpendicular stone rift plane	Against Wet Condition Control	+3.0
	Against Preceding Freeze-Thaw Exposure Set	+16.1

ASTM C666 – Post Freeze-Thaw Flexural Strength
Test Condition: Perpendicular Rift, 100-Cycle (Wet)

Specimen Details		Support Span (in)	Specimen Dimensions (in)		Failure Load (lb_f)	Flexural Strength (psi)
No.	**Test Condition**		**Width**	**Depth**		
PP-FT100-1	Loaded Perpendicular to stone rift plane Post 100-Cycles Freeze-Thaw Exposure Wet Condition	12.5	3.91	1.17	775	1,350
PP-FT100-2			4.00	1.17	621	1,060
PP-FT100-3			3.95	1.27	909	1,330
PP-FT100-4			3.92	1.15	767	1,380
PP-FT100-5			3.98	1.15	523	930
Series Average						**1,210**
Standard Deviation						202
Coefficient of Variation (%)						16.7

- ***No 100-cycle specimen showed readily visible signs of degradation post-exposure.***

Post Freeze-Thaw Comparative Flexural Strength Evaluation (100 Cycles C666, Proc. B)

Evaluation Condition		Result (% Change)
Perpendicular stone rift plane	Against Wet Condition Control	-9.0
	Against Preceding Freeze-Thaw Exposure Set	-11.7a

Conclusion: The average test results were evaluated against the performance criteria presented in ASTM C568 Table 1, and ANSI A326.3. The results of these evaluations are presented in the table(s) below:

ASTM C568 Performance Evaluation Summary				
Physical Requirement	**Test Series Detail**		**Result**	
			Mean Test Value	**Performance Evaluation**
C97 Absorption (%): Class I (Low Density): ≤12.0 Class II (Medium Density): ≤7.5.0 Class III (High Density): ≤3.0			0.25	Meets as Stated: Class III
C97 Density (lbs/ft^3): Class I (Low Density): ≥110 Class II (Medium Density): ≥135 Class III (High Density): ≥160			168.0	Meets as Stated: Class III
C170 Compressive Strength (psi): Class I (Low Density): ≥1,800 Class II (Medium Density): ≥4,000 Class III (High Density): ≥8,000	Perpendicular	Wet	15,370	Meets as Stated: Class III
		Dry	16,610	
	Parallel	Wet	12,050	
		Dry	13,110	
C99 Modulus of Rupture (psi): Class I (Low Density): ≥400 Class II (Medium Density): ≥500 Class III (High Density): ≥1,000	Perpendicular	Wet	2,010	Meets as Stated: Class III
		Dry	1,790	
C1353 Abrasion Resistance: Class I (Low Density): H_a ≥10 Class II (Medium Density): H_a ≥10 Class III (High Density): H_a ≥10			33.6	Meets as Stated: Class III
C880 Flexural Strength (psi): No Performance Criteria Stated	Perpendicular	Wet	1,330	Design Property Only
		Dry	1,450	

ANSI A326.3 Performance Evaluation Summary			
Physical Requirement	**Test Series Detail**	**Result**	
		Mean Test Value	**Performance Evaluation**
ANSI A326.3 - Dynamic Coefficient of Friction (Wet): DCoF ≥0.42	Brushed Finish	0.90	Meets as Stated

Post Freeze-Thaw Comparative Flexural Strength Evaluation Summary				
Test Series	**Test Condition**	**Series Mean Wet Flexural Strength (psi)**	**Comparative Performance Evaluation (%)**	
			vs. Wet Control	**vs. Preceding Freeze-Thaw Exposure Set**
0 Cycle (Wet)	Perpendicular Wet	1,330	N/A	N/A
25 Cycles (Wet)		1,170	-12.0	N/A
50 Cycles (Wet)		1,180	-11.3	+0.9
75 Cycles (Wet)		1,370	+3.0	+16.1
100 Cycles (Wet)		1,210	-9.0	-11.7

ASTM C568 – Limestone Properties Evaluation

The Chapel Buff product satisfied the ASTM C568 performance requirements for a Class III (High-Density) Limestone product for Absorption, Density, Compressive Strength, Modulus of Rupture, and Abrasion Resistance.

There are no ASTM C568 performance criteria for ASTM C880 Flexural Strength, so these values are reported as a design property only.

ANSI A325.3 Evaluation

The Chapel Buff product (brushed finish) satisfied the ANSI A326.3 recommended minimum performance criteria of 0.42 DCOF for wet condition (Mean Wet Condition DCOF: 0.90).

ASTM C666 – Freeze-Thaw Durability Evaluation

No post-exposure freeze-thaw specimen showed readily visible signs of degradation post-exposure.

There are no ASTM C568 performance criteria for ASTM C666 Freeze-Thaw Durability, so these values are reported as a design property only.

It has been our pleasure to provide this product testing service for your project. Please do not hesitate to contact us if you have any questions or require additional information. Contact information is listed below.

Respectfully submitted,

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Revision Log

No.	Date	Page(s)	Description
0	12/08/23	N/A	Initial report release

Document Control Number: *NSICD 00001-R0*

Photographs

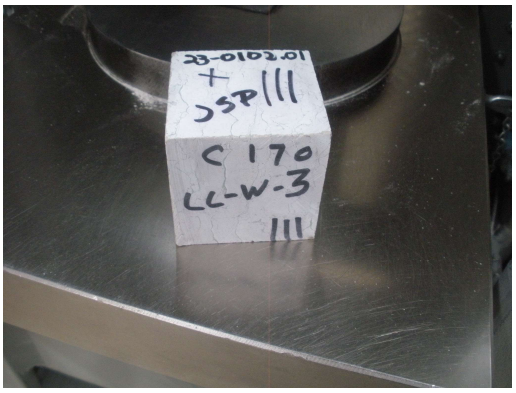

Photo No. 1
ASTM C170 – Representative Pretest Condition Specimen

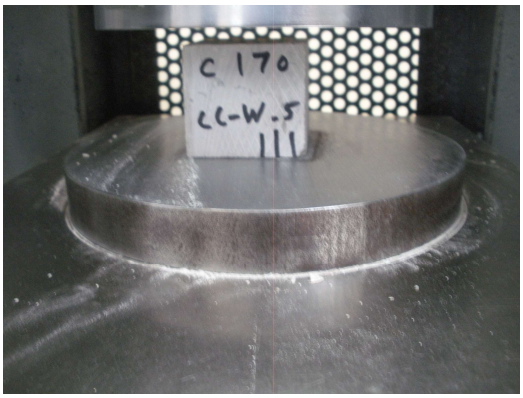

Photo No. 2
ASTM C170 – Test Setup

Photo No. 3
ASTM C170 – Specimen Failure Mode: Loading Perpendicular to Rift (Wet Condition)

Photo No. 4
ASTM C170 – Specimen Failure Mode: Loading Parallel to Rift (Dry Condition)

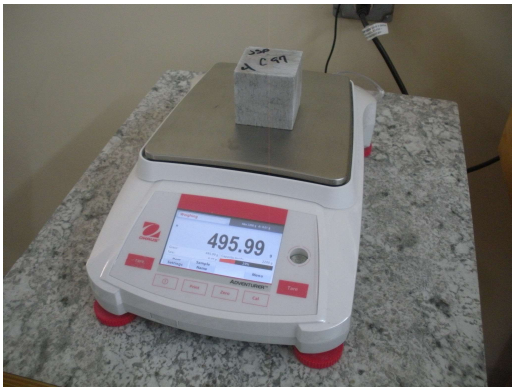

Photo No. 5
ASTM C97 – Absorption & Density Test Setup

Photo No. 6
ASTM C99 – Modulus of Rupture Test Setup

Photo No. 7
ASTM C99 – Specimen Failure Mode: Loading Perpendicular to Rift (Wet Condition)

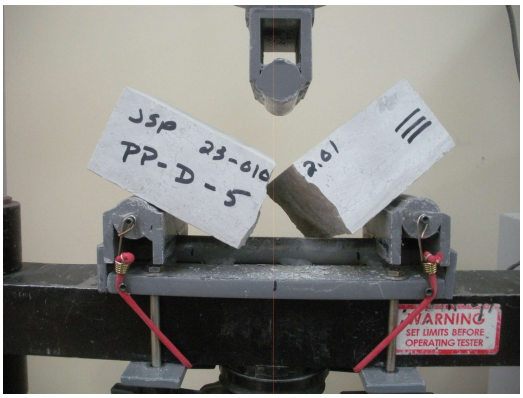

Photo No. 8
ASTM C99 – Specimen Failure Mode: Loading Perpendicular to Rift (Dry Condition)

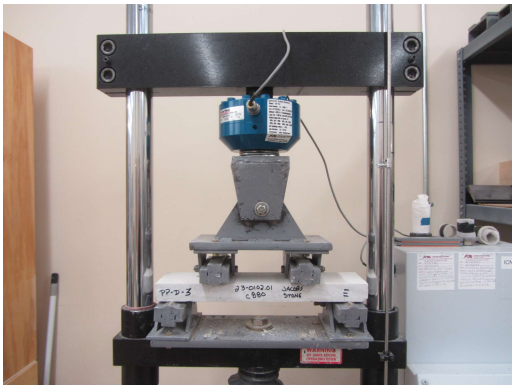

Photo No. 9
ASTM C880 – Flexural Strength Test Setup

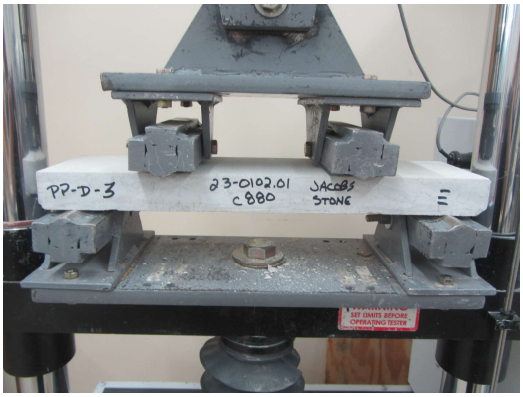

Photo No. 10
ASTM C880 – Specimen Loading Detail

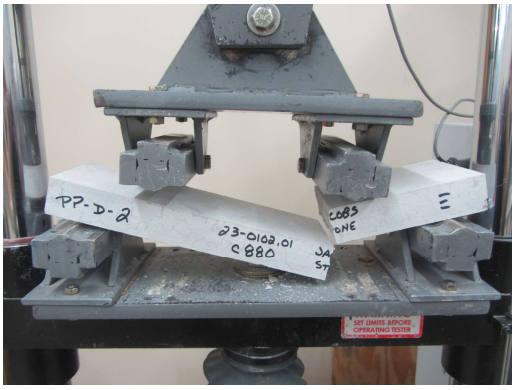

Photo No. 11
ASTM C880 – Specimen Failure Mode:
Loading Perpendicular to Rift
(Dry Condition)

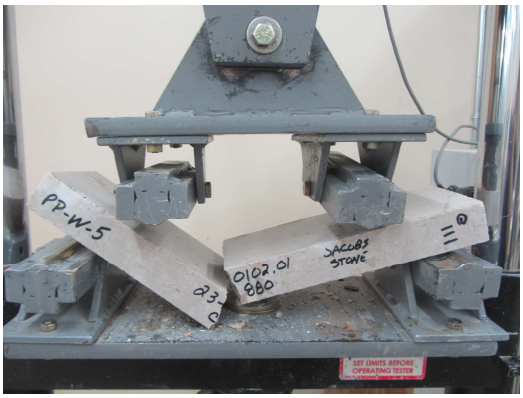

Photo No. 12
ASTM C880 – Specimen Failure Mode:
Loading Perpendicular to Rift
(Wet Condition)

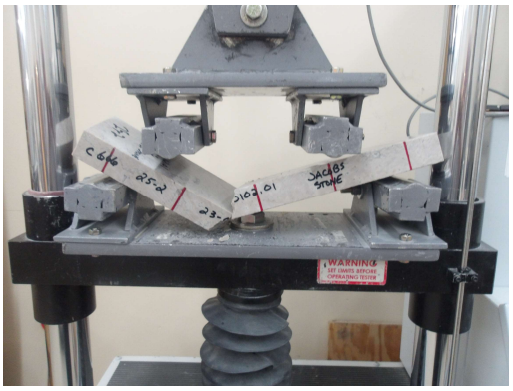

Photo No. 13
ASTM C666 (C880) - Failure Mode:
Representative 25-Cylce Specimen
(Perpendicular, Wet Condition)

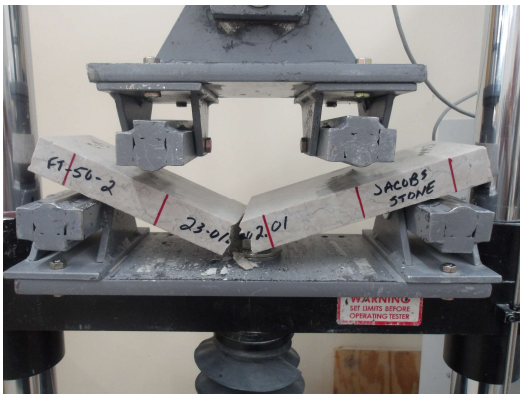

Photo No. 14
ASTM C666 (C880) - Failure Mode:
Representative 50-Cylce Specimen
(Perpendicular, Wet Condition)

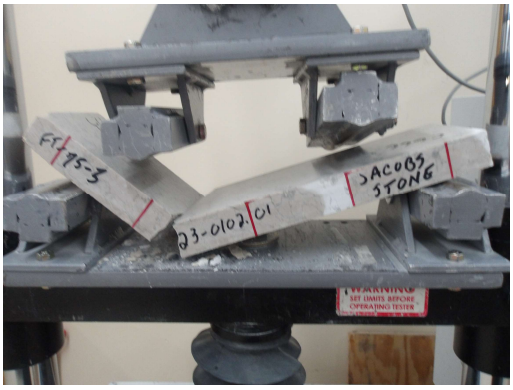

Photo No. 15
ASTM C666 (C880) - Failure Mode:
Representative 75-Cylce Specimen
(Perpendicular, Wet Condition)

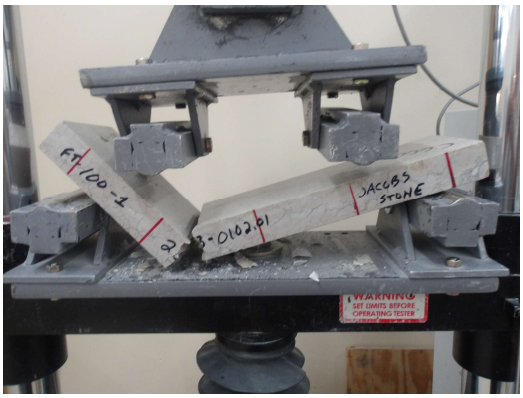

Photo No. 16
ASTM C666 (C880) - Failure Mode:
Representative 100-Cylce Specimen
(Perpendicular, Wet Condition)

Photo No. 17
ASTM C1353 – Pretest Specimen Condition

Photo No. 18
ASTM C1353 – Abrasion Test Setup

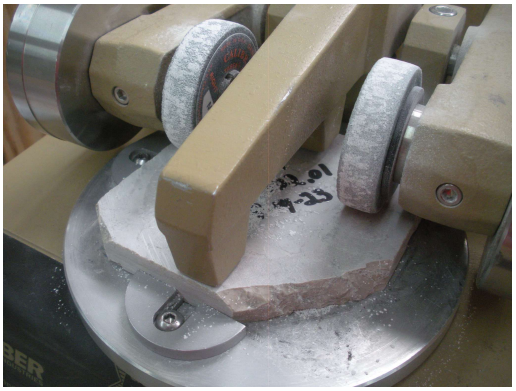

Photo No. 19
ASTM C1353 – Test in Progress

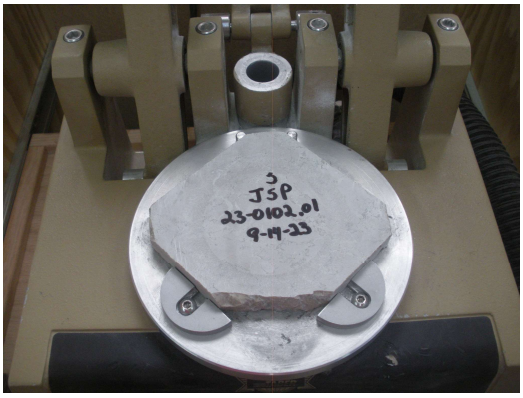

Photo No. 20
ASTM C1353 – Representative Post-Abrasion Specimen Condition

Photo No. 21
BOT 3000E Test Apparatus

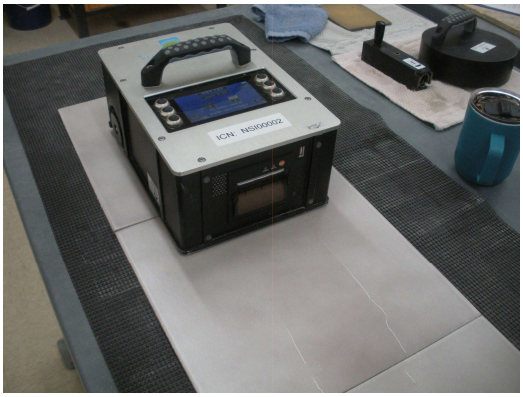

Photo No. 22
ANSI A326.3 – DCOF Evaluation
BOT 3000E Pretest Unit Calibration

Photo No. 23
Chapel Buff Stone Surface Detail
(Brushed Finish)

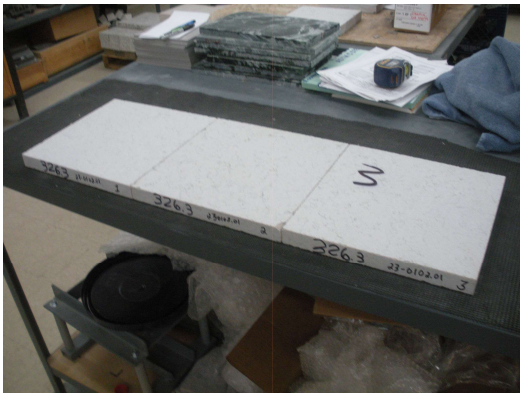

Photo No. 24
DCoF Test Set Up