CERTIFIED TEST REPORT

COMPRESSIVE STRENGTH OF CYLINDRICAL HYDRAULIC-CEMENT MORTAR
- Per ASTM C39 -

Report Number: R-5.10_02-03-21B_PS
Date: April 27, 2021

REPORT PREPARED FOR:

Piazza Stoneworks
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Quality System: The Structures and Materials Laboratory (SML) maintains a quality system in compliance with ISO 17025-2017, accredited under International Accreditation Service (IAS), testing laboratory TL-478 and qualified laboratory by the Florida Department of Transportation (FDOT) number ISM028. All the test results presented herein are linked through unbroken chain data. Analyzed data is obtained directly from the recorded raw data during testing, from which the test results are presented. This report contains analyzed tabulated data results.

Procedures: All tests and services are done in accordance with the SML Quality Manual (Version 6.0) revised November 30, 2019; relevant standard operating procedures (SOPs); and with the applicable requirements of the reference standard test methods, unless otherwise stated.

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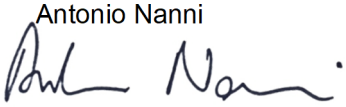
Test Report

Controls:	
Superseded Report	New report
Reason for Revision	n/a
Effective Date	April 27, 2021

Test Report Approval Signatures:	
Quality review Approval	I indicate that I have reviewed this Test Report and agree with the contents it presents, and find it meets all applicable laboratory requirements and policies. I approve for its release to the customer. Name: Francisco De Caso Signature:  Date: April 27, 2021
Technical review Approval	I indicate that I have reviewed this Test Report and agree with the technical contents it presents, and find it meets all applicable laboratory requirements and policies. I approve for its release to the customer. Name: Antonio Nanni Signature:  Date: April 27, 2021

1. COMPRESSIVE STRENGTH - ASTM C39

1.1. TEST SUMMARY INFORMATION

Test Objective:	Determination of compressive strength of cured mortar cylindrical specimens.
Sample Under Evaluation:	Piazza Stoneworks bagged dry mix mortar.
Test Standard Method/s:	ASTM C39-21. Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
Test Set-up:	Uni-axial compressive load was applied via a universal test frame using with bearing socket block. Load control rate corresponding to a stress rate of 0.25 MPa/s (35 lbf/s) was applied. The maximum load at failure was recorded.
Test Location:	Structures and Materials Laboratory at the University of Miami. 1251 Memorial Dr., MEB108 Coral Gables, FL, 33146.
Analyst/s:	Juan Manuel Palacios
Technical Test Record:	TDS_C39_PS-6.
Specimen Dimensions:	Cylindrical prisms made from Piazza Stoneworks mix with nominal diameter (D), and length/height (l) dimensions equal to 102 x 203 mm (4.0 x 8.0 in.).
Specimen Preparation:	Mortar mix to fabricate the prism specimens was prepared per manufacturer specifications with a 15% of water by volume. Specimens were cast in prefabricated cylindrical molds cast per C192 'Practice for Making and Curing Concrete Test Specimens in the Laboratory'.
Sampling Reference:	Provided by the client.
Specimen Conditioning:	Specimens were conditioned in the humidity room for the first 24 hours. Curing continued by submerging specimens in lime-water until test date was reached for reference purposes.
Specimen ID:	Specimens are labeled and uniquely identified for quality and traceability using the format M#_X; where M is the tested property (CS-Compressive Strength); # is the curing period (1 for 7 days and 2 for 28 days), and X is specimen repetition number (1 to 5). Refer to Table 1.1.
Test Results:	Compressive strength tests results for 7 and 28 day strength are tabulated in Table 1.2, respectively.

Table 1.1 – Test matrix

Specimen ID	Material Identification	Curing Period (days)	Cast date (mm.dd.yy)	Test date (mm.dd.yy)
CS1_01 to 05	Piazza Stoneworks dry mix design	7	03.24.2021	03.31.2021
CS2_01 to 05		28	03.23.2021	04.20.2021

1.2. TEST RESULTS

Table 1.2 – Results for cylindrical compressive strength of mortar specimens with Piazza Stoneworks mix

Specimen ID	Average Diameter D_{ave}		Area A		Maximum Load P_{max}		Compressive Strength f_{cm}		Fracture
	mm	in.	mm^2	in^2	kN	lbf	MPa	psi	Mode
CS1_01	101.7	4.002	8115	12.58	293.6	66010	36.18	5248	Type 1
CS1_02	101.7	4.002	8115	12.58	304.9	68550	37.57	5450	Type 3
CS1_03	101.6	4.000	8107	12.57	306.6	68920	37.81	5484	Type 3
CS1_04	101.6	4.000	8107	12.57	292.2	65700	36.05	5228	Type 1
CS1_05	101.6	4.001	8111	12.57	313.5	70480	38.65	5606	Type 3
Average					**302.2**	**67932**	**37.25**	**5403**	
S_{n-1}					9.0	2033	1.12	162	
CV((%)					3.0	3.0	3.0	3.0	
CS2_01	101.6	4.000	8107	12.57	354.0	79580	43.66	6333	Type 3
CS2_02	101.6	4.000	8107	12.57	360.5	81050	44.47	6450	Type 3
CS2_03	101.7	4.003	8120	12.59	344.0	77340	42.37	6145	Type 3
CS2_04	101.6	4.001	8111	12.57	342.6	77010	42.23	6125	Type 3
CS2_05	101.6	4.000	8107	12.57	363.6	81730	44.84	6504	Type 1
Average					**352.9**	**79342**	**43.52**	**6311**	
S_{n-1}					9.5	2129	1.19	172	
CV((%)					2.7	2.7	2.7	2.7	

**Compressive strength, f_{cm} is defined as P_{max} / A*

♦ END OF TES REPORT ♦