



TEST REPORT

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REPORT NUMBER: 4086-25001

PROJECT NUMBER: 46599

REPORT ISSUED: October 22, 2025

CLIENT: **Prestige Stone Products LLC**
9290 Winesburg Rd.
Dundee, OH 44624
Phone: 330.439.5318

Contact: Paul Miller

SUBJECT: Adhered Manufactured Stone Masonry Veneer [AMSMV]

CODE/STANDARD: ICC-ES *Acceptance Criteria for Adhered Manufactured Stone Masonry Veneer*, [AC51], Approved June 2018 (Editorially revised February 2024)

TEST DATE(S): From July 15, 2025 to September 19, 2025

CONCLUSION: The Prestige Stone AMSMV complies with the requirements of ICC-ES AC51, June 2018 [Editorially revised Feb 2024] and ASTM C1670-2024a

Prepared & Submitted By:

Sanjay "Jay" Mishra
Vice President of Building Product Testing

All testing and sample preparation for this report was performed under the continuous, direct supervision of IAPMO Institute of Building Technology (IBT), unless otherwise stated. The statement of compliance, if stated, is based on the test results compared to the standard specifications without considering measurement uncertainty. The observations, test results and conclusions in this report apply only to the specific samples tested and are not indicative of the quality or performance of similar or identical products. Only the Client shown above is authorized to copy or distribute the report, and then only in its entirety. Any use of the IAPMO IBT name for the sale or advertisement of the tested material, product or service must first be approved in writing by IAPMO IBT.

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- IAPMO QCC Sampling Report (5 pages)
- QAI Test Report, ASTM E84 (7 pages)
- Intertek Test Report, ASTM C666, (8 pages)
- Southwest Inspection & Testing Test Report, ASTM C31 (1 page)

1.0 INTRODUCTION & TEST PROGRAM

The tests listed below were conducted on Adhered Manufactured Stone Masonry Veneer [AMSMV] manufactured at the Prestige Stone, Dundee, OH plant.

<i>TEST PROGRAM</i>
<i>ICC-ES Acceptance Criteria for Adhered Manufactured Stone Masonry Veneer, ICC-ES AC51, dated June 2018 [Editorially revised February 2024]</i>
<ul style="list-style-type: none"> • Compressive Strength at 28 days, ASTM C1670 & C39 • Water Absorption and Density, ASTM C1670 and C140 • Procedure for Determining Average Thickness, ASTM C1670 • Dimensional Tolerances, ASTM C1670 • Freeze-Thaw (50 cycles) ASTM C1670 & C666, Procedure A • Length Change / Linear Drying Shrinkage, ASTM C157 • Surface Burning Characteristics, ASTM E84 or UL 723 • Shear Bond Strength, ASTM C482 • Thermal Resistance, ASTM C518

2.0 TEST SPECIMENS

Specimen sampling was conducted at the Prestige Stone, Dundee, OH plant by IAPMO Quality Control Consultants (IAPMO QCC), Roswell, GA (ANAB/ ANSI ISO 17020:2012; Certificate #AI-2965. The IAPMO QCC sampling report can be found in the appendix. IAPMO QCC personnel witnessed the molding of test specimens and also selected boxes containing the finished product. The molds for all small-scale specimens were provided by IAPMO IBT.

The Linear Drying Shrinkage specimens were demolded after 24 hours, covered with a wet cloth, and wrapped and sealed in plastic as required by the standard. Compression cylinders were demolded by IAPMO IBT personnel on day 7. The freeze thaw specimens were not moisture cured since this is not required by the referenced standard. All samples were shipped to the IAPMO IBT testing facility in Ontario, CA and received on July 21, 2025.

3.0 COMPRESSION STRENGTH, ASTM C1670-2024a

Standard: ASTM C1670-2024a, *Standard Test Methods for Adhered Manufactured Stone Masonry Veneer Units*

Specimens: Five (5) 4-inch diameter x 8-inch (100 mm x 200 mm) cylinders tested at 28 days. Test specimens were molded using the standard mix design. Molding was witnessed by IAPMO QCC.

Requirement: The average compressive strength of five specimens shall be a minimum of 2,100 psi (15 MPa) with no individual specimen having measured compressive strength less than 1,800 psi (12 MPa).

Report: The test was conducted by Southwest Inspection & Testing, Inc., La Habra, CA (IAS TL-160) under IBT's direction. The Southwest Inspection & Testing test report can be found in the appendix.

Compliance: The product meets the minimum compressive strength requirements.

<i>Compressive Strength @ 28-days</i>				
<i>Specimen</i>	<i>lbs.</i>	<i>psi</i>	<i>MPa</i>	<i>Fracture Type</i>
1	94830	7540	361.02	II
2	98250	7820	374.42	III
3	96480	7680	367.72	III
4	99300	7900	378.25	III
5	95370	7590	363.41	IV
Average	96846	7706	368.97	
Standard Deviation	1,895	152	7.3	

4.0 WATER ABSORPTION & DENSITY, ASTM C1670-2024a

Standards: ASTM C1670-2024a, *Standard Test Methods for Adhered Manufactured Stone Masonry Veneer Units*

Samples: Three (3) 6" x 6" (152 mm x 152 mm) samples were tested. Samples were obtained by cutting three full-size veneer units.

Procedure: The samples were placed in a drying oven at 230 ± 9 °F (110 ± 5 °C) until the mass of the specimen changed no more than 0.2 % in successive determinations of mass at 2-hour intervals. The samples were then completely submerged in water at 60 to 80 °F (15 to 27 °C) for 24 to 28 hours. Weights were then taken after the immersion period of each sample suspended in water. The samples were then removed from the water and allowed to drain for 1 min and visible water was removed with a damp cloth, and the saturated weight was taken.

Requirement: The saturated weight of the veneer units cannot exceed 15 pounds per square foot (73 kg/m²) per section 8.3 of ASTM C1670.

Calculation: Saturated Density = [(Ws)/(Ws-Wi)] x 62.4 per ASTM C1670. The weight per square foot of the unit shall be determined by multiplying the saturated density of the unit by the average thickness.

Compliance: The product complies with the saturated weight requirements.

Sample	Oven Dry Weight after drying @ 239 F (g) (Wd)	Immersed Weight after 28 hours water immersion (g) (Wi)	Saturated Weight after 60 sec draining and wiping (g) (Ws)	Absorption (%)	Absorption (lb./ft ³)	Absorption (Kg/m ³)
1	240.25	121.46	279.67	16.41	15.55	249.16
2	266.78	134.97	310.2	16.28	15.46	247.79
3	302.27	151.48	352.01	16.46	15.48	248.04
Average				16.38	15.49	248.33
Standard Deviation				0.09	0.05	0.73

Sample	Oven Dry Weight after drying @ 239 F (Kg) (Wd)	Immersed Weight after 28 hours water immersion (Kg) (Wi)	Saturated Weight after 60 sec draining and wiping (Kg) (Ws)	Saturated Density, (lb./ft ³)	Saturated Density, (Kg/m ³)	Weight/Sq. ft (lb./ft ²)	Weight/Sq. ft (Kg/m ²)
1	0.24025	0.12146	0.27967	110.31	1767.71	6.51	31.82
2	0.26678	0.13497	0.31020	110.46	1770.24	7.21	35.23
3	0.30227	0.15148	0.35201	109.54	1755.40	7.47	36.48
Average				110.10	1764.45	7.06	34.51
Standard Deviation				0.50	7.94	0.49	2.41

5.0 PROCEDURE FOR DETERMINING AVERAGE THICKNESS, C1670-2024a

Standard: ASTM C1670-2024a, *Standard Specification for Adhered Manufactured Stone Masonry Veneer Units*, Annex A1.

Samples: Three veneer samples from the density test in section 4 above.

Volume: Per section A1.3.1 of ASTM C1670, the net volume of each unit shall be determined by dividing the saturated weight (Ws) by the saturated density determined in accordance with 8.3 of C1670.

Calculation: Net Volume = Saturated Weight (Ws) / Saturated Density

Compliance: The stone veneer complies with the thickness and density requirements.

Sample	Saturated Weight after 60 sec draining and wiping (Kg) (Ws)	Saturated Density, (Kg/m ³)	Net Volume, m ³	Net Volume, in ³
1	0.27967	1767.71	0.0001582	9.655
2	0.31020	1770.24	0.0001752	10.693
3	0.35201	1755.40	0.0002005	12.237
Average	0.31396	1764.45	0.0001780	10.862
Standard Deviation	0.0363	7.94	0.0000213	1.299

Analysis

Maximum Allowable Thickness = 15 lb./ft² / Density (lb./ft³)
 = 15/110.10 = 0.13624 ft = **1.635 inches**

Conclusion: The average actual thickness of the samples tested was 0.770 inches and is less than the Maximum Allowable Thickness of 1.635 inches. The specimens tested comply with the maximum density requirements of section 8.3 of ASTM C1670-2024a.

Density Sample	Footprint (inches)		<u>Crosscheck and Verification</u> The average sample footprint of the three samples when measured was 10,397.72 mm ² or 16.12 in ² . Net Volume / Footprint = Thickness or 10.862/16.12 = 0.674 inches which is below the maximum allowable thickness of 1.635 inches.
	Width	Length	
1	4.000	4.000	
2	4.000	4.000	
3	4.000	4.000	
Average	4.000	4.000	

6.0 DIMENSIONAL TOLERANCES, ASTM C1670-2024a

Six (6) samples were randomly selected. The following observations were made:

Units shall have a minimum thickness of 1/4 in. [6 mm] except those parts of a unit within 0.5 in. [13 mm] of the unit perimeter.	The tested product complies with this requirement.
Units shall not exceed 36 in. [915 mm] in any face dimension and shall not exceed more than 5 ft ² [0.5 m ²] in total face area.	The tested product complies with this requirement.

7.0 SURFACE BURNING CHARACTERISTICS, ASTM E84-2024a

Standard: ATM E84-2024a, *Standard Test Method for Surface Burning Characteristics of Building Materials*

Equivalence: The above test procedure is comparable to the following standards: UL 723, ANSI/NFPA No. 255, and UBC No. 8-1.

Laboratory: QAI Laboratories, Rancho Cucamonga, CA (IAS-TL-220).

Samples: The test samples were submitted to QAI by IAPMO IBT.

Report: The QAI Laboratories test report can be found in the appendix of this report.

Results: Flame Spread = **0**
Smoke Density = **0**

8.0 FREEZE THAW, ASTM C666-15

Standard: ASTM C666-15, *Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing* and ASTM C1670-21b *Standard Specification for Adhered Manufactured Stone Masonry Veneer Units*

Testing: The freeze thaw test was conducted by Intertek on samples provided by IAPMO IBT. Test specimens were molded using the standard mix design. Fabrication of these test specimens was witnessed by IAPMO QCC. The 28-day sample conditioning in accordance with the standard was done at IAPMO IBT. The test results are reproduced below, and the Intertek test report can be found in the appendix of this report.

Laboratory: Intertek, York, PA, (IAS-TL-144)

Compliance: The tested product complies with the minimum requirement of no more than 1.5% total mass loss or show any fracture completely through the cross section after the completion of 50 freeze thaw cycles.

SECTION 8 TEST RESULTS

ASTM C1670 / ASTM C666 - Freeze Thaw Resistance Evaluation (50 Cycles)

SPECIMEN ID	WET CONDITION MASS (lbs)		MASS CHANGE (%) ¹	POST-EXPOSURE SPECIMEN VISUAL EVALUATION
	PRE-EXPOSURE	POST EXPOSURE		
1	14.2540	14.2920	+0.27	No specimen breakage/fracture through cross section
2	13.9640	13.9980	+0.24	
3	14.1180	14.1560	+0.27	
4	14.1220	14.1600	+0.27	Some granular debris observed in all freeze/thaw cycling bins, but no significant visual change to specimens
5	13.8280	13.8720	+0.32	
Average			+0.27	

¹ Specimen mass loss is denoted by (-), mass change denoted by (+) is net positive

9.0 LENGTH CHANGE, ASTM C157-2024

Standard: ASTM C157, *Standard Test Method for Length Change of Hardened Hydraulic-Cement Mortar and Concrete* with modifications and exceptions as specified in Section 9.3 of ASTM C1670-2024a.

Specimens: Four 3" x 3" x 11.25" [75 mm square cross section] test specimens were molded using the standard mix design. Fabrication of these test specimens was witnessed by QCC. The initial (7th day) readings were taken after the samples were removed from moist storage. The final readings were taken after air storage (dry conditioning) at 73 ± 3 OF (23 ± 20 F) and $50 \pm 4\%$ relative humidity for 28 days.

Calculations: Length Change: $\Delta L = (\text{CRD} - \text{Initial CRD})/G \times 100$
 CRD = difference between the comparator reading of the specimen and the reference bar.

G= gage length (10 inches [250 mm])

Requirement: Length change between the 7-day reading (immediately following moist storage), and the 28-day air curing reading (total age of 35 days) shall not exceed 0.10 %.

Compliance: The tested samples complied with the minimum requirement.

<i>Dimensional Measurements (in.) and Length Change (%)</i>						
DATE	7/22/2025	Time	9:00 AM	Comparator	11.6305	Length Change %
7 days (A)	Sample #1	Sample #2	Sample #3	Sample #4	Sample	
Reading 1	11.5595	11.5345	11.5530	11.6250	Sample #1	0.716
Reading 2	11.5590	11.5345	11.5530	11.6250	Sample #2	0.962
Reading 3	11.5585	11.5340	11.5535	11.6250	Sample #3	0.772
Reading 4	11.5585	11.5340	11.5535	11.6250	Sample #4	0.055
Average	11.5589	11.5343	11.5533	11.6250	Average	0.627
DATE	8/19/2025	TIME	9:00 AM	Comparator	11.6305	Length Change %
35 days (E)	Sample #1	Sample #2	Sample #3	Sample #4	Sample	
Reading 1	11.5545	11.5295	11.5500	11.6220	Sample #1	0.760
Reading 2	11.5545	11.5295	11.5500	11.6220	Sample #2	1.009
Reading 3	11.5545	11.5300	11.5495	11.6220	Sample #3	0.805
Reading 4	11.5545	11.5295	11.5505	11.6215	Sample #4	0.086
Average	11.5545	11.5296	11.5500	11.6219	Average	0.665

<i>Length Change between 7 days and 35 days, ΔL (%)</i>			
<i>(28 days of dry conditioning)</i>			
0.044	0.046	0.032	0.031
Average ΔL (%)		0.037	
Standard Deviation		0.008	

10.0 SHEAR BOND STRENGTH, ASTM C482-2020

Standard: ASTM C482-2020, *Standard Test Method for Bond Strength of Ceramic Tile to Portland Cement Paste*

Specimens: 4"x4" (101.6 x 101.6 mm), with a thickness no greater than 2-5/8 in. [70 mm]

Fabrication: All test specimens were fabricated by IBT personnel at IBT's Ontario, CA test facility. The test specimen construction was as follows:

- The mortar substrate used was specified for non-vitreous tile (water absorption greater than 7 %) in Test Method C482.
- The samples were allowed to cure at 73 °F for seven (7) days prior to testing. The samples were wrapped in impervious plastic film and were kept moist during the entire curing period.

Procedure: Samples were tested in accordance with ASTM C482 by clamping the support fixture to the base of a United Universal Testing Machine (SFM-150KN) equipped with an electronic load cell and a computerized data acquisition system.

The shear load was applied through a 1/2 in. [13 mm] by 1/2 in. [13 mm] steel bar (in place of the key) placed adjacent to the sample mortar interface.

Load Rate: The load was applied at a rate of 200 ± 20 psi per minute until failure.

Compliance: The tested product complied with the 50 psi [350 kPa] minimum requirement.

<i>Veneer Adhered with Portland Cement Paste per ASTM C482</i>			
<i>Sample #</i>	<i>Peak Force</i>	<i>Bond Strength</i>	<i>Bond Strength</i>
	<i>(lbf)</i>	<i>(psi)</i>	<i>(kPa)</i>
1	3466.7	216.67	1,493.9
2	4952.92	309.56	2,134.3
3	4899.98	306.25	2,111.5
4	4466.37	279.15	1,924.7
5	3965.73	247.86	1,708.9
6	2842.61	177.66	1,224.9
Average	4099.05	256.19	1766.37
Standard Deviation	836.87	52.30	360.63

Shear blocks molded per C482 [L] and sample under test in Universal Testing Machine (UTM) [R]



11.0 THERMAL TRANSMISSION PROPERTIES, ASTM C518-21

- Standard: ASTM C518-21, *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*
- Apparatus: TA Instruments / LaserComp FOX 314 Heat Flow Meter. Heat flow direction was up, and test specimen orientation was horizontal.
- Calibration: The heat flow meter was calibrated using a NIST traceable Standard Reference Material (SRM). The SRM used was Expanded Polystyrene (EPS) #1808142, calibrated using a 1450D NIST Calibration standard.
- Conditioning: The samples were tested after a minimum 96-hour conditioning at 73 °F ± 2 °F (23 °C ± 1 °C) and 50 ± 5 percent relative humidity.
- Samples: 12"x12"x1" [305 x 305 x 25.4 mm] molded specimens. The thickness reported below is automatically determined by the heat flow instrument.
- Comment: This is an abridged ASTM C518 test report.
- Uncertainty: The uncertainty of the TA Instruments / LaserComp FOX 314 Heat Flow Meter is estimated to be 1%.

<i>Physical Properties</i>	<i>Units</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>Average</i>
Test Date	Date	08/27/25	08/27/25	08/27/25	
Upper plate temperature	°C	12.78	12.79	12.79	12.79
	°F	55.00	55.02	55.02	55.02
Lower plate temperature	°C	35.02	35.01	35.01	35.01
	°F	95.04	95.02	95.02	95.02
Mean temperature	°C	23.91	23.90	23.90	23.90
	°F	75.04	75.02	75.02	75.03
Temperature Differential, Delta	°C	22.24	22.22	22.22	22.23
	°F	40.03	40.00	40.00	40.01
Thickness	mm	26.16	25.65	25.28	25.70
	in	1.030	1.010	0.995	1.01
Test Duration	minutes	89	111	119	106.33
Thermal Conductivity	W/m.K	0.2658	0.2683	0.2330	0.2557
Thermal Conductivity	Btu.in/hr.ft ² .°F	1.843	1.860	1.616	1.77
Thermal Resistivity	mK/W	3.762	3.727	4.293	3.927
Thermal Resistivity	°F.ft ² .h/Btu.in	0.543	0.538	0.619	0.566
Thermal Resistance, R (as tested)	m ² .K/W	0.09840	0.09558	0.10850	0.1008
	°F.ft ² .h/Btu	0.559	0.543	0.616	0.573
Thermal Resistance, R per inch	m ² .K/W	0.0955	0.0946	0.1090	0.0997
	°F.ft ² .h/Btu	0.543	0.538	0.619	0.566

End of Report

APPENDIX

IAPMO QCC Sampling Report (5 pages)

QAI Test Report, ASTM E84 (7 pages)

Intertek Test Report, ASTM C666, (8 pages)

Southwest Inspection & Testing Test Report, ASTM C31 (1 page)

TEST SAMPLE SELECTION REPORT

Rendered to: **IAPMO Institute of Building Technology**
4775 E. Philadelphia Street
Ontario, CA 91761
Attn: Jay Mishra

3rd Party Witnessing by:



IAPMO-Quality Control Consultants, LLC
10710 Stroup Road
Roswell, GA 30075
(770) 998-2720

Sample Selection Date: 7/15/2025
Report Date: 7/16/2025



TEST SAMPLE SELECTION REPORT

Sample Selection Date: 7/15/2025

Report Date: 7/16/2025

Report Holder: Prestige Stone Products, LLC
9290 Winesburg Road
Dundee, OH 44624
Attn: Crystal Wengerd

Manufacturer: Prestige Stone Products, LLC
9290 Winesburg Road
Dundee, OH 44624
Attn: Paul Miller

IAPMO-QCC was contracted by the Report Holder to witness the following:

Materials Witnessed:

1. Five (5) 4"x 8" Cylinders- ASTM C1670,C39 (Compressive Strength)
2. Five (5) 4"x 4" x 14" Beam mold samples- ASTM 1670 (Freeze Thaw)
3. Four(4) 3"x 3" x 11.25" Molded Samples- ASTM C157 (Linear Dry Shrinkage)
4. Three (3) 12"x 12"x 1" Molded Samples- ASTM C518 (Thermal Resistance)
5. 100 square ft. of Finished Veneer Stone from randomly selected inventory, providing min/max profile sizes
6. from various production dates.
- 7.
- 8.

Sampling Process: The samples were witnessed on 7-15-25 and, verified and noted on the Chain of Custody Documents. Any CoA's, Batch Sheets, Production work orders and QA Testing documents are kept on file at IAPMO-QCC.

The sample(s) being collected were from: (check all that apply)

- inventory
- production
- combination of inventory and production

How was sample selection determined: (check all that apply)

- random selection during production - due to overproduction of material
- random selection of inventory - only if product has an evaluation report
- material produced during sampling - due to limited supply of material

The sample(s) are: (check all that apply)

- a continuous section
- component
- other _____
- roll/length
- individual pieces



Description of why the sample was selected from the respective location or process:

Samples were made from witnessed production and also pulled from inventory

Notes to Lab (if applicable):

Test Sample Description: (photographs attached).

Test Sample Markings and Shipping: The samples were documented with Company Name, date, product name, IAPMO-QCC, initialed by inspector and testing facility (if known at the time), and Project #.
Shipping to be provided by Prestige Stone Products

Product Witnessed by: Brett Wrigley

This report will be retained by IAPMO-QCC for a period of four years from the original report date. This report may not be reproduced, except in full, without the approval of IAPMO-QCC.

Reviewed by:



Ashley Wrigley, IAPMO-QCC Compliance Manager

Attachments (pages):

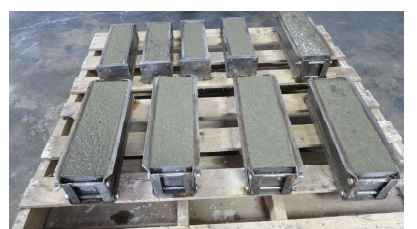
Appendix A: Photographs

Revision Log

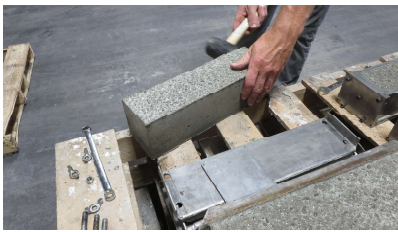
Rev. #	Date	Page(s)	Revision(s)



Appendix A: Photographs



Appendix A: Photographs



CLIENT: IAPMO IBT
4755 Philadelphia Street
Ontario, CA 91761

Test Report Number : QA-2700F-1a	Date: July 30, 2025
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SAMPLE ID: The client identified the following test material as:
Prestige Stone Project # 46599

SAMPLING DETAIL: Test Samples were submitted to the Laboratory directly by the client. No sampling or sample preparation were observed by QAI staff.

DATE OF RECEIPT: Samples were received at QAI facilities on: July 25, 2025

TESTING PERIOD: July 28, 2025

AUTHORIZATION: Testing was authorized by Jay Mishra for proposal QAI-2535 signed July 25, 2025.

TEST REQUESTED: Perform standard flame spread and smoke density developed classification tests on the sample supplied by the Client in accordance with ASTM E84 - 24a "Standard Method of Test for Surface Burning Characteristics of Building Materials". The foregoing test procedure is comparable to UL 723, ANSI/NFPA No. 255, and UBC No. 8-1..

TEST RESULTS:	<u>Flame Spread</u>	<u>Smoke Developed</u>
	0	0

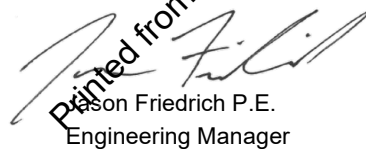
CONCLUSION: When tested in accordance to ASTM E84-24a the tested material resulted in a Class 'A'. Detailed test results are presented in the subsequent pages of this report

Prepared By



Victor.A.Peinado
Fire Lab Supervisor

Signed for and on behalf of
QAI Laboratories, Inc.



Jason Friedrich P.E.
Engineering Manager



SCOPE: This fire-test-response standard is used for the comparative surface burning behavior of building materials is applicable to exposed surfaces such as walls, ceilings and others. The test is conducted with the specimen in the ceiling position with the surface to be evaluated exposed face down to the ignition source. The material, product, or assembly shall be capable of being mounted in the test position during the test. Thus, the specimen shall either be self-supporting by its own structural quality, held in place by added supports along the test surface, or secured from the back side. The purpose of this test method is to determine the relative burning behavior of the material by observing the flame spread along the specimen. Flame spread and smoke developed index are reported. However, there is not necessarily a relationship between these two measurements.

USE: The use of supporting materials on the underside of the test specimen has the ability to lower the flame spread index from those which might be obtained if the specimen could be tested without such support. These test results do not necessarily relate to indices obtained by testing materials without such support.

Testing of materials that melt, drip, or delaminate to such a degree that the continuity of the flame front is destroyed, results in low flame spread indices that do not relate directly to indices obtained by testing materials that remain in place.

This standard is used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled conditions, but does not by itself incorporate all factors required for fire-hazard or fire-risk assessment of the materials, products, or assemblies under actual fire conditions.

PROCEDURE: A brief overview of the method is as follows: The test specimen, a material between 20 and 24 inches in width by 24 feet +/- 12 inches in length is loaded onto the water cooled ledge of the fire test chamber when tested to ASTM E84 or CAN/ULC-S102. If tested to CAN/ULC-S102.2 the specimen is tested on the chamber floor. The inside dimensions are 17 3/4 inches +/- 1/4" wide by 12 inches +/- 1/2" deep by 25 feet long. The fire test chamber is a rectangular horizontal duct with a removable lid. The sides and base of the chamber are lined with an insulated firebrick with pressure tight observation windows down one side for a technician to observe flame progression during the duration of the 10-minute test period. The chamber lid is lowered into test position with non combustible concrete board placed between the specimen and chamber lid. A draft of 240 feet per minute which is maintained inside the test chamber throughout the test period by the means of an electronic fan afterburner and an electronically controlled damper door system located downstream of the test chamber in the exhaust ducting. The test is started when the test flame is ignited at the front of the test chamber. An electronic photocell system located in the exhaust system downstream from the test chamber is used to plot the smoke developed for use in calculating the smoke developed index while a technician plots the flame spread distance used in determining the flame spread index. The test is run for the 10 minute duration in accordance to the method.

(See Diagrams in the Appendix of this report.)



PREPARATION AND CONDITIONING:

The manufactured Stone Masonry Veneer material was delivered to QAI in various sizes ranging from 1-2 inches thick by 6-12 Inches wide by 1-2 Foot long. Sufficient amount of stone samples were used to fulfill the chamber requirements for testing. (See Photos in Appendix of this report). The specimens was placed in the conditioning room (maintained at 73 ± 5° F and a relative humidity of 52 ± 5%) for a minimum of 72 hours prior to testing.

MOUNTING METHOD:

The test ready samples consisting of various sizes were supported with metal rods spaced at 12" inch intervals and 2 inch hexagonal mesh to fulfill the chamber requirements for testing. Prior to testing the samples were covered with 1/4 inch cement board as required in the test method.

ASTM E84 TEST RESULTS:

CLIENT NAME:	IAPMO IBT	TEST DATE:	2025-07-28
SAMPLE ID:	Prestige Stone Project # 46599		
SAMPLE IGNITION:	00:00	Minutes / Seconds	
MAX FLAME FRONT:	0.0	Feet	
TIME TO MAXIMUM SPREAD:	00:00	Minutes / Seconds	
TEST DURATION:	10:12	Minutes / Seconds	
SUMMARY:	FLAME SPREAD:	0	<i>0 Unrounded</i>
	SMOKE DEVELOPED:	0	<i>0 Unrounded</i>

OBSERVATIONS:

A Maximum Flamefront of 0 feet was observed. The Test was terminated at 10:12.



SUMMARY OF ASTM E84 / UL 723 RESULTS:

Because of the possible variations in reproducibility, the results are adjusted to the nearest figure divisible by 5.
Smoke Density values over 200 are rounded to the nearest figure divisible by 50.

In order to obtain the Flame Spread Classification, the above results should be compared to the following table:

<u>NFPA CLASS¹</u>	<u>IBC CLASS²</u>	<u>FLAME SPREAD</u>	<u>SMOKE DEVELOPED</u>
A	A	0 through 25	Less than or equal to 450
B	B	26 through 75	Less than or equal to 450
C	C	76 through 200	Less than or equal to 450

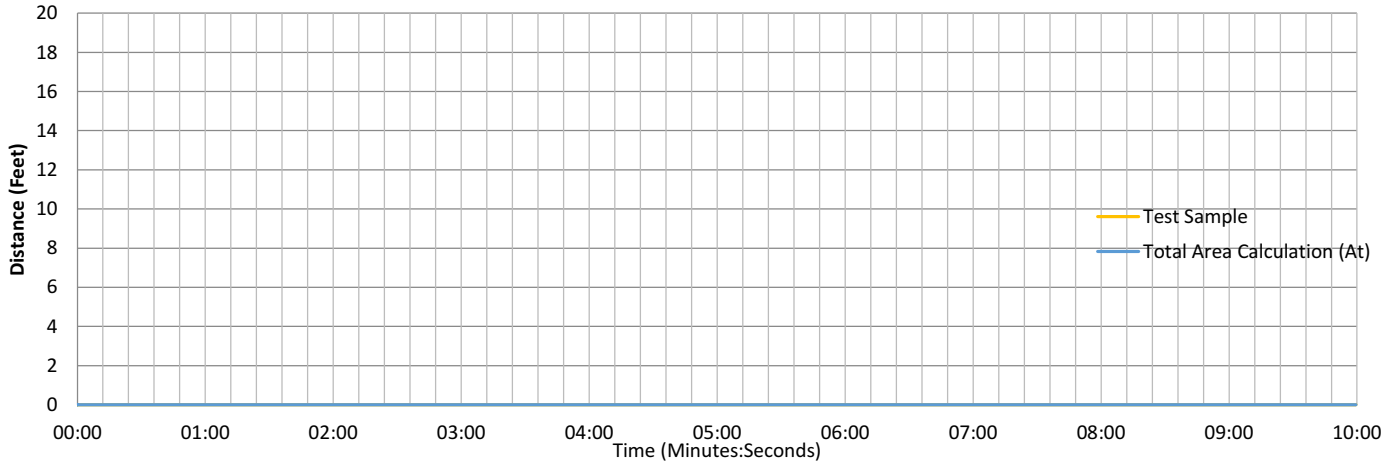
BUILDING CODES CITED:

1. National Fire Protection Association, ANSI/NFPA No. 101, "Life Safety Code"
2. International Building Code, Chapter 8, Interior Finishes, Section 803.

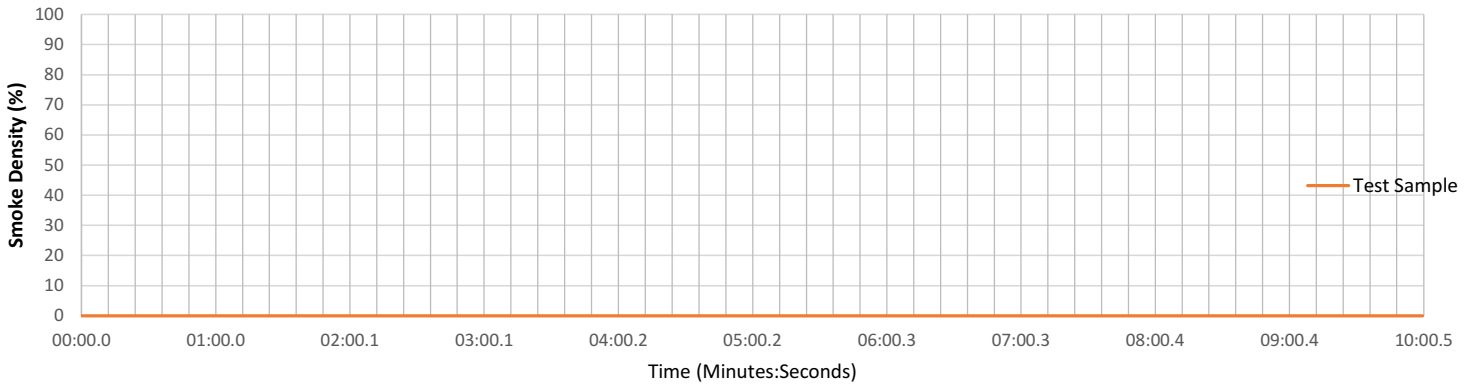


RESULTS CONTINUED:

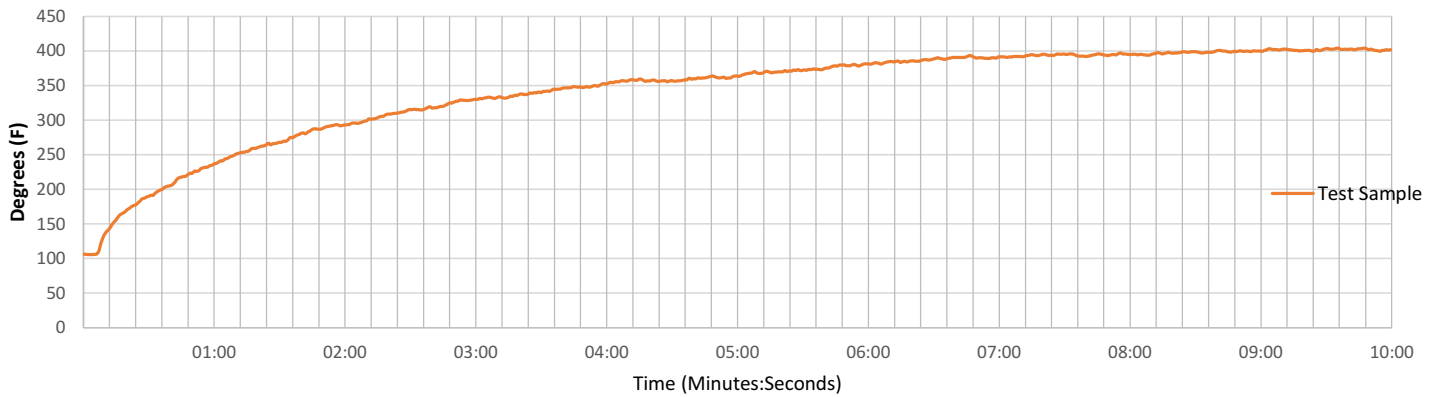
Flame Spread



Smoke Readings



Temperature



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APPENDIX

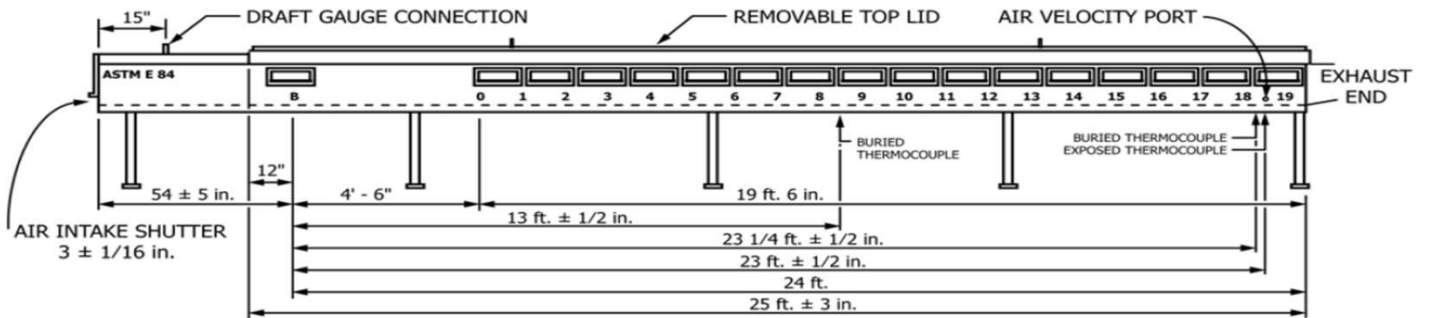


Diagram 1. Test Chamber side view showing critical dimensions.

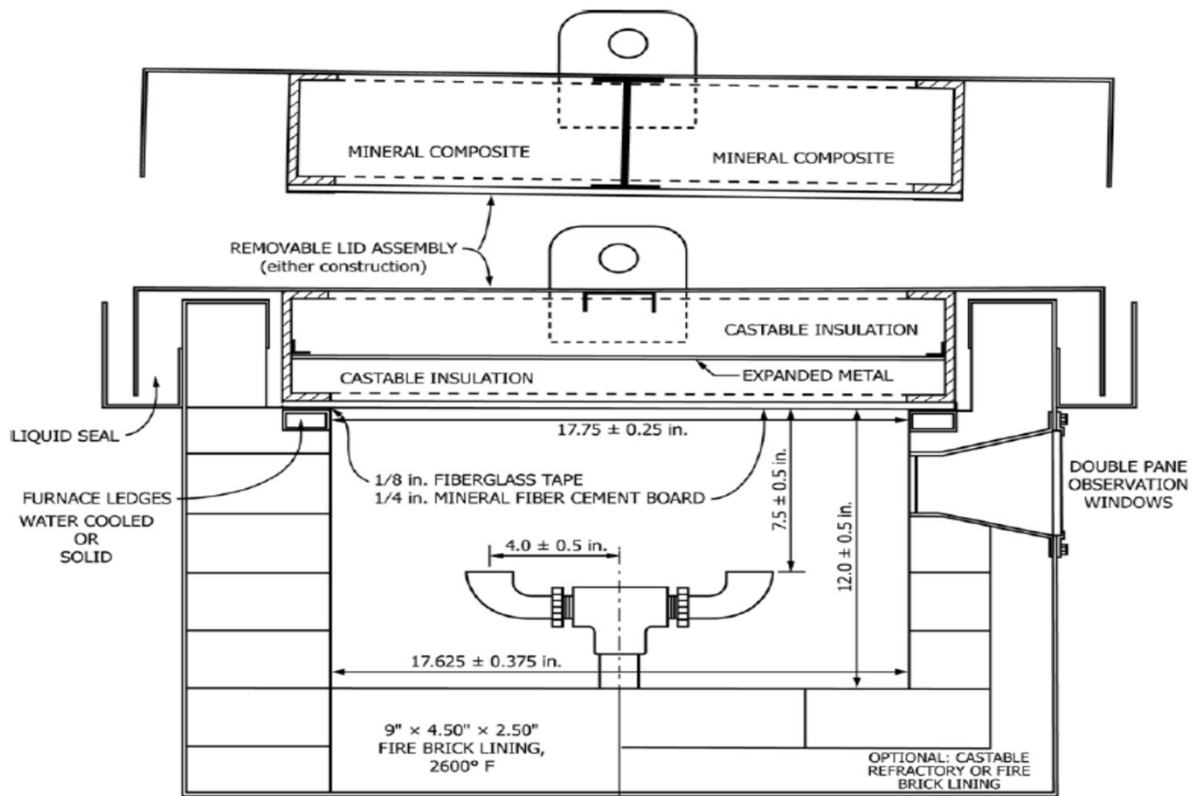


Diagram 2. Test Chamber looking down chamber showing critical dimensions.

APPENDIX

Photo 1. Surface of Specimen Tested

<<<END OF TEST REPORT>>>

IAPMO R&T LAB TEST REPORT

SCOPE OF WORK

ICC-ES AC51, SECTION 3.6 FREEZE THAW DURABILITY EVALUATION OF MANUFACTURED
STONE MASONRY VENEER MIX DESIGN - PRESTIGE STONE, DUNDEE, OHIO
PROJECT NO. 46599

REPORT NUMBER

S9621.01-106-31 R0

TEST DATES

08/25/25 - 09/02/25

ISSUE DATE

09/11/25

RECORD RETENTION END DATE

09/02/29

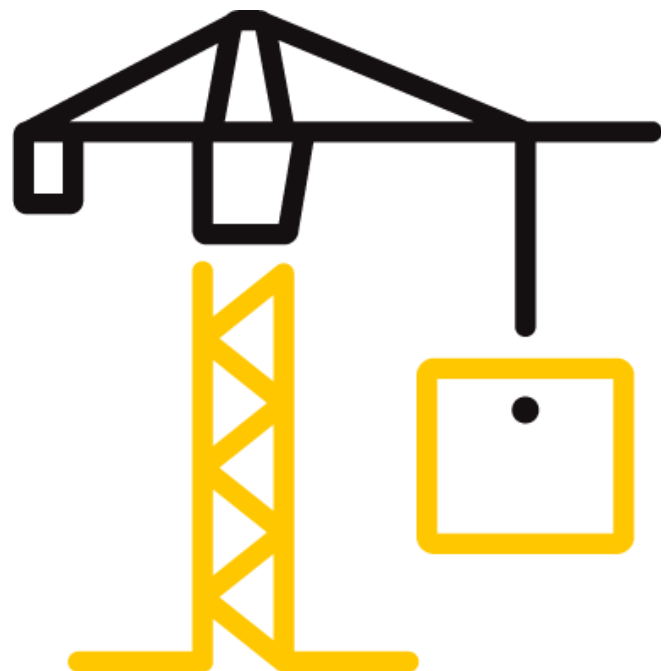
PAGES

8

DOCUMENT CONTROL NUMBER

RT-R-AMER-Test-2827 (07/12/22)

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TEST REPORT FOR IAPMO R&T LAB

Report No.: S9621.01-106-31 R0

Date: 09/11/25

REPORT ISSUED TO

IAPMO R&T LAB

4755 E. Philadelphia St
Ontario, California 91761

SECTION 1

SCOPE


Product: Manufactured Stone Masonry Veneer Mix Design - Prestige Stone, Dundee, Ohio - Project No. 46599

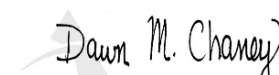
Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted by IAPMO R&T LAB to evaluate Manufactured Stone Masonry Veneer Mix Design - Prestige Stone, Dundee, Ohio - Project No. 46599 in accordance ASTM C666, Procedure A per ASTM C1670, Section 6 Freeze-Thaw durability for compliance with Section 3.6 of ICC-ES AC51, *Acceptance Criteria for Adhered Manufactured Stone Masonry Veneer*. Results obtained are tested values and were secured by using the designated test methods. Testing was conducted at the Intertek B&C test facility in York, Pennsylvania.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

Unless differently required, Intertek reports apply the "Simple Acceptance" rule, also called "Shared Risk approach," of ILAC-G8:09/2019, Guidelines on Decision Rules and Statements of Conformity.

For INTERTEK B&C:

COMPLETED BY:	J. Rich Hammons
TITLE:	Technician Team Lead Materials Laboratory
SIGNATURE:	 Digitally Signed by: James Hammons
DATE:	09/11/25

REVIEWED BY:	Dawn M. Chaney
TITLE:	Laboratory Supervisor Materials Laboratory
SIGNATURE:	 Digitally Signed by: Dawn M. Chaney
DATE:	09/11/25

JRH:dmc/kae

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TEST REPORT FOR IAPMO R&T LAB

Report No.: S9621.01-106-31 R0

Date: 09/11/25

SECTION 2

SUMMARY OF TEST RESULTS

ICC-ES AC51 SECTION	TEST PROPERTY	PERFORMANCE CRITERIA	RESULTS
3.6	Freeze-Thaw Durability	No single Specimen in a group of five shall exhibit a mass loss greater than 1.5% or show any fracture completely through the cross section	No single specimen had mass loss greater than 1.5% or showed any fracture through cross section

SECTION 3

TEST METHODS

The specimens were evaluated in accordance with the following:

ICC-ES AC51, *Acceptance Criteria for Adhered Manufactured Stone Masonry Veneer*, Approved June 2018, Editorially revised February 2024, Section 3.6

ASTM C1670/C1670M-21b, *Standard Specification for Adhered Manufactured Stone Masonry Veneer Units*, Section 6

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

SECTION 4

MATERIAL SOURCE

Samples were submitted by IAPMO IBT on 08/18/2025 and the samples had been conditioned at 73°F and 50% RH for 28 days according to IAPMO IBT. The following was received in good condition on 08/18/25:

- (3) Boxes with (5) ASTM C666 specimens, molded on 07/15/25 at the Prestige Stone, Dundee, Ohio Plant

Refer to the product description photos in Section 10. The materials were tested as received. Representative materials/test specimens will be retained by Intertek B&C for a minimum of four years from the test completion date.

TEST REPORT FOR IAPMO R&T LAB

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Date: 09/11/25

SECTION 5

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
J. Rich Hammons	Intertek B&C
Dawn M. Chaney	Intertek B&C

SECTION 6

TEST PROCEDURE

All conditioning of test specimens and test conditions were at standard laboratory conditions, unless otherwise reported. Refer to the test related photos in Section 10. Calibration certificates are available upon request.

ICC-ES AC51 - Freeze-Thaw Durability, Section 3.6 / ASTM C1670, Section 6

The freeze-thaw resistance evaluation was conducted in accordance with the procedure detailed in ASTM C666, Procedure A. The specimens were immersed in water for a period of 48 hours prior to weighing with a digital balance (ICN: INT03173) to measure pretest saturated mass. The specimens were transferred to individual exposure trays, completely immersed in water, and exposed in an Espec environmental cycling chamber (ICN: INT03071) for a total of 50 repeating freezing and thawing cycles, each consisting of alternately lowering the temperature of the specimens from 40°F to 0°F (4°C to -18°C) and then raising it from 0°F to 40°F (-18°C to 4°C).

Upon completion of the full 50-cycle exposure, the specimens were removed from the water, visually evaluated for evidence of deterioration, and re-weighed in a saturated condition for evaluation against pretest mass. Mass loss was recorded for each specimen and percent mass loss was calculated per ASTM C1670 Section 6.4.3.5 for the test series. Results were evaluated against the performance criteria presented in ASTM C1670, Section 6.4.2.

TEST REPORT FOR IAPMO R&T LAB

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SECTION 7

TEST SPECIMEN DESCRIPTIONS

TEST PROCEDURE	NUMBER OF SPECIMENS	NOMINAL SPECIMEN DIMENSIONS	VISUAL CHARACTERISTICS
ICC-ES AC51 - Freeze/Thaw Durability, Section 3.6	5	4 in. x 4 in. x 14 in.	Grey molded concrete specimens; some corner/edge chipping upon receipt, but no cracks or other evidence of specimen compromise

SECTION 8

TEST RESULTS

ASTM C1670 / ASTM C666 - Freeze Thaw Resistance Evaluation (50 Cycles)

SPECIMEN ID	WET CONDITION MASS (lbs)		MASS CHANGE (%) ¹	POST-EXPOSURE SPECIMEN VISUAL EVALUATION
	PRE-EXPOSURE	POST EXPOSURE		
1	14.2540	14.2920	+0.27	No specimen breakage/fracture through cross section Some granular debris observed in all freeze/thaw cycling bins, but no significant visual change to specimens
2	13.9640	13.9980	+0.24	
3	14.1180	14.1560	+0.27	
4	14.1220	14.1600	+0.27	
5	13.8280	13.8720	+0.32	
Average			+0.27	

¹ Specimen mass loss is denoted by (-), mass change denoted by (+) is net positive

SECTION 9

CONCLUSION

The Adhered Manufactured Stone Masonry Veneer [AMSMV] manufactured by the Prestige Stone, Dundee, Ohio- Project No. 46599 met the specified performance requirements listed in ICC-ES AC51 for Section 3.6 Freeze-Thaw Durability for the testing performed in this report.

TEST REPORT FOR IAPMO R&T LAB

Report No.: S9621.01-106-31 R0

Date: 09/11/25

SECTION 10 PHOTOGRAPHS

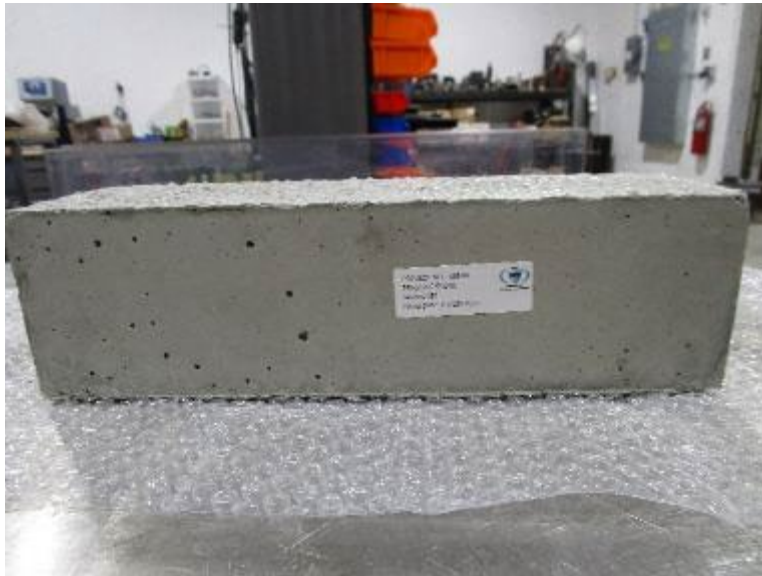


Photo No. 1
Material As Received with Project Number



Photo No. 2
ASTM C1670 / ASTM C666 Specimens Before Exposure

TEST REPORT FOR IAPMO R&T LAB

Report No.: S9621.01-106-31 R0

Date: 09/11/25



Photo No. 3

ASTM C1670 / ASTM C666 Specimens After Exposure



Photo No. 4

ASTM C1670 / ASTM C666 Specimens Granular Debris After Exposure



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Date: 09/11/25

SECTION 11

REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	09/11/25	N/A	Original Report Issue

FIELD DATA ON TEST SPECIMENS

--- ASTM C31, C138, C143, C172, C173, C231, C1064 ---

CONCRETE: X **MORTAR:** **SHOTCRETE:** **CORES:** **GUNITE:**

ADDRESS: 4755 E PHILADELPHIA ST, ONTARIO **JOB #:** 46599 **DATE:** 08/12/2025
JOB NAME: **PERMIT #:** **ISSUED BY:**
ARCHITECT: **ENGINEER:**
CONTRACTOR: **SUB:**

LOCATION IN STRUCTURE: PRESTIGE STONE
TRACT:

PHASE: **LOT #:**

CONCRETE SUPPLIER: **PLANT:** **MIX #:**
TYPE OF CEMENT: **ADMIXTURE:** **TICKET #:**
SLUMP: 0.00 in. **WATER ADDED:** 0 gal. **AIR TEMP:** 0 F
CONCRETE TEMP: 0 F **MIXING TIME:** 0 min. **TIME CAST:** 00:00

DATE CAST: 07/15/2025 **RECEIVED AT LAB:** 07/31/2025

SPECIMENS MADE BY: JAY MISHRA **SPECIFIED PSI @ 28 Days:** 0

LAB #: 269722 **CLIENT:** IAPMO IBT

TESTING INFORMATION:

SAMPLE IDENTIFICATION:	2540459	2540460	2540461	2540462	2540463
AGE DAYS:	28	28	28	28	28
DATE TEST:	08/12/2025	08/12/2025	08/12/2025	08/12/2025	08/12/2025
SIZE (in.): Height X Diameter	8.000 X 4.000	8.000 X 4.000	8.000 X 4.000	8.000 X 4.000	8.000 X 4.000
AREA (in.Â²):	12.57	12.57	12.57	12.57	12.57
CRUSH LOAD (lbs.):	94830	98250	96480	99300	95370
COMPRESSIVE STRENGTH (psi.):	7540	7820	7680	7900	7590
HEIGHT-DIAMETER RATIO:					
CORRECTION FACTOR:					
CORRECTED STRENGTH (psi.):					
BREAK TYPE:	II	III	III	III	IV
C.T.M. USED:	Forney96	Forney96	Forney96	Forney96	Forney96

REMARKS:

ASTM C39, C174, C192, C470, C617, C42

COMPLIES: X **DOES NOT COMPLY:** **FOR INFORMATION:**

THIS REPORT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF SOUTHWEST INSPECTION AND TESTING, INC.

SAMPLES CAST BY OTHERS:

RESPECTFULLY SUBMITTED
SOUTHWEST INSPECTION AND TESTING

NOTICE: These test results are from samples cast by inspectors or technicians not employed by our firm. They were either delivered to our laboratory or picked up by our driver. We will accept no responsibility for the inspection made on the jobsite by the inspector, furthermore we do not take responsibility for any information on this report other than the strength as tested and reported.

ZAFAR AHMED
PRINCIPAL ENGINEER

ASTM C39 BREAKS: I=CONE - II=CONC AND SPLIT - III=COLUMNAR - IV=SHEAR - V=SIDE FRACTURES - VI=POINTED