

National Concrete Masonry Association 13750 Sunrise Valley Drive Herndon, VA 20171-4662 **0** 703.713.1900 **F** 703.713.1910

ncma.org/lab

March 24, 2021

Behadir "Nick" Tivari Linda Group S.H.P.K. Xheme Topalla 6000 Gjilan, Kosovo

Mr. Tivari,

Enclosed please find a report of testing performed by the National Concrete Masonry Association Research and Development Laboratory on the following products:

Report Number	Unit Description
21-164A 21-164B	ASTM C140: Absorption and Dimensions ASTM C482: Shear Bond Strength

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After taking the online survey, make use of the many resources available at our website, www.ncma.org. There you will find the latest industry news and events, a searchable directory of products and services, a vast collection of literature on the design, implementation, and marketing of manufactured concrete products and systems, as well as a list of the available laboratory services for future testing.

We take pride in meeting your product evaluation requirements and look forward to continuing to service your testing needs for years to come. Thank you for choosing NCMA's Research and Development Laboratory. Please feel free to contact me directly with any comments or questions at: 571-224-0924 or tjones@ncma.org.

Sincerely,

Timothy Jones

Manager, Research and Development Laboratory



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ASTM C140/C140M - Absorption Test Report

Job No.: 21-164A Report Date: 3/24/2021

Linda Group S.H.P.K. Client: Xheme Topalla Address: 6000 Gjilan, Kosovo

National Concrete Masonry Association Research and Development Laboratory 13750 Sunrise Valley Drive Herndon, VA 20171-4662 Testing Agency:

Address:

Standard Specification: ASTM C1670/C1670M-21 Linda Group S.H.P.K.

Unit Description:

Sampling Party:

Date Samples Manufactured: Unknown

Adhered Manufactured Stone Masonry Veneer Unit

Date Samples Received: 3/1/2021

Mark: 'ID No. 811184861'

Summary of Test Results	ASTM		
	C1670-21	Average	
	Specified	Test	
Physical Property	<u>Values</u>	Results	
Net Compressive Strength	2100 min	Not Tested	psi
Density	***	142.4	pcf
Absorption	****	14.2	pcf
Saturated Unit Weight	15 max	7.7	lb/ft ²
Average Thickness	2.625 max	0.650	in.

	ASIM		
	C1670-21	Maximum	
	Specified	Test	
Physical Property	<u>Values</u>	Results	
Unit Face Area	5 max	0.15	ft ²
Unit Face Dimension	36 max	8.42	in.

Absorption	Specimen	Average Width	Average Length	Max Face Dimension	Unit Face Area	Average Thickness
Units	No.	in.	in.	in.	ft ²	in.
	1	2.41	8.35	8.36	0.14	0.692
	2	2.49	8.42	8.42	0.15	0.594
	3	2.40	8.30	8.30	0.14	0.693
	4	2.45	8.35	8.36	0.14	0.639
	5	2.45	8.30	8.31	0.14	0.634
Date Tested:	6	2.46	8.06	8.06	0.14	0.649
3/10/2021	Average	2.44	8.29	8.30	0.14	0.650

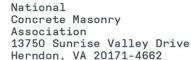
	Specimen	Received Weight	Immersed Weight	Saturated Weight	Oven-Dry Weight	Saturated Unit Weight	Absorption	Density	Net Volume
Date Tested:	No.	lb	lb	lb	lb	lb/ft ²	pcf	pcf	ft ³
3/13/2021	1	1.08	0.63	1.14	1.04	8.1	14.8	141.2	0.0080
to	2	0.98	0.58	1.03	0.94	7.1	14.4	142.7	0.0072
3/15/2021	3	1.09	0.64	1.13	1.04	8.2	14.1	142.3	0.0080
	4	1.02	0.60	1.07	0.98	7.5	14.3	141.6	0.0075
	5	1.01	0.60	1.06	0.98	7.5	14.0	142.6	0.0074
	6	1.02	0.60	1.07	0.98	7.8	14.0	143.8	0.0074
	Average	1.04	0.61	1.08	0.99	7.7	14.2	142.4	0.0076

Timothy Jones

Manager, Research and Development Laboratory

Jason J. Thompson

Vice President of Engineering



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ASTM C482-20 Test Report Standard Test Method for Bond Strength of Ceramic Tile to Portland Cement Paste

Job No: 21-164B Linda Group S.H.P.K. Report Date: 3/24/2021 Client:

Xheme Topalla

6000 Gjilan, Kosovo Testing Agency: National Concrete Masonry Assoc.

Research and Development Laboratory

13750 Sunrise Valley Drive Address: Unit Description: Art Stone Technology

Herndon, VA 20171-4662

Sampling Party: Linda Group S.H.P.K.

Date Received: 3/1/2021

The client provided five manufactured veneer units for shear bond testing. Shear bond assemblies were constructed in accordance with ASTM C482-20 utilizing the mortar substrate for non-vitreous tile, as modified by ASTM C1670/C1670M-21, and portland cement paste substrate as a bonding matrix. Each assembly was tested for shear bond strength in accordance with ASTM C482-20.

Individual Unit Test Results

Date Tested: 3/22/2021

Shear Bond Specimens		Veneer 9	Sample			
		Average	Average	Shear Bond	Maximum	Shear Bond
		Width	Height	Area*	Load	Strength**
		(in.)	(in.)	(in. ²)	(lb)	(psi)
	Unit #1	2.35	2.34	5.51	1130	205
	Unit #2	2.36	2.35	5.55	810	146
	Unit #3	2.35	2.36	5.54	720	130
	Unit #4	2.34	2.35	5.52	740	134
	Unit #5	2.34	2.35	5.51	510	93
	Average	2.35	2.35	5.53	782	142

^{*}Shear bond area calculated by multiplying the width and length of manufactured stone sample.

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^{**}Minimum shear bond strength required by TMS 402-16 is 50 psi.