NATIONAL CONCRETE MASONRY ASSOCIATION
Sustainable Concrete Products for Structures and Hardscapes

13750 Sunrise Valley Drive
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www.ncma.org

November 19, 2014

Bob Harlem
Oneonta Block Co.
6459 State Highway 23
Oneonta, NY 13820

Please find enclosed a copy of a test report that we performed at your request on the following product that you supplied to the NCMA Research and Development Laboratory:

8 x 8 x 16 inch Concrete Masonry Unit
Mark: 'OBC LIGHT 8/18'

NCMA Job Number: 14-501-3A

We are pleased to report that the tested properties from this report comply with the applicable requirements of ASTM C90-14, Standard Specification for Loadbearing Concrete Masonry Units.

The attached report includes the tested compressive strength of the concrete masonry unit. The compressive strength of masonry constructed using these units can be calculated using the Unit Strength Method as outlined in Section 1.4.B.2.b of Specification for Masonry Structures (TMS 602-13 / ACI 530.1-13 / ASCE 6-13). It should be noted that as a result of industry research, the Unit Strength Method was recalibratied in the 2013 edition of the Specification for Masonry Structures, reducing the conservatism in the calculated compressive strength of masonry that was present in previous editions. Because jurisdictions adopt model codes at different times, the calculated values using both the 2011 and the 2013 Specification for masonry structures is provided below.

In accordance with the Unit Strength Method, the compressive strength of masonry is a function of unit strength and mortar type. As shown in the attached test report...

Net Area Compressive Strength of 8 x 8 x 16 inch Concrete Masonry Unit Mark: 'OBC LIGHT 8/18'	3690 psi

Therefore, the net area compressive strength of masonry when these units are used, can be considered to be the following:

	TMS 602-13/ ACI 530.1-13/ ASCE 6-13		*TMS 602-11/ ACI 530.1-11/ ASCE 6-11*	
	Net Area Compressive Strength		Net Area Compressive Strength	
When used with:	of Masonry		of Masonry	
Type M or S mortar	2670	psi	2470	psi
Type N mortar	2330	psi	2320	psi

The values provided above can be compared directly to the specified compressive strength of masonry, f'_m. If these values exceed f'_m, compliance has been documented.

As mentioned before, the Unit Strength Method is a conservative method for determining compliance with the specified compressive strength of masonry when compared against the alternative Prism Test Method that may also be used. The results from the Prism Test Method will likely exceed the values calculated values of the Unit Strength Method.

Sincerely,

Dominick Dowds

Dominick O. Dowds
Manager, Research & Development Laboratory

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ASTM C140/C140M-14 Test Report
Sampling and Testing Concrete Masonry Units and Related Units

Job No.: 14-501-3A
Report Date: 11/19/2014

Client: Oneonta Block Co.
Address: 6459 State Highway 23
Oneonta, NY 13820

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

Standard Specification: ASTM C90-14

Sampling Party: Oneonta Block Co.

Unit Description:
8 x 8 x 16 inch Concrete Masonry Unit
Mark: 'OBC LIGHT 8/18'

Date Samples Received: 10/24/2014

Summary of Test Results

Physical Property	ASTM C90-14 Specified Values	Average Test Results		Physical Property	ASTM C90-14 Specified Values	Average Test Results	
Net Compressive Strength	2000 min	3690	psi	Min. Faceshell Thickness (t_{fs})	1.25 min	1.52	in.
Gross Compressive Strength	****	1940	psi	Min. Web Thickness (t_w)	0.75 min	1.03	in.
Density	****	100.5	pcf	Equivalent Web Thickness	****	2.39	in.
Absorption	18 max	14.4	pcf	Normalized Web Area (A_{wn})	6.5 min	26.6	$in.^2/ft^2$
Percent Solid	****	52.6	%	Equivalent Thickness	****	4.00	in.
Net Cross-Sectional Area	****	62.36	$in.^2$	Max. Var. from Spec. Dimensions	.125 max	0.030	in.
Gross Cross-Sectional Area	****	118.55	$in.^2$				

Individual Unit Test Results

Compression Units	Specimen No.	Received Weight lb	Cross-Sectional Area * Gross in^2	Cross-Sectional Area * Net in^2	Max. Load lb	Compressive Strength Gross psi	Compressive Strength Net psi
	#1	29.34	118.55	62.36	223080	1880	3580
	#2	28.96	118.55	62.36	237830	2010	3810
Date Tested:	#3	28.64	118.55	62.36	228980	1930	3670
11/4/2014	Average	28.98	118.55	62.36	229960	1940	3690

* Unit areas determined as the average of the three absorption units and are assumed to be the same as those units tested in compression.

Absorption Units	Specimen No.	Avg Width in.	Avg Height in.	Avg Length in.	Avg./Min. Face Shell Thickness in.	Min. Web Thickness in.	Minimum Web Area $in.^2$	Normalized Web Area $in.^2/ft^2$
	#4	7.60	7.63	15.60	1.53	1.03	23.65	26.6
	#5	7.60	7.61	15.60	1.53	1.04	23.76	26.7
Date Tested:	#6	7.60	7.60	15.60	1.52	1.03	23.48	26.4
10/30/2014	Average	7.60	7.61	15.60	1.52	1.03	23.63	26.6

**Where the thinnest points of opposite face shells differ in thickness by less than 0.125 inches, their measurements are averaged.

Date Tested:	Specimen No.	Received Weight lb	Immersed Weight lb	Saturated Weight lb	Oven-Dry Weight lb	Absorption pcf	Density pcf	Net Volume ft^3	Percent Solid %
11/3/2014	#4	29.18	14.59	31.88	27.84	14.6	100.5	0.2771	53.0
to	#5	28.88	14.38	31.40	27.50	14.3	100.8	0.2728	52.3
11/6/2014	#6	28.68	14.28	31.38	27.44	14.4	100.1	0.2740	52.6
	Average	28.91	14.42	31.55	27.59	14.4	100.5	0.2746	52.6

Comments 1) These units meet or exceed the compression strength, absorption and dimensional requirements of ASTM C90-14.

Dominick O. Dowds
Manager, Research & Development Laboratory