

July 14, 2021

Matt Perreault
Best Block
2088 FM 949
Alleyton, TX 78935

Please find enclosed the test report conducted in accordance with ASTM C140/C140M-20a, *Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units*, that we performed at your request on the following product that you supplied to the NCMA Research and Development Laboratory:

NCMA Project Number: 21-314-5
12x8x16 in. CMU
ID: Regular Standard Weight No. 5

The attached report includes results documenting the tested compressive strength of the concrete masonry units submitted for evaluation. The compressive strength of a masonry assembly 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) as referenced in the 2015 *International Building Code*; or as outlined in Section 1.4 B.2.b of *Specification for Masonry Structures* (TMS 602-16) as referenced in the 2018 *International Building Code*.

The net area compressive strength of these concrete masonry units is: 4,050 psi

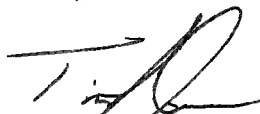
Using the Unit Strength Method, the net area compressive strength of masonry constructed with these units can be considered to be the following for projects designed under either the 2015 or 2018 *International Building Code*:

Net Area Compressive Strength of Masonry When Used with Type M or S Mortar =	2,810	psi
Net Area Compressive Strength of Masonry When Used with Type N Mortar =	2,420	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 with the specified compressive strength of masonry has been demonstrated. Please note that the contents of this report are not to be reproduced, except in full, without the written approval of the NCMA Research and Development Laboratory.

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

ASTM C140/C140M-20a Test Report
Sampling and Testing Concrete Masonry Units and Related Units

NCMA Project Number: 21-314-5
Report Date: 7/14/2021

Client: Best Block
Address: 2088 FM 949
Alleyton, TX 78935

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

Standard Specification: ASTM C90-16a

Sampling Party: Best Block

Sample Description: 12x8x16 in. CMU
ID: Regular Standard Weight No. 5

Date Samples Received: 6/3/2021

Summary of Test Results

	ASTM C90-16a Specified Values	Average Test Results		ASTM C90-16a Specified Values	Average Test Results	
Physical Property				Physical Property		
Net Compressive Strength	2,000 min	4,050	psi	Min. Face Shell Thickness (t_{fs})	1.25 min	1.53 in.
Gross Compressive Strength	****	2,200	psi	Min. Web Thickness (t_w)	0.75 min	1.40 in.
Density	****	124.3	pcf	Equivalent Web Thickness	****	3.25 in.
Absorption	15 max	8.8	pcf	Normalized Web Area (A_{wn})	6.5 min	36.4 in. ² /ft ²
Percent Solid	****	54.3	%	Maximum Variation from Specified Dimensions	.125 max	0.06 in.
Net Cross-Sectional Area	****	53.67	in. ²			
Gross Cross-Sectional Area	****	98.81	in. ²			

Individual Unit Test Results

Compression Units	Specimen No.	Received Weight lb	Cross-Sectional Area*		Maximum Load lb	Compressive Strength	
			Gross in ²	Net in ²		Gross psi	Net psi
			Date Tested: 6/22/2021	1		53.2	98.8
	2	51.2	98.8	53.7	216,800	2,190	4,040
	3	51.6	98.8	53.7	204,410	2,070	3,810
	Average	52.0	98.8	53.7	217,250	2,200	4,050

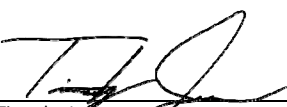
* Compression and absorption units were reduced in size in accordance with ASTM C140/C140-20a. Unit areas determined as the average of the three reduced-size absorption units and are assumed to be the same as those units tested in compression.


Absorption Units Full-Size Unit Measurements	Specimen No.	Average Width in.	Average Height in.	Average Length in.	Minimum Web Height in.	Avg./Min.	Min. Web Thickness in.	Minimum Web Area in. ²	Normalized Web Area in. ² /ft ²
						Face Shell Thickness** in.			
						Date Tested: 6/10/2021			
	5	11.61	7.68	15.57	7.68	1.53	1.42	32.67	36.8
	6	11.65	7.69	15.59	7.69	1.54	1.45	33.36	37.5
	Average	11.62	7.68	15.58	7.68	1.53	1.40	32.36	36.4

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

Reduced-Size Absorption Specimens

Date Tested: 6/19/2021 to 6/21/2021	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 %
	5	29.9	16.7	31.4	29.3	8.8	124.2	0.236	54.1
	6	30.5	17.0	32.0	29.9	8.8	124.3	0.241	54.6
	Average	30.2	16.9	31.7	29.6	8.8	124.3	0.238	54.3


Timothy Jones
Manager, Research and Development Laboratory


Jason L. Thompson
Vice President of Engineering



Representative Test Specimen