

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: 21-314-3  
8x8x16 in. CMU  
ID: Regular Standard Weight No. 3

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: 3,310 psi

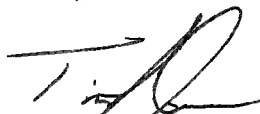
Using the Unit Strength Method, the net area compressive strength of masonry constructed with these units can be considered to be the following for projects designed under either the 2015 or 2018 *International Building Code*:

Net Area Compressive Strength of Masonry When Used with Type M or S Mortar =	2,520	psi
Net Area Compressive Strength of Masonry When Used with Type N Mortar =	2,220	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](mailto: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: 21-314-3  
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: 8x8x16 in. CMU  
ID: Regular Standard Weight No. 3

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	
<b>Physical Property</b>				<b>Physical Property</b>		
Net Compressive Strength	2,000 min	3,310	psi	Min. Face Shell Thickness ( $t_f$ )	1.25 min	1.27 in.
Gross Compressive Strength	****	1,810	psi	Min. Web Thickness ( $t_w$ )	0.75 min	1.15 in.
Density	****	121.8	pcf	Equivalent Web Thickness	****	2.66 in.
Absorption	15 max	9.9	pcf	Normalized Web Area ( $A_{wn}$ )	6.5 min	29.7 in. <sup>2</sup> /ft <sup>2</sup>
Percent Solid	****	54.7	%	Maximum Variation from Specified Dimensions	.125 max	0.03 in.
Net Cross-Sectional Area	****	35.07	in. <sup>2</sup>			
Gross Cross-Sectional Area	****	64.08	in. <sup>2</sup>			

**Individual Unit Test Results**

Compression Units	Specimen No.	Received Weight lb	Cross-Sectional Area*		Maximum Load lb	Compressive Strength	
			Gross in <sup>2</sup>	Net in <sup>2</sup>		Gross psi	Net psi
			Date Tested: 6/16/2021	1		34.4	64.1
	2	33.4	64.1	35.1	110,750	1,730	3,160
	3	34.6	64.1	35.1	119,750	1,870	3,410
	Average	34.1	64.1	35.1	116,140	1,810	3,310

\* Compression and absorption units were reduced in size in accordance with ASTM C140/C140M-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.	Minimum Web Area in. <sup>2</sup>	Normalized Web Area in. <sup>2</sup> /ft <sup>2</sup>	
						Face Shell Thickness** in.			
						Date Tested: 6/9/2021			4
	5	7.64	7.61	15.60	7.61	1.27	1.19	27.24	30.6
	6	7.65	7.64	15.61	7.64	1.27	1.07	24.55	27.6
	Average	7.64	7.63	15.60	7.63	1.27	1.15	26.38	29.7

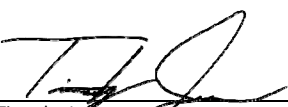
\*\*Where the thinnest points of opposite face shells differ in thickness by less than 0.125 inches, their measurements are averaged.

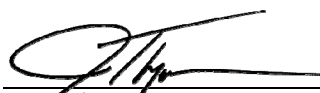
**Reduced-Size Absorption Specimens**

Date Tested: 6/11/2021 to 6/15/2021	Specimen No.	Received Weight lb	Immersed Weight lb	Saturated Weight lb	Oven-Dry Weight lb	Absorption pcf	Density pcf	Net	Percent
								Volume ft <sup>3</sup>	Solid %
	4	19.1	10.7	20.3	18.8	9.7	122.1	0.154	54.5
	5	18.9	10.6	20.2	18.6	10.4	120.8	0.154	54.5
	6	19.7	11.0	20.7	19.2	9.6	122.7	0.157	55.2
	Average	19.3	10.7	20.4	18.9	9.9	121.8	0.155	54.7



Representative Test Specimen

  
Timothy Jones  
Manager, Research and Development Laboratory

  
Jason L. Thompson  
Vice President of Engineering