



13750 Sunrise Valley Drive
 Herndon, Virginia 20171-4662
 703.713.1900 ■ 703.713.1910 Fax
 ncma@ncma.org ■ www.ncma.org

ASTM C 140-09 Test Report
Sampling and Testing Concrete Masonry Units and Related Units

Job No.: 10-341
 Report Date: 5/12/2010

Client: Grace Construction Products Headquarters
 Address: 7221 Parkland Court West
 Milwaukee, WI 53223

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

Unit Specification: ASTM C1372-09

Sampling Party: Flagstone (Brookville)

Unit Designation/Description:
 Segmental Retaining Wall Unit

Date Samples Received: 4/21/2010

Project Identification: Trial 423

Summary of Test Results:

Physical Property	Tested Values	ASTM C 1372-09 Required Values
Net Compressive Strength	4480 psi	3000 psi minimum
Density	122.8 pcf	-----
Absorption	8.8 pcf	15 pcf maximum
Absorption	7.2 %	-----

The client delivered three full-size units to the laboratory. From each unit, a 2 x 4 x 8 in. coupon was saw-cut from the front half of the unit for compression testing. Also, an additional segment was taken from the unit for absorption testing in accordance with ASTM C 140. The results of these tests are summarized above, with individual results listed below.

Measurements of Full-Size Units *

	Avg Width ** in.	Avg Height in.	Avg Length in.	Weight lb	
Unit #1	11.80	4.03	17.63	34.92	
Unit #2	12.10	4.01	17.65	34.97	
Unit #3	11.85	3.99	17.60	34.95	
Date Tested 4/23/2010	Average	11.92	4.01	17.63	34.95

* Deviations from specified dimensions are not reported since the specified dimensions were not available.

** The width dimension of this unit includes a split surface. Therefore, this dimension is an estimated average rather than an average calculated from measured dimensions.

Compression Specimens

	Avg Width in.	Avg Height in.	Avg Length in.	Coupon Weight lb	Maximum Compression Load lb	Tested Compressive Strength psi	
Unit #1a	1.97	4.03	7.98	4.54	62620	3980	
Unit #2a	1.98	3.97	7.97	4.56	76341	4830	
Unit #3a	1.98	4.02	7.98	4.49	72970	4620	
Date Tested 5/5/2010	Average	1.98	4.01	7.98	4.53	70640	4480

Absorption Specimens

	Received Wt, W _R lb	Immersed Wt, W _I lb	Saturated Wt, W _S lb	Oven-Dry Wt, W _O lb	Absorption pcf	Absorption %	Density pcf	
Unit #1b	6.69	3.63	6.90	6.49	7.7	6.2	123.8	
Unit #2b	6.54	3.56	6.79	6.33	8.9	7.3	122.3	
Unit #3b	7.12	3.94	7.45	6.90	9.8	8.0	122.5	
Date Tested 5/7/2010	Average	6.78	3.71	7.05	6.58	8.8	7.2	122.8

Note: These units comply with the compressive strength and absorption requirements of ASTM C 1372-09.

Nicholas R. Lang
 Manager, Research & Development Laboratory