

January 11, 2018

Fred Dunand  
Saturn Materials  
350 Yorkville Park Square  
Columbus, MS 39702

Mr. Dunand,

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
18-202	4 x 8 inch Concrete Paving Unit

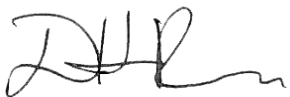
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The National Concrete Masonry Association Research and Development Laboratory is dedicated to the scientific testing and research of concrete masonry products and systems. We take pride in meeting your product certification and evaluation requirements 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 703-713-1900 or [dross@ncma.org](mailto:dross@ncma.org).

Sincerely,



Douglas H. Ross  
Manager, Research and Development Laboratory

**ASTM C140/C140M-17a Test Report**  
**Sampling and Testing Concrete Masonry Units and Related Units**

Job No: 18-202  
Report Date: 1/11/2018

Client: Saturn Materials  
Address: 350 Yorkville Park Square  
Columbus, MS 39702

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

Unit Specification: ASTM C936/C936M-16

Sampling Party: Saturn Materials

Unit Description: 4 x 8 inch Concrete Paving Unit

Date Samples Received: 1/2/2018

Specified Height (mm): 60

**Summary of Test Results**

	ASTM C936			ASTM C140 Required Compression Specimen		
	Required	Actual		Specimen	Actual	
Absorption:	5 max	3.0	%	Length/Width Ratio:	2.1 max	2.02
Density (Oven Dry Condition):	---	125.4	lb/ft <sup>3</sup>	Aspect Ratio ( $R_a$ ):	0.60 - 1.20	0.62

**Individual Unit Test Results**

*Full Size Unit Measurements*

	Avg. Width (in.)	Avg. Height (in.)	Avg. Length (in.)	Sample Weight (lb)
Unit #1	3.881	2.392	7.815	5.32
Unit #2	3.881	2.413	7.828	5.42
Unit #3	3.881	2.394	7.822	5.33
Average	3.881	2.400	7.821	5.36

*Absorption Specimens*

	Received Weight $W_R$ (lb)	Immersed Weight $W_I$ (lb)	SSD Weight $W_S$ (lb)	Oven-Dry Weight $W_D$ (lb)	Absorption (%)	Density (pcf)	Net Volume (ft <sup>3</sup> )
Unit #4	5.32	2.78	5.39	5.23	3.1	124.9	0.0418
Unit #5	5.42	2.85	5.47	5.32	2.9	126.3	0.0421
Unit #6	5.33	2.78	5.40	5.23	3.2	124.9	0.0419
Average	5.36	2.80	5.42	5.26	3.0	125.4	0.0419

Comments: These units meet the absorption requirements of ASTM C936/C936M-16.



Douglas H. Ross  
Manager, Research and Development Laboratory



Jason J. Thompson  
Vice President of Engineering