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REPORT OF STONE TESTING

PROJECT:
MATERIAL CHECK

REPORTED TO:
REALSTONE SYSTEMS
560 KIRTS BOULEVARD
SUITE 120
TROY, MI 48084

AET PROJECT NO: 20-11101

DATE: November 1, 2012

Product Type: Mocha
Date Tested: 10/20/10 to 10/26/12

Conformance: The stone samples meet ASTM:C616-08 requirements for Quartzitic Sandstone dimension stone.

Sample	A	B	C	D	E	Average	Requirements ASTM C616
<u>Strength Properties: ASTM C170 – WET CONDITION - PERPENDICULAR</u>							
Compression Strength, psi:	11,840	12,340	13,370	12,760	14150	12,890	10,000 Min
<u>Strength Properties: ASTM C170 – DRY CONDITION – PERPENDICULAR</u>							
Compression Strength, psi:	20,240	18,980	23,210	20,910	20,440	20,760	10,000 Min
<u>Strength Properties: ASTM C170 – WET CONDITION - PARALLEL</u>							
Compression Strength, psi:	13,030	13,140	12,280	14,530	13,140	13,220	10,000 Min
<u>Strength Properties: ASTM C170 – DRY CONDITION - PARALLEL</u>							
Compression Strength, psi:	19,590	17,400	17,440	20,320	17,150	18,380	10,000 Min
<u>Strength Properties: ASTM C99 & C880 – WET CONDITION -</u>							
Modulus of Rupture, psi:	2,100 2,040	2,470 2,040	2,030 2,330	2,050 2,190	2,190 2,050	2,150	1,000 Min
Flexural Strength, psi:	1,090 1,110	1,380 1,280	1,130 1,040	1,430 1,350	1,440 1,070	1,230	
<u>Strength Properties: ASTM C99 & C880 – DRY CONDITION</u>							
Modulus of Rupture, psi:	2,550 2,560	2,630 2,540	2,550 2,220	2,700 2,590	2,690 2,890	2,590	1,000 Min
Flexural Strength, psi:	1,860 1,860	1,700 1,910	1,760 1,720	1,640 1,940	1,730 1,830	1,800	



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Sample	A	B	C	Average	Requirements ASTM C616
<u>Physical Properties: ASTM:C97</u>					
Specific Gravity:	2.621	2.618	2.625	2.078	
Bulk Density, pcf:	163.5	163.4	163.8	163.6	150 Min
Absorption, %	1.06	1.13	1.03	1.08	3.0 Max

Remarks: The samples were destroyed during testing and discarded.

Report Prepared By:

 John J. Haupt, PE
 Staff Engineer II

Report Reviewed By:

 John Amundson
 Principal Engineer



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REPORT OF FREEZE-THAW TESTING OF STONE

PROJECT:

MATERIAL EVALUATION
MOCHA-STONE UNITS

REPORTED TO:

REALSTONE SYSTEMS
560 KIRTS BLVD
SUITE 120
TROY, MI 48084

ATTN: STEVE HODGES

AET JOB NO: 20-11101

DATE: JANUARY 29, 2013

INTRODUCTION

This report presents the test results on five stone units. Samples were submitted and identified by you. The scope of our work consisted of conducting freeze-thaw testing in accordance with ASTM C67-12, "Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile" and evaluated according to ASTM C 216-12a "Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale)." Our work was authorized by you on February 20, 2012.

SAMPLE INFORMATION

American Engineering Testing, Inc. received 5 stone samples identified as Mocha #1 through #5 from Realstone Systems.

TESTING METHODS

The specimens were subjected to freeze-thaw cycling in accordance with ASTM C67, Section 9.

1. The samples were placed in a pan with water at a depth of ½" and frozen for 20 hours. Next the samples were immersed in a thawing tank for 4 hours. This process continued for 50 cycles or until the specimens develop a crack or appears to have lost more than 3% of its original weight by disintegration as judged by visual inspection.
2. Final weight loss percentages are calculated by dividing the oven dry weight of dislodged material by the final oven dried sample weight, plus the total dislodged material.

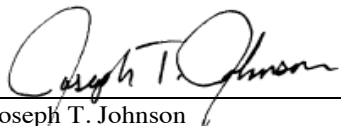
TEST RESULTS

Sample	Weight Loss %	Full Width Cracking	Rating
M1	0.000%	No	See Remarks
M2	0.002%	No	See Remarks
M3	0.004%	No	See Remarks
M4	0.007%	No	See Remarks
M5	0.014%	No	See Remarks
Average	0.005%		

REMARKS

The samples were tested for 50 freeze thaw cycles. The test results meet the specifications of ASTM C216-12a "Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale)" for SW facing material. This report represents specifically the samples tested. The ASTM C216 requirements for freeze-thaw durability in section 6.1.3.1 state that no individual unit separates or disintegrates resulting in a weight loss greater than 0.5% of its original dry weight. Additionally, ASTM C216, Section 6.1.3.2 states that no individual unit develops a crack that exceeds, in length, the units least dimension. If you have any questions, please feel free to call us.

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For additional help or with questions please contact us
at 1-866-698-5066 or at realstonesystems.com