



- CONSULTANTS
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 - MATERIALS
 - FORENSICS

PROJECT:
 MATERIAL CHECK

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

ATTN: STEVE HODGES

AET PROJECT NO: 20-11101

DATE: November 1, 2012

Product Type: White Birch
 Date Tested: 10/22/10 to 10/26/12

Conformance: The stone samples meet ASTM:C568-10 medium-density requirements for Limestone dimension stone.

Sample	A	B	C	D	E	Average	Requirements ASTM C568
<u>Strength Properties: ASTM C170- WET CONDITION - PERPENDICULAR</u>							
Compression Strength, psi:	9,920	10,780	10,860	12,350	9,500	10,680	4,000 Min
<u>Strength Properties: ASTM C170 - DRY CONDITION - PERPENDICULAR</u>							
Compression Strength, psi:	15,220	3,560	16,160	6,590		10,380	4,000 Min
<u>Strength Properties: ASTM C170 - WET CONDITION - PARALLEL</u>							
Compression Strength, psi:	15,170	10,810	5,890	17,270	12,030	12,230	4,000Min
<u>Strength Properties: ASTM C170 - DRY CONDITION - PARALLEL</u>							
Compression Strength, psi:	15,030	14,440	13,570	9,100	15,280	13,480	4,000 Min
<u>Strength Properties: ASTM C99 & C880 - WET CONDITION -</u>							
Modulus of Rupture, psi:	1,290	1,040	300	1,650	1,240	1,240	500 Min
	1,300	2,100	1,150	1,460	860		
Flexural Strength, psi:	1,100	1,110	790	1,070	1,040	930	
	120	890	900	1,130	1,100		
<u>Strength Properties: ASTM C99 & C880 - DRY CONDITION</u>							
Modulus of Rupture, psi:	1,270	2,300	1,250	2,410	1,720	2,050	500 Min
	2,240	1,990	2,250	2,440	2,610		
Flexural Strength, psi:	1,140	1,270	1,020	230	1,080	990	
	790	1,120	1,110	1,190	940		



Sample	A	B	C	Average	Requirements ASTM C568
<u>Physical Properties: ASTM:C97</u>					
Specific Gravity:	2.364	2.397	2.296	2.352	
Bulk Density, pcf:	147.5	149.6	143.2	146.8	135 Min
Absorption, %	5.5	5.0	6.6	5.7	7.5 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:

FREEZE-THAW TESTING
WHITE BIRCH STONE

REPORTED TO:

REALSTONE SYSTEMS
560 KIRTS BOULEVARD
SUITE 120
TROY, MI 48084

ATTN: KURT FEIN

AET JOB NO: 29-01290

DATE: OCTOBER 11, 2013

INTRODUCTION

This report presents the results of testing performed on five stone units. Samples were submitted to our laboratory by you. The scope of our work consisted of performing freeze-thaw testing and reporting our results. Testing was conducted in accordance with ASTM C67 “Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile” and evaluated according to ASTM C 216 “Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale)”. Our work was authorized by you on June 14, 2013.

SAMPLE INFORMATION

American Engineering Testing, Inc. received 1 box of 5 samples of stone from Realstone Systems labeled as White Birch on June 19, 2013.

TESTING METHODS

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

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 is 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 materials by the final oven dried sample weight, plus the total dislodged materials.

TEST RESULTS

WHITE BIRCH STONE			
Cycles	Weight Loss %	Full Width Cracking	Rating
1	0.0	No	See Remarks
2	0.0	No	See Remarks
3	0.0	No	See Remarks
4	0.0	No	See Remarks
5	0.0	No	See Remarks
Average	0.0		

REMARKS

The samples were tested to 50 freeze thaw cycles and found to meet the specifications of ASTM C216 "Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale)" for SW facing material. This report represents specifically the samples tested. According to ASTM C216 section 6.1.3.1 No individual unit separates or disintegrates resulting in a weight loss greater than 0.5% of its original dry weight. Also section 6.1.3.2 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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