AMERICAN ENGINEERING TESTING, INC.

CONSULTANTS
- GEOTECHNICAL
- MATERIALS
- ENVIRONMENTAL

REPORT OF STONE TESTING

PROJECT:

PRODUCTION CHECK

REPORTED TO:

REALSTONE SYSTEMS
560 KING BOULEVARD, SUITE 120
TROY, MI 46084

ATTN: MIKE QUARTON

AET JOB NO: 05-02343

DATE: OCTOBER 5, 2005
REVISED: NOVEMBER 7, 2005

INTRODUCTION

This report presents the results of stone testing performed by our firm. The testing was performed June through October, 2005. Our work was requested and authorized by Mike Quarton of Realstone Systems on June 7, 2005. The scope of our work was limited to the following:

- Density on absorption
- Compressive strength
- Flexural strength
- Freeze-thaw
- Coefficient of friction

SAMPLE PROCUREMENT

Two samples were received at our laboratory on June 3, 2005. They measured 8' x 6" x 1". These samples were used for the specific gravity and absorption testing.

Twenty samples were received on August 3, 2005. These samples were tested for compressive and flexural strength and also freeze-thaw.
Three samples were received on August 10, 2005. These samples were tested for coefficient of friction.

TEST PROCEDURES

Density and Absorption

Density and absorption tests were performed in accordance with ASTM:C97, "Absorption and Specific Gravity and Dimension Stone."

Compressive Strength
Compressive strength was determined in accordance with ASTM:C39, "Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens."

Flexural Strength
Flexural strength was determined in accordance with ASTM:C880, "Test Method for Flexural Strength of Dimensional Stone."

Freeze-Thaw
Freeze-thaw durability was determined in accordance with ASTM:C67, Section 8, "Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile."

Coefficient of Friction
Coefficient of friction testing was performed in accordance with ASTM:C1028, "Standard Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and other Life Surfaces by the Horizontal Dynamometer Pull-Meter Method."

TEST RESULTS

Density and Absorption

Sample ID	Bulk Specific Gravity	Absorption, %
A	2.68	1.35
B	2.69	1.20
C	2.77	0.9
C	2.77	1.0
E	2.71	1.10
Average	2.72	1.1

Compressive Strength

Sample No.	Parallel to Rift	Perpendicular to Rift
1	7,400 psi	16,400 psi
2	10,840 psi	17,390 psi
3	9,460 psi	15,700 psi
Average	9,230 psi	16,500 psi

Flexural Strength

Sample No.	Parallel to Rift	Perpendicular to Rift
1	910 psi	650 psi
2	1,040 psi	780 psi
3	950 psi	800 psi
Average	970	740

Freeze-Thaw

	G Samples					
ASTM:C67	1	2	3	4	5	Average
Percent Loss:	.19	.18	.12	.24	.15	.18
Breakage:	None	None	None	None	None	
Cracking:	None	None	None	None	None	

	TE Samples					
ASTM:C67	1	2	3	4	5	Average
Percent Loss:	.47	.19	.51	.30	.39	.37
Breakage:	None	None	None	None	None	
Cracking:	None	None	None	None	None	

It is our understanding there are no maximum percent loss specifications for natural stone. ASTM:C216 gives a maximum percent loss allowed of .5% for brick.

Coefficient of Friction

Sample No.	Dry Condition	Wet Condition
1	0.90	0.63
2	0.93	0.70
3	0.86	0.59
Average	0.91	0.67

It is our understanding there are no minimum standards for the coefficient of friction for flooring materials. However, the Occupational Safety and Health Administration (OSHA) and Ceramic Tile Industries (CTI) recommend a minimum threshold value of 0.5 under both wet and dry conditions. In addition, America Disability Act recommends that an approximate threshold value for the static of coefficient of friction of 0.6 under both wet and dry conditions.

REMARKS

Should you have any questions regarding this report or if we can be of further assistance, please contact me.

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