



July 17, 2009

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Subject: **Final Report of Resistance ASTM C67 and C97 Testing**
TEC Services Project Number: TEC 09-0718
TEC Services Laboratory Number: 09-197

Mr. McGowan:

Testing, Engineering & Consulting Services Inc. (TEC Services) is pleased to present this final report of our Absorption and Freeze/Thaw testing of the five stone samples that you submitted to our laboratory. This work was performed in accordance with our Service Agreement (TEC-PRO-09-0718) dated February 9, 2009.

Freeze/Thaw testing was performed in accordance with ASTM C 67-08 *Standard Test Method for Sampling and Testing Brick and Structural Clay Tile*. Before, during, and after testing the specimens were visually inspected for cracking. A crack is defined by ASTM C67 as a fissure or separation visible to a person with normal vision from a distance of one foot under an illumination of not less than 50 fc. Results of the freeze/thaw testing are reported in Table 1.

Absorption testing was performed in accordance with ASTM C 97-02 *Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone*. Results of the absorption testing are reported in table 2.

Table 1 – Results of ASTM C67 Freeze Thaw Testing

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Initial Weight after prep (g)	1444.8	1434	1427.5	1393.3	1311.7
Final Dry Weight (g)	1441.3	1430.1	1423.4	1389	1307.8
% Weight Loss	0.24	0.27	0.29	0.31	0.30

*The specimens exhibited no signs of cracking after the completion of the 50 freeze/thaw cycles.

Table 1 – Results of ASTM C97 Absorption and Specific Gravity Testing

Sample ID	Oven Dry, Weight (grams)	SSD after 24 hour Soak (grams)	Suspended after Soak (grams)	Percentage Water Absorption by Weight (%)	Bulk Specific Gravity
1	407.30	409.40	263.40	0.52	2.79
2	402.80	404.40	261.20	0.40	2.81
3	402.20	405.20	260.30	0.75	2.78
4	412.30	414.10	237.00	0.44	2.33
5	354.70	357.30	229.30	0.73	2.77
Average				0.57	2.70

We appreciate the opportunity to provide our services to you on this project. Should you have any questions or comments regarding this report, please feel free to contact us at your convenience.

Sincerely,

Testing, Engineering & Consulting Services, Inc.



Anne Miller
 Staff Engineer



Shawn McCormick
 Lab Manager