

# Specifications



## NELSON TESTING LABORATORIES

*Construction Materials*  
1210 REMINGTON ROAD  
SCHAUMBURG, ILLINOIS 60173 USA  
Phone (847) 882-1146 Fax (847) 882-1148

www.nelsontesting.com

June 25, 2009

J & N Stone, Inc.  
905 Waterford Street  
P.O. Box 442  
Wakarusa, Indiana 46573

Attn: Mr. Jeffrey Lengacher

### REPORT OF TESTS

**SUBJECT:** Physical Analysis of Stone

**PROJECT:** J & N Stone, Inc. - 2009 Product Certification

**TEST METHODS:** ASTM C 97, "Standard Test Method for Absorption and Bulk Specific Gravity of Dimension Stone"

ASTM C 99, "Standard Test Method for Modulus of Rupture of Dimension Stone"

ASTM C 170, "Standard Test Method for Compressive Strength of Dimension Stone"

ASTM C 482, "Standard Test Method for Bond Strength of Ceramic Tile to Portland Cement Paste"

ASTM C 666, "Test Method for Resistance of Concrete to Rapid Freezing and Thawing."

**DATE OF TESTS:** May 2009

**MATERIALS:** Shipped by J & N Stone, Inc. to NTL on April 14, 2009

**NTL PROJECT #:** 1054-09

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### TEST RESULTS

#### ASTM C 97 – Water Absorption (%)

	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>Avg.</u>
J & N, Inc. Stone	12.0	11.8	11.5	11.6	11.9	11.8%

#### ASTM C 99 – Modulus of Rupture (psi)

	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>Avg.</u>
J & N, Inc. Stone						
Dry	867	814	796	724	780	796
Wet	385	358	402	366	414	385

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NTL Project #1054-09  
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### TEST RESULTS

#### ASTM C 170 – Compressive Strength (psi)

	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>Avg.</u>
<i>J &amp; N, Inc. Stone</i>						
<i>Dry</i>	3812	4064	3782	3943	4114	<b>3943</b>
<i>Wet</i>	3530	3660	3690	3384	3414	<b>3536</b>

#### ASTM C 482 – Shear Bond Strength (psi)

	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>Avg.</u>
<i>Mortar – Type "S"</i>						
<i>J &amp; N, Inc. Stone</i>	123	111	105	114	121	<b>115</b>

#### ASTM C 666, Procedure A - Freeze-Thaw Resistance

*J & N, Inc. Stone*

<u>Specimen</u>	<u>Cycles</u>	<u>Initial Weight (g)</u>	<u>New Weight (g)</u>	<u>Weight Change (%)</u>
1	300	3270.4	3251.5	0.58%
2	300	2457.8	2437.4	0.83%
3	300	2042.8	2024.3	0.91%

**CPWL (Cumulative Percent Mass Loss) – 0.77%**

Respectfully submitted,

NELSON TESTING LABORATORIES

Mark R. Nelson  
President

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August 31, 2010

J & N Stone, Inc.  
905 Waterford Street  
P.O. Box 442  
Wakarusa, Indiana 46573

Attn: Mr. Jeffrey Lengacher

## REPORT OF TESTS

**SUBJECT:** Physical Analysis of Stone

**PROJECT:** J & N Stone, Inc. - 2010 Product Certification

**TEST METHODS:** ASTM C 348, "Standard Test Method for Flexural Strength of Hydraulic-Cement Mortars"  
ASTM C 567, "Standard Test Method for Determining Density of Structural Lightweight Concrete"

**DATE OF TESTS:** August, 2010

**MATERIALS:** Shipped by J & N Stone, Inc. to NTL on August 18, 2010

**NTL PROJECT #:** 1119-10

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## TEST RESULTS

### ASTM C 348 – Flexural Strength (psi)

Specimen Size – 40 mm x 40 mm x 160 mm

	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>#6</u>	<u>Avg.</u>
<b>J &amp; N, Inc. Stone</b>	550	530	580	550	590	510	<b>552</b>

### ASTM C 567 – Density (lbs./cu.ft.) – modified\*

\*Specimen Size – 1" x 4" x 4"

	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>#6</u>	<u>Avg.</u>
<b>J &amp; N, Inc. Stone</b>	112.1	114.6	109.5	107.9	116.1	113.0	<b>112.2</b>

TABLE 2 - THERMAL CONDUCTIVITY TEST RESULTS\* FOR LIGHTWEIGHT CONCRETE  
TESTED IN THE "OVEN-DRY" CONDITION\*\*\*\*

Specimen Identification	Test Date	Test Duration,**** days	Hot Side Temperature, °F	Cold Side Temperature, °F	Average Temperature Gradient, °F	Mean Specimen Temperature $t_m$ , °F	Heat Flux $q$ , Btu/hr-ft <sup>2</sup>	Thermal Resistance $R_p$ ***** hr-ft <sup>2</sup> -°F/Btu	Thermal Conductivity $k$ , Btu-in./hr-ft <sup>2</sup> -°F
A/C	8/31/2002	2.1	95.6	65.3	30.3	80.4	33.0	0.92	1.68

\* Measured in general accordance with ASTM Designation: C-177-95 using the guarded hot plate.

\*\* Test specimens were submitted and identified by J&N Stone Co.

\*\*\* Test specimens were over-dried at a nominal temperature of 230°F for a period of 6 days prior to testing.

\*\*\*\* Includes time before steady-state equilibrium is achieved.

\*\*\*\*\* Thermal Resistance presented is for the as-measured thickness. Specimens had nominal thicknesses of 1.5-in. Actual thicknesses are presented in Table 1.