

**Sampling and Testing Architectural Cast Stone
Specifications per ASTM C1364**

Date: September 27, 2012

Project Number: BL-12-05711

Client:
Julie Napp
Superior Precast Products, Inc.
1950 Ravine Rd Ste B
Kalamazoo, MI 49004-3515

Project Description:
Cast Stone Testing

Sample Data

Type of Unit: 2 X 2 Cube
Supplier: Superior Precast Products, Inc.
Mix Design: 205
Date Cast: 8/27/12
Date Received: 9/7/12

**Standard Test Method for Absorption of Architectural Cast Stone (Test Method A, Cold Water)
ASTM C1195**

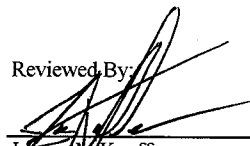
Sample Number:	116	117	118	Average	Specifications
Date Tested:	9/24/12	9/24/12	9/24/12		
Moisture Content as Received (%):	3.5	3.4	3.5	3.5	
Absorption (%):	2.4	2.4	2.4	2.4	Max 6.0

**Standard Test Method for Compressive Strength of Architectural Cast Stone
ASTM C1194**

Sample Number:	119	120	121	Average	Specifications
Date Tested:	9/24/12	9/24/12	9/24/12		
Moisture Content as Received (%):	3.5	3.5	3.5	3.5	
Width (in.):	2.06	2.05	2.05	2.05	
Height (in.):	2.03	2.04	2.00	2.02	
Length (in.):	2.06	2.06	2.05	2.06	
Compressive Strength (psi):	9850	9670	9400	9640	Min 6500

Remarks: The samples meet or exceed the compression and absorption requirements of ASTM C 1364.

Reviewed By:


Jayson M. Kauffman
Project Manager

**Sampling and Testing Architectural Cast Stone
Specifications per ASTM C1364**

Date: May 8, 2013

Project Number: BL-13-02202

Client:
Julie Dintaman
Superior Precast Products, Inc.
1950 Ravine Rd Ste B
Kalamazoo, MI 49004-3515

Project Description:
Cast Stone Testing

Sample Data

Type of Unit: 2 X 2 Cube
Supplier: Superior Precast Products, Inc.
Mix Design: 100
Date Cast: 4/3/13
Date Received: 4/16/13

**Standard Test Method for Absorption of Architectural Cast Stone (Test Method A, Cold Water)
ASTM C1195**

	140	141	142	Average	Specifications
Sample Number:	140	141	142		
Date Tested:	5/1/13	5/1/13	5/1/13		
Moisture Content as Received (%):	3.8	3.8	3.9	3.8	
Absorption (%):	2.1	2.2	2.2	2.2	Max 6.0

**Standard Test Method for Compressive Strength of Architectural Cast Stone
ASTM C1194**

	143	144	145	Average	Specifications
Sample Number:	143	144	145		
Date Tested:	5/1/13	5/1/13	5/1/13		
Moisture Content as Received (%):	3.9	4.0	4.1	4.0	
Width (in.):	1.97	1.95	1.97	1.96	
Height (in.):	192.00	1.93	1.94	65.29	
Length (in.):	1.98	1.96	1.95	1.96	
Compressive Strength (psi):	9680	10370	10120	10060	Min 6500

Remarks: The samples meet or exceed the compression and absorption requirements of ASTM C 1364.

Reviewed By

Jayson M. Kauffman
Project Manager

**Sampling and Testing Architectural Cast Stone Specifications per ASTM C1364
Standard Test Method for Linear Shrinkage of Concrete Masonry Units ASTM C426.**

Date: July 9, 2010

Project Number: BL-10-6655

Client:
Julie Nap
Superior Precast Products, Inc.
1950 Ravine Rd Ste B
Kalamazoo, MI 49004-3515

Project Description:
Arch. Cast Stone Testing
Braun Bloomington Facility
Bloomington, MN 55438

Sample Data

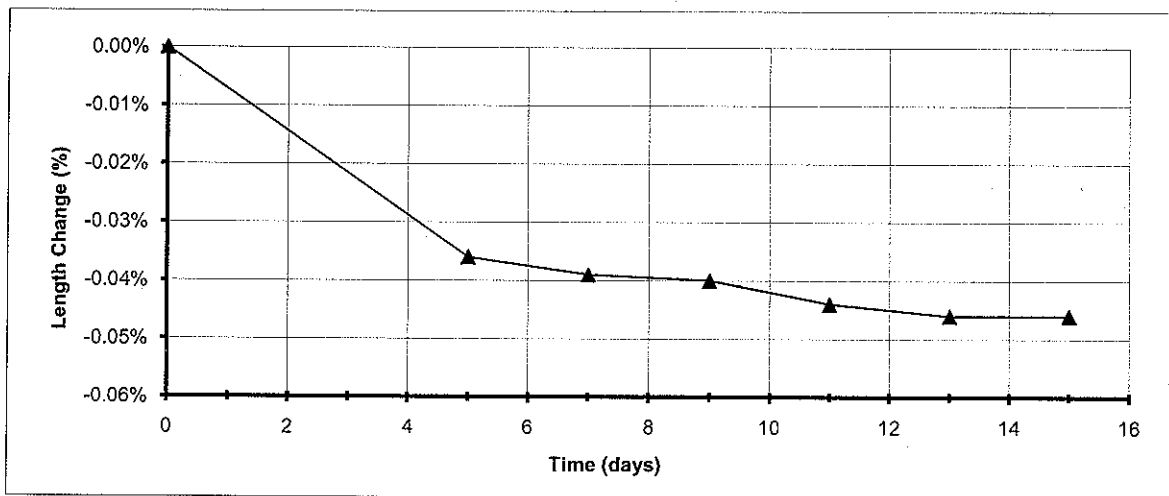
Set Number: 1
Number of Samples: 3
Type of Unit: Arch. Cast Stone
Supplier: Superior Precast Products, Inc.
Age of Samples: Not Given

Date Cast: 6/8/2010
Date Received: 6/16/2010
Date Immersed: 6/21/2010
Sampled By: Client
Size of Sample: 3X3X10

Linear Shrinkage Analysis

Date Measured	Days out of Bath	Length Change			
		1A	1B	1C	Average
6/23/10	0	0.000%	0.000%	0.000%	0.000%
6/28/10	5	-0.034%	-0.034%	-0.041%	-0.036%
6/30/10	7	-0.037%	-0.036%	-0.043%	-0.039%
7/2/10	9	-0.038%	-0.037%	-0.046%	-0.040%
7/4/10	11	-0.041%	-0.040%	-0.050%	-0.044%
7/6/10	13	-0.045%	-0.042%	-0.051%	-0.046%
7/8/10	15	-0.045%	-0.042%	-0.051%	-0.046%

Moisture Loss			
1A	1B	1C	Average
2.859%	2.608%	3.074%	2.847%
0.598%	0.527%	0.545%	0.557%
0.407%	0.384%	0.367%	0.386%
0.265%	0.258%	0.261%	0.261%
0.111%	0.103%	0.059%	0.091%
0.000%	0.006%	0.000%	0.002%
0.000%	0.000%	0.000%	0.000%



Remarks:

Mix #102

The samples meet the linear shrinkage requirements of ASTM 1364 5.7

Reviewed By

Jayson M. Kauffman

Project Manager

May 31, 2012

CSIN-1001.38

Mr. Gary Nap
Superior Precast Products, Inc.
1950 Ravine Road
Kalamazoo, Michigan 49004

Re: Architectural Cast Stone Freeze-Thaw Testing – Superior Precast Products, Inc.

Dear Mr. Nap:

Attached are test results for the referenced sample. Superior Precast Products, Inc. submitted and identified the cast stone samples as Color 102 that were cast on January 3, 2012 and arrived at our facility on January 26, 2012.

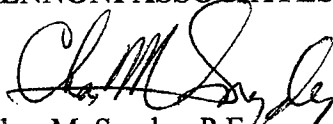
Laboratory No. 10-98153

One slab of cast stone was reduced to one set of three beams with nominal dimensions of 3" x 4" x 16" and were tested in accordance with ASTM C 666 Procedure A as modified by Section 5.6 "Resistance to Freezing and Thawing" of ASTM C 1364-07. Final results indicate the Cumulative Percent Mass Loss of the three samples were 0.1 %, which occurred after 300 freeze-thaw cycles.

This set meets the maximum requirements of 5% after 300 freeze-thaw cycles. Photographs of the samples before and after testing are attached.

Very truly yours,

PENNONI ASSOCIATES INC.



Chas M. Snyder, P.E.
Laboratory Manager



Quinton D. Davis, Jr.
Division Manager

CC Mrs. Jan Boyer, Cast Stone Institute
Attachments





ASTM C666 - Freeze/Thaw of Concrete

Laboratory No. 10- 98153

PROJECT NO. CSIN 1101.38
PROJECT NAME Superior Precast Products Inc.
SAMPLE ID Color 102

Test Results of ASTM C 666 - Procedure A

Freeze-Thaw Cycles	Mass Change (%)
0	0
30	0.00
60	0.01
90	0.01
120	0.02
150	0.02
180	0.03
210	0.04
240	0.07
270	0.09
300	0.14

Values are the average of three specimens.

