

Project: Production Check
Project Location: Medford, Mn

AET # 11-04511
4/3/2008

Report of Concrete Block Testing

<u>Sample Number</u>	4A	4B	4C	Avg.
Block Type:	4" Stretchers			
Block Producer:	Concrete Materials Inc			
Date Tested:	4/1/2008			
Tested By:	Jeff Bale			

ASTM C90 Specifications

<u>Dimensions</u>					Individual Unit	Average of 3 Units
Length, in:	15.57	15.57	15.57		15 5/8 ±1/8" (15.5 to 15.75)	
Width, in:	3.63	3.64	3.64		3 5/8 ±1/8" (3.5 to 3.75)	
Height, in:	7.66	7.66	7.64		7 5/8 ±1/8" (7.5 to 7.75)	
Face Shell, in:	1.05	1.06	1.05	1.05		min 3/4" (0.75)
Web, in:	1.13	1.08	1.09	1.10		min 3/4" (0.75)
Equivalent Web:	2.62	2.50	2.52	2.55		min 1 5/8" (1.625)
Equivalent Thickness:	2.67	2.69	2.70	2.69		
Weight as received, lb	25.1	25.4	25.7			

Physical Properties

Moisture Content, %:	32.4	33.3	30.8			
Absorption, %:	6.4	6.1	5.7			
Absorption lb/cu ft.	8.5	8.2	7.7	8.1	max 15	max 13
Density, pcf	134	134	136	135		min 125

Strength

Total Load, lbs:	133480	119150	109840			
Gross Area, sq. in:	56.46	56.64	56.70			
Gross Strength, psi:	2364	2104	1937	2135		
Net Area, sq. in:	41.62	41.86	42.04			
Net Strength, psi:	3207	2847	2612	2889	min 1700	min 1900

Remarks: The samples meet ASTM:C90 specifications for hollow load bearing concrete masonry units for items tested.

EQUIVALENT THICKNESS REQUIRMENTS FOR FIRE RESISTANCE *

Type of Coarse Aggregate	Minimum Equivalent Thickness** for Rating of :			
	4 Hour	3 Hour	2 Hour	1 Hour
Siliceous Gravel (Normal Weight)	6.2"	5.3"	4.2"	2.8"

* Based on Table 43-B, Uniform Buildign Code

** Equivalent thickness of a masonry unit is determined by dividing the net volume of the unit by the area of the face. The thickness of Gypsum Wallboard, Portland Cement Plaster, or 1.5 time the thickness of Gypsum Plaster applied to the wall may be included in determining equivalent thickness.

Project: Production Check
Project Location: Medford, Mn

AET# 11-04511
4/3/2008

Report of Concrete Block Testing

Sample Number 6A 6B 6C Avg.
 Block Type: 6" Stretcher
 Block Producer: Concrete Materials Inc
 Date Tested: 4/1/2008
 Tested By: Jeff Bale

ASTM C90 Specifications

Dimensions

	6A	6B	6C	Avg.	Individual Unit	Average of 3 Units
Length, in:	15.59	15.57	15.57		15 5/8 ±1/8" (15.5 to 15.75)	
Width, in:	5.63	5.63	5.63		5 5/8 ±1/8" (5.5 to 5.75)	
Height, in:	7.64	7.62	7.60		7 5/8 ±1/8" (7.5 to 7.75)	
Face Shell, in:	1.04	1.03	1.03	1.03		min 1"
Web, in:	1.06	1.07	1.02	1.05		min 1"
Equivalent Web:	2.44	2.47	2.37	2.42		min 2 1/4" (2.25)
Equivalent Thickness:	3.16	3.18	3.19	3.18		
Weight as received, lb	29.7	30.0	30.1			

Physical Properties

Moisture Content, %:	27.5	34.6	34.7			
Absorption, %:	6.0	5.9	5.6			
Absorption lb/cu ft.	8.1	7.9	7.6	7.9	max 15	max 13
Density, pcf	134.3	134.8	135.1	134.7		min 125

Strength

Total Load, lbs:	154320	129900	136290			
Gross Area, sq. in:	87.77	87.66	87.66			
Gross Strength, psi:	1758	1482	1555	1598		
Net Area, sq. in:	49.24	49.45	49.69			
Net Strength, psi:	3134	2627	2743	2835	min 1700	min 1900

Remarks: The samples meet ASTM:C90 specifications for hollow load bearing concrete masonry units for items tested.

EQUIVALENT THICKNESS REQUIRMENTS FOR FIRE RESISTANCE *

Minimum Equivalent Thickness** for Rating of :

Type of Coarse Aggregate	4 Hour	3 Hour	2 Hour	1 Hour
Siliceous Gravel (Normal Weight)	6.2"	5.3"	4.2"	2.8"

* Based on Table 43-B, Uniform Buildign Code

** Equivalent thickness of a masonry unit is determined by dividing the net volume of the unit by the area of the face. The thickness of Gypsum Wallboard, Portland Cement Plaster, or 1.5 time the thickness of Gypsum Plaster applied to the wall may be included in determining equivalent thickness.

BRAUN INTERTEC

Braun Intertec Corporation
11001 Hampshire Avenue S
Minneapolis, MN 55438

Phone: 952.995.2000
Fax: 952.995.2020
Web: braunintertec.com

Sampling and Testing Concrete Masonry Units ASTM C140 Specifications per ASTM C90

Date: January 2, 2008

Project Number: BL-07-06099

Client:

Denver O'Brien
Cemstone Products, Inc.
2025 Centre Pointe Boulevard
Suite 300
Mendota Heights, MN 55120

Project Description:

Block Testing/PO# 73861
Medford, MN

Sample Data

Type of Unit: 8" Plain Stretcher
Supplier: Cemstone
Date Cast: Not Given
Date Received: 12/31/07

Specified Dimensions

Nominal Width (in.): 8
Width (in.): 7 5/8
Height (in.): 7 5/8
Length (in.): 15 5/8

Absorption & Dimensional Analysis

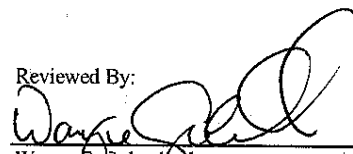
Sample Number:	1A	1B	1C	Average	Specifications
Date Tested:	01/02/08	01/02/08	01/02/08		
Average Width (in.):	7 5/8	7 5/8	7 5/8	7 5/8	7 4/8 to 7 6/8
Average Height (in.):	7 5/8	7 5/8	7 5/8	7 5/8	7 4/8 to 7 6/8
Average Length (in.):	15 5/8	15 5/8	15 5/8	15 5/8	15 4/8 to 15 6/8
Average Minimum Faceshell Thickness (in.):	1 20/64	1 18/64	1 18/64	1 18/64	Min 1 1/4
Average Minimum Web Thickness (in.):	1	1	1	1	Min 1
Equivalent Web Thickness (in.):	2 3/8	2 3/8	2 3/8	2 3/8	Min 2 1/4
Moisture Content (%):	2.4%	2.4%	2.4%	2.4%	
Moisture Content (% of Total Absorption):	46.4%	45.1%	45.1%	45.5%	
Absorption (pcf):	7.1	7.2	7.1	7.1	Max 13
Absorption (%):	5.2%	5.3%	5.2%	5.2%	
Net Volume (ft ³):	0.27	0.27	0.27	0.27	
Density (pcf):	135.9	135.7	135.9	135.8	
Equivalent Thickness (in.):	3.97	3.96	3.95	4.0	
Percent Solid (%):	52.2%	52.3%	52.1%	52.2%	
Gross Cross Sectional Area (in ²):	118.8	118.2	118.4	118.4	
Net Cross Sectional Area (in ²):	62.0	61.8	61.7	61.8	

Compressive Strength Analysis

Sample Number:	1A	1B	1C	Average	Specifications
Date Tested:	01/02/08	01/02/08	01/02/08		
Average Width (in.):	7 5/8	7 5/8	7 5/8	7 5/8	
Average Height (in.):	7 5/8	7 5/8	7 5/8	7 5/8	
Average Length (in.):	15 5/8	15 5/8	15 5/8	15 5/8	
Gross Area Compressive Strength (psi):	2350	2610	2450	2470	
Net Area Compressive Strength (psi):	4500	5000	4700	4730	Min 1900
Individual Specification:	Min 1700	Min 1700	Min 1700		

Remarks:

Reviewed By:


Wayne F. Golembeck
Project Manager

Project: Production Check
Project Location: Medford, Mn

AET # 11-04511
4/3/2008

Report of Concrete Block Testing

Sample Number 10A 10B 10C Avg.
 Block Type: 10" Stretcher
 Block Producer: Concrete Materials Inc
 Date Tested: 4/2/2008
 Tested By: Jeff Bale

ASTM C90 Specifications

Individual Average of
 Unit 3 Units

Dimensions

Length, in:	15.59	15.61	15.59		15 5/8 ±1/8" (15.5 to 15.75)
Width, in:	9.65	9.65	9.65		9 5/8 ±1/8" (9.5 to 9.75)
Height, in:	7.60	7.60	7.58		7 5/8 ±1/8" (7.5 to 7.75)
Face Shell, in:	1.59	1.59	1.57	1.58	min 1 3/8" (1.375)
Web, in:	1.22	1.22	1.18	1.21	min 1 1/8" (1.125)
Equivalent Web:	2.82	2.81	2.73	2.78	min 2 1/2" (2.50)
Equivalent Thickness:	4.95	4.94	4.90	4.93	
Weight as received, lb	45.8	45.6	45.3		

Physical Properties

Moisture Content, %:	30.6	31.4	37.1		
Absorption, %:	5.9	6.0	5.8		
Absorption lb/cu ft.	7.9	7.9	7.6	7.8	max 15
Density, pcf	132.7	132.0	132.6	132.4	min 125

Strength

Total Load, lbs:	260260	291500	228410		
Gross Area, sq. in:	150.38	150.57	150.38		
Gross Strength, psi:	1731	1936	1519	1729	
Net Area, sq. in:	77.13	77.13	76.33		
Net Strength, psi:	3374	3779	2993	3382	min 1700 min 1900

Remarks: The samples meet ASTM:C90 specifications for hollow load bearing concrete masonry units for items tested.

EQUIVALENT THICKNESS REQUIRMENTS FOR FIRE RESISTANCE *

Type of Coarse Aggregate	Minimum Equivalent Thickness** for Rating of :			
	4 Hour	3 Hour	2 Hour	1 Hour
Siliceous Gravel (Normal Weight)	6.2"	5.3"	4.2"	2.8"

* Based on Table 43-B, Uniform Buildign Code

** Equivalent thickness of a masonry unit is determined by dividing the net volume of the unit by the area of the face. The thickness of Gypsum Wallboard, Portland Cement Plaster, or 1.5 time the thickness of Gypsum Plaster applied to the wall may be included in determining equivalent thickness.

Project: Production Check
Project Location: Medford, Mn

AET# 11-04511
April 3, 2008

Report of Concrete Block Testing

Sample Number 12A 12B 12C Avg.
 Block Type: 12" Stretcher
 Block Producer: Concrete Materials Inc
 Date Tested: 4/2/2008
 Tested By: Jeff Bale

ASTM C90 Specifications

Dimensions

					Individual Unit	Average of 3 Units
Length, in:	15.59	15.57	15.57		15 5/8 ±1/8" (15.5 to 15.75)	
Width, in:	11.65	11.61	11.63		11 5/8 ±1/8" (11.5 to 11.75)	
Height, in:	7.60	7.64	7.64		7 5/8 ±1/8" (7.5 to 7.75)	
Face Shell, in:	1.54	1.54	1.53	1.54		min 1 1/2" (1.50)
Web, in:	1.16	1.16	1.16	1.16		min 1 1/8" (1.125)
Equivalent Web:	2.67	2.69	2.69	2.68		min 2 1/2" (2.50)
Equivalent Thickness:	5.27	5.28	5.25	5.27		
Weight as received, lb	49.7	49.9	49.7			

Physical Properties

Moisture Content, %:	22.7	23.8	22.2			
Absorption, %:	5.8	5.7	5.7			
Absorption lb/cu ft.	7.9	7.8	7.7	7.8	max 15	max 13
Density, pcf	135.9	135.4	135.8	135.7		min 125

Strength

Total Load, lbs:	278110	268300	271320			
Gross Area, sq. in:	181.69	180.84	181.15			
Gross Strength, psi:	1531	1484	1498	1504		
Net Area, sq. in:	82.12	82.21	81.81			
Net Strength, psi:	3387	3264	3316	3322	min 1700	min 1900

Remarks: The samples meet ASTM:C90 specifications for hollow load bearing concrete masonry units for items tested.

EQUIVALENT THICKNESS REQUIRMENTS FOR FIRE RESISTANCE *

Type of Coarse Aggregate	Minimum Equivalent Thickness** for Rating of :			
	4 Hour	3 Hour	2 Hour	1 Hour
Siliceous Gravel (Normal Weight)	6.2"	5.3"	4.2"	2.8"

* Based on Table 43-B, Uniform Buildign Code

** Equivalent thickness of a masonry unit is determined by dividing the net volume of the unit by the area of the face. The thickness of Gypsum Wallboard, Portland Cement Plaster, or 1.5 time the thickness of Gypsum Plaster applied to the wall may be included in determining equivalent thickness.

Project: Production Check
Project Location: Medford, Mn

AET # 11-04511
4/3/2008

Report of Concrete Block Testing

Sample Number 14A 14B 14C Avg.
 Block Type: 14" Stretcher
 Block Producer: Concrete Materials Inc
 Date Tested: 4/1/2008
 Tested By: Jeff Bale

ASTM C90 Specifications

Dimensions

					Individual	Average of
					Unit	3 Units
Length, in:	15.59	15.59	15.59		15 5/8 ±1/8" (15.5 to 15.75)	
Width, in:	13.62	13.62	13.62		13 5/8 ±1/8" (13.5 to 13.75)	
Height, in:	7.60	7.62	7.60		7 5/8 ±1/8" (7.5 to 7.75)	
Face Shell, in:	1.56	1.57	1.68	1.60		min 1 1/2" (1.50)
Web, in:	1.30	1.31	1.25	1.29		min 1 1/8" (1.125)
Equivalent Web:	3.01	3.04	2.88	2.98		min 2 1/2" (2.50)
Equivalent Thickness:	6.10	6.11	6.23	6.15		
Weight as received, lb	57.1	57.4	58.6			

Physical Properties

Moisture Content, %:	36.8	35.2	37.9			
Absorption, %:	5.7	5.7	5.6			
Absorption lb/cu ft.	7.6	7.6	7.5	7.6	max 15	max 13
Density, pcf	133.7	133.9	134.2	133.9		min 125

Strength

Total Load, lbs:	389480	411880	300560			
Gross Area, sq. in:	212.38	212.38	212.38			
Gross Strength, psi:	1834	1939	1415	1730		
Net Area, sq. in:	95.09	95.29	97.14			
Net Strength, psi:	4096	4323	3094	3838	min 1700	min 1900

Remarks: The samples meet ASTM:C90 specifications for hollow load bearing concrete masonry units for items tested.

EQUIVALENT THICKNESS REQUIRMENTS FOR FIRE RESISTANCE *

Type of Coarse Aggregate	Minimum Equivalent Thickness** for Rating of :			
	4 Hour	3 Hour	2 Hour	1 Hour
Siliceous Gravel (Normal Weight)	6.2"	5.3"	4.2"	2.8"

* Based on Table 43-B, Uniform Buildign Code

** Equivalent thickness of a masonry unit is determined by dividing the net volume of the unit by the area of the face. The thickness of Gypsum Wallboard, Portland Cement Plaster, or 1.5 time the thickness of Gypsum Plaster applied to the wall may be included in determining equivalent thickness.

Project: Production Check
Project Location: Medford, Mn

AET# 11-04511
June 19, 2008

Report of Concrete Block Testing

Sample Number

	16A	16B	16C	Avg.
Block Type:	16" Stretcher			
Block Producer:	Concrete Materials Inc			
Date Tested:	4/2/2008			
Tested By:	Jeff Bale			

ASTM C90 Specifications

Dimensions

	16A	16B	16C	Avg.	Individual Unit	Average of 3 Units
Length, in:	15.59	15.59	15.55		15 5/8 ±1/8" (15.5 to 15.75)	
Width, in:	15.65	15.67	15.67		15 5/8 ±1/8" (15.5 to 15.75)	
Height, in:	7.60	7.60	7.64		7 5/8 ±1/8" (7.5 to 7.75)	
Face Shell, in:	1.56	1.55	1.56	1.56		min 1 1/2" (1.50)
Web, in:	1.27	1.28	1.26	1.27		min 1 1/8" (1.125)
Equivalent Web:	2.92	2.95	2.92	2.93		min 2 1/2" (2.50)
Equivalent Thickness:	6.58	6.56	6.57	6.57		
Weight as received, lb	62.1	61.9	62.2			

Physical Properties

Moisture Content, %:	40.8	42.3	44.7			
Absorption, %:	5.1	5.0	5.4			
Absorption lb/cu ft.	6.9	6.7	7.2	7.0	max 15	max 13
Density, pcf	134.9	134.8	134.5	134.7		min 125

Strength

Total Load, lbs:	366050	340860	383630			
Gross Area, sq. in:	243.99	244.29	243.68			
Gross Strength, psi:	1500	1395	1574	1490		
Net Area, sq. in:	102.56	102.24	102.23			
Net Strength, psi:	3569	3334	3752	3552	min 1700	min 1900

Remarks: The samples meet ASTM:C90 specifications for hollow load bearing concrete masonry units for items tested.

EQUIVALENT THICKNESS REQUIRMENTS FOR FIRE RESISTANCE *

Type of Coarse Aggregate	Minimum Equivalent Thickness** for Rating of :			
	4 Hour	3 Hour	2 Hour	1 Hour
Siliceous Gravel (Normal Weight)	6.2"	5.3"	4.2"	2.8"

* Based on Table 43-B, Uniform Buildign Code

** Equivalent thickness of a masonry unit is determined by dividing the net volume of the unit by the area of the face. The thickness of Gypsum Wallboard, Portland Cement Plaster, or 1.5 time the thickness of Gypsum Plaster applied to the wall may be included in determining equivalent thickness.

TESTS OF LIGHT WEIGHT CONCRETE BLOCK

PROJECT:
Production Check
Medford, MN

REPORTED TO:
North Star Stone
PO Box 149
2173 76th Street NW
Medford, MN 55049
Attn: Patrick Kelly

AET JOB NO: 11-04620

DATE: July 9, 2008

INTRODUCTION

This report contains the results of a test performed on light weight concrete block that were submitted to our laboratory.

Our work on this project was verbally requested and authorized by Mr. Patrick Kelly of North Star Stone on June 27, 2008.

METHODS AND RESULTS

The tests were performed in general conformance with the methods indicated. Test results are attached. One block was submitted to our laboratory for compression testing only.

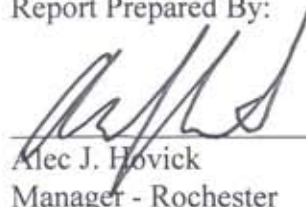
CLOSURE

To protect the addressee, the public, and ourselves, this report (and all supporting information) is provided for the addressee's own use. No representations are made to parties other than the addressee.

Test samples have been discarded.

If you have any questions concerning this report or we can be of further assistance, please contact us.

Report Prepared By:



Alec J. Hovick
Manager - Rochester

Project: Production Check
 Project Location: Medford, MN

AET # 11-04620
 7/11/2008

Report of Concrete Block Testing

Sample Number A B C Avg.
 Block Type: Light Weight 4" Corner
 Block Producer: Northstar Stone
 Date Tested: 7/7/2008
 Tested By: Sid Melder

ASTM C90 Specifications

Dimensions

	A	B	C	Avg.	Individual Unit	Average of 3 Units
Length, in:	15.56	15.50	15.56		15 5/8 ±1/8" (15.5 to 15.75)	
Width, in:	3.63	3.65	3.65		3 5/8 ±1/8" (3.5 to 3.75)	
Height, in:	7.64	7.67	7.67		7 5/8 ±1/8" (7.5 to 7.75)	
Face Shell, in:	1.11	1.13	1.11	1.12		min 3/4" (0.75)
Web, in:	1.13	1.16	1.14	1.14		min 3/4" (0.75)
Equivalent Web:	2.60	2.69	2.64	2.64		min 1 5/8" (1.625)
Equivalent Thickness:	2.64	2.67	2.73	2.68		
Weight as received, lb	16.6	16.8	17.1			

Physical Properties

Moisture Content, %:	13.4	17.2	3.9			
Absorption, %:	12.8	12.7	12.2			
Absorption lb/cu ft.	11.5	11.4	11.0	11.3	max 20	max 18
Density, pcf	90	89.5	90.3	89.9		min 125

Strength

Total Load, lbs:	101010	97530	102850			
Gross Area, sq. in:	56.5	56.6	56.8			
Gross Strength, psi:	1788	1724	1810	1774		
Net Area, sq. in:	41.1	41	42			
Net Strength, psi:	2458	2353	2422	2411	min 1700	min 1900

Remarks: The samples meets ASTM:C90 specifications for light weight hollow load bearing concrete masonry units for items tested.

Project: Production Check
 Project Location: Medford, MN

AET# 11-04620
 7/11/2008

Report of Concrete Block Testing

Sample Number A B C Avg.
 Block Type: Light Weight 6" Corner
 Block Producer: Northstar Stone
 Date Tested: 7/7/2008
 Tested By: Sid Melder

ASTM C90 Specifications

Dimensions

	A	B	C	Avg.	Individual Unit	Average of 3 Units
Length, in:	15.56	15.56	15.56		15 5/8 ±1/8" (15.5 to 15.75)	
Width, in:	5.66	5.65	5.65		5 5/8 ±1/8" (5.5 to 5.75)	
Height, in:	7.63	7.64	7.58		7 5/8 ±1/8" (7.5 to 7.75)	
Face Shell, in:	1.06	1.06	1.08	1.07		min 1"
Web, in:	1.10	1.12	1.16	1.13		min 1"
Equivalent Web:	2.55	2.60	2.69	2.61		min 2 1/4" (2.25)
Equivalent Thickness:	3.23	3.24	3.27	3.25		
Weight as received, lb	20.1	20.2	20.1			

Physical Properties

Moisture Content, %:	14.8	11.9	13.2			
Absorption, %:	13.7	13.1	13.9			
Absorption lb/cu ft.	12.2	11.7	12.2	12.0	max 20	max 18
Density, pcf	88.7	89.2	88.4	88.8		min 105

Strength

Total Load, lbs:	114920	123460	111640			
Gross Area, sq. in:	88.1	87.9	87.9			
Gross Strength, psi:	1304	1404	1270	1326		
Net Area, sq. in:	50.3	50.4	50.9			
Net Strength, psi:	2284	2447	2195	2309	min 1700	min 1900

Remarks: The samples meets ASTM:C90 specifications for light weight hollow load bearing concrete masonry units for items tested.

Project: Production Check
Project Location: 0

AET# 11-04620
July 11, 2008

Report of Concrete Block Testing

Sample Number
Block Type: Light Weight 8" Stretcher
Block Producer: Northstar Stone
Date Tested: 7/7/2008
Tested By: Sid Melder

ASTM C90 Specifications

Dimensions

	A	B	C	Avg.	Individual Unit	Average of 3 Units
Length, in:	15.56	15.56	15.56		15 5/8 ± 1/8" (15.5 to 15.75)	
Width, in:	7.65	7.65	7.61		7 5/8 ± 1/8" (7.5 to 7.75)	
Height, in:	7.63	7.62	7.63		7 5/8 ± 1/8" (7.5 to 7.75)	
Face Shell, in:	1.32	1.30	1.43	1.35		min 1 1/4" (1.250)
Web, in:	1.09	1.06	1.10	1.08		min 1"
Equivalent Web:	2.52	2.44	2.53	2.50		min 2 1/4" (2.250)
Equivalent Thickness:	3.83	3.77	3.82	3.81		
Weight as received, lb	23.4	23.5	23.5			

Physical Properties

Moisture Content, %:	14.6	22.7	16.9			
Absorption, %:	15.3	15.1	14.9			
Absorption lb/cu ft.	13.3	13.2	13.1	13.2	max 20	max 18
Density, pcf	86.9	87.7	87.3	87.3		min 105

Strength

Total Load, lbs:	108740	120930	125470			
Gross Area, sq. in:	119.1	119.1	118.4			
Gross Strength, psi:	913	1016	1059	996		
Net Area, sq. in:	59.6	58.7	59.5			
Net Strength, psi:	1825	2059	2108	1997	min 1700	min 1900

Remarks: The samples meets ASTM:C90 specifications for light weight hollow load bearing concrete masonry units for items tested.
