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**Wisconsin**  
Department of Commerce

Evaluation #

200714-O

**Safety & Buildings Division**  
**201 West Washington Avenue**  
**P.O. Box 2658**  
**Madison, WI 53701-2658**

## Wisconsin Building Products Evaluation

Material

Concrete Masonry Units

Manufacturer

Wisconsin Concrete Masonry Association  
6737 W. Washington Street, Suite. 1420  
Milwaukee, WI 53214

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### SCOPE OF EVALUATION

This report evaluates the use of Concrete Masonry Units (CMUs) manufactured by the producing members of the Wisconsin Concrete Masonry Association. Manufacturers include:

- Antigo Block Company, Antigo, Wisconsin
- Bend Industries, West Bend, Wisconsin
- County Materials Corporation, Marathon, Wisconsin
- Lake Brick and Block Company, Zenda, Wisconsin
- Winger Concrete Products, Hazelhurst, Wisconsin

**GENERAL:** CMUs are approved structural building materials that may be utilized for concrete masonry construction, including: above grade load-bearing exterior walls; below grade walls and foundation walls; shear stabilizing walls; interior walls, including partitions, party walls, firewalls and sound attenuating walls; backing walls that support other exterior finishes, including brick, stucco, EIFS, stone, etc.; un-reinforced (plain) walls and Reinforced walls, beams, lintels, pilasters, and columns; safety/separation walls, including fire-safe enclosures, blast enclosures, and hazardous work enclosures.

CMU walls are constructed for use in residential, commercial and industrial structures plus other applications.

### DESCRIPTION AND MATERIALS

CMUs are manufactured in different sizes and shapes. Typically, CMUs have nominal face dimensions of 8 inches by 16 inches, and are available in nominal thicknesses of 4, 6, 8, 10, 12, 14, and 16 inches (Note: Other sizes are available, but not all sizes and shapes are available in every marketplace). The CMUs are manufactured utilizing primarily hydraulic cement, water, and a combination of mineral aggregates with or without the inclusion of other constituent materials, i.e. coloring pigments, integral water repellants, etc.

**TESTS AND RESULTS**

The test results provided below verify that the CMUs perform in a manner equal to or superior to the material covered under the current Wisconsin Commercial Building Code [Comm 61.05] Enrolled with the International Building Code [2103.1] requirements.

CMUs are manufactured to conform to the concrete masonry specification requirements of the American Society of Testing and Materials (ASTM), designation: “ASTM C90; Loadbearing Concrete Masonry Units.” The CMUs were independently tested in accordance with ASTM C140; Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units.” The provided test reports confirm that the CMUs meet or exceed ASTM C90 Physical Requirements for:

- Minimum Thickness of Face Shells and Webs
- Permissible Variations in Dimensions
- Structural Compressive Strength
- Maximum allowable Absorption
- Weight Classification (Density) Normal Weight / Medium Weight / Light Weight
- Moisture Content

**Fire-Resistance Rating**

In addition, the ASTM C140 test reports yield the equivalent thickness of the CMUs to the nearest 0.1 inches. The equivalent thickness for concrete masonry is defined by ASTM as “the average thickness of solid material in the unit.” The reports of the tested equivalent thicknesses are functional for determining the Fire-Resistance-Rated-Construction in accordance with the requirements of the Wisconsin Enrolled Commercial Building Code [s. IBC 720.3.2 Concrete Masonry Walls (Table 720.3.2)].

**1 ANTIGO BLOCK COMPANY**  
 230 Milton Street / P.O. Box 34  
 Antigo, WI 54409

Test Report	Unit Size	CMU Description	Equivalent Thickness	Fire Rating	Average Net area Strength (psi)
B-07002	8"	Normal Weight – 2 Cell	3.8"		4380
B-07003	12"	Normal Weight – 2 Cell	5.3"		4353
B-07004	8"	Lightweight – 2 Cell	3.7"		2867
B-07005	12"	Lightweight – 2 Cell	5.3"		2490

**2 BEND INDUSTRIES, INC. / OLDCASTLE**  
 2200 S. Main Street  
 West Bend, WI 53095

**A Bend Industries, Inc. – Appleton**  
 1132 East Wisconsin Avenue  
 Appleton, Wisconsin 54911

Test Report	Unit Size	CMU Description	Equivalent Thickness	Fire Rating	Average Net area Strength (psi)
B-06132	4"	Normal Weight – 3 Cell	2.7"	.75 Hour	3900
B-06133	6"	Normal Weight – 2 Cell	3.0"	1 Hour	5197
B-06134	8"	Normal Weight – 2 Cell	3.8"	1.5 Hour	4110
B-06136	10"	Normal Weight – 2 Cell	4.7"	2.25 Hour	4307
B-06137	12"	Normal Weight – 2 Cell	5.6"	3.25 Hour	3923
B-07004	8"	Normal Weight – Half High - 2 Cell	4.1"	1.75 Hour	4560
B-07005	12"	Normal Weight – Half High - 2 Cell	5.9"	3.5 Hour	3913
B-06135	8"	Full Face Split – Normal Weight	4.5"	2.25 Hour	4123
B-06138	12"	Full Face Split – Normal Weight	6.3"	4 Hour	4347

**B BEND INDUSTRIES, Inc. – West Bend**

2200 S. Main Street  
West Bend, WI 53095

Test Report	Unit Size	CMU Description	Equivalent Thickness	Fire Rating	Average Net area Strength (psi)
B-06139	4"	Normal Weight – 3 Cell	2.8"	1 Hour	5407
B-06140	6"	Normal Weight – 2 Cell	3.2"	1.25 Hour	6533
B-06143	8"	Normal Weight – 2 Cell	4.0"	1.75 Hour	5563
B-06144	8"	Normal Weight – 2 Hour Fire Rated	4.4"	2 Hour	5560
B-06145	10"	Normal Weight – 2 Cell	4.6"	2.25 Hour	5153
B-06149	12"	Normal Weight – 2 Cell	5.3"	3 Hour	4803
B-06146	12"	Normal Weight – 3 Cell	6.3"	4 Hour	4477
B-06150	14"	Normal Weight – 2 Cell	6.2"	4 Hour	5323
B-06151	16"	Normal Weight – 2 Cell	6.5"	4 Hour	5610
B-06141	8"	Full Face Split – Normal Weight	4.8"	2.5 Hour	5120
B-06148	12"	Full Face Split – Normal Weight	5.4"	3 Hour	4293

**3 COUNTY MATERIALS CORPORATION**

**Corporate Office:**

205 North Street / P.O. Box 100  
Marathon, Wisconsin 54448-0100

**A County Materials Corporation – Appleton**

3019 West Prospect Avenue  
Appleton, Wisconsin 54914

Test Report	Unit Size	CMU Description	Equivalent Thickness	Fire Rating	Average Net area Strength (psi)
B-06211	4"	Normal Weight – 3 Cell	2.7"		4290
B-06212	6"	Normal Weight – 2 Cell	3.0"		5537
B-06213	8"	Normal Weight – 2 Cell	4.0"		4647
B-06214	8"	Normal Weight – 2 Hour Fire Rated	4.5"		5173
B-06215	10"	Normal Weight – 2 Cell	4.6"		4940
B-06216	12"	Normal Weight – 2 Cell	5.2"		4627
B-06217	8"	Full Face Split – Normal Weight	4.1"		5473
B-06218	4"	Lightweight – 3 Cell	2.7"		3457
B-06219	6"	Lightweight – 2 Cell	3.0"		2730
B-06220	8"	Lightweight – 2 Cell	4.0"		2863
B-06223	8"	Lightweight – 75% Solid	6.2"		3607
B-06221	10"	Lightweight – 2 Cell	4.7"		3380
B-07033	12"	Lightweight – 2 Cell	5.1"		3053

**B County Materials Corporation – Eau Claire**

1111 Menomonee Street  
Eau Claire, Wisconsin 54702-0910

Test Report	Unit Size	CMU Description	Equivalent Thickness	Fire Rating	Average Net area Strength (psi)
B-06121	4"	Normal Weight – 3 Cell	2.7"		5750
B-06122	6"	Normal Weight – 2 Cell	3.0"		5300
B-06123	8"	Normal Weight – 2 Cell	4.0"		6503
B-06124	10"	Normal Weight – 2 Cell	4.6"		6100
B-06125	12"	Normal Weight – 2 Cell	5.0"		5047
B-06116	4"	Lightweight – 3 Cell	2.6"		2983
B-06118	8"	Lightweight – 2 Cell	4.0"		4440
B-06119	10"	Lightweight – 2 Cell	4.5"		3073
B-06120	12"	Lightweight – 2 Cell	5.1"		2730

**C County Materials Corporation – La Crosse**

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1702 Kramer Street  
La Crosse, Wisconsin 53126

Test Report	Unit Size	CMU Description	Equivalent Thickness	Fire Rating	Average Net area Strength (psi)
B-06178	4"	Normal Weight – 3 Cell	2.7"		4630
B-06179	6"	Normal Weight – 2 Cell	3.4"		5203
B-06180	8"	Normal Weight – 2 Cell	4.0"		4650
B-06181	10"	Normal Weight – 2 Cell	4.6"		4297
B-06182	12"	Normal Weight – 2 Cell	5.0"		4230
B-06184	4"	Lightweight – 3 Cell	2.7"		3470
B-06185	6"	Lightweight – 2 Cell	3.4"		3390
B-06186	8"	Lightweight – 2 Cell	4.0"		3277
B-06187	10"	Lightweight – 2 Cell	4.6"		3497
B-06188	12"	Lightweight – 2 Cell	5.1"		3190
B-06183	8"	Full Face Split – Normal Weight	4.2"		4210

**D County Materials Corporation – Madison**

6399 Nesbitt Road  
Madison, Wisconsin 53719

Test Report	Unit Size	CMU Description	Equivalent Thickness	Fire Rating	Average Net area Strength (psi)
B-06160	4"	Normal Weight – 3 Cell	2.7"		4513
B-06161	6"	Normal Weight – 2 Cell	3.0"		5237
B-06162	8"	Normal Weight – 2 Cell	4.0"		4303
B-06163	8"	Normal Weight – 2 Hour Fire Rated	4.6"		5143
B-06164	10"	Normal Weight – 2 Cell	4.8"		4833
B-06165	12"	Normal Weight – 2 Cell	5.4"		4167
B-06168	4"	Lightweight – 3 Cell	2.7"		3550
B-06169	6"	Lightweight – 2 Cell	3.0"		3610
B-06170	8"	Lightweight – 2 Cell	4.0"		3240
B-06171	8"	Lightweight – 75% Solid	6.0"		3277
B-06172	10"	Lightweight – 2 Cell	4.9"		2950
B-06173	12"	Lightweight – 2 Cell	5.4"		3033
B-06166	4"	Full Face Split – Normal Weight	3.4"		5588
B-07167	8"	Full Face Split – Normal Weight	4.5"		4733

**E County Materials Corporation – Marathon**

205 North Street / P.O. Box 100  
Marathon, Wisconsin 54448-0100

Test Report	Unit Size	CMU Description	Equivalent Thickness	Fire Rating	Average Net area Strength (psi)
B-06224	4"	Normal Weight	2.6"		4413
B-06225	6"	Normal Weight	3.0"		4260
B-06226	8"	Normal Weight	4.0"		4057
B-06227	10"	Normal Weight	4.6"		3937
B-06228	12"	Normal Weight	5.1"		3513
B-06230	8"	Full Face Split – Normal Weight	4.1"		4627
W90831	4"	Heritage Utility Brick – Normal Weight			4870
W94706	8"	Heritage Brick – Normal Weight			2570

**F County Materials Corporation – Milwaukee**

W140 N5856 Lilly Road

Menomonee Falls, Wisconsin 53051

Test Report	Unit Size	CMU Description	Equivalent Thickness	Fire Rating	Average Net area Strength (psi)
B-06189	4"	Normal Weight – 3 Cell	2.6"		5187
B-06190	6"	Normal Weight – 2 Cell	3.2"		4943
B-06191	8"	Normal Weight – 2 Cell	4.0"		4397
B-06192	8"	Normal Weight – 2 Hour Fire Rated	4.2"		5270
B-06193	10"	Normal Weight – 2 Cell	4.6"		3890
B-06194	12"	Normal Weight – 2 Cell	5.1"		3753
B-06195		Normal Weight – 2 Cell	6.3"		5870
B-06196	4"	Normal Weight – 2 Cell	7.1"		4113
B-06200	6"	Lightweight – 2 Cell	3.2"		3903
B-06201	8"	Lightweight – 2 Cell	4.0"		3300
B-06202	10"	Lightweight – 2 Cell	4.7"		3257
B-06203	12"	Lightweight – 2 Cell	5.1"		3053
B-06197	12"	Full Face Split – Normal Weight	5.9"		3850
B-06198	12"	Sound Cell - Lightweight	5.6"		3223

**G County Materials Corporation – Roberts**

1203 70<sup>th</sup> Avenue  
 Roberts, Wisconsin 54023

Test Report	Unit Size	CMU Description	Equivalent Thickness	Fire Rating	Average Net area Strength (psi)
B-06063	4"	Normal Weight – 3 Cell	2.6"		4293
B-06064	6"	Normal Weight – 2 Cell	2.9"		3993
B-06065	8"	Normal Weight – 2 Cell	4.0"		4430
B-06069	8"	Normal Weight – 2 Hour Fire Rated	4.4"		4417
B-06070	10"	Normal Weight – 3 Hour Fire Rated	5.4"		4713
B-06066	12"	Normal Weight – 2 Cell	4.6"		4213
B-06067		Normal Weight – 2 Cell	5.1"		4013
B-06071	4"	Normal Weight – 3 Hour Fire Rated	5.4"		4267
B-06058	6"	Lightweight – 3 Cell	2.6"		3300
B-06059	8"	Lightweight – 2 Cell	2.9"		2257
B-06060	10"	Lightweight – 2 Cell	3.9"		2807
B-06061	12"	Lightweight – 2 Cell	4.6"		3080
B-06062		Lightweight – 2 Cell	5.0"		2273
B-06068	8"	Full Face Split – Normal Weight	4.2"		4853

**4 LAKES BRICK & BLOCK COMPANY**

W3751 Builders Court / P.O. Box 159  
 Zenda, WI 53195

Test Report	Unit Size	CMU Description	Equivalent Thickness	Fire Rating	Average Net area Strength (psi)
B-06027	4"	Normal Weight – 2 Cell	2.7"		4280
B-06028	6"	Normal Weight – 2 Cell	2.9"		5967
B-06029	8"	Normal Weight – 2 Cell	3.9"		4853
B-06030	10"	Normal Weight – 2 Cell	4.5"		5020
B-06031	12"	Normal Weight – 2 Cell	5.3"		4860
B-06032	14"	Normal Weight – 2 Cell	6.6"		4547

**5 WINGER CONCRETE PRODUCTS, INC.**

6857 Hwy 51 South  
 Hazelhurst, WI 54531

Test Report	Unit Size	CMU Description	Equivalent Thickness	Fire Rating	Average Net area Strength (psi)
B-06038	4"	Normal Weight – 3 Cell	2.6"	.75 Hour	4127
B-06040	6"	Normal Weight – 2 Cell	3.4"	1 Hour	4020
B-06042	8"	Normal Weight – 2 Cell	3.9"	1.5 Hour	3987
B-06043	10"	Normal Weight – 2 Cell	4.5"	2 Hour	3683
B-06045	12"	Normal Weight – 2 Cell	5.0"	2 Hour	3587
B-06037	4"	Lightweight – 3 Cell	2.6"		2607
B-06039	6"	Lightweight – 2 Cell	3.4"		3023
B-06041	8"	Lightweight – 2 Cell	3.9"		2590
B-06044	12"	Lightweight – 2 Cell	5.4"		3153
B-06035	4"	Retaining Wall Block	3.7"		3040
B-06036	6"	Retaining Wall Block	5.7"		3763

**LIMITATIONS OF APPROVAL**

The CMU design and use in construction shall comply with the **Comm** and **IBC** limitations in accordance with the current **Wisconsin Uniform Dwelling Code for 1- & 2-family dwellings** and the **Wisconsin Amended ICC Code**, respectively.

This approval will be valid through December 31, 2012, unless manufacturing modifications are made to the product or a re-examination is deemed necessary by the department. The product approval is applicable to projects approved under the current edition of the applicable codes. This approval may be void for project approvals made under future applicable editions. The Wisconsin Building Product Evaluation number must be provided when plans that include this product are submitted for review.

**DISCLAIMER**

The department is in no way endorsing or advertising this product. This approval addresses only the specified applications for the product and does not waive any code requirement not specified in this document.

Revision Date:

Approval Date: October 12, 2007

By: \_\_\_\_\_

Lee E. Finley, Jr.  
 Product & Material Review  
 Integrated Services Bureau