



HOME of MAGNUM BOARD®

“The New Generation **GREEN** Building Material”

“Install It for Health & Safety-Install It for Life”

Providing a Complete Line of Fiber Reinforced MgO Building Materials

PRODUCT SUBMITTAL SHEET – Issue 091125.1544DPA

GENERAL	<p>Magnum Board® is a fiber reinforced MgO building material product line providing interior and exterior sheathing, roofing and flooring substrate, backer board and underlayment, exterior Magnum 111 vertical sheathing and horizontal lap siding.</p> <p>Magnum Board® is virtually impervious to fire, water and insects; does not feed mold or mildew; and is non-toxic.</p> <hr/>
RELATED SECTIONS	<p>05400 - Cold Formed Metal Framing 06100 - Rough Carpentry: Wood Framing 06100 - Rough Carpentry: Sheathing 06200 - Finish Carpentry: Adjacent work to receive fire treated sheathing. 06400 - Architectural Woodwork: Adjacent work to receive fire treated sheathing. 07210 - Insulation: Exterior wall insulation 07900 - Sealant: Joint sealant and acoustic sealant 08100 - Metal support assemblies 09215 – Veneer plaster</p> <hr/>
REFERENCES	<p>A. ICC-ES AC386 Acceptance criteria for fiber-reinforced magnesium-oxide based sheets</p> <p>B. ICC-ES Evaluation Report: ESR-2880</p> <p>C. ASTM International (ASTM)</p> <ol style="list-style-type: none">1. ASTM C1185-03 Flexural Strength2. ASTM C1325-04 Dimensions and Tolerances3. ASTM C1186-02 Moisture Movement4. ASTM C1186-02 Water Absorption5. ASTM C1325-04 Compression Indentation6. ASTM C1325-04 Nail Head Pull Through7. ASTM C1325-04 Falling Ball Impact8. ASTM C1325-04 Shear Bond Strength9. ASTM C1396-06a Humidified Deflection10. AC376 and ASTM E72 section 15 Wet Racking Shear11. ASTM G155 Zenon Arc Accelerated Weathering12. ASTM E136-04 Behavior of materials in a vertical tube at 750°C13. University of Pittsburgh Protocol Measurement of Acute Lethality of Thermal Decomposition Products – Toxicity Test

P.O. Box 90
Seffner, FL 33583
USA
www.magnumbp.com
EM: sales@magnumbp.com

For Sales and Technical Support:
Canada, Australia, New Zealand, Alaska and Hawaii, call 585.820.7625
Africa, call 305498.8186
Continental United States, call: 315.992.4884
For all other locations, call
813.900.2957

14. ASTM C1185 Frost Resistance (Freeze / Thaw)
 15. ASTM E119-08a Standard Test Methods for Fire Tests of Building Construction and Materials
 16. ANSI / UL263 (ASTM E119 and NFPA 251) Underwriters Laboratory Standard Test Method for Building Construction and Materials – One- and two-hour wall rating.
 17. ASTM G21 Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
 18. ASTM E84-05 Surface Burning Characteristics. Magnum Board® building materials meet Class A fire rating and have zero smoke developed and zero flame spread.
 19. ASTM E136 Noncombustible Construction Classification. Magnum Board® Building Materials are classified as non-combustible.
 20. ULC S102-10 Surface Burning Characteristics. In Canada, Magnum Board® Building Materials are zero smoke developed and zero flame spread.
 21. ULC S135-14 Non-combustible Construction Classification
- D. Fire Rated Assemblies: Provide materials and construction identical to those tested in fire endurance rated assemblies by an independent testing agency to the authorities having jurisdiction:
1. Test method: ASTM E119 / UL263
 2. Test method: CAN / ULC-S101M
 3. Ratings: As indicated on the drawings: designations listed are from:
 - a. UL Fire Resistance Directory
 - b. ULC Fire Resistance Directory
- E. Canadian Construction Materials Centre (CCMC)
1. Approved
- F. Conformite Europeene (CE)
1. Approved for surface burning characteristics EN13501-1:2007+A1:2009.
 2. A1 Rating

BUILDING CODE APPROVAL

- ICC-ES EVALUATION REPORT – ESR-2880 Certified
- IAPMO Certification pending
- One-hour rated fire wall assembly tested with Southwest Research Institute
- Two-hour rated fire wall assembly tested with Southwest Research Institute -Certification pending.
- State of California Approval (CalFire) Pending

**WIND LOADS
AND SEISMIC
LOADS**

- 2021, 2018, 2015 and 2012 International Building Code® (IBC)
- 2021, 2018, 2015 and 2012 International Residential Code® (IRC)
- 2020 Florida Building Code – Building
- 2020 Florida Building Code – Residential

Evaluation to the following green standards:

- 2020, 2015, 2012, and 2008 ICC 700 National Green Building Standard™ (ICC 700-2020, ICC 700-2015, ICC 700-2012 and ICC 700-2008)

In accordance with ICC-ES Evaluation Report, ESR-2880, Magnum Board® Building Materials are approved for seismic zones A, B, and C,

Testing for seismic zone D has been conducted and passed. IAPMO is currently adding results to our ER.

Seismic and Wind load for zones E and F are pending with IAPMO.

INSTALLATION

Refer to Magnum Board® Installation Instructions for the applicable product being installed.

Fastener types and patterns are included in Magnum Board® Installation Instructions.

SHEARWALL STRENGTH – Test Standard E72-22 Section 14

Sheathing	Max. Aspect Ratio (h/w)	Framing Materials	Stud Blocking Required	Required Sheathing Screw Size	Screw Spacing Screw Size	Nominal Shear Strength
16mm (5/8" nominal)	4:1	2' X 4' Wood	No	No 8 (See install Procedures)	6" Perimeter and 12" at intermediate supports	1725 PLF

FLOORING SUBSTRATE – ASTM E72-15 Section 17 and ASTM E2322-03 (2015) Section 10 Method B

Substrate	Load	Deflection	Floor Joist and Truss Centers	Materials	Fastener Pattern	Fasteners
18mm (3/4" nominal) Magnum Board® Substrate	1025 PF	.039mm	24"	Wood or Light Gauge Steel as Specified	Refer to MBP Installation Instructions	Refer to MBP Installation Instructions

P.O. Box 90
Seffner, FL 33583
USA
www.magnumbp.com
EM: sales@magnumbp.com

For Sales and Technical Support:
Canada, Australia, New Zealand, Alaska and Hawaii, call 585.820.7625
Africa, call 305498.8186
Continental United States, call: 315.992.4884
For all other locations, call
813.900.2957

ROOFING SUBSTRATE – E72-15 SECTION 21, ASTM E2322-03 (2015) SECTION 13						
Substrate	Load	Deflection	Truss Centers	Materials	Fastener Pattern	Fasteners
18mm (3/4" nominal) Magnum Board® Substrate	1011.64 PF	0.28mm	24"	Wood or Light Gauge Steel as Specified	Refer to MBP Installation Instructions	Refer to MBP Installation Instructions
TECHNICAL DATA SHEET						
ITEM	TYPICAL VALUES (STANDARD Tested)			STANDARD / REFERENCE		
Flexural Strength – Modulus of Elasticity (psi) – 12mm	719,574			ASTM C1185		
Compressive Strength	3190 psi			ASTM D2394		
Dimensions and Tolerances	Exceeds ASTM requirements			ASTM Section C1325-04 of ASTM C1186		
Moisture Movement	0.003%			ASTM1186		
Water Absorption – 12mm	23%			ASTM C1186		
Standard Test Method for Resistance to Growth of Mold and Mildew	Magnum Board® is ranked 10 of 10 and is not a nutrient for mold and / or mildew			ASTM D3273		
Compression Indentation	No residual deformation was noted following loading and the rest period.			ASTM C1325		
Fastener holding (lbf) 12mm	Pending			AC 118 4.3.1, AISI S905		
Fastener holding (lbf) 16mm	Pending			AC 118 4.3.1, AISI S905		
Fastener holding (lbf) 18mm	Pending			AC 118 4.3.1, AISI S905		
Nail Head Pull Through - 12mm	174 lbs			ASTM C1325		
Falling Ball Impact	All Magnum Board® Specimens exceed the 12" requirements of C1325 by nearly 2X			ASTM C1325		
Shear Bond Strength	Mortar Average Shear Strength (PSI) Portland 168.82 Latex 234.32 Magnum Board® exceeds the requirements of C1325 NOTE: Refer to endorsement by Mapei and the Mapei installation instructions for Magnum Backer Board.			ASTM C1325		
Humidified Deflection	Magnum Board® exceeds requirements of test protocol ASTM C1396-06A and ICC-AC386.			ASTM C1396-06A		
Surface Burning Characteristics	Classification A Classified as Non-Flammable			E84-05 NOTE: E84-24 Results Pending IAPMO		
Surface Burning Characteristics – Europe	Reaction to fire classification: A1 Rating			Europe EN13501-1:2007+A1:2009		
Non-Combustible Construction	Classification – Non-Combustible			E136		
Underwriters Laboratory Fire Rating	Meets requirements for single layer each side of wall, 12mm, one hour fire wall			UL-263, ULC S101-07, ULC S102-10, ULC S135-		

P.O. Box 90
Seffner, FL 33583
USA
www.magnumbp.com
EM: sales@magnumbp.com

For Sales and Technical Support:
Canada, Australia, New Zealand, Alaska and Hawaii, call 585.820.7625
Africa, call 305498.8186
Continental United States, call: 315.992.4884
For all other locations, call
813.900.2957

	rating. ANSI / UL Certified for the United States Canada Design No. – W490 Wall Assembly Design Number S102 for zero smoke developed / zero flame spread BXUV7 – Fire Resistance Ratings – CAN/ULC-S101 Certified for Canada.	04 and ASTM E119
Heat Capacity (cp)	<u>Temperature</u> <u>Test Result</u> 23°C j g-1 k-1	ASTM E269-11
Xenon Arc Accelerated Weathering	Five (5) specimens were examined under 5X magnification following 2,000 hours of exposure. No signs of surface cracking, checking, crazing, erosion, or chalking were observed.	ASTM G155
Frost Resistance (Freeze / Thaw)	After 50 cycles, the specimens were examined, and no visible cracks or structural alterations were noted.	ASTM C-1185
Measurement of Acute Lethality of Thermal Decomposition Products by University of Pittsburgh Test Protocol	Magnum Board® meets the combustion toxicity protocol developed at the University of Pittsburgh, and the requirements for interior finish material as defined by Title 27, Chapter 1, subchapter 5, Article 5, of the Building Code of the City of New York.	U-Pitt – December 1988
Volatile Organic Compound (VOC) Testing	Magnum Board® contains NO Toxic VOC's and exceeds the overall requirements of the "US Green Buildings Council LEED Standard for VOC's".	ASTM D5116
Density	Magnum Structural Sheathing Ranges from 1.0 g/cm ³ to 1.05 g/cm ³ (1000 kg/m to 1050 kg/m ³) Magnum Ultra Structural Sheathing 1.20 g/cm ³ to 1;25 g/cm ³ (1200 kg/m ³ to 1250 kg/m ³)	In house Testing
Standard Test Method to Determine the Coefficient of Linear Thermal Expansion	Thermal Coefficient of Lineal Expansion, al, (in/in-°F) 38-90°F Result: 3.97 X 10	ASTM D696-08
Determine Hygrometric Coefficient of Expansion – 18mm	Hygrometric Coefficient of Expansion- (HCE) , unrestrained, for Magnum Board® 18mm nominal thickness (in/in/%RH) 10% - 90% RH Result: 2.08 X 10	
Asbestos	Magnum Board® is asbestos free	
Carcinogens	Magnum Board® is carcinogen free	Reference UPitt Test Results
Formaldehyde	Magnum Board is formaldehyde free	
Off-Gassing	Magnum Board® does not emit noxious gasses	
STC Values	STC-48 on a standard wall system using 12mm Magnum Board® sheathing on both sides of a wall system with either wood or metal stud construction, rock wool	In house testing

P.O. Box 90
Seffner, FL 33583
USA
www.magnumbp.com
EM: sales@magnumbp.com

For Sales and Technical Support:
Canada, Australia, New Zealand, Alaska and Hawaii, call 585.820.7625
Africa, call 305498.8186
Continental United States, call: 315.992.4884
For all other locations, call
813.900.2957

	insulation and a quiet glue or equal on the insides of each sheet Magnum Board® Sheathing	
R Values	Magnum Board® thermal insulation “R” Value per inch is 1.2 as compared to the following estimates: Cement Board.....0.8 Plywood.....1.2 Gypsum Wallboard...0.9 Gypsum Sheathing:...1.1 OSB.....1.0	
Crying Test	Pending IAPMO Certification	BBA
Permeance Vapor Transmission	<p>Table 1. ASTM E 96 results for 3 mm Magnum® Board in U.S. Customary Units</p> <p>ASTM E 96 (Procedure A) WVT (grains/h·ft²) 3.67 0.43 Permeance (Perms) 8.93</p> <p>ASTM E 96 (Procedure B) WVT (grains/h·ft²) 13.9 Permeance (Perms) 34.0</p> <p>Table 2. ASTM E 96 results for 3 mm Magnum® Board in SI Units</p> <p>ASTM E 96 (Procedure A) WVT (g/h·m²) 2.55 Permeance (ng/Pa·s·m²) 511</p> <p>ASTM E 96 (Procedure B) WVT (g/h·m²) 9.7 Permeance (ng/Pa·s·m²) 1,947</p> <p>Table 3. ASTM E 96 results for 18 mm Magnum® Board in U.S. Customary Units</p> <p>ASTM E 96 (Procedure A) WVT (grains/h·ft²) 1.40 Permeance (Perms) 3.42</p> <p>ASTM E 96 (Procedure B) WVT (grains/h·ft²) 6.78 Permeance (Perms) 14.6</p> <p>Table 4. ASTM E 96 results for 18 mm Magnum® Board in SI Units</p> <p>ASTM E 96 (Procedure A) WVT (g/h·m²) 0.98 Permeance (ng/Pa·s·m²) 196 ASTM E 96 (Procedure B)</p>	ASTM E96 / ASTM E96M-05

P.O. Box 90
Seffner, FL 33583
USA
www.magnumbp.com
EM: sales@magnumbp.com

For Sales and Technical Support:
Canada, Australia, New Zealand, Alaska and Hawaii, call 585.820.7625
Africa, call 305498.8186
Continental United States, call: 315.992.4884
For all other locations, call
813.900.2957

	WVT (g/h·m ²) 4.17 Permeance (ng/Pa·s·m ²) 836	
--	---	--

HANDLING AND STORAGE	Refer to Magnum Board® Storage and Handling Instructions
-----------------------------	--

NOTICE TO SPECIFIERS

In accordance with ICC-ES Evaluation Report, ESR-2880 issue December 2024, subject to renewal December 2025, Magnum® Fiber Reinforced MgO Building Materials are approved for use as a structural sheathing applied to interior and exterior wood and metal framed structures, to resist uniform transverse loads and racking shear loads.

Magnum Fiber Reinforced MgO Building Materials are suitable for use in all construction types under the IBC and in buildings constructed under the IRC

SUBMITTAL APPROVALS	Project Name:
	Project No.:
	Contractor:
	Date:

P.O. Box 90
Seffner, FL 33583
USA
www.magnumbp.com
EM: sales@magnumbp.com

For Sales and Technical Support:
Canada, Australia, New Zealand, Alaska and Hawaii, call 585.820.7625
Africa, call 305498.8186
Continental United States, call: 315.992.4884
For all other locations, call
813.900.2957