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 Name: MAG STRUCTURAL (RB) TECHNICAL DATA SHEET

Product Thickness: 12mm (1/2" Nominal)

Issue No.: 02 **Issue Date: 03.21.26**

DESIGN FEATURES

Magnum® ® fiber-reinforced MgO building materials are engineered for exceptional performance, providing resistance to fire, water, and insect damage, including termites and carpenter ants. They do not support the growth of mold or mildew, are non-toxic, and are both highly durable and recyclable. Manufactured primarily from magnesium oxide and magnesium chloride, Magnum® sheathing is available in thicknesses ranging from 3 mm (1/8" nominal) to 25 mm (1" nominal), with standard dimensions up to 4 feet by 12 feet, as well as custom sizes within this range. Magnum® provides a near glass smooth surface – excellent for achieving a level "5" drywall finish. These materials are approved for both interior and exterior applications and for use in seismic zone D locations. Magnum® also offers vertical siding (Magnum® 111) and horizontal siding in 12-foot lengths. Both are available in a variety of finishes to suit diverse architectural needs.	As a versatile alternative to traditional materials such as wood, gypsum-based, Portland cement, and OSB, Magnum® MgO products provide enhanced durability and performance. In addition to standard applications, they are particularly well-suited for use in Structural Insulated Panels (SIPs) and Exterior Insulated Finish Systems (EIFS). Magnum® building materials are compatible with a wide range of conventional finishes, including paint, Portland cement stucco, synthetic stucco, stone, brick, plaster, wallpaper and others Designed for high-impact resistance, these materials deliver superior strength and long-term reliability. Manufactured at near-ambient temperatures, Magnum® products not only offer environmental benefits in their composition but also in their energy-efficient production process.
MAGNUM® PRODUCTS: INSTALL THEM FOR HEALTH & SAFETY – INSTALL THEM FOR LIFE	

RELATED SECTIONS

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

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www.magnumbp.com
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For Sales and Technical Support:
Canada, Australia, New Zealand, Alaska and Hawaii, call 585.820.7625
Africa, call 305498.8186
For all other locations, call 813.900.2957

REFERENCE DOCUMENTS

Professional Engineer (PE) Certified Product Submittal Specification	Issue 10
Storage and Handling Instructions	083007.1338
Installation Instructions	Refer to www.magnumbp.com
Architectural Finish Instructions	Refer to www.magnumbp.com
Representative STC Ratings	030812.1023
Material Safety Data Sheet (MSDS)	073113RB

CODE COMPLIANCE

ICC-ES AC-386	Underwriters Laboratory
ICC-ES AC-376	CCMC
ICC-ES AC-378	EU: Fire Safety
Florida Product Approval	Oceania
CALFIRE – Pending	APLAC (MRA): Virtually Worldwide

EVALUATION AND LIST REPORTS BY IAPMO

Evaluation Report: ER-986	Listing Report: UEL-5068

PHYSICAL PROPERTIES

Edge Profiles	Square, Tape Relief, T & G, Ship Lap and Beveled.	
Unprotected Exposure	Refer to MBP Storage and Handling Procedure	
Density	1.0 to 1.05	
Coefficient of Linear Thermal Expansion	3.97×10^{6}	ASTM E228 for solids
Hygrometric Coefficient of Expansion	2.08×10^{5}	ASTMD5229/D5229M
Permeance Vapor Transmission	Refer to Professional Engineer (PE) Product Submittal Specification Issue 10, page 12	
Moisture Absorption	<27%	ASTM C1185
Moisture Movement	Machine: 0.03% - Cross: 0.04%	ASTM 1186-02
Chloride Content	≤ 3%	ASTM C871
Compressive Indentation	No residual deformation following loading and rest period	ASTM C1325-04
Mold and Mildew	Ranked 10 of 10. Not food for mold or mildew	ASTM D3273-00
Xenon Arc Accelerated Weathering	After 2,000-hour exposure, no signs of surface cracking, checking, crazing, erosion, or chalking.	ASTM G155
Frost Resistance (Freeze / Thaw)	Pass	ASTM C1185
Humidified Deflection	Pass	ASTM C1396-061
Nail Head Pull Thru	174.8 lbf Results meet the minimum requirements of 125 lbf call out in AC386, section 3.1.7	ASTM C1325-04
Fastener Pull Out	366.2 lbf	**ASTM D1761 (Wood) IH Tested by Fastener Mfgr
Fastener Shear Value	817.2 lbf	**
Bend Yield Value	191,000 psi	**

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ENVIRONMENTAL PROPERTIES

Measurement of Acute Lethality of Therma Decomposition Products by University of Pittsburgh Test Protocol	Meets combustion toxicity protocol	U-PITT December 1988
Volatile Organic Compound (VOC) Testing	Zero VOCs. Meets requirements of the "US Green Buildings Council LEED Standard for VOC's".	
Asbestos	Zero	
Formaldehyde	Zero	

FIRE PERFORMANCE

Flame Spread	Flame spread index: 0 Classification A	CAN / ULC-S102-10 UL Europe EN13501-1:2007+A1:2009
Smoke Developed	Smoke developed index: 0. Classification A	CAN / ULC-S102-10
Combustibility	Noncombustible	E136-04
Fire Assembly	1 Hour: Single sheet each side	UL263 / E119

STRUCTURAL PROPERTIES

TRANSVERSE LOAD
AC-376, ASTM E72-05, ASTM C1185-03

	Positive Load		Negative Load		Modulus of Elasticity	Average Flexural Strength
	psf	kPa	psf	kPa	719,574	1508 psi
Average	145.63	6.97	130.66	6.26		
Standard Deviation	14.35	0.69	16.35	0.78		

AC376 section 4.1.4.2 states that no single test result may vary by more than 15 percent from the average of the three tests. These test results meet those requirements. Regarding flexural strength, Section 3.1.1 of AC386 specifies a minimum average flexural strength of 580 [psi. All specimens tested above this requirement.

INSTALLATION

Max Aspect Ratio	Stud Blocking Required	Fastener Type / Size	Fastener Pattern	Maximum Load	Average Load	Nominal Shear Strength
4.1	No	Grabber Guard 1500 No. 8 X 1 – ½" Long	6" Perimeter / 12" at intermediate supports	17.0 kn / 356 psf	16.3 kn / 341 psf	207 plf

NOTES:

1. Current fasteners pull out, shear and bending values obtained from testing conducted by a fastener manufacturer. Formal testing is being conducted by Intertek.

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