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

PROFESSIONAL ENGINEER (PE) CERTIFIED PRODUCT SUBMITTAL SPECIFICATION

File No.: 091125.1544
Issue 10

GENERAL	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. Magnum Board® is virtually impervious to fire, water and insects; does not feed mold or mildew; and is non-toxic.
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
REFERENCES	A. ICC-ES AC386 Acceptance criteria for fiber-reinforced magnesium-oxide based sheets B. ICC-ES Evaluation Report: ESR-2880 C. IAPMO Uniform Evaluation Service (UES) accredited to ISO / IEC 17065. D. IAPMO ER NO. 986 and Listing Report No. UEL-5068 E. ASTM International (ASTM) 1. ASTM C1185-03 Flexural Strength 2. ASTM C1325-04 Dimensions and Tolerances 3. ASTM C1186-02 Moisture Movement 4. ASTM C1186-02 Water Absorption 5. ASTM C1325-04 Compression Indentation 6. ASTM C1325-04 Nail Head Pull Through 7. ASTM C1325-04 Falling Ball Impact 8. ASTM C1325-04 Shear Bond Strength 9. ASTM C1396-06a Humidified Deflection

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	10. AC376 and ASTM E72 section 15 Wet Racking Shear 11. ASTM G155 Zenon Arc Accelerated Weathering 12. ASTM E136-04 Behavior of materials in a vertical tube at 750°C 13. University of Pittsburgh Protocol Measurement of Acute Lethality of Thermal Decomposition Products – Toxicity Test 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 Non combustible 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 F. 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 G. Canadian Construction Materials Centre (CCMC) 1. Approved H. Conformité Européene (CE) 1. Approved for surface burning characteristics EN13501-1:2007+A1:2009. 2. A1 Rating
APPLICATIONS	Residential, Commercial, Industrial and secondary operations including, but not limited to: 1. Single family dwellings 2. Multi-family dwellings 3. Office Buildings 4. High-Rise Buildings 5. Schools 6. Hotels 7. Motels 8. Airports

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	9. Retail Complexes 10. Restaurants 11. All laminates 12. Structural Insulated Panels (SIP) 13. Exterior Insulated Finish System (EIFS) 14. Other
BUILDING CODE APPROVAL	1. Florida Product Approval – The Magnum Fiber Reinforced MgO Building Materials, as evaluated and represented in IAPMO UES Evaluation Report ER-986, and with changes as noted in this supplement, are a satisfactory alternative for use in buildings built under the following codes: a. 2023 2023 Florida Building Code, Building, Eighth Edition (FBC-B) b. 2023 023 Florida Building Code, Residential, Eighth Edition (FBC-R) 2. ICC-ES EVALUATION REPORT – ESR-2880 Certified 3. IAPMO ER Certification pending – E-6118 (No. 986) and E6121 (UEL-5068) 4. One-hour rated fire wall assembly tested with Southwest Research Institute 5. Two-hour rated fire wall assembly tested with Southwest Research Institute - Certification pending. 6. State of California Approval (CalFire) Pending 7. California Supplemental - Pending 8. 2021, 2018, 2015 and 2012 International Building Code® (IBC) 9. 2021, 2018, 2015 and 2012 International Residential Code® (IRC) 10. 2020 Florida Building Code – Building 11. 2020 Florida Building Code – Residential Evaluation to the following green standards: 1. 2020, 2015, 2012, and 2008 ICC 700 National Green Building Standard™ (ICC 700-2020, ICC 700-2015, ICC 700-2012 and ICC 700-2008
TEST LABS UTILIZED	**Structural and Performance Product Testing Conducted by:** RADCO – Long Beach, CA. Report Numbers: RAD-4224, RAD-4224-Rev 1, RAD-4224-S1 and RAD-4451, Rev. 1 **Fire Testing Conducted / Witnessed by:** Southwest Research Institute – San Antonio, TX Report Numbers: 01.1521.01.101c, 01.11813.02.046, 01.11810.165a, 01.11810.01.165b and 01.11850.01.431, 01.15209.141 Underwriters Laboratories – Northbrook, IL File Number: R26120 USA Design Number UO61 Underwriters Laboratories – Toronto, Canada Design Number W490 – Report Number 11CA02086 Exova Warrington Fire – North America

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	Report Number: 13-002-529 (A) SGS Testing Labs Report Number: AJFS1805004403FF-01 Report Number: AJFS1705002938FF-01 Report Number: SUZMR240300141201 **Additional Testing Conducted By:** EMSL Analytical – Cinnaminson, NJ Intertek Report Number: 230704001SHF.001, Rev 2 Report Number: 101433709MID-001, Rev 1 Report Number: 2208310165HF-001, Rev 2 Report Number: 250509005SHF-001, Rev 2 Report Number: 250214013SHF-001, Rev 2 Report Number: 201016003SHF-002 Air Quality Sciences Report Number: 17196-01 PRI Construction Materials Technologies Report Number; MBP-002-02-01 Report Number: MBP-003-02-01 Report Number: MBP-005-02-01 Report Number: MBP-004-02-01 Report Number: MBP-001-02-01 NOTE: Magnum MgO Building Materials has achieved Florida Product Approval. Please refer to report ICC-ES Evaluation Service Report (ESR) 2880. **CURRENTLY BEING UPDATED TO CURRENT BUILDING CODES**
WIND LOADS AND SEISMIC LOADS	In accordance with ICC-ES Evaluation Report, ESR-2880, Magnum Board® Building Materials are approved for seismic zones A, B, and C, and up to 35' in zone D. (Reference attached email from Brian Gerber at IAPMO). Seismic zone D approval is currently being added to MBP ER. Seismic and Wind load for zones E and F are pending with IAPMO. Undergoing testing to ASTM E2126, EC-003 and ASCE 7. Will be recognized as either system #16 or system #17.
DELIVERY, STORAGE, AND HANDLING	1. Ship, receive, and store Magnum Board Building Materials in accordance with MBP storage and handling procedure. 2. Ship materials on sturdy pallets and well covered to keep from weather, damage and dirt. 3. Keep materials dry prior to and during installation: a. Stack flat on dunnage and do not allow material to bow, or to sit directly on the ground. b. Do not stack other materials on top of Magnum Board® c. Protect Magnum Board® from jobsite dirt and debris. d. Protect the edges, ends and faces of Magnum Board® from damage.

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QUALITY ASSURANCE	Installer qualifications: Always select installers who are well trained and are specialized in the work for which they are engaged. Follow good construction installation practices and applicable Magnum Board® installation guidelines.
INSTALLATION	Refer to Magnum Board® Installation Instructions for the applicable product being installed. Fastener types and patterns are included in Magnum Board® Installation Instructions.

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

12mm (1/2" nominal) Mag Structural Interior / Exterior Ceilings, Walls & Trim	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 the requirements called out in AC376. 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 (h/w)	Stud Blocking Required	Fastener Type / Size	Fastener Pattern	Maximum Load	Average Load	Nominal Shear Strength
4.1	No	Grabber Guard 1500 No. 8 x 1-1/2" Long	6" Perimeter / 12" at intermediate supports	17.0 kn or 356 psf	16.3 kn or 341 psf	207 plf

CONCENTRATED, TRANSVERSE AND RACKING LOAD
ASTM E72-22, Sections 17, 18, 19, 20, and 21 and ASTM E2322-22 Sections 10, 11, 12, and 13

TRANSVERSE LOAD (Two (2) Point Load) - Floor

12mm (1/2" nominal) Mag Ultra Structural Roofing Substrate, Interior / Exterior Walls, Ceilings, Trim and Shear Walls	Max Load	Average Load	Avg. Deflection at 1000 N	Depth of Indentation	Modulus of Elasticity	Shear Strength
	1146 N / 258 lbf /266 psf	1129 N / 254 lbf / 262 psf	48.96 mm / 1.928 inches	0.12mm / .0047 inches	719,574	286 lbf

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CONCENTRATED LOAD – FLOOR
ASTM E72-22, Section 18, ASTM E2322-22, Section 11

Load	Maximum Deflection	Average Deflection	Depth of Indentation
4450 N 1000 lbf	0.26 mm 0.010 inches	0.25mm 0.010 inches	0.12mm 0.005 inches

CONCENTRATED LOAD – FLOOR
ASTM E72-22, Section 18, ASTM E2322-22, Section 14

Load	Maximum Deflection	Average Deflection	Depth of Indentation
4450 N / 1000 lbf	0.26 mm / 0.011 inches	0.24 mm / 0.009 inches	0.12 mm / 0.0047 inches

TRANSVERSE LOAD (Two Point Load) – ROOF
ASTM E72-22, Section 20, ASTM E2322-22, Section 12, Method B

Maximum / Load	Average Load	Maximum Deflection	Average Deflection
1389 N 312 lbf	1382 mm / 311 lbf	65.24 mm / 2.569 inches at 281 lbf / 290 psf	64.96 mm / 2.55 inches at 281 lbf / 290 psf

CONCENTRATED LOAD – ROOF
ASTM E72-22, Section 21, ASTM E2322-22, Section 13

Load	Maximum Deflection	Average Deflection	Depth of Indentation
4450 N / 1000 lbf	0.23 mm / 0.009 inches	0.22 mm / 0.009 inches	0.08 mm / 0.003

CONCENTRATED LOAD – ROOF
ASTM E72-22, Section 21, ASTM E2322-22, Section 13

Load (N) (Center of the board)	Maximum Deflection	Average Deflection	Depth of Indentation
4450 N / 1000 lbf	0.22 mm / 0.009 inches	0.21 mm / 0.008 inches	0.06 mm / 0.002 inches

INSTALLATION

Max Aspect Ratio	Stud Blocking Required	Fastener Type / Size	Fastener Pattern	Maximum Load	Average Load	Nominal Shear Strength
4.1 h/w	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	212 plf

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FLEXURAL STRENGTH (Modulus of Rupture)
12mm Mag Ultra Structural – All Applications

Test Item: Flexural Strength (Modulus of Rupture)
Test Method: ASTM C1185-08 (2016) section 5
Test Span: 254mm
Load Rate: 3mm/min

Conditioning: Equilibrium Conditioning: Place the test specimens for at least 7 days in a controlled atmosphere of (23±2)°C and (50±5)% relative humidity.

	Flexural Strength	Modulus of Elasticity
Machine Direction	15.5 MPa / 2296 psi	2241 MPa / 325,030 psi
Cross-machine Direction	19.7 MPa / 2857 psi	2856 MPa / 414, 228 psi
Average Value	17.6MPa / 2553 psi	2548 MPa / 284,854 psi

Conditioning: Wet Conditioning: Immerse specimens to be tested in wet conditions in water at a temperature of 23 ± 4°C for a period 48 h minimum. Test the specimens immediately upon removal from the water.

	Flexural Strength	Modulus of Elasticity
Machine Direction	12.4 MPa / 1798 psi	1795 MPa / 260,343 psi
Cross-machine Direction	14.7 MPa / 2132 psi	2132 MPa / 309,221 psi
Average Value	13.6 MPa / 1973 psi	1964 MPa / 284,854 psi

Note: The average value of the specimen pair was the arithmetic mean value obtained in the two directions.

RACKING LOAD (STANDARD WOOD FRAMES)
TEST STANDARD ASTM E72-22, SECTION 14

16mm (5/8" nominal)	Maximum Load	Average Load	Maximum Deflection	Average Deflection	Modulus of Elasticity
Mag Ultra Structural Interior / Exterior Walls, Ceilings, Trim and Shear	31.4 kn / 7059 lbf / 1763 plf	30.7 kn / 6909 lbf / 1726 plf	29.17mm at 24.0 kn / 1.148 inches at 5395 lbf o / 1348 plf	26.93mm at 24.0 kn / 1.06 inches at 5395 lbf / 1348 plf	1,126,000 psi

INSTALLATION

Max. Aspect Ratio	Stud Blocking Required	Fastener Type and Size	Screw Spacing Screw Size	Maximum Load	Average Load	Nominal Shear Strength
4:1 h/w	No	Grabber guard 1500 No. 8 X 1 ¾" Long	6" Perimeter and 12" at intermediate supports	31.4 km / 7059 lbf	30.7 kn / 6902 lbf	1725 plf

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RACKING LOAD (STANDARD SOUTHERN PINE WOOD FRAMING)
TEST STANDARD ASTM E72-22, SECTION 14

18mm (3/4" Nominal) Mag Ultra Structural Roofing / Flooring Substrate, and Trim	Maximum Load	Average Load	Maximum Deflection	Average Deflection	Modulus of Elasticity	Shear
	17.0 kn / 3822 lbf / / 955 plf	16.3 kn / 3672 lbf / 917 plf	37.17 mm / 1.463 inches	30.78 mm / 1.212 inches	1,392,000	955

INSTALLATION

Floor Joist and Truss Centers	Materials	Fastener Pattern	Fasteners
24"	Wood or Light Gauge Steel as Specified	6" Perimeter and 12" at intermediate supports	Grabber guard 1500 No. 8 X 1 ¾" 2" Long

TRANSVERSE LOAD (Two Point Load) – FLOOR
ASTM E72-15, Section 17, ASTM E2322-03 (2015), Section 10, Method B
"Load at the center of the board"
Test Surface: Smooth

18mm (3/4" Nominal) Mag Ultra Structural – Roofing and Flooring Substrate	Maximum Load	Average Load	Maximum Deflection	Average Deflection
	1360 N / 306 lbf / 316 psf	1338 N / 301 lbf / 311 psf	7.35 mm / 0.289 inches	6.95 mm / 0.274 inches

CONCENTRATED LOAD – FLOOR
ASTM E72-15 section 18, and ASTM E2322-03 (2015) Section 11
18mm (3/4" Nominal) Mag Ultra Structural Roofing and Flooring Substrate
"Load at the center of the board"
Test Surface: Smooth

Maximum Load	Maximum Deflection	Average Deflection	Maximum Depth of Indentation	Average Depth of Indentation	Modulus of Elasticity	Flexural Strength
4450 N / 1000 lbf	0.71 mm / 0.028 inches	0.68 mm / 0.027 inches	0.52 mm / 0.020 inches	0.43 mm / 0.017 inches	1,392,000	3,626 psi

CONCENTRATED LOAD – FLOOR
ASTM E72-15 Section 18 and ASTM E2322-03 (2015) Section 11
"Load at the center of the edge of the board"
Test Surface: Smooth

Maximum Load	Maximum Depth of Indentation	Average Depth of Indentation	Maximum Deflection	Average Deflection
4450 N / 1000 lbf	0.44 mm / 0.017 inches	0.39 mm / 0.015 inches	0.80 mm / 0.017 inches	0.71 mm / 0.028 inches

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TRASVERSE LOAD (Two-point load) – ROOF
ASTM E72-15 section 20 and ASTM E2322-03 (2015) Section 12, Method B
Test Surface: Rough

Maximum Load	Average Load	Maximum Deflection	Average Deflection
1916 N / 431 lbf / 445 psi	1883 N / 423 lbf / 437 psi	7.47 mm at 1050 N / 0.294 inches	6.91 at 1050 N / 0.272 inches

CONCENTRATED LOAD – ROOF
ASTM E72-15 Section 21 and ASTM E2322-03 (2015) Section 13
"Load at the center of the board"
Test Surface: Rough

Maximum Load	Maximum Depth of Indentation	Average Depth of Indentation	Maximum Deflection	Average Deflection
4450 N / 1000 lbf	0.30 mm / 0.012 inches	0.28 mm / 0.011 inches	0.67 mm / 0.026 inches	0.61 mm / 0.024 inches

CONCENTRATED LOAD – ROOF
ASTM E72-15 Section 21 and ASTM E2322-03 (2015) Section 13
"Load at the center of the edge of the board"
Test Surface: Rough

Maximum Load	Maximum Depth of Indentation	Average Depth of Indentation	Maximum Deflection	Average Deflection
4450 N 1000 lbf	0.35 mm / 0.014 inches	0.31 mm / 0.012 inches	0.67 mm / 0.026 inches	0.63 mm / 0.025 inches

INSTALLATION

Maximum Aspect Ratio	Stud Blocking Required	Fastener Type / Size	Fastener Spacing
4.1 h/w	Walls Only	Grabber Guard 1500 No. 8, 2 Inch	6" Perimeter and 12" at intermediate supports

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ADDITIONAL 6mm and 12mm TEST RESULTS

Compressive Strength	3190 psi	ASTM D2394
Dimensions and Tolerances – 6MM and 12MM	Test samples exceed ASTM requirements for edge straightness, length, width, thickness, squareness and edge straightness.	ASTM Section C1325-04, and sections 7.4, 7.5, 7.6 and 7.7 of ASTM C1186-02
Moisture Movement	Machine: 0.03% Cross: 0.04%	ASTM1186-02
Water Absorption – 12mm	Average Water Absorption = 27%	ASTM C1186-02

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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 D3273-00
Compression Indentation – 12mm	No residual deformation was noted following loading and the rest period.	ASTM C1325-04
Fastener pull-out (lbf) 12mm	Pending	Wood: ASTM D176 LGS: AISI S905
Fastener pull-out (lbf) 16mm	Pending	Wood: ASTM D176 LGS: AISI S905
Fastener pull-out (lbf) 18mm	Pending	Wood: ASTM D176 LGS: AISI S905
Nail Head Pull Through – 12MM	174.8 lbf The results meet the minimum requirement of 125 lbf called out in AC386, section 3.1.7	ASTM C1325-04
Falling Ball Impact – 12MM	All Magnum Board® Specimens exceed the 12" requirements of C1325 by nearly 2X	ASTM C1325
Shear Bond Strength – 6MM and 12MM	Mortar Average Shear Strength (PSI) [1]Portland 168.82 [2]Latex 234.32 1. The mortar selected was identified as compliant with ANSI A118.1. 2. The mortar selected was identified as compliant with ANSI A118.4 Both sets of specimens meet the 50 psi NOTE: Refer to endorsement by Mapei and the Mapei installation instructions for Magnum Backer Board.	ASTM C1325-04
Humidified Deflection – 12MM	The test specimens meet the requirements of C1396-06A and AC386.	ASTM C1396-06A
Surface Burning Characteristics – 4MM – 20MM Canada (ULC)	Classification A Classified as Non-Flammable Flame spread index: 0 Smoke developed index: 0	CAN / ULC-S102-10
Surface Burning Characteristics – Europe	Reaction to fire classification: A1 Rating	UL Europe EN13501-1:2007+A1:2009
Behavior of Materials in a Vertical Tube Furnace at 750ć – 12MM	The Magnum Board tested meets the test criteria presented in ASTM E 136 and can be classified as Non-Combustible	ASTM E136-04
Underwriters Laboratory Fire Rating 1-Hour single layer each side	Meets requirements for single layer each side of wall, 12mm Mag Ultra Structural, one hour fire wall rating. ANSI / UL Certified for the United States	ASTM E 119 / ANSI UL-263 (Fire Test) & ASTM E 2226 (Hose Stream) CAN / ULC-S101 Certified for Canada

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Southwest Research Institute (SWRI) 2-Hour single layer each side	Meets requirements for single layer each side of wall, 16mm Mag Ultra Structural sheathing, two-hour fire wall rating. ANSI Certified for the United States	ASTM E-119 Standard for fire-resistance testing of building construction assemblies, & ASTM E2226 (Hose Stream) Also certified by Fire Protection Engineer, Mr. Saleel Anthrathodiyil, PE, with Telgian Engineering & Consulting.
Evaluation of Heat and smoke release rates – 15MM Mag Structural	Magnum Sheathing passed the criteria in NBCC Division B, Article 3.1.5.1, Section 2	ULC S135-04
Heat Capacity (cp)	Temperature: 23°C Test Result: 1.48 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. Magnum Board exceeds the requirements of ASTM C-1185.	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 Test Protocol, 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/cm3 to 1.05 g/cm3 (1000 kg/m to 1050 kg/m3) Magnum Ultra Structural Sheathing 1.20 g/cm3 to 1;25 g/cm3 (1200 kg/m3 to 1250 kg/m3)	In house Testing

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Standard Test Method to Determine the Coefficient of Linear Thermal Expansion – 18MM	Thermal Coefficient of Lineal Expansion, al, (in/in-°F) 38-90°F Result: 3.97×10^{6}	ASTM E228 for Solids
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: 2.08×10^{5}	PRI tested to ASTM formula.
Asbestos	Magnum Board® is asbestos free	In House Testing
Carcinogens	Magnum Board® is carcinogen free	Reference U-Pitt Test Results
Formaldehyde	Magnum Board is formaldehyde free	In House Testing
Off-Gassing	Magnum Board® does not emit noxious gasses	Reference U-Pitt Test Results
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 insulation and a quiet glue or equal on the insides of each sheet Magnum Board® Sheathing	In house testing
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	Representative – Public Information
Crying Test	Pending IAPMO Certification	BBA – Results Pending
Permeance Vapor Transmission 3MM & 18MM	Table 1. ASTM E 96 results for 3 mm Magnum® Board in U.S. Customary Units ASTM E 96 (Procedure A) WVT (grains/h·ft2) Avg 3.67 Std deviation 0.43 Permeance (Perms) Avg 8.93 Std deviation 1.04 ASTM E 96 (Procedure B) WVT (grains/h·ft2) Avg 13.9 Std deviation .09	ASTM E96 / ASTM E96M-05

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	Permeance (Perms) Avg 34.0 Std deviation 2.1 Table 2. ASTM E 96 results for 3 mm Magnum® Board in SI Units ASTM E 96 (Procedure A) WVT (g/h·m2) Avg 2.55 Std deviation 0.30 Permeance (ng/Pa·s·m2) Avg 511 Std deviation 59.4 ASTM E 96 (Procedure B) WVT (g/h·m2) Avg 9.7 Std deviation 0.6 Permeance (ng/Pa·s·m2) Avg 1,947 Std deviation 121 Table 3. ASTM E 96 results for 18 mm Magnum® Board in U.S. Customary Units	
	ASTM E 96 (Procedure A) WVT (grains/h·ft2) Avg 1.40 Std deviation 0.10 Permeance (Perms) Avg 3.42 Std deviation 0.24 ASTM E 96 (Procedure B) WVT (grains/h·ft2)Avg 6.78 Std deviation 0.89 Permeance (Perms) Avg 14.6 Std deviation 2.2 Table 4. ASTM E 96 results for 18 mm Magnum® Board in SI Units ASTM E 96 (Procedure A) WVT (g/h·m2) Avg 0.98 Std deviation 0.07 Permeance (ng/Pa·s·m2) Avg 196 Std deviation 14 ASTM E 96 (Procedure B) Std deviation 0.62 WVT (g/h·m2) Avg 4.17 Permeance (ng/Pa·s·m2) Avg 836 Std deviation 124	

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LIST OF ACRONYMS

Acronym	Item
AC	Acceptance Criteria
ANSI	American National Standards Institute
ASTM	ASTM International
BXUV	UL Fire Resistance Product Code
CCMC	Canadian Construction Materials Centre
CE	Conformité Européenne
EN	Europäische Norm ("European Norm")
ICC-ES ESR 2880	International Code Council Evaluation Service Report 2880
IAPMO – ERs	Evaluation Report Nos ER No. 986 and Listing Report No. UEL-5068
FBC	Florida Building Code
HSC	Hygrometric Coefficient of Expansion
IAW	In Accordance With
ICC Acceptance Criteria (AC386)	ICC-AC386
kN	Kilonewtons
Kpa (kPa)	Kilopascal
LBF	Pound-Force
LB-FT	Pounds per Foot
LEED	Leadership in Energy and Environmental Design
mm	Millimeter
N	Newtons
OSB	Oriented Strand Board
Psf	Pounds per square foot
psi	Pounds per square inch
RH	Relative Humidity
R Value	Thermal Resistance
SDS	Safety Data Sheet
STC	Sound Transmission Class
TBA	TO Be Announced
UL	Underwriters Laboratory
ULC	Under Writers of Canada
USA	United States of America
WVT	Water Vapor Transmission

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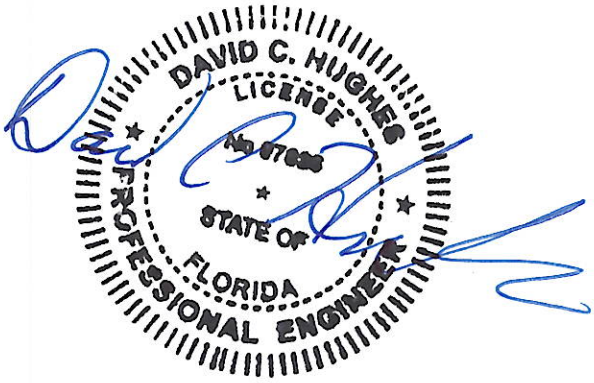
NOTICE TO SPECIFIERS

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:



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