

Innovation MgO

WALL AND SUBFLOOR SHEATHING PANELS FOR COMMERCIAL AND MULTIFAMILY BUILDINGS



STRENGTH + DURABILITY + VERSATILITY + FIRE RESISTANCE

Innovation MgO panels are revolutionizing the construction industry with their unmatched versatility and performance. These high-density magnesium oxide (MgO) cement panels offer superior fire resistance, strength, and durability, simplifying installation across all building types. Innovation MgO panels are a reliable alternative to traditional materials like fire-retardant-treated wood (FRTW) sheets, gypsum panels, and Portland cement panels. Innovation MgO panels are approved for use in commercial and multifamily exterior and interior fire-rated walls, interior underlayment and structural subfloors, elevator shaft liners, and other applications where structural strength and fire resistance are a priority.



INNOVATION MgO PANELS

Innovation MgO Wall Panels are approved for use in all building types and a wide range of interior and exterior applications. Designed for speed and versatility, the same panel can be used in walls, subfloors, SIP and SIS panels, and more, streamlining your construction process. Innovation MgO panel products have been independently tested for fire, structural, and other performance categories.

Product Lineup: High Density

Panel Size	Thickness / SKU	Name	Edge Profile	Weight (lbs/sf)	Fire Rating
Standard* 48" x 96"	1/4" (~6mm) 1F14	Flex	Flat + Square	±50 lbs (1.5)	PENDING
	1/2" (~12mm) 1W12	Wall	Flat + Square	±95 lbs (2.8)	1 + 2-hr
1220mm x 2440mm	1/2" (~12mm) 1F12	Floor	Flat + Square	±95 lbs (2.8)	PENDING
	3/4" (~19mm) 1S34	Subfloor	Tongue + Groove	±155 lbs (4.8)	PENDING

*Special order panels are available in 10' and 12' long sheets.

Product Lineup: Lower Density

Full lineup of lower density panels will be available in Spring 2025

Noncombustible Class A1 Fire Resistance With Independent 1 & 2-Hour Fire Ratings

Type I

Non or Limited Combustibility
Concrete Buildings
High Rise Multifamily Building

Type II

Non or Limited Combustibility
Steel Buildings
Big Box Store, School

Type III

Non or Limited Combustibility
Low Rise & Light Commercial
Mixed-Used Building

Type IV

Non or Limited Combustibility
Heavy Timber Buildings
Timber Frame Office Building

Type V

No Fire Resistance Required
Wood Framed Buildings
Single Family Home

Additional Uses

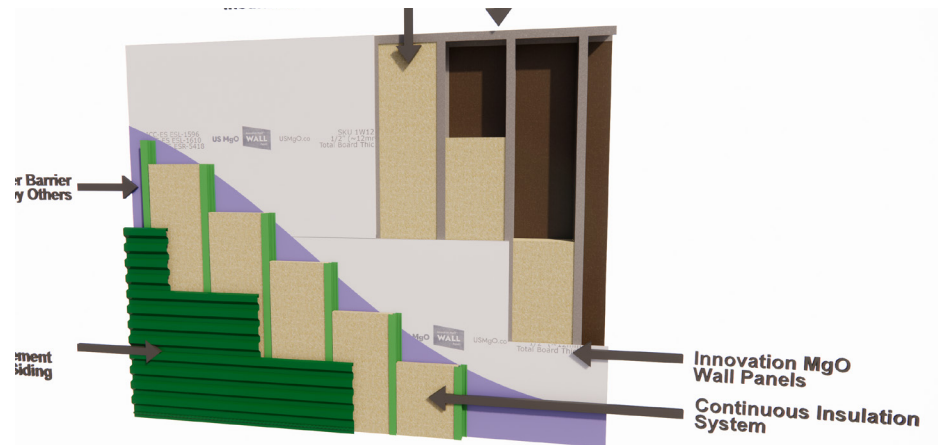
SIP & SIS Panel Systems
Residential & Commercial

+ Pending final approval for use in all Building Types I, II, III, IV, & V per IBC 2021

INNOVATION MgO PANELS

Innovation MgO 1/2" Wall Panels offer the design and construction industry an innovative sheathing panel that outperforms wood-based, gypsum-based, and Portland cement panels on technical performance and overall value. Comprised of a proprietary magnesium oxide (MgO) cement, Innovation MgO Wall Panels are naturally fire resistant, provide industry-leading flexural strength and dimensional stability, and provide high durability as they withstand weather conditions better than the alternatives.

Innovation MgO 1/2" Wall Panels are pending approval for exterior and interior use in all building types I, II, III, IV, & V and are easily installed using traditional tools and methods. One panel can be used in a multitude of exterior and interior wall applications and attaches easily to both metal and wood studs, reducing hassle, and saving both time and money.



Innovation MgO 3/4" Subfloor Panels provide structural support and fire resistance in 3/4" panels for subfloor use in commercial and multifamily buildings. Unlike fire-retardant-treated wood (FRTW) sheets, Innovation MgO Subfloor Panels will char, not burn, and maintain their structural integrity when exposed to fire.

Panels may be used for both fire resistance and structural strength on their own in subfloor and underlayment applications, unlike wood and gypsum-based products that require multiple layers and added thickness to achieve the same results.

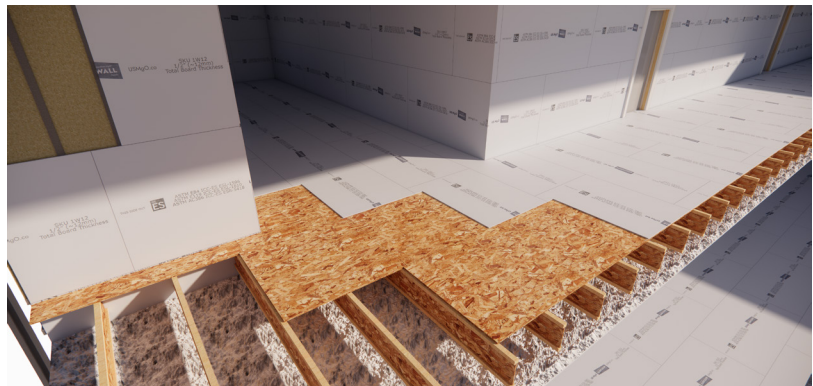
In a fire event, panels absorb large amounts of heat, contributing to a delay in fire and smoke spread. Innovation MgO 3/4" Subfloor Panels provide occupants and emergency personnel with additional time to evacuate and perform life-saving rescues in the event of a fire event.



INNOVATION MgO PANELS

Innovation MgO 1/2" Floor Panels provide structural support and fire resistance in 1/2" panels for underlayment use in multifamily buildings and single family homes. Unlike fire-retardant-treated wood (FRTW) sheets, Innovation MgO 1/2" Floor Panels will char, not burn, and maintain their structural integrity when exposed to fire.

Panels may be used for both fire resistance and structural strength in underlayment applications. Panels provide a smooth, flat attachment plane for a variety of flooring options. With strong sound deadening properties, Innovation MgO 1/2" Floor Panels eliminate the need for a sound mat. Unlike gypcrete and other wet laid gypsum products, Innovation MgO 1/2" Floor Panels require no curing time and can be installed in all weather conditions.



Innovation MgO 1/4" Flex Panels offer unique characteristics that traditional gypsum cannot match in both exterior and interior applications. Unlike gypsum-based panels, Innovation MgO 1/4" Flex Panels offer lasting durability from damages and scratches and can be installed in all weather conditions, including when installing interior walls without a roof system in place. Innovation MgO Flex Panels offer better fastener pull-out strength as well, providing an ideal attachment base for interior walls.

For interior use, Innovation MgO Flex Panels can be treated much the same as interior gypsum for finishing, making them ideal for high traffic areas such as hallways and breezeways that are prone to damage and deterioration. Ceilings are another ideal use for these panels as they provide lasting durability and fire resistance.

SIP and SIS panel products are also an ideal use for these panels as they contribute both fire resistance and structural strength while enabling reliable and lasting attachment of WRBs and claddings during finishing.



APPLICATION TYPES

+ Interior Fire-Rated Walls

+ Exterior Fire-Rated Walls

+ Structural Subflooring

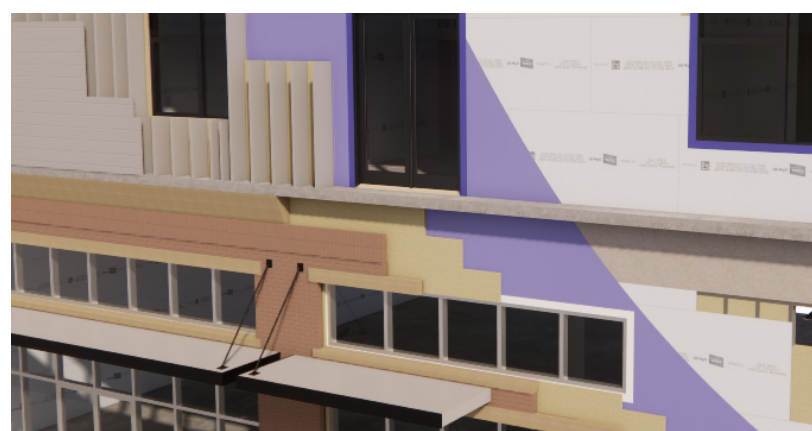
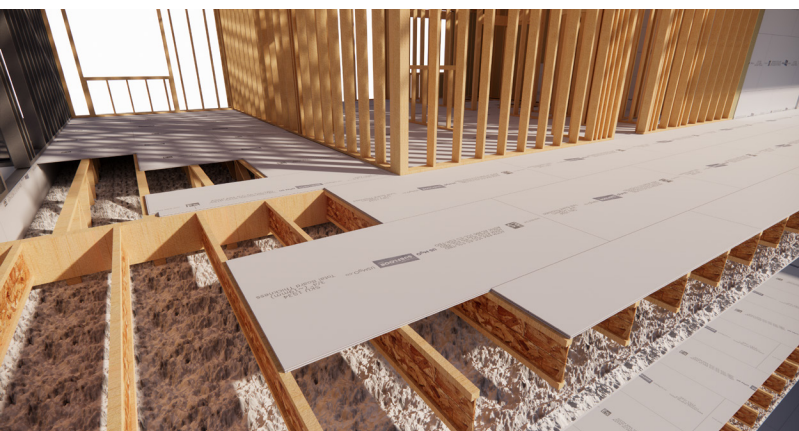
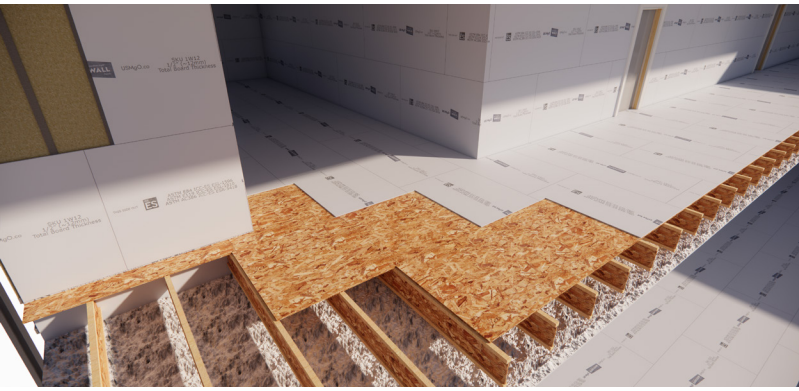
+ Underlayment

+ SIP & SIS Panels

+ Stairwells & Hallways

+ Elevator Shafts

+ Ceilings



TOP FIVE BENEFITS



Fire Resistance

- + Extends the amount of time for safe evacuation of occupants in a fire event
- + Noncombustible Class A1 fire resistant with 1 and 2-hour fire rating on its own
- + Fire performance comparable to exterior 1/2" gypsum boards
- + Meets NFPA 285 and ASTM E119 2-hour fire rating in many fire-rated assemblies



Durability

- + Resists warping, swelling, delamination, and cracking caused by moisture exposure
- + Built to endure, ensuring reliable performance throughout the life of your structure
- + Requires minimal upkeep, reducing long-term costs



Water Resistance

- + Highly resistant to water damage during construction and throughout the building's lifespan
- + Superior wetting-drying performance; experiences minimal strength loss compared to traditional materials like OSB, plywood, and gypsum when exposed to repeated wetting and drying cycles
- + Panels undergo rigorous testing to ensure exceptional water resistance capabilities



Ease of Installation

- + Fast and easy installation using traditional tools, no specialized Personal Protective Equipment (PPE) is required for handling
- + Reduces materials and labor expenses while minimizing weather and labor-related delays
- + Streamline the subfloor system by eliminating the need for a second layer of underlayment; one 3/4" Subfloor panel provides structural and fire resistance needs and can be installed in wet conditions



Strength

- + Maintains exceptional structural integrity after extended exposure to wetting/drying and cold/hot cycles, lasting up to 180 days before requiring a water resistive barrier (WRB) or cladding
- + Offers dimensional stability, resists swelling, delamination, warping, and bending in normal moisture conditions
- + Superior strength compared to Portland cement panels, including compressive strength, tensile strength, and high resistance to shear, impact, and bending forces

OTHER BENEFITS

+ Quality Assurance

- + Panels have unmatched quality control, manufactured under rigorous oversight by multiple independent organizations (ICC-ES, ICC-NTA, CMMA) and undergo annual audits
- + US MgO Company goes a step further - performing third-party lab testing on all imported MgO materials before delivery, ensuring the highest quality for our customers

+ Versatile Cladding Attachment

- + Panels act as a strong, smooth structural base for exterior walls, offering a quick and ideal attachment plane for various cladding materials (brick, masonry, tile, metal panels, stucco, etc.)
- + Simplifies and expedites cladding installation with high shear and fastener withdrawal strength

+ Sound Absorption

- + Made with high-density MgO, panels offer exceptional sound absorption capabilities
- + Provides a quieter, more comfortable living and working environments in both residential and commercial settings

+ Fungal Growth Resistance

- + Highly resistive to various forms of fungal growth due to chemical makeup and mechanical properties

+ Environmentally Friendly

- + Sustainable choice, non-toxic, low energy manufacturing, and contains no harmful materials, ideal for health-sensitive environments

+ Naturally Inhibits Termites & Insects

- + Naturally deters termites and insects as they cannot easily bore into the material

+ Freeze-Thaw Performance

- + Ideal for cold climates; maintains dimensional stability and structural integrity through freeze-thaw cycles

+ Promotes Healthy Indoor Air Quality

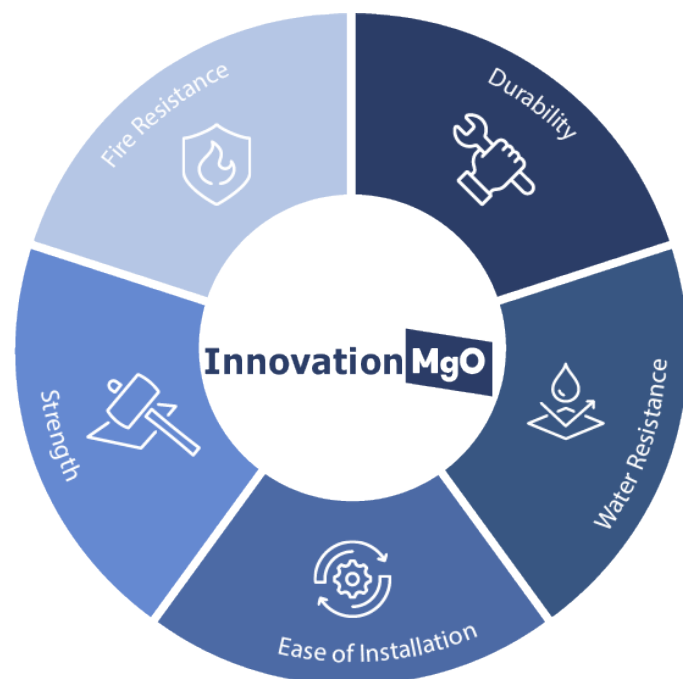
- + Contains no VOCs, nothing to off-gas

+ Broad Compatibility

- + Works seamlessly with many types of sealants, paints, coatings, and WRBs for efficient and reliable installation

+ Optimizes Materials & Labor

- + Reduces material needs and installation time



1/2" WALL PANELS

Physical Properties			
Material Composition	Magnesium Oxychloride Cement	Thickness	Nominal 1/2" (12mm)
Weight (lbs/sf)	±90 lbs (2.8)	Thickness Deviation (ASTM C1185)	< ± 1/16 in. (1.59mm)
Available Sizes	Nominal 48 in. (1220mm) x 96 in. (2440mm) x 1/2 in. (~12mm)	Length, Width, and Diagonal Deviation (ASTM C1185)	< ± 1/8 in. (3.18mm)
Density	≥ 1.09 g/cm ³	Unprotected Exposure	180 days
Test Name	Test Method	Results	More Info / Minimum AC
Code Acceptance			
Building Types	2018 and 2021 IBC and IRC; 2023 FBC; 2022 CBC and CRC with WUI; 2023 LABC and LARC	All Building Types (I, II, III, IV, V)	ESR-5418
Code Evaluations	ASTM E84 ASTM E119 ASTM E386	See Listing / Report	ESL-1596 ESL-1610 ESR-5418
Fire & Thermal Resistance Properties			
Flame and Smoke Development	ASTM E84, ASTM E2768	Class A (Flame Spread Index 0-25; Smoke-Developed Index of 0-450)	ESL-1596
Combustibility	ASTM E136-19 Method A	Pass, Noncombustible Class A1	-
Fire-Rated Wall Assemblies	ASTM E119	1 & 2-Hour - See ESL-1610	ESL-1610
Structural Properties			
Allowable Stud Spacing	-	12 in. / 16 in. / 24 in. OC	Test Results at 24 in. OC
Compression Indentation	ASTM D2394	0.004 in.	Deformation at 1250 psi / Requirement to be less than 0.05
Flexural Strength (Machine / Cross Direction)	ASTM C1185	Dry: 2,855 MD / 3,410 XD Wet: 2,980 MD / 3,049 XD	580 psi (4000 kPa) min average acceptance for both wet and dry
Humidified Deflection	ASTM C473	1/8 in.	(48) hours at 90F and 90% RH / Required to be less than 1.25
Falling Ball Impact	ASTM D1037	No damage to top or bottom from a 12" drop	-
Uniform Static Air Pressure	TAS 202-94	28.5 psf (L/360); 38.0 psf (L/240)	Max Wall Design Pressures (ASTM E330)
Cyclic Air Pressure	TAS 203-94	28.5 psf (L/360); 38.0 psf (L/240)	Max Wall Design Pressures (ASTM E330)
Fastener & Adhesion Properties			
Dry-Set Cement Shear Bond Strength	ANSI A118.1/A118.4	86 psi	Min shear bond strength at 7-day curing of 50 psi
Latex Cement Shear Bond Strength	ANSI A118.1/A118.4	307 psi	Min shear bond strength at 7-day curing of 50 psi
Fastener Withdrawal	ASTM D1037	> 275 lbs./in.	#10-13 Pancake Head Screw
Nail Head Pull-Through	ASTM D1037	618 lbf	0.121 x 3" Roofing Nail -Resistance of 90 lbf
Moisture Properties			
Moisture Absorption	ASTM C1185	≤ 20%	48 Hour Submersion
Moisture Content	ASTM D4442	≤ 6.4	-
Water Vapor Permeability	ASTM E96 Water Method	11.5 perms	-
Moisture Movement Test	ASTM C1185	0.06% MD / 0.11% XD	Increase of chamber from 30% RH to 90% RH measured in both machine and cross direction

1/2" FLOOR PANELS

Physical Properties			
Material Composition	Magnesium Oxychloride Cement	Thickness	Nominal 1/2" (12mm)
Weight (lbs/sf)	±90 lbs (2.8)	Thickness Deviation (ASTM C1185)	< ± 1/16 in. (1.59mm)
Available Sizes	Nominal 48 in. (1220mm) x 96 in. (2440mm) x 1/2 in. (~12mm)	Length, Width, and Diagonal Deviation (ASTM C1185)	< ± 1/8 in. (3.18mm)
Density	≥ 1.09 g/cm ³	Unprotected Exposure	180 days
Test Name	Test Method	Results	More Info / Minimum AC
Code Acceptance			
Building Types	2018 and 2021 IBC and IRC; 2023 FBC; 2022 CBC and CRC with WUI; 2023 LABC and LARC	All Building Types (I, II, III, IV, V)	PENDING
Code Evaluations	ASTM E84 ASTM E119 ASTM E386	See Listing / Report	ESL-1596 ESL-1610 ESR-5418 (PENDING)
Fire & Thermal Resistance Properties			
Flame and Smoke Development	ASTM E84, ASTM E2768	Class A (Flame Spread Index 0-25; Smoke-Developed Index of 0-450)	ESL-1596
Combustibility	ASTM E136-19 Method A	Pass, Noncombustible Class A1	-
Fire-Rated Wall Assemblies	ASTM E119	1 & 2-Hour - See ESL-1610	ESL-1610
Structural Properties			
Allowable Stud Spacing	-	PENDING Estimated 12 in / 16 in / 19.2 in / 24 in	-
Board Capacity (lbs/sf)	-	PENDING	
Compression Indentation	ASTM D2394	0.004 in.	Deformation at 1250 psi / Requirement to be less than 0.05
Flexural Strength (Machine / Cross Direction)	ASTM C1185	Dry: 2,855 MD / 3,410 XD Wet: 2,980 MD / 3,049 XD	580 psi (4000 kPa) min average acceptance for both wet and dry
Humidified Deflection	ASTM C473	1/8 in.	(48) hours at 90F and 90% RH / Required to be less than 1.25
Falling Ball Impact	ASTM D1037	No damage to top or bottom from a 12" drop	-
Uniform Static Air Pressure	TAS 202-94	28.5 psf (L/360); 38.0 psf (L/240)	Max Wall Design Pressures (ASTM E330)
Cyclic Air Pressure	TAS 203-94	28.5 psf (L/360); 38.0 psf (L/240)	Max Wall Design Pressures (ASTM E330)
Fastener & Adhesion Properties			
Dry-Set Cement Shear Bond Strength	ANSI A118.1/A118.4	86 psi	Min shear bond strength at 7-day curing of 50 psi
Latex Cement Shear Bond Strength	ANSI A118.1/A118.4	307 psi	Min shear bond strength at 7-day curing of 50 psi
Fastener Withdrawal	ASTM D1037	> 275 lbs./in.	#10-13 Pancake Head Screw
Nail Head Pull-Through	ASTM D1037	> 618 lbf	0.121 x 3" Roofing Nail - Resistance of 90 lbf
Moisture Properties			
Moisture Absorption	ASTM C1185	≤ 20%	48 Hour Submersion
Moisture Content	ASTM D4442	≤ 6.4	-
Water Vapor Permeability	ASTM E96 Water Method	11.5 perms	-
Moisture Movement Test	ASTM C1185	0.06% MD / 0.11% XD	Increase of chamber from 30% RH to 90% RH measured in both machine and cross direction

3/4" SUBFLOOR PANELS

Physical Properties			
Material Composition	Magnesium Oxychloride Cement	Thickness	Nominal 3/4" (19mm)
Weight (lbs/sf)	±155 lbs (4.8)	Thickness Deviation (ASTM C1185)	< ± 1/16 in. (1.59mm)
Available Sizes	Nominal 48 in. (1220mm) x 96 in. (2440mm) x 3/4 in. (19mm)	Length, Width, and Diagonal Deviation (ASTM C1185)	< ± 1/8 in. (3.18mm)
Density	≥ 1.09 g/cm ³	Unprotected Exposure	180 days
Test Name	Test Method	Results	More Info / Minimum AC
Code Acceptance			
Building Types	2018 and 2021 IBC and IRC; 2023 FBC; 2022 CBC and CRC with WUI; 2023 LABC and LARC	PENDING	-
Code Evaluations	ASTM E84 ASTM E119 ASTM E386	PENDING	ESL - PENDING ESL - PENDING ESR-5418 (PENDING)
Fire & Thermal Resistance Properties			
Flame and Smoke Development	ASTM E84, ASTM E2768	PENDING	-
Combustibility	ASTM E136-19 Method A	PENDING	-
Fire-Rated Wall Assemblies	ASTM E119	PENDING	-
Structural Properties			
Allowable Stud Spacing	-	PENDING Estimated 12 in / 16 in / 19.2 in / 24 in	-
Board Capacity (lbs/sf)	-	PENDING	-
Compression Indentation	ASTM D2394	PENDING	-
Flexural Strength (Machine / Cross Direction)	ASTM C1185	≥ 18 Mpa	≥ 18 Mpa
Humidified Deflection	ASTM C473	PENDING	-
Falling Ball Impact	ASTM D1037	PENDING	-
Uniform Static Air Pressure	TAS 202-94	PENDING	-
Cyclic Air Pressure	TAS 203-94	PENDING	-
Fastener & Adhesion Properties			
Dry-Set Cement Shear Bond Strength	ANSI A118.1/A118.4	PENDING	-
Latex Cement Shear Bond Strength	ANSI A118.1/A118.4	PENDING	-
Fastener Withdrawal	ASTM D1037	PENDING	-
Nail Head Pull-Through	ASTM D1037	PENDING	-
Moisture Properties			
Moisture Absorption	ASTM C1185	≤ 14%	≤ 20%
Moisture Content	ASTM D4442	≤ 6.4%	≤ 6.4%
Water Vapor Permeability	ASTM E96 Water Method	PENDING	-
Moisture Movement Test	ASTM C1185	PENDING	-

1/4" FLEX PANELS

Physical Properties			
Material Composition	Magnesium Oxychloride Cement	Thickness	Nominal 1/4" (6mm)
Weight (lbs/sf)	±50 lbs (1.5)	Thickness Deviation (ASTM C1185)	< ± 1/16 in. (1.59mm)
Available Sizes	Nominal 48 in. (1220mm) x 96 in. (2440mm) x 1/4 in. (6mm)	Length, Width, and Diagonal Deviation (ASTM C1185)	< ± 1/16 in. (1.59mm)
Density	≥ 1.09 g/cm ³	Unprotected Exposure	180 days
Test Name	Test Method	Results	More Info / Minimum AC
Code Acceptance			
Building Types	2018 and 2021 IBC and IRC; 2023 FBC; 2022 CBC and CRC with WUI; 2023 LABC and LARC	PENDING	-
Code Evaluations	ASTM E84 ASTM E119 ASTM E386	PENDING	ESL - PENDING ESL - PENDING ESR-5418 (PENDING)
Fire & Thermal Resistance Properties			
Flame and Smoke Development	ASTM E84, ASTM E2768	PENDING	-
Combustibility	ASTM E136-19 Method A	PENDING	-
Fire-Rated Wall Assemblies	ASTM E119	PENDING	-
Structural Properties			
Allowable Stud Spacing	-	PENDING Estimated 12 in / 16 in / 19.2 in / 24 in	-
Compression Indentation	ASTM D2394	PENDING	-
Flexural Strength (Machine / Cross Direction)	ASTM C1185	PENDING	-
Humidified Deflection	ASTM C473	PENDING	-
Falling Ball Impact	ASTM D1037	PENDING	-
Uniform Static Air Pressure	TAS 202-94	PENDING	-
Cyclic Air Pressure	TAS 203-94	PENDING	-
Fastener & Adhesion Properties			
Dry-Set Cement Shear Bond Strength	ANSI A118.1/A118.4	PENDING	-
Latex Cement Shear Bond Strength	ANSI A118.1/A118.4	PENDING	-
Fastener Withdrawal	ASTM D1037	PENDING	-
Nail Head Pull-Through	ASTM D1037	PENDING	-
Moisture Properties			
Moisture Absorption	ASTM C1185	PENDING	-
Moisture Content	ASTM D4442	PENDING	-
Water Vapor Permeability	ASTM E96 Water Method	PENDING	-
Moisture Movement Test	ASTM C1185	PENDING	=



About Us

US MgO Company is a leading supplier and manufacturer of high quality magnesium oxide (MgO) sheathing panels worldwide, catering to the residential, commercial, and industrial construction markets in North America. US MgO was established by a team of accomplished building and material scientists, boasting extensive experience spanning decades in the development, research, and manufacturing of MgO panels and innovative building products.

Our Mission

At US MgO, we are passionate about promoting the widespread adoption of MgO sheathing products. Our exclusive range of high-performance MgO panels sets a new standard, offering exceptional fire resistance, exceptional durability, and unmatched versatility.

Empowering the Future of Construction

US MgO is dedicated to educating architects, builders, and contractors about the unique benefits of Innovation MgO panels. Through education, we can empower professionals to design innovative, high-performing, and sustainable buildings.

Advancing Codes & Standards

To support growth of this innovative product category in North America and beyond, US MgO is dedicated to advancing codes, standards, and

manufacturer requirements for MgO products worldwide. Advancing codes and standards instills trust and confidence in customers, thus creating new and innovative opportunities for MgO-based products.

Proven Technical Performance

Projects demand proven technical performance and customers expect nothing less. To exceed these requirements, we maintain the industry's most robust quality control standards in the products we supply and manufacture. As active participants in the standards setting community, we advocate for others to follow and oftentimes push past minimum requirements in favor of strong and proven performance in the products we sell.

We're better than unjustified marketing claims; US MgO products offer proven, third-party tested technical performance and real world benefits backed by the nation's leading technical support team and a 10-Year Limited Product Warranty.

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