Innovation MgO

WALL, FLOOR, AND SUBFLOOR SHEATHING PANELS FOR ALL BUILDING TYPES

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.

US MgO

www.USMgO.co | Info@USMgO.co | 1-855-MGO-4YOU |

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.

Commercial Grade Sheathing Panels

Panel Size	Thickness / SKU	Name	Edge Profile	Weight (lbs/ sf)	Fire Rating
Standard 48" x 96" 1220mm x 2440mm	1/4" (~6mm) 1WCB14 1TBB141	Wall Cover Board Tile Backer Board	Flat + Square	±50 lbs (1.5)	
	1/2" (~12mm) 1WSP12 1FSP12	Wall Sheathing Panel Floor Sheathing Panel	Flat + Square	±95 lbs (2.8)	1 + 2-hr
	3/4" (~19mm) 1SSP34	Subfloor Sheathing Panel	Tongue + Groove	±155 lbs (4.8)	1 + 2-hr

Residential Grade Sheathing Panels

Panel Size	Thickness / SKU	Name	Edge Profile	Weight (lbs/ sf)	Fire Rating
Standard 48" x 96"	1/4" (~6mm) 1WCB14 1TBB141	Wall Cover Board Tile Backer Board	Flat + Square	±40 lbs (1.3)	
1220mm x 2440mm	1/2" (~12mm) 1WSP12 1FSP12	Wall Sheathing Panel Floor Sheathing Panel	Flat + Square	±80 lbs (2.5)	1 + 2-hr

Field & Shop Constructed SIP/SIS Panels

Many types available with 1/4" and 1/2" panels. Contact us for details.

Made In USA MgO Sheathing Panels

Available in late 2025 from Wilmington, NC! Contact us for details.

APPLICATION TYPES

Noncombustible Class A 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

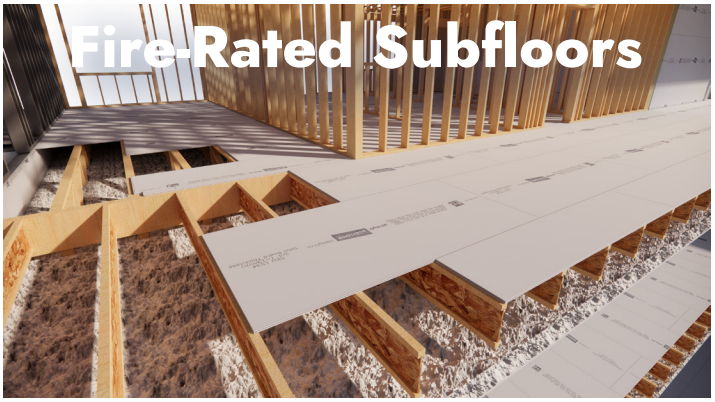
Type III
Non or Limited Combustibility
Low Rise & Light Commercial
Mixed-Used Building

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

Approved for use in all Building Types I, II, III, IV, & V per IBC 2021



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

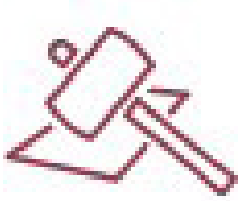
- Resists warping, swelling, delamination, and cracking caused by moisture exposure
- Built to endure, ensuring reliable performance throughout the life of your structure
- Requires minimal upkeep, reducing long-term costs

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

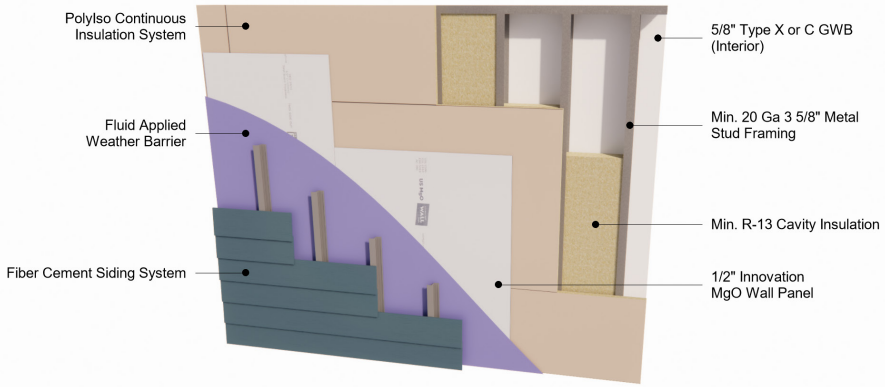
- Maintains exceptional structural integrity after extended exposure to wetting/drying and cold/hot cycles, lasting up to 180 days before requiring a water resistive barrier (WRB) or cladding
- Offers dimensional stability, resists swelling, delamination, warping, and bending in normal moisture conditions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

1/2" WALL 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 approved 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™
WALL
Panels



1/2" WALL PANELS

Physical Properties			
Material Composition	Magnesium Oxychloride (MOC) Cement	**Thickness**	Nominal 1/2" (12mm)
Weight (lbs.) (sf)	± 90 lbs (2.8)	**Thickness Deviation (ASTM C1185)**	< ± 1/16 in. (1.6mm)
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. (3.2mm)
Density	≥ 1.09 g/cm3	**Unprotected Exposure**	180 days

Test Name	Test Method	Results	More Info / Minimum Acceptance Criteria
Code Acceptance			
Building Types	2018 and 2021 IBC and IRC; 2023 FBC; 2022 CBC and CRC; 2023 LABC and LARC	All Building Types (I, II, III, IV, V)	ESR-5418
Code Evaluations & Additional Listings	ASTM E84: Surface Burning Characteristics of Building Materials ASTM E119: Fire Tests of Building Construction and Materials ASTM E2768: Extended Duration Surface Burning Characteristics of Building Materials AC 386: Acceptance Criteria for Fiber-Reinforced Magnesium Oxide-Based Sheets		ESL-1596 ESL-1610 ESL-1632 ESR-5418
Fire & Thermal Resistance Properties			
Flame and Smoke Development	ASTM E84 ASTM E2768	Flame Spread ≤ 10; Smoke Developed ≤ 25 PASS	ESL-1596
Combustibility	ASTM E136-19 Method A	PASS, Noncombustible	ESR-5418
Fire-Rated Wall Assemblies	ASTM E119 CAN/ULC-S101	1 & 2-Hour - See ESL-1610 (US) 1& 2-Hour - See ESL-1632 (Canada)	ESL-1610 ESL-1632
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 in.
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 in.
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
Cyclic Air Pressure	TAS 203-94	28.5 psf (L/360); 38.0 psf (L/240)	Max Wall Design Pressures

Allowable Transverse Wind Loads on Wood Studs						
	Nominal Panel Thickness	**Maximum Support Spacing**	**Fastener Type**	**Fastener On-Center Spacing (Perimeter/Field)**	**Allowable Wind Load**	
					Positive	**Negative**
	1/2 in.	16 in.	0.113 in. x 2 in. galvanized ring shank nails	4 in. / 6 in.	80 psf	42 psf
	For SI 1 inch = 25.4 mm; 1 psf = 47.88 Pa					

1/2" WALL PANELS

Structural Properties (continued)				
			Transverse Load - Positive	Transverse Load - Negative
	Limit	Deflection	Average Pressure	Average Pressure
Sheathing Span Deflection Criteria (ASTM E72)	L/90 L/120 L/180 L/240 L/360 L/480 L/600	1.028 in. 0.771 in. 0.514 in. 0.385 in. 0.257 in. 0.193 in. 0.154 in.	112 psf 85 psf 59 psf 46 psf 32 psf 25 psf 21 psf	105 psf 81 psf 59 psf 47 psf 34 psf 27 psf 23 psf

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. (max force)	#10-13 Pancake Head Screw
Nail Head Pull-Through	ASTM D1037	618 lbf	0.121 x 3" Roofing Nail - Resistance of 90 lbf

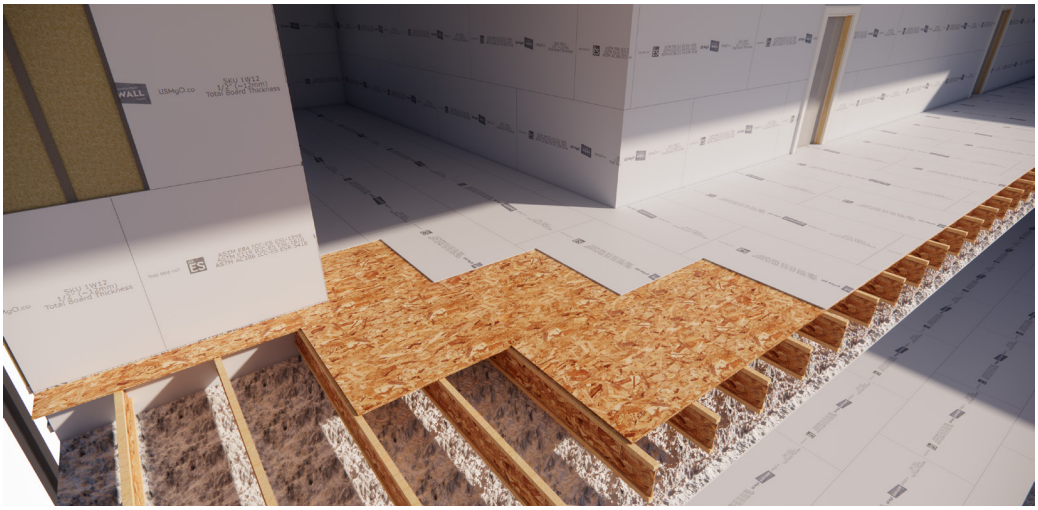
Moisture Properties			
Moisture Absorption	ASTM C1185	≤ 20%	48 Hour Submersion
Moisture Content	ASTM D4442	≤ 6.4	
Water Vapor Permeability	ASTM E96 Water Method	11.5 perms	
Moisture Movement Test	ASTM C1185	0.06% Machine Direction 0.11% Cross Direction	Increase of chamber from 30% Relative Humidity to 90% measured in both machine and cross direction

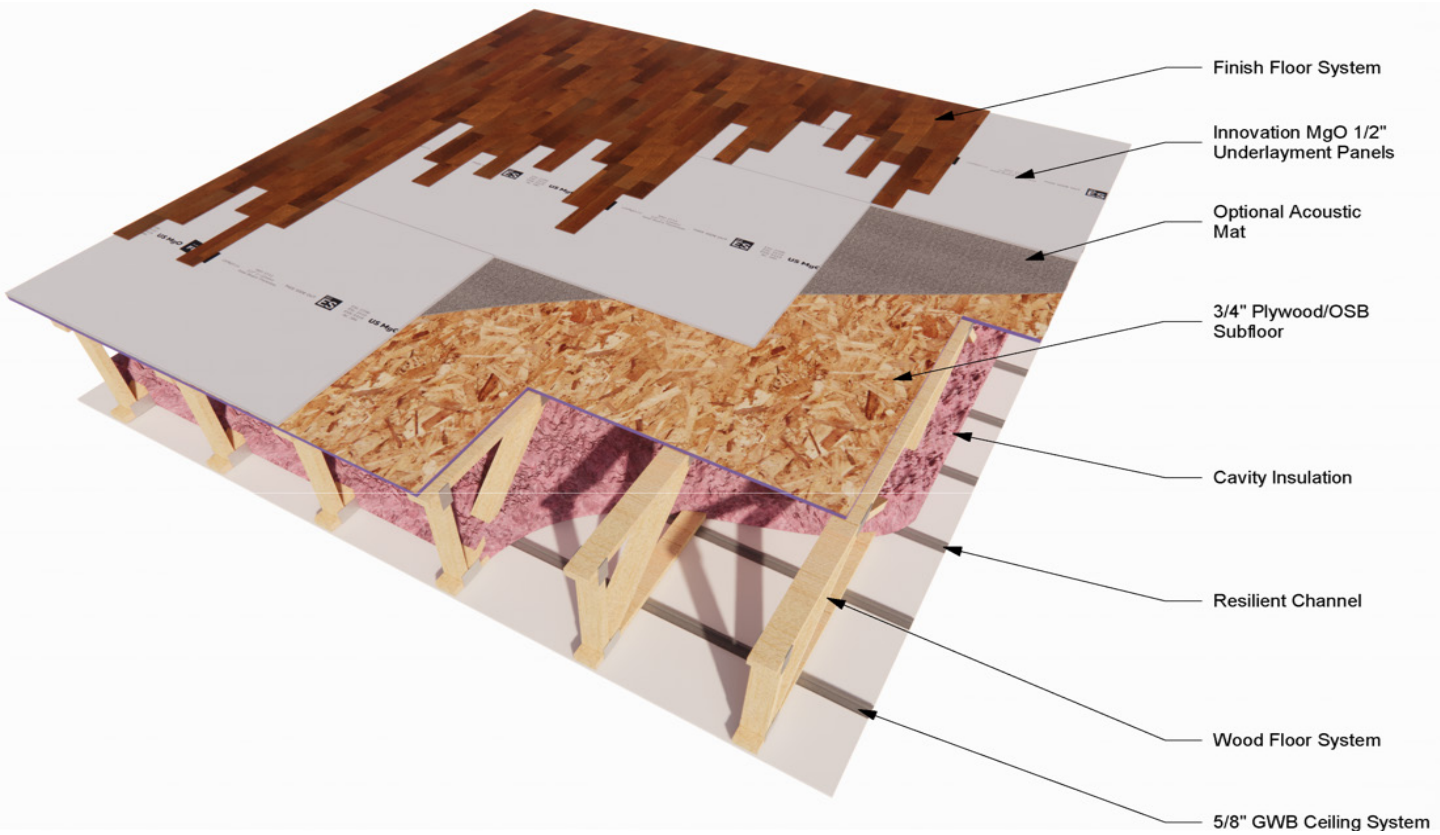
1/2" FLOOR PANELS

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™
FLOOR
Panels





1/2" FLOOR PANELS

Physical Properties			
Material Composition	Magnesium Oxychloride (MOC) 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/cm3	**Unprotected Exposure**	180 days
Test Name	**Test Method**	**Results**	**More Info / Minimum Acceptance Criteria**
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)	
Code Evaluations	ASTM E119: Fire Tests of Building Construction and Materials ASTM E2768: Extended Duration Surface Burning Characteristics of Building Materials		ESL-1610 ESL-1596
Fire & Thermal Resistance Properties			
Flame and Smoke Development	ASTM E84 ASTM E2768	Flame Spread ≤ 10; Smoke Developed ≤ 25 PASS	
Combustibility	ASTM E136-19 Method A	PASS, Noncombustible	
Fire-Rated Floor Assemblies	ASTM E119	Multiple 1 & 2-hour fire-rated assemblies available	ESL-1610
Structural Properties			
Allowable Joist Spacing	ASTM E330	See Specification Guide	
Fastener Holding	ASTM D1761	See Specification Guide	
Compression Indentation	ASTM D2394	0.004 in.	Deformation at 1250 psi / Requirement to be less than 0.05 in.
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 in.
Falling Ball Impact	ASTM D1037	No damage to top or bottom from a 12" drop	
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. (max force)	#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	

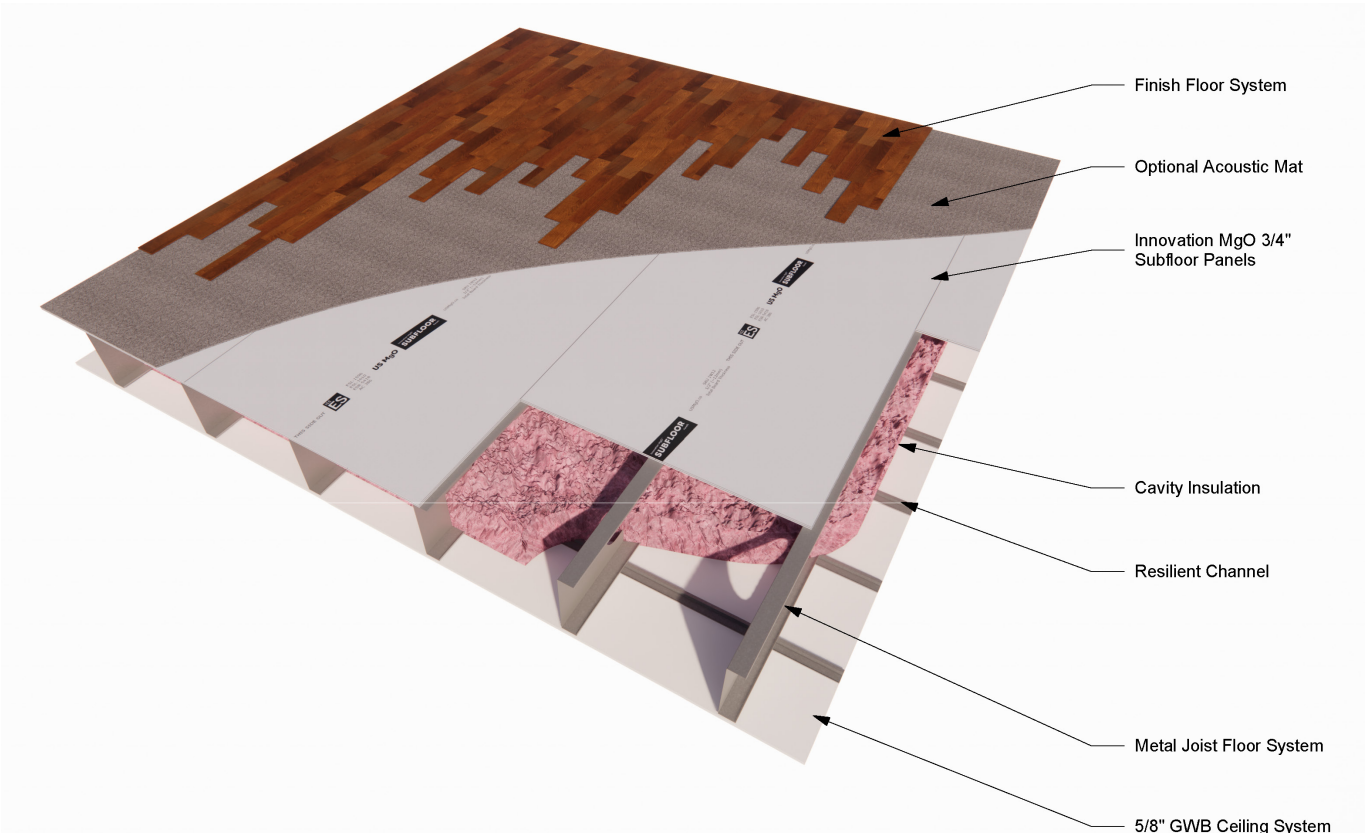
3/4" SUBFLOOR PANELS

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™
SUBFLOOR
Panels



3/4" SUBFLOOR PANELS

Physical Properties			
Material Composition	Magnesium Oxychloride (MOC) Cement	**Thickness**	Nominal 3/4" (19mm)
Weight (lbs.) (sf)	±155 lbs. (4.8)	**Thickness Deviation (ASTM C1185)**	< ± 1/16 in. (1.6mm)
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. (3.2mm)
Density	≥ 1.09 g/cm3	**Unprotected Exposure**	180 days

Test Name	Test Method	Results	More Info / Minimum Acceptance Criteria
Code Acceptance			
Building Types	2018 and 2021 IBC and IRC; 2023 FBC; 2022 CBC and CRC; 2023 LABC and LARC	All Building Types (I, II, III, IV, V)	
Code Evaluations	ASTM E119: Fire Tests of Building Construction and Materials ASTM E2768: Extended Duration Surface Burning Characteristics of Building Materials		ESL-1610 ESL-1596
Fire & Thermal Resistance Properties			
Flame and Smoke Development	ASTM E84 ASTM E2768	Flame Spread ≤ 10; Smoke Developed ≤ 25 PASS	
Combustibility	ASTM E136-19 Method A	PASS, Noncombustible	
Fire-Rated Floor Assemblies	ASTM E119	Multiple 1 & 2-hour fire-rated assemblies available	ESL-1610
Structural Properties			
Allowable Joist Spacing	ASTM E330	L/480 > 133 psf	Up to 24" span
Fastener Holding	ASTM D1761	See Specification Guide	
Compression Indentation	ASTM D2394	0.004 in.	Deformation at 1250 psi / Requirement to be less than 0.05 in.
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 in.
Falling Ball Impact	ASTM D1037	No damage to top or bottom from a 12" drop	
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	> 350 lbs. (max force)	#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%	

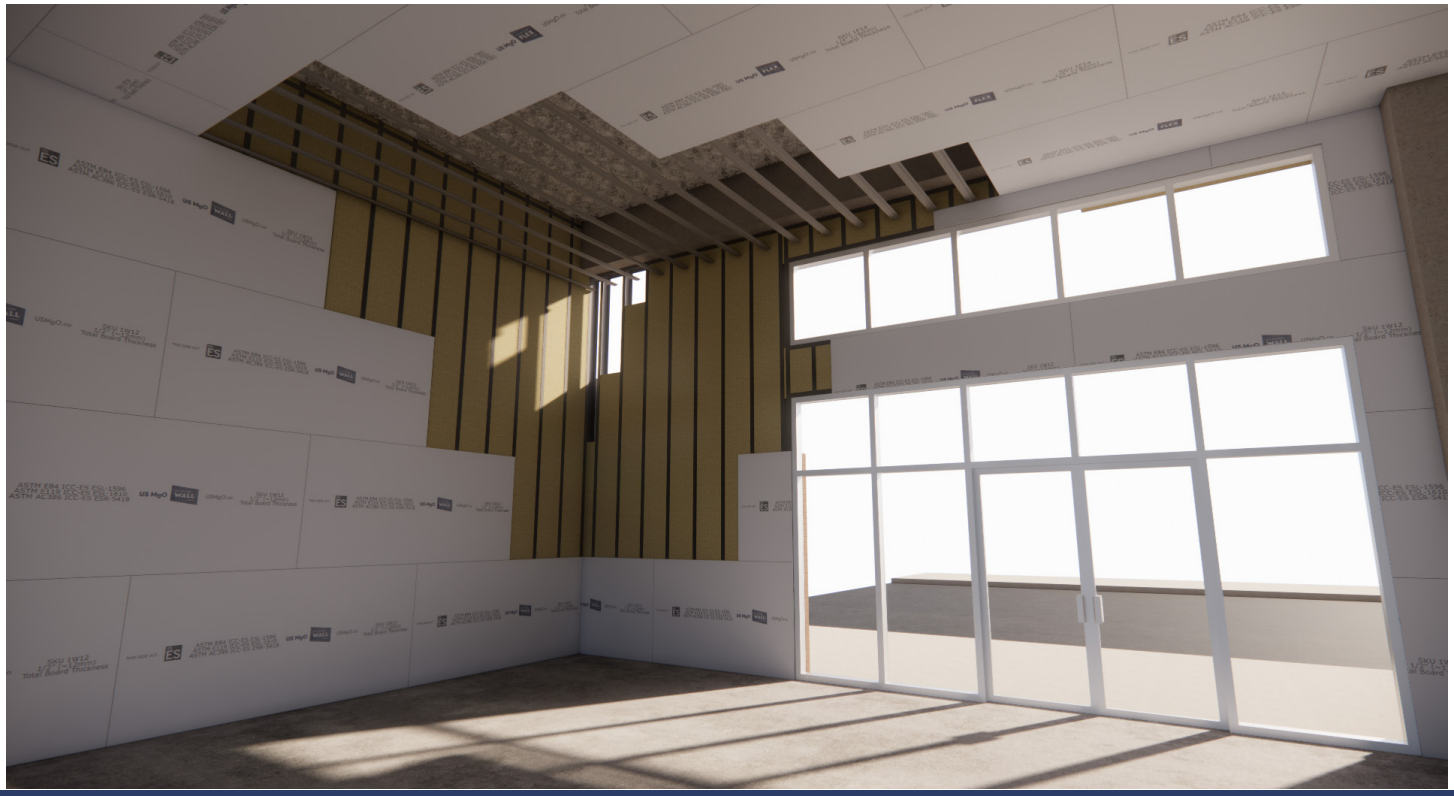
1/4" FLEX PANELS

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

Innovation MgO™
FLEX
Panels



1/4" FLEX PANELS

Physical Properties			
Material Composition	Magnesium Oxychloride (MOC) Cement	**Thickness**	Nominal 1/4" (6mm)
Weight (lbs.) (sf)	± 50 lbs (1.5)	**Thickness Deviation (ASTM C1185)**	< ± 1/16 in. (1.6mm)
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. (1.6mm)
Density	≥ 1.09 g/cm3	**Unprotected Exposure**	180 days

Test Name	Test Method	Results	More Info / Minimum Acceptance Criteria
Code Acceptance			
Building Types	2018 and 2021 IBC and IRC; 2023 FBC; 2022 CBC and CRC; 2023 LABC and LARC	All Building Types (I, II, III, IV, V)	PENDING
Code Evaluations	ASTM E84: Surface Burning Characteristics of Building Materials ASTM E119: Fire Tests of Building Construction and Materials ASTM E2768: Extended Duration Surface Burning Characteristics of Building Materials AC 386: Acceptance Criteria for Fiber-Reinforced Magnesium Oxide-Based Sheets		PENDING PENDING PENDING PENDING
Fire & Thermal Resistance Properties			
Flame and Smoke Development	ASTM E84 ASTM E2768	Flame Spread ≤ 10; Smoke Developed ≤ 25 PASS	
Combustibility	ASTM E136-19 Method A	PASS, Noncombustible	
Fire-Rated Wall Assemblies	ASTM E119	PENDING	
Structural Properties			
Allowable Stud Spacing	-	PENDING	
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	> 40 lbs. (max force)	#10-13 Pancake Head Screw
Nail Head Pull-Through	ASTM D1037	PENDING	
Moisture Properties			
Moisture Absorption	ASTM C1185	PENDING	
Moisture Content	ASTM D4442	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.

Made in USA

In late 2025, US MgO will release the first US-made MgO panels for wall, floor, and subfloor applications. Construction is underway on two manufacturing plants in the Wilmington, NC area. Contact us for more information!

CONTACT US AT:

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