

INNOVATION MgO

THE CONSTRUCTION INDUSTRY'S
STRONGEST AND MOST VERSATILE PANEL

THIS SIDE OUT

SKU 1W12
1/2" (~12mm)
Total Board Thickness

US MgO



USMgO.co

ASTM E84 ICC-ES ESL-1596
ASTM E119 ICC-ES ESL-1610
ASTM AC386 ICC-ES ESR-5418



STRENGTH + FIRE RESISTANCE + WORKABILITY

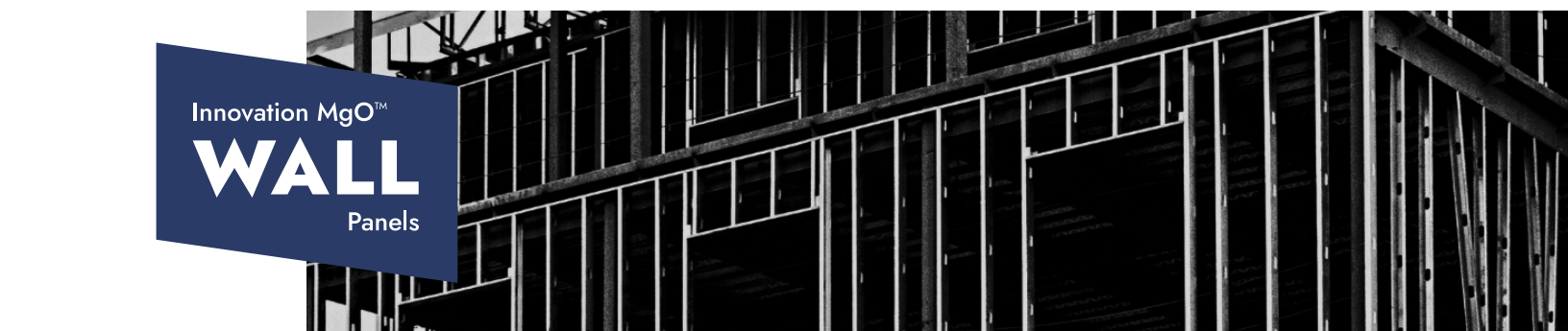
Innovation MgO panels are revolutionizing the construction industry with their unmatched versatility and performance. These high-density magnesium oxide (MgO) cement panels offer superior fire resistance, strength, and durability, simplifying installation across various building types. **Innovation MgO** panels are a reliable alternative to traditional materials like gypsum, OSB, FRT plywood, and Portland cement panels for both interior and exterior applications.



INNOVATION MgO PANELS

Panel Size	Thickness SKU	Name	Edge Profile	Weight (lbs/sf)	Fire Rating	ICC-ES Documents
Standard* 4' x 8' 1220mm x 2440mm	1/4" (6mm) 1W14	Flex	Flat + Square	±40 lbs (1.3)	1-hr	ESR-PENDING
	1/2" (12mm) 1W12	Wall	Flat + Square	±90 lbs (2.8)	1 + 2-hr	ASTM E84: ESL-1596 ASTM E119: ESL-PENDING ASTM E186: ESR-PENDING
	1/2" (12mm) 1S12	Subfloor	Flat + Square	±90 lbs (2.8)	1 + 2-hr	ESR-PENDING
	3/4" (19mm) 1S34	Subfloor	Tongue + Groove	±135 lbs (4.2)	1 + 2-hr	ESR-PENDING

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



Key Technical Properties

Weight (lbs/sf)	±90 lbs (2.8)
Material Composition	Magnesium Oxychloride Cement (MOC)
Construction Type	All Building Types (I, II, III, IV, V)
Density	≥ 1.15 g/cm ³
Code Evaluations	ASTM E84: ESL -1596 ASTM E119: ESL-1610 Pending ASTM E386: ESR-5418 Pending
Unprotected Exposure	90 days
Fire Resistance	Nonflammable Class A1 Fire-Rated
Flame + Smoke Development Index	Class A (Flame Spread Index 0-25; Smoke-Developed Index of 0-450)
Fire Rated Assemblies	Yes - See Assemblies Guide (Pending)
Water Vapor Permeability	11.5 perms
Max Support Spacing (in)	12 in. / 16 in. / 24 in. OC



ALL BUILDING TYPES, MANY APPLICATIONS

Innovation MgO Wall, Subfloor, and Flex 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, are currently code approved as a noncombustible product. Listings and reports are available on our website with detailed performance and approvals information.



- + Interior Walls
- + Exterior Walls
- + Ceilings
- + Subflooring
- + SIP + SIS Panels
- + Elevator Shafts
- + Stairwells + Hallways
- + Fire Rated Common Walls

The Innovation MgO Advantage

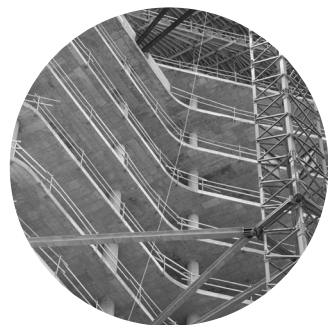
When it comes to building materials, performance matters. Here's how **Innovation MgO** outperforms alternative products:

- + **Superior Structural Strength:** **Innovation MgO** panels' high-density composition provide exceptional structural strength, enabling innovative designs and secure connections for many types of cladding.
- + **Unmatched Fire & Water Protection:** **Innovation MgO** panels deliver industry-leading performance in both fire and water resistance, making our panels the ideal choice for code compliance and demanding environments.
- + **Dimensional Stability:** **Innovation MgO** panels will not delaminate, warp, or swell in the presence of all forms of moisture, ensuring a reliable installation that delivers lasting performance.

Nonflammable 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*



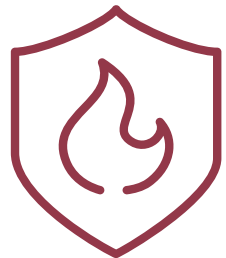
Additional Use

*SIP & SIS Panel Systems
Residential + Commercial*



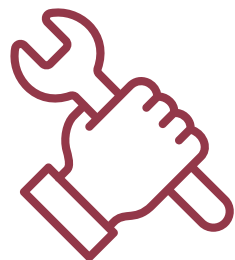
+ **Innovation MgO is Approved for Use in Load Bearing Exterior Walls per IBC 2021**

TOP FIVE BENEFITS



Fire Resistance

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



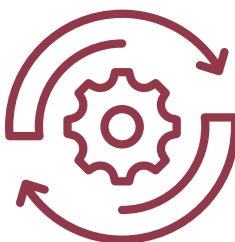
Durability

- + 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



Workability

- + 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



Strength

- + Maintains exceptional structural integrity after extended exposure to wetting/drying and cold/hot cycles, lasting up to 90 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, 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-emission, and contains no harmful materials, ideal for health-sensitive environments

+ Naturally Inhibits Termites and 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

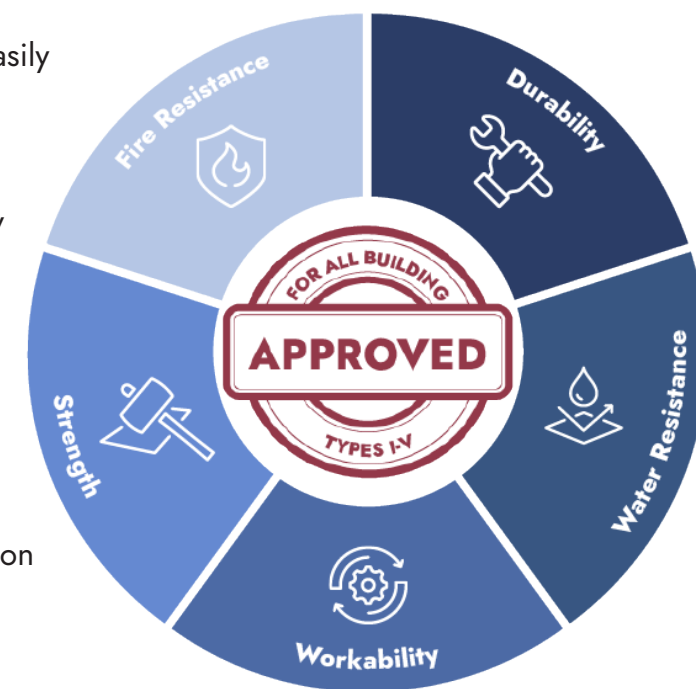
- + Contains no VOCs, nothing to off-gas

+ 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



TECHNICAL PROPERTIES

Innovation MgO 1/2" Wall Panel

Test Name	Test Method	Results	More Information / Minimum Acceptance Criteria
Physical Properties			
Code Acceptance	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 PENDING
Available Sizes	-	48 in. (1220mm) x 96 in. (2440mm) x 1/2 in. (12mm)	-
Density	-	≥ 1.15 g/cm ³	-
Thickness Deviation	ASTM C1185	< ± 1/16 in. (1.59mm)	-
Length, Width, and Diagonal Deviation	ASTM C1185	< ± 1/8 in. (3.18mm)	-
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	-
Fire-Rated Wall Assemblies	ASTM E119	1 & 2-Hour - See Assemblies Guide	ESL-1610 PENDING
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 Direction / 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
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

A photograph of a building facade with a sign that reads "US MgO". The sign is white with black text. The background is slightly blurred.

US MgO

About Us

US MgO Company is a leading supplier and manufacturer of the highest quality Magnesium Oxide (MgO) 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.

CONTACT US AT:

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