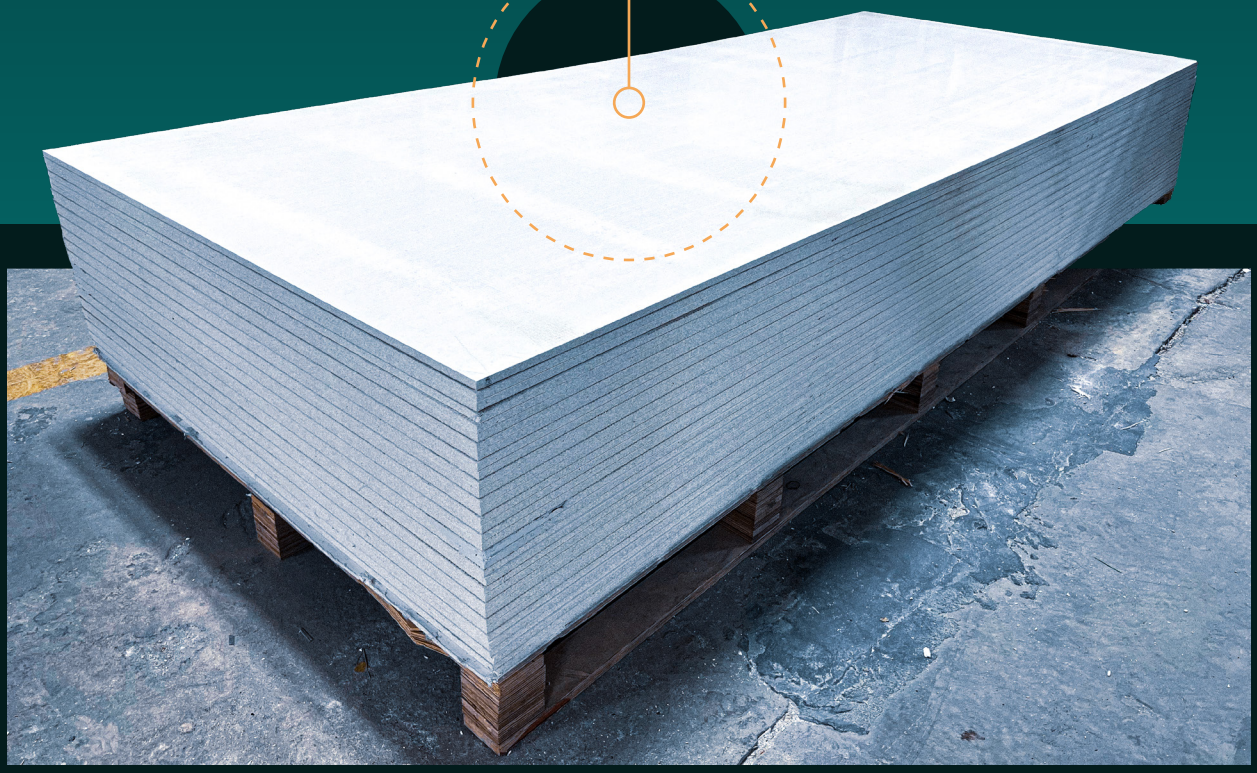
Sheathing Panels for All
Building and Construction Types

SUPERIORMgO



SUPERIOR MgO panels are rapidly transforming the construction industry by offering a superior alternative to traditional building materials. These panels are prized for their non-combustibility, tensile strength, and moisture resistance, making them ideal for a wide range of applications from interior walls and sheathing to exterior cladding. Their lightweight nature simplifies installation, reduces construction time, and lowers labor costs. SUPERIOR MgO panels are environmentally friendly due to their sustainable sourcing, aligning with the growing demand for green building solutions. As building codes become more stringent and the industry is seeking sustainable and efficient materials, Oaksource has developed a solution: ICC-certified MgO panels, which are poised to become a standard in modern construction.

SUPERIOR MgO Panels

Superior MgO Wall Panels have received approval from the **International Coding Council (ICC)** for utilization across all types of buildings and for a broad spectrum of both interior and exterior applications. These MgO panel products have undergone independent testing for fire resistance, structural integrity, and various other performance metrics.

Residential/Commercial Grade Sheathing & Subfloor Panels
(48” x 96”) 1220mm x 2440mm

Thickness	Name	Edge Profile	Weight *(lbs/sf)*	Fire Rating
¼” (6mm)	Wall Cover/ Tile Backer Board	Flat + Square	+50 lbs (1.5)	—
½” (12mm)	Interior/Exterior Wall Sheathing	Flat + Square	+92 lbs (2.8)	1-2 Hour
¾” (18mm)	Roof Sheathing	Flat + Square	+158 lbs (4.9)	1-2 Hour
¾” (19mm)	Subfloor Sheathing	Tongue + Groove	+167 lbs (5.2)	1-2 Hour

Residential/ Commercial Grade Sheathing & Subfloor Panels
(48” x 120”) 1220mm x 3048mm

Thickness	Name	Edge Profile	Weight *(lbs/sf)*	Fire Rating
¼” (6mm)	Wall Cover/ Tile Backer Board	Flat + Square	+60 lbs (1.8)	—
½” (12mm)	Interior/Exterior Wall Sheathing	Flat + Square	+118 lbs (3.7)	1-2 Hour
¾” (18mm)	Roof Sheathing	Flat + Square	+198 lbs (6.1)	1-2 Hour
¾” (19mm)	Subfloor Sheathing	Tongue + Groove	+209 lbs (6.1)	1-2 Hour

Application Allowances

Noncombustible, Green Building Standard Approved with Independent 1 & 2-Hour Fire Rating. Approved for use in all building types I, II, III, VI & V per IBC 2021

All Current Approved Use Cases

- Load bearing exterior walls in metal and wood framing
- Load bearing exterior walls with a one and two hour ASTM 119 fire resistant rating
- Interior frame walls
- Load bearing exterior impact rated in accordance with TAS 201 and 203 (HVHZ)
- Exterior wall cladding on structural steel frame buildings
- Walls clad with stone, tile, wallpaper, or paint
- Fire rated stair shafts
- Ceilings interior and exterior
- Noncombustible structural sub floor decking
- Noncombustible roof deck sheathing
- Structural diaphragm wall and floors
- Nationwide use including California, Florida, New York and Europe
- Use in seismic design

Fire Benefits

- **ZERO FLAME SPREAD:** MgO panels exhibit virtually no flame spread, preventing fire from propagating across surfaces.
- **NO SMOKE DEVELOPMENT:** They produce minimal smoke when exposed to fire, improving visibility and reducing the risk of smoke inhalation.
- **HIGH HEAT RESISTANCE:** MgO panels maintain their structural integrity at high temperatures, preventing collapse and containing the fire.

→ MGO PANELS:	→ TRADITIONAL MATERIALS:
Completely noncombustible	Often contain combustible elements
Zero flame spread and minimal smoke	Can contribute to flame spread & smoke development May
Maintain structural integrity at high temps	lose structural integrity quickly in a fire

- **LOWER UTLITIES COSTS**: heating and cooling is more energy efficient and economical.
- **REDUCED INSURANCE COST:** Buildings constructed with MgO panels may qualify for lower insurance premiums due to the reduced fire risk.
- **ENHANCED SAFETY FOR OCCUPANTS:** The noncombustible nature of MgO panels provides a safer environment for building occupants.
- **DURABILITY & LONGEVITY:** MgO panels are resistant to moisture, mold, and pests, ensuring long-term performance and reduced maintenance costs.
- **ENVIRONMENTALLY FRIENDLY:** MgO boards are carbon neutral and recylable, while wood and concrete products contribute to deforestation, energy consumption and high carbon emmissions.

Moisture Benefits

Moisture can severely compromise the structural integrity of buildings. MgO panels offer **superior resistance to water damage**, preventing swelling, warping, and disintegration that can occur with traditional materials. This resistance translates to a longer lifespan for buildings and reduced maintenance costs over time.

- **MOLD PREVENTION**
- **IMPROVED AIR QUALITY**
- **ENHANCED DURABILITY**
- **HUMID ENVIRONMENT SUITABILITY**

Benefits in Installation

Lighter Weight

MGO panels are significantly lighter than cement boards and comparable in weight to drywall. This reduces strain during handling and installation.

- **Easier to maneuver**
- **Reduced labor costs**
- **Lower transportation expenses**

Ease of Cutting

MgO panels can be easily cut with standard woodworking tools (saws, routers, drills). They require less specialized equipment compared to fiber cement.

- **Simple cutting process**
- **Faster installation times**
- **Fewer specialized tools needed**

Less Dust Production

Cutting MgO panels produces significantly less dust than cement boards or drywall. This creates a cleaner and safer working environment.

- **Improved air quality**
- **Reduced cleanup time**
- **Healthier job site**

A Better Finish

MgO panels provide an excellent substrate for a wide range of finishes. They have good adhesion properties, ensuring a durable and aesthetically pleasing final product.

- **Versatile finishing options**
- **Enhanced adhesion**
- **Long-lasting results**

½” Wall Panels

Physical Properties			
Material Composition	Magnesium oxide plus food-grade oxysulfate	**Thickness**	Nominal 1/2” (12mm)
Weight *(lbs/sf)*	⁺⁄₋ 90lbs (2.8)	**Thickness Deviation** ASTM C1185	Less than 0.047”
Available Sizes	Nominal 48” (1220mm) x 96” (2440mm) x 1/2” (~12mm)	**Length/Width Deviation** ASTM C1185	⁺⁄₋ 0.5% from nominal with maximum ⁺⁄₋ 1/4” variation
TEST NAME	**TEST METHOD**	**RESULTS**	**MORE INFO** Minimum Acceptance Criteria
Code Acceptance			
Building Types	2015, 2018, & 2021 IBC and IRC; 2023 FBC; 2019 CBC and CRC; 2023 LABC and LARC	All Building Tpes (I, II, III, IV, V)	**ESR-4642**
Code Evaluations & Additional Listings	ASTM E84: Surface burning characteristics of building materials ASTM E119: Fire tests of building construction & materials AC 386: Acceptance criteria for Fiber-reinforced MgO-based sheets		**ESL-1558** **ESR-4642**
Fire & Thermal Resistance Properties			
Flame & Smoke Development	ASTM E84	PASS	**ESR-4642**
Combustibility	ASTM E136	PASS, Noncombustible	**ESR-4642**
Fire-rated Wall Assemblies	ASTM E119	1 & 2-Hour	**ESL-1558** **ESR-4642**
Structural Properties			
Allowable Stud Spacing	16” OC		
Compression Indentation	ASTM D2394	0.001”	
Flexural Strength	ASTM C1185	Dry: 3,096 MD / 2,611 XD Wet: 2,501 MD / 2,137 XD	Exceeds the minimum flexural strength of 580psi (4,000kPa)
Humidified Deflection	ASTM C473	0”	Average deflection at high humidity = 0”
Falling Ball Impact	ASTM D1037	No damage to top or bottom from a 12” drop	
Concentrated Loading	ASTM D2394	Residual indention: 0”	

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”	16” OC	0.113” x 2.5” long ring shank nails	8”	53 psf	22 psf

½” Wall Panels (Continued)

Fastener & Adhesion Properties			
Dry-set Portland Cement Shear Bond Strength	ANSI A118.1 / A118.4-1999	193 psi	Minimum shear bond strength at 7-day curing: 50 psi
Latex Cement Shear Bond Strength	ANSI A118.1 / A118.4-1999	137 psi	Minimum shear bond strength at 7-day curing: 50 psi
Nail Head Pull Through	ASTM D1037	96 lbf	Electro-galvanized roofing nails 1-1/5”
Moisture Properties			
Moisture Absorption	ASTM C1185	40%	48 hour submersion
Moisture Movement Test	ASTM C1185	0.11% Machine Direction 0.09% Cross Direction	Increase of chamber from 30% relative humidity to 90% measured in both machine and cross direction

About Us

Oaksource Materials International is a trusted global supplier of high-quality magnesium oxide (MgO) sheathing panels. We proudly serve the residential, commercial, and industrial construction markets across North America.

Changing the Future of Construction

Oaksource Materials International is committed to working with architects and builders to usher in the education process about Superior MgO and its revolutionary benefits. In order for MgO to become universally accepted, end users need to be confident, knowledgeable and innovative.

OakSource Mission

We are dedicated to advancing the use of MgO products. Our exceptional range of ICC certifications and high- performance MgO panels sets a new benchmark in the industry, offering non-combustibility, remarkable durability, and supreme functionality.

Enhancing & Elevating Codes & Standards

We are committed to enhancing the MgO product category in North America and beyond by advancing essential codes, standards, and manufacturer requirements. This dedication builds trust with our customers and opens up new opportunities for innovative MgO solutions.

Proven Technical Performance

In today’s demanding building materials market, reliable performance is non-negotiable. Our customers deserve the best, and we meet that need by maintaining the highest quality control standards for our products. As active contributors to industry standards, we push ourselves and others to go beyond basic requirements, ensuring that our products deliver exceptional performance.

Our offerings come with proven, third-party (ICC) tested technical performance and real-world benefits. We proudly back our products with a 10-Year Limited Product Warranty, giving our customers confidence in their investment.