

STRENGTH + DURABILITY + VERSATILITY + FIRE RESISTANCE

Innovation MgO

WALL

Panels

INSTALLATION MANUAL

Innovation MgO Wall Panels

Nominal 48" x 96" x 1/2" (~12mm)

**WALL AND SUBFLOOR SHEATHING PANELS FOR
COMMERCIAL AND MULTIFAMILY BUILDINGS**

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Overview

This Installation Manual is intended to provide general product and proper installation instructions to designers, installers, and end users of Innovation MgO Wall Panels. These instructions should be read in their entirety by all parties involved in the design and installation of Innovation MgO Wall Panels prior to installation.

This Installation Manual is a general document and does not include information on every installation scenario. Proper installation as defined in this Installation Manual is subject to the most restrictive requirements specified by US MgO Company.

Readers of this Installation Manual, installers of Innovation MgO Wall Panels, and end users of Innovation MgO Wall Panels are fully and solely responsible for meeting all safety and code compliance requirements. Contact US MgO Company for additional information.



1. Product Overview

Innovation MgO Wall Panels are durable, fire-rated, structural wall sheathing panels comprised primarily of magnesium oxide (MgO) cement. Sheets are provided in 48" wide x 96" long x 1/2" (nominal ~12mm) thick panels with a straight/square edge profile.

Panels are pending approval for use in all building types I, II, III, IV, and V in various exterior and interior applications.

In exterior wall applications, Innovation MgO panels are ideal replacements for fire-retardant-treated wood (FRTW) sheets, Portland cement, and gypsum-based panels.

In interior applications, Innovation MgO panels offer advantages to wood and gypsum-based materials in elevator shafts, stairwells, demising/common walls, and high traffic areas.

2. Uses and Limitations

Always consult applicable building code(s), engineer or architect of record, or other authority having jurisdiction.

A. BUILDING TYPES

Panels are pending approval for use in:

- All building types I, II, III, IV, and V per [ICC-ES ESR-5418](#) (Pending)

Panels are not approved for use in:

- Exterior roof systems
- Below grade applications

B. WALL TYPES

Panels are approved for use in:

- Exterior walls (including open corridors and breezeways) that will not be exposed to weather after construction and that are coated with an approved water-resistive barrier (WRB) and cladding material.
- Exterior open-jointed wall systems when covered by an approved WRB.
- Interior ceilings and walls.
- Fire-rated assemblies in accordance with:
 - ASTM E84 [ICC-ES ESL-1596](#)
 - ASTM E119 [ICC-ES ESL-1610](#)
 - ASTM AC308 [ICC-ES ESR-5418](#) (Pending)

Panels are not approved for use in:

- Exterior walls that will be directly exposed to weather post-construction (e.g. without cladding material) and/or that are not coated with an approved WRB.

Panels can be exposed to weather conditions during construction for up to 180 days but are not to be used as a WRB.

- See **Installation** section for more information.
- See **Water-Resistive Barriers** section for more information.

3. Storage, Handling, & Cutting

A. STORAGE

- Interior storage in a covered and dry environment in original manufacturer's packing is preferred.
- Store panels on original or similar pallets off the ground. Ensure pallets are fully supported underneath to avoid sagging.
- If storing outside or if packaging is damaged, cover panels with a waterproof tarp or similar material.
- Panels and pallets shall not have direct contact with wet surfaces or standing water.
- Panels should be stored horizontally, not vertically, to avoid damage to edges.
- Do not stack panels higher than 6 units/pallets. Stacked units shall be level and aligned vertically.

B. PRECAUTIONS + SAFE HANDLING

- Consult the Safety Data Sheet (SDS) for information on safety, first aid instructions, and potential hazards to avoid.
- Wear appropriate Personal Protective Equipment (PPE) when handling panels:
 - Hand gloves
 - Long sleeves
 - Dust mask and/or respirator
 - Safety glasses or goggles
- Reduce dust by ensuring adequate ventilation, collecting dust, and maintaining a clean jobsite.
- Wash hands and/or arms after handling

to avoid skin irritation. Follow all jobsite hygiene practices and policies.

- Ensure that lifting equipment is rated for handling loads. Forks must extend completely under the pallet when lifting.
- When lifting by hand, two persons are recommended. Carry vertically or horizontally with hands on the long sides. Avoid carrying horizontally with hands on the short sides. Always follow proper lifting techniques.

C. CUTTING

- Panels may be cut using a variety of standard tools including fine-tooth handsaw, drywall saw, circular saw, jig saw, table saw, and articulating saw. Fiber-cement blades are recommended for power saws and can provide cleaner edges and reduced dust.
- Cut-outs for electrical and plumbing penetrations and other holes or notches may be performed using a jigsaw, hole saw, rotary tool, or similar. Carbide tip blades are recommended but not required in these cases.
- Panels may be scored and snapped using a scoring tool.
- Use compressed air or similar tool to collect and remove dust residue when cutting Innovation MgO Wall panels.

4. Physical Properties

Provided below are key physical properties related to the installation of Innovation MgO Wall Panels. Review the Data Sheet for additional technical information.

A. PRODUCT PROPERTIES

Dimensions	Nominal 48" x 96" x 1/2" (~12mm)
Approximate Weight	± 90 lbs (~2.8 psf)
Length, Width, and Diagonal Deviation	< ± 1/8 in. (~3.175mm)
Thickness and Tolerances	< ± 1/16 in. (~1.5875mm)
Density	≥ 1.15 g/cm ³
Edge Profile	Straight (Square)
Unprotected Exposure Limits	180 days

B. FIRE RESISTANCE PROPERTIES

Innovation MgO Wall Panels have been evaluated in specific fire-rated designs in accordance with ASTM E84 and ASTM E119. Refer to [ICC-ES ESL-1596](#) and [ICC-ES ESL-1610](#) for additional information. Follow all local building code requirements for fire-rated construction.

Surface Burning Characteristics per ASTM E84 / ASTM E2768

Flame Spread / Smoke Developed	Class A (Flame Spread Index 0 - 25; Smoke-Developed Index of 0 - 450)
Fire Resistance (ASTM E119)	Fire-Resistant

C. WATER VAPOR PERMEABILITY PROPERTIES

ASTM E96	≥ 11.5 perms
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D. STRUCTURAL PROPERTIES

Allowable Stud Spacing

12 in. / 16 in. / 24 in. OC

5. Installation

Wall systems designed with Innovation MgO Wall Panels shall be consistent with the applications as described in this section. When used in fire-rated construction, follow all details and requirements as set forth in the applicable fire-rated design.

A. VERIFY FRAMING

- Install panels with the smooth side facing out and the rough side against framing.
- Framing may be wood, light-gauge, or heavy-gauge metal and shall not be less than 1-1/2 in. wide. Framing members shall be plumb and in-plane.
- Back all panel edges with framing or blocking.
- *Exterior Only:*
 - Panels used as an element to resist lateral loading shall be installed in accordance with the manufacturer specifications and/or applicable evaluation service report.
 - Install connectors such as metal straps and ties that are used to resist uplift, shear, and other loads directly to framing members prior to installation of panels.
 - When designing to resist uplift forces, consult applicable building codes and/or applicable evaluation service report.

B. POSITION PANELS

- Panels may be installed to vertically-oriented stud either vertically with the long 96" side parallel to the stud or horizontally with the short 48" side perpendicular to

the stud.

- Butt square edges of panels tightly to one another on all sides.
- *Exterior Only:*
 - Panels shall not be installed less than 6-in. from exposed earth without a code-approved method of termite protection.

C. ATTACH PANELS WITH APPROVED FASTENERS

Fastener Types

- *For exterior and/or interior use:* Screws and/or nails that are code-recognized and manufacturer approved for withdrawal resistance, pull-through strength, and resistance to corrosion via inherent material property, coating for corrosion resistance (such as hot-dipped galvanized), or permanent separation by a non-metallic material.
- *Approved coatings include:*
 - Tri-coated
 - Zinc coated
 - Epoxy coated

Fastening Methods

- Fasteners must be spaced a minimum of 3/8-in. from all edges and no closer than 2-in. from a corner.

5. Installation (continued)

- Install fasteners straight and perpendicular to panels and framing.
- Fasteners shall be flush or slightly driven below the panel surface.
- Nails must be minimum 0.113 x 2-in. (50.8mm) ring shank nails with a maximum o.c. spacing of 6-in. on edges and 12-in. in the field to be used when attaching 1/2-in. (~12mm) and 5/8-in. (~16mm) panels for non-shear wall applications. (Such as Hot-dipped galvanized nails)
- The WRB shall be attached in such a manner as to be continuous behind the exterior wall veneer.

Innovation MgO Wall Panels are not a WRB. A code compliant WRB must always be applied over panels prior to the installation of finish exterior wall covering. All WRBs and accompanying flashing must be installed in accordance with the manufacturer's written instructions.

Fastening Pattern

- Panels not used as part of a shear wall or braced wall can be installed on framing spaced a maximum of 24-in. o.c. with fasteners spaced a maximum of 6-in. o.c. around the perimeter of the panel, and 12-in. o.c. at the intermediate stud locations in the field of the panel.

D. SEAL SEAMS & PENETRATIONS

- Seal interior seams and penetrations with manufacturer approved materials.
- Exterior panel joints do not require sealing treatment unless required by fluid-applied WRB system or as part of an enclosure system such as EIFS.

E. APPLY WATER-RESISTIVE BARRIER (WRB) (EXTERIOR ONLY)

- Exterior installation requires protection by a code compliant and manufacturer approved WRB.

- **Mechanically Fastened Sheet Membranes:** Membranes of this type must be installed using corrosion-resistant fasteners with plastic caps.

- **Self-Adhered Sheet and Fluid-Applied Membranes:** Membranes of this type require a fully dry and clean panel surface for proper adhesion. Prior to membrane installation, ensure that panel surface is free of water, moisture, dirt, dust, and other debris.

F. REPAIR AS NEEDED


- Use a WRB manufacturer-approved compound or sealant to patch small damages and holes in the WRB.
- Larger damages and holes through the panel must be replaced with a new piece of panel that is blocked with roughly twice the material area at all seams.

5. Installation (continued)


G. ATTACH WALL COVERING


- *Interior:*
 - Apply paint or other form of wall covering.
- *Exterior Only:*
 - Attach cladding according to manufacturer's guidelines.
 - Most conventional exterior sidings, claddings and wall coverings, including vinyl, composite, metal, stone, brick, and wood may be applied over Innovation MgO Wall Panels.
 - Always follow cladding manufacturer and applicable building code requirements for the installation of finish cladding materials.

6. Contact Information

 1-855-MGO-4YOU

 Info@USMgO.co

 www.USMgO.co

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Building 16
Leland, NC 28451

For Warranty Information or Service call 1-855-MGO-4YOU or write US MgO Company c/o Warranty 9600 Ploof Road SE, Building 16, Leland, NC 28451. Claims must be made to US MgO Company within thirty (30) days of becoming aware of any such claim.

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