



HOME of MAGNUM BOARD®

“The New Generation **GREEN** Building Material”

“**Install It for Health-Install It for Life**”

Providing a Full Line of MgO Building Materials

Technical Guide

Issue No.: 101621.1439-4 (Updated 080124DPA)

General Requirements:

This technical guide is intended to provide general information to the designer, contractor, and end user. The following guidelines will help you properly install the full line of Magnum® Fiberglass Reinforced MgO Building Materials (hereinafter, MBP BM).

The contractor and / or end user should complete their own code compliance review as well as comply with local safety regulations, applicable building codes, and under the guidance of the designing authority and the authority having jurisdiction.

Storage and Handling:

Store MBP BMs in clean, dry areas, off the ground (indoors, if possible).

Cover panels with plastic sheets, tarps, or equal, leaving covers open and away from the sides of the panels to allow for air circulation.

Consider additional protection during extended adverse weather conditions.

See the MBP BMs product dimension and weights table, 120121.1000, for individual products and pallet sizes.

Ensure forklifts or alternative equipment are capable of lifting and moving the pallet or load safely.

Ensure if lifting pallets from long end the forks are long enough to balance the weight of the lift safely.

Safety:

Always use correct personal protective equipment and tools when handling, cutting, and installing MBP BMs including, but not limited to:

Gloves
Safety Glasses
Dust Masks

Consult the MBP MSDS – (Material Safety Data Sheet) for any safety, health, and first aid instructions.

Follow OSHA guidelines, latest edition, for general site safety and for lifting techniques. Ideally carry panels with two-(2) people and avoid bending or flexing panels.

Fasteners:

MBP BMs are to be installed with approved corrosion resistant stainless-steel fasteners or consult your fastener supplier.

Preferred driver profile is "star".

Any use of non-certified fasteners will void any warranty claims by the contractor or end user.

Approved fasteners when using wood framing:

#8 shank or smaller, flat head, high / low threads, sharp drill point tip with nibs under the screw head for countersinking. Penetration depth should be approximately 1/2" thru base materials. Wings on fasteners are also preferred.

Approved fasteners when using cold formed framing, preferably "gal90".

NOTE, if "gal90 is not used, faces of cold formed steel that will be in contact with BMP BMs must be separated using a minimum of one-(1) mil of paint or tape such as blue painters' tape.

GOOD - Screws:

#8 shank or smaller, flat head with nibs under the screw head for countersinking. Self-drilling points. Penetration depth should be approximately 1/2" thru base materials. Wings on fasteners are also preferred.

BEST – Pneumatic Pins:

#8 shank or smaller, flat head. Penetration depth should be approximately 1/2" thru base materials.

Note: Pneumatic pressure varies. Begin at approximately 120 lbs and test penetration before beginning actual installation.

Approved fasteners when attaching shingles to Magnum® Board Fiber reinforced MgO Roofing Substrate:

Stainless steel pneumatically applied fasteners 1 1/4" long, 12-gauge shank, 3/8" head. Test pneumatic pressure before starting shingle installation to ensure proper penetration. Penetration depth should be approximately 1/2" thru base materials.

Fasteners used to install ancillary products on to MBP BMs are required to be an approved fastener type. This includes exterior finishes, building wraps, strapping and more.

For assistance concerning fastener selections, please contact one of the following:

David Hughes, PE, VP Engineering: dhughes@magnumbp.com

Edward Gilbert, VP Quality Control: egilbert@magnumbp.com

Dan Armstrong, C.P.M., VP Project Services

darmstrong@magnumbp.com

Or your Magnum® Dealer from whom you purchased your material(s).

Adhesives:

Ensure the proper butt joint adhesive is selected for the task. Use ASTM D3498 compliant adhesives.

Adhesives should be stored and installed according to the manufacturer's instructions.

MBP suggests a premium grade, high performance, moisture cured, 1-component, polyurethane based non-sag, non-shrink elastomeric sealant / adhesive specially designed for bonding non-porous or slightly porous materials such as:
Sikabond Construction Adhesive,

LOCTITE PL® PREMIUM construction adhesive, or
Equal.

Framing must be clean and free from dirt, oils, and contamination.

Do not allow adhesive to skin over.

Mechanical fasteners must be used in addition to adhesives.

In the case of installation onto poly or vapor barrier where adhesive will not be used, all fasteners should be specified by the designing authority to ensure proper pull out and holding strength. All specified fasteners must be stainless steel or titanium.

Cutting:

Position cutting station so that wind will blow dust away from user or others in the working area and allow for ample dust dissipation. If possible, set up cutting station outdoors.

BEST: Score and snap using carbide-tipped scoring knife or utility knife- (ability to use this method depends on material thickness).

Or fiber cement shears-electric or pneumatic.

BETTER: Dust reducing circular saw equipped with HEPA vacuum extraction. Regular saw blades can be used; however, a fiber-cement blade may reduce dust; provide cleaner cuts; and provide better blade life. Support both ends of building material as required during the cutting process.

GOOD: Dust reducing circular, or table saw.

Make circular cuts and irregular angle cuts with a jigsaw, or Laminate Trimmer or equivalent tool equipped with a cement board bit or carbide tipped blade.

Framing:

Magnum® Fiberglass Reinforced MgO Building Materials can be installed on the exterior or interior of walls, ceilings, floors, and roofs similar to products like OSB, Portland cement-based products, Plywood, and Exterior or Interior Gypsum based products.

Start with proper framing ensuring walls, joists, and trusses are straight and square to allow for a flat stress-free installation.

Out of square framing may cause damage, warping, or cracking and should be repaired prior to installing MBP BMs.

Ceiling Installation:

MBP recommends you always install the ceiling first.

Use panel lifter or T Brace to support weight.

Use proper board orientation, fasteners, and connections in accordance with specific fire rated assemblies or as required by the designing authority.

In lieu of fire rated assembly, for projects specifying Magnum® Fiberglass Reinforced MgO Building Materials, they can be installed perpendicular to joists, or trusses.

Install Magnum® MgO Sheathing with joints staggered. All edges should be supported by framing.

Install approved fasteners straight and perpendicular. Fasteners should penetrate framing members at least 1.5" -(38mm).

Locate approved fasteners at least 9/16" (14mm) from the ends and edges of sheathing and minimum of 4" (100mm) from corners.

When fastening to light gauge steel and using screws in lieu of pins, use fasteners (screws) with nibs under the fastener heads to allow for proper countersinking. Wings are also recommended. Do not over drive fasteners.

Start at center of each sheet and work towards the perimeter.

Fasten both board edges to their common stud.

Wall Installation:

Use proper board orientation, fasteners, and connections in accordance with specific fire rated assemblies or as required by the designing authority.

In lieu of fire rated assembly, projects specifying Magnum MgO Sheathing can be installed vertically or horizontally.

If installing Horizontally, start at the top and work down.

If installed Vertically, start at one end of the wall and work across.

Install first sheet of Magnum MgO Sheathing flush with the vertical stud to which it is being fastened. Apply a generous amount of the selected Sealant / Adhesive to the exposed edge of the installed sheet. Install the next sheet of Magnum MgO Sheathing butting joints together tightly. A small amount of Sealant / Adhesive should squeeze to the surface along the entire seam. Using a putty knife, remove the excess Sealant /

Adhesive from the butt joint leaving a smooth “seamless” appearing surface between the two-(2) installed sheets.

Install approved fasteners straight and perpendicular. Fasteners should penetrate framing members at the least 1” (25mm).

Locate approved fasteners at least 9/16” (14mm) from the ends and edges of sheathing and a minimum of 4” (100mm) from corners.

When fastening to light gauge steel and using screws in lieu of pins, use Fasteners(screws) with nibs under the fastener heads to allow for countersinking. Wings are also recommended. Do not overdrive fasteners.

Start at the center of the sheathing and work towards the perimeter. All edges should be supported by framing.

In lieu of project specifications install approved fasteners at minimum 6” (152mm) on center along supported panel ends and edges and 12 inches (304mm) on center at intermediate supports.

Magnum® MgO Sheathing shall be properly flashed at openings and preferably located so that no joint will align with an edge of the opening.

Cut Magnum® MgO Sheathing accurately and do not force it into place. To join boards at an inside corner, butt the second board against the first and fasten the edge of the second board to the first stud. To join boards at an outside corner, lap the end of the second board over the end of the first. Boards should be flush with each other to create a perfect 90 angle corner.

Always fasten both board edges to their common stud.

Floor Substrate Installation: Magnum MgO Structurally rated sheathing is available in a ¾” (18mm) thickness and with optional Square, Tongue and Groove or Ship Lap Edges.

Distributed live load values vary depending on joint spacing.

Use proper board orientation, fasteners, and connections in accordance with specific fire rated assemblies or as required by the designing authority.

In lieu of fire rated assembly or project specifications, Magnum MgO Structural Sheathing should be installed perpendicular to joists, or trusses, with joints staggered and all edges should be supported by framing.

Install approved fasteners straight and perpendicular, fasteners should penetrate framing members at least 1” (25mm).

Locate approved fasteners at least 9/16” (14mm) from the ends and edges of sheathing and maximum of 4” (100mm) from corners.

When fastening to light gauge steel, use approved Fasteners with nibs under the heads to allow for countersinking. Do not overdrive fasteners.

Start at the center of each sheet and work towards the perimeter.

In lieu of project specifications install approved fasteners at minimum 6" (152mm) on center along supported panel ends and edges and 12" (304mm) on center at intermediate supports.

Install first sheet of Magnum MgO Sheathing flush with the vertical stud to which it is being fastened. Apply a generous amount of the selected Sealant / Adhesive to the exposed edge of the installed sheet. Install the next sheet of Magnum MgO Sheathing butting joints together tightly. A small amount of Sealant / Adhesive should squeeze to the surface along the entire seam. Using a putty knife, remove the excess Sealant / Adhesive from the butt joint leaving a smooth "seamless" appearing surface between the two-(2) installed sheets.

Use dunnage plywood, or equal, on top of the installed sheathing to protect it during the construction phase.

Roof Substrate Installation: Magnum MgO Structurally rated sheathing is available in a 3/4" (18mm) thickness, and with optional Square, Tongue and Groove or Ship Lap Edges.

Distributed live loads vary depending on joist spacing.

Use proper board orientation, fasteners, and connections in accordance with specific fire rated assemblies or as required by the designing authority.

In lieu of fire rated assembly or project specifications, Magnum MgO Sheathing should be installed perpendicular to joists, or trussed, with joints staggered, and all edges should be supported by framing.

Install approved fasteners straight and perpendicular. Fasteners should penetrate framing members at least 1" (25mm).

Locate approved fasteners at least 9/16" (14mm) from the ends and edges of sheathing and minimum of 4" (100mm) from corners. If fastening to light gauge steel, fasteners should have nibs under the fastener heads to allow for proper countersinking. Do not overdrive fasteners.

Start at center of sheathing and work towards the perimeter.

In lieu of project specifications install approved fasteners at minimum 6" (152mm) on center along supported panel ends and edges and 12" (304mm) at intermediate supports.

Install first sheet of Magnum MgO Sheathing flush with the vertical stud to which it is being fastened. Apply a generous amount of the selected Sealant / Adhesive to the exposed edge of the installed sheet. Install the next sheet of Magnum MgO Sheathing butting joints together tightly. A small amount of Sealant / Adhesive should squeeze to the surface along

the entire seam. Using a putty knife, remove the excess Sealant / Adhesive from the butt joint leaving a smooth “seamless” appearing surface between the two-(2) installed sheets.

Once installed, Magnum MgO Sheathing must be waterproofed with a suitable roofing material or approved waterproofing system per code requirements.

Roofing Finishes Installation Roofing finishes include, but are not limited to, flat tiles, barrel tiles, shingles of all types, rolled roofing and roof coatings.

Refer to fastener section above for correct fasteners.

Prior to starting the project, ensure the surface of Magnum Roofing Substrate is clean and free of all debris.

Install peel and stick membrane, or approved equal, in strict accordance with manufacturer’s instructions and local code requirements.

Before beginning shingle installation, check pneumatic pressure to ensure proper setting allowing for penetrations per manufacturers recommendations and local codes.

Install shingles using pneumatic fasteners.

Always follow manufacturers instructions and local building code requirements.

Water and Air Resistive Barriers

Evolving codes, standards and programs are requiring the use of water and air resistive barriers. In most cases, these barriers are applied over the exterior sheathing. Magnum® Fiberglass Reinforced MgO Sheathing has been widely accepted as a preferred substrate for all recognized types of water and air resistive barriers including but not limited to:

Self-adhered sheet materials

Fluid applied membranes

Spray polyurethane foam (medium density closed cell)

Mechanically attached flexible sheet (Includes #15 asphalt felt and synthetic wraps)

Board stock air barrier – rigid foam core

For a list of air barrier materials, accessories and components, see the Air Barrier Association of America (ABAA) website: www.airbarrier.org.

Where joint protection is required or desired, two methods may be used.

Method 1:

Apply bead of all purpose, single components, moisture-curing, gap filling polyurethane that creates permanent elastic seals and bonds in a wide variety of service environments to joints.

Trowel to desired flush level

Use backer rod for openings larger than 1/8" (3mm)

Sealant should be approved for exterior and interior use by the manufacturer.

Follow manufacturers installation recommendations for use the Magnum MgO Sheathing and design authority specifications.

Method 2

Apply fiba Tape joint tape to joints.

The membrane should self-seal against fasteners and conform to contours for continuous bonded contact. Joint tape to all joints. Overlapping at intersections by the width of the tape.

Use backer rod for openings larger than 1/8" (3mm)

Follow manufacturer's installation recommendations for use with Magnum® Fiberglass Reinforced MgO Sheathing and design authority specifications.

NOTE: Consult with local building code, design professional, owner or cladding manufacturer for water resistive barrier

Protection of Penetrations

All penetrations should be protected to prevent air and water infiltration. Follow building code, door / window manufacturer or design authority's recommendations for flashing around openings, abutments to dissimilar materials and wall terminations.

Recommendations and Limitations for use:

The following recommendations are important to ensure the proper use and benefit of Magnum® MgO Sheathing.

Failure to strictly adhere to each recommendation and limitations may void the limited warranty provided by Magnum® Board Products for such product. For additional warranty details, please go to www.magnumbp.com.

Magnum® Fiberglass Reinforced MgO Building Materials is resistant to normal weather conditions, but it is not intended for extended immersion in water. Cascading roof / floor water should be directed away from the sheathing until appropriate drainage is installed.

Avoid any conditions that will create moisture in the air and condensation on the exterior walls during periods when the exterior temperature is lower than the interior. The use of forced air heaters creates volumes of water vapor which, when not properly vented, can condensate on building materials. The use of these heaters and any resulting damage is not the

responsibility of Magnum® Board Products. Consult heater manufacturer for proper use and ventilation.

The use of non-certified fasteners on any Magnum® Fiberglass Reinforced MgO Building Material is not recommended and will void any warranty claim.

MBP does not warrant and is not responsible or liable for the performance of any cladding, coating, finishes, coverings, or other materials on exterior systems applied over Magnum® Fiberglass Reinforced MgO Building Materials. The suitability and compatibility of any system is the responsibility of the system manufacturer or design authority. Because materials expand and contract at different rates and under different conditions, MBP does not guarantee crack free joints.

Any use of Magnum® Fiberglass Reinforced MgO Building Materials below grade or within 8 inches of exposed earth will require a suitable method of protection approved by the designing authority. **MBP recommends considering Weather Skin Materials – Calgary Alberta – Canada – Phone: 403.764.6849.**

Detailed Installation Guidelines:

MBP has developed a detailed installation guide for every product it manufactures and sells. For specific detailed installation guidelines, visit our website at www.magnumbp.com Or call one of our representatives listed in the "Sales Information and Technical Support section.

Engineering Specifications:

MBP has developed a detailed engineering specification for every building material it manufactures. For example, refer to the Engineering Specification prepared especially for flooring substrate to determine allowable loads and joist spacing. Please visit our website www.magnumbp.com to view these specifications, Or call one of our representatives listed in the "Sales Information and Technical Support section.

Sales Information and Technical Support

Contact MBP today for sales information, order placement, or technical support by phone or email based on the territory you are in:

Canada, New Zealand, Australia, Hawaii, and Alaska

Edward A. Gilbert: 585.820.7625

Email: egilbert@magnumbp.com

Africa and South Florida

Ed English: 305.498.8186

Email: eenglish@magnumbp.com

Europe, North, Central, and South America, The Islands and all other locations.

Daniel P. Armstrong: 813.900.2957

Email: darmstrong@magnumbp.com

Website:

Visit our website at www.magnumbp.com to view and download:

- ✓ Material Safety Data Sheet
- ✓ Certified Test Summary including tests Magnum building materials have been subjected to and the test results
- ✓ Technical Guide (This document)
- ✓ Material Installation Instructions
- ✓ Technical Bulletins
- ✓ Architectural Specifications
- ✓ Engineering Specifications
- ✓ Brief History of Magnum® Board Products, LLC
- ✓ Articles
- ✓ Power Point Presentations
- ✓ Videos
- ✓ Photo Gallery
- ✓ Product Brochure
- ✓ Frequently Asked Questions
- ✓ Contact Information