This technical document must be read, considered and used with the relevant Beal Appraisal Certificate. (Product Technical Statement).

Structural Capacity and NCC 2022 Compliant
18mm Magnum Board Flooring Sheet
Point Load Tested

MAGNUM® BOARD
INSTALLATION GUIDE

Magnum Board is a technologically advanced, high-quality Magnesium Oxide Board, providing superior performance in the flooring underlay category.



SIZE AVAILABLE

Ergonomic size 2700mm x 600mm x 18mm sheet

for ease of installation over 450mm and 600mm joist spacing's.

PROFILE

Square ends, tongue and groove long edges.

FEATURES

Vapour permeable.

Silica Free.

Free of nasty chemicals.

High moisture resistance.

Excellent adhesion.

Installer Friendly.

Mould and insect proof.

Considered CO2 negative.

Fully supported by independent test data.

Suitable for use in Foreverbreathe™ Specification.

Non-combustible with zero flame spread.

043AU v3.1
Date of Issue: 01/10/2025

McCormacks Australia
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Noble Park, North Vic, 3174
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https://www.mccormacksaustralia.com.au/magnumboard
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MAGNUM BOARD™
18MM FLOORING UNDERLAY
TECHNICAL INFORMATION

Contents

Products, Tools and Equipment Required 3

Before You Start 4-5
- Important Information
- Material Safety, Handling, Maintenance & Storage Requirements
- Period of Exposure
- Using Magnum Board in Relation to Other Manufacturers Products
- Installer Responsibility
- Surface Finishes
- Design Considerations

Installation Procedure - Cutting Magnum Board 6
- Cutting Magnum Board Guidelines

Installation Procedure 7
- Guidelines for installing Magnum Board® 18mm Flooring Underlay

Fixing Pattern - 18mm Magnum Board Flooring Underlay 8
- Fixing pattern for 2700 x 600 x 18mm Flooring
- Control Joint Locations

Fixing Orientation - 18mm Magnum Board Flooring Underlay 9
- Fixing the correct face up

Application of Mapei PU35 and PU45 on Timber Joists 10
- Application of Mapei product to timber floor joists
- Application of Mapei product in waterproof areas

Application of Mapei PU35 and PU45 on Steel Joists 11
- Application of Mapei product to steel floor joists
- Application of Mapei product in waterproof areas

Steel Framing Protection and Thermal Break 12

Pre-Installation & Post-Installation Checklist 13

Installation Procedure For Exterior Use Balconies and Tiled Decks 14

External Tiled Deck System 15

Mapei Work Method Statements

Ceramic/Stone System 16-19
- External Installation of Tiles in External Areas

Ceramic/Stone System 20-22
- Internal Installation of Tiles in Internal Areas

Installation of Engineered Timber over Magnum Board 23-24

Puddle Flange Installation Information

Installation Instructions for Puddle Flange in Magnum Board 18mm Substrate 25-26

Material Safety Data Sheet 27-35

WARRANTY INFORMATION

MagnumBoardWarranty.pdf

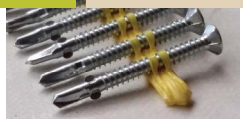
While every effort has been made to ensure a satisfactory outcome with respect to the use of Magnum Board® 18mm Flooring underlay - along with all Magnum Board® products - no dialogue or negotiation will be considered if any method or third-part component has been used apart from those described in this technical manual. Any warranty - written or implied - will be subject to examination, and will apply solely to the quality of the Magnum Board® product being deficient at the point of purchase only, or the subsequent deficient performance of the product once the correct method of installation has been determined. Any deficient performance resulting from the application of a third party product, will become the responsibility of that products manufacturer and / or agents. Magnum Board® and it's associated agents will not be held responsible for any such incident or outcome.

NOTE: Warranty is valid by completion of these Pre-Installation & Post-Installation inspection checklist. Checklist on page 13.

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Products, Tools & Equipment Required

FIGURE 1 STEEL FRAMING



Simpson Strong Tie SSBFHSD2SA Screw for Steel framing, 10-gauge x 50mm #2 Square Drive Wing Tip Stainless Steel 316

FIGURE 2 TIMBER FRAMING



Simpson Strong Tie SSDHSD50TSA Screw for Timber Framing, 12-gauge x 50mm #2 Square Drive Pre-Bore Tip Stainless Steel 316

NOTE: We recommend the Simpson Strong-Tie Stainless Steel 316 screws as they meet all application requirements, including high-corrosion environments such as:

- **In areas within 1km of a coastal area.**
- **All external fixings**
- **Wet areas.**
- **Industrial or chemically aggressive environments.**

NOTE: Please avoid C3 screws in these environments. (Use Class 4 or 316 stainless instead) Outside of these environments quality C3 galvanised screws with multi-layer protective finish can be used.

FIGURE 3



SIFCO FCN90LB-ST
Nail Gun
with No Mar Tip

FIGURE 4



SIFCO FRP50V8SS/8
Coil Collated Nails
50 x 2.8mm Stainless Steel Flat Head
with annular groove shank

FIGURE 5



Ecko WB75
Weatherboard Nail
with No Mar Tip

FIGURE 6



Ecko Round Head Nails
Coil Collated Nails HHSS-50V8R
50 x 2.8 Stainless Steel Flat Head
with annular groove shank

FIGURE 7



18mm Magnum Board®
flooring underlay
2700mm x 600mm x 18mm

FIGURE 8



Makita Simpson Strong-Tie Drive
with Quick Drive attachment
PROSDDM25KA

FIGURE 9



Festool Cutting Equipment
or similar

FIGURE 10



HEPA Extraction System

FIGURE 11



Spirit Level 1.8M Minimum

FIGURE 12



Straight Edge 1.8M Minimum

FIGURE 13



Mapei PU45 and/or
Mapei PU35

FIGURE 14



Diamond Pro PCD Fibre Cement
Circular Saw Blade

FIGURE 15



Multi-Material Diamond Blade
for Cut Off Saw

FIGURE 16



Diamond Pro
Diamond Hole Saw

FIGURE 17



Battery-powered drill gun with
torque control

FIGURE 18



Puddle flange recess kit
Recommended for correct
installation into 18mm Magnum
Board® flooring substrate

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Before You Start



IMPORTANT INFORMATION

NOTE: We recommend the Simpson Strong-Tie Stainless Steel 316 screws (refer to page 3) as they meet all application requirements, including high-corrosion environments such as: In areas within 1km of a coastal area, All external fixings, Wet areas, Industrial or chemically aggressive environments. Please avoid C3 screws in the these environments. (Use Class 4 or 316 stainless instead). Outside of these environments quality C3 galvanised screws with multi-layer protective finish can be used.

- Magnum Board® can be installed to solid timber, LVL lumber or steel joists. Prior to commencing work, ensure floor framing has been designed and installed in accordance with the project specifications including any referenced Australian Standards and the NCC.
- Suitable for installation onto 450mm and 600m joist centres. All framing must be straight and level with all Magnum Board butt ends fully supported by framing.
- Construction of steel framing must be in accordance with local building codes for steel framed buildings.
- A 50mm minimum stud width is required for steel framing with a min thickness (BMT) of 0.75mm (Please see note below with regards to steel framing).
- A 42mm minimum stud width is required for timber framing.
- Timber framing must be kiln dried with a moisture content 18% or less. Framing quality must be straight and level to a standard that supports Magnum Board® to all surfaces in contact with framing. Installation to buckled or bent framing will result in tension within Magnum Board that may lead to movement and establish surface cracking
- During installation, ensure Magnum Board sheets are secured to the framing promptly. Protect the surface from damage and ensure loading does not exceed specified capacity, particularly for point loading. Ensure point loads during construction are located above framing members and that the framing members are safe to support the load. Consult the project structural engineer as required.
- Minimum distance from earth / ground to Magnum Board must be no less than 150mm. Minimum distance above formed paths and driveways is 50mm. The adjacent finished ground must also slope away from the building to prevent water accumulation, typically a minimum slope of 50mm over the first metre.
- **Note:** Magnum Board must not be installed in design solutions that place Magnum Board in direct contact with soil or within designs that place Magnum Board below ground.
- All openings for services, penetrations, intersections, connections, must be flashed and comply with local building codes.
- Where screws are less than our recommended distance from edge of boards (Less than 15mm for butt ends and 25mm for T&G edges) the screw positions must be pre-bored with a 5mm Ø drill and countersink prior to screw-fixing, in order to prevent cracking. Care must be taken to ensure that the hole does not continue into the framing beneath.

NOTE: For steel framing - Ensure a 10mm continuous bead of glue is applied to top of steel joists to prevent corrosion of steel coating. **This continuous 10mm bead of glue also acts as thermal break between Magnum Board and steel-joists in buildings**, steel framing must have this thermal break, as required per the National Association of Steel Framed Housing (NASH standard).

NOTE: Suitable protection preventing contact between copper piping and Magnum Board® Flooring Underlay is required to prevent a risk of long-term corrosion.

Warranty information can be found on page 2.

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Before You Start - Continued

MATERIAL SAFETY, HANDLING, MAINTENANCE AND STORAGE REQUIREMENTS

- It is good construction practice to marshal or stage the materials to be installed as close to the point of installation as possible.
- Always protect all edges of Magnum Board® prior to and during installation.
- Do not stack other materials on top of Magnum Board®.
- During construction, ensure Magnum Board® surfaces are kept clean and flat.
- Magnum Board® must be stored inside, in a well ventilated area, up off concrete floors, kept dry, out of direct sunlight and away from freezing conditions.

PERIOD OF EXPOSURE

Protection from direct exposure to weather must be in place within 60 days of installation.

USING MAGNUM BOARD® IN RELATION TO OTHER MANUFACTURERS PRODUCTS

In case of an apparent conflict between the Magnum Board® instructions and those of a third party, contact https://www.mccormacksaustralia.com.au/

INSTALLER RESPONSIBILITY

It is the responsibility of the installer to inspect their workplace prior to beginning the installation of Magnum Board® 18mm Flooring Underlay to ensure installed work will meet the owner / contractor's requirements. Refer to 18mm Flooring Underlay Site Pre-Installation & Post-Installation Checklist on page 13.

NOTE: Warranty is valid by completion of these Pre-Installation & Post-Installation inspection checklist. Checklist on page 13.

SURFACE FINISHES

The surface of the Magnum Board® must be clean, dust and contaminant free prior to the commencement of any successive treatment or process. Mapei products have been tested for use in application of timber, tiles, carpet and vinyl. For more information see: www.mccormacksaustralia.com.au

DESIGN CONSIDERATIONS

All design and construction must comply with appropriate requirements of the current National Construction Code (NCC) an other applicable regulations and standards.

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Installation Procedure - Cutting Magnum Board



CUTTING MAGNUM BOARD® GUIDELINES

NOTE: We recommend use of qualified installers and use of FESTOOL cutting and extraction systems or similar.

- Even though Magnum Board® is a non-toxic building material, always wear a dusk mask, safety glasses and follow MSDS Guidelines.
- Magnum Board can be cut with a diamond tipped keyhole saw, sabre saw, or power saw equipped with a diamond blade and HEPA vacuum extraction.
- Never use a circular saw blade that is inappropriate for the specific operation being undertaken.
- Measure accurately and mark your cutting locations before cutting.
- Min sheet width when trimmed shall be 200 mm. Trim and install in a manner to maintain tongue and groove edge profiles. Reinstate as required..
- Make circular cuts and irregular angle cuts using a cement board bit, diamond tipped bit keyhole saw or a sabre saw.
- To perform cut outs for services, electrical outlets, wiring, switches, etc., carefully measure and mark the location of the opening on the face of Magnum Board®. Outline the opening in pencil and cut it out with a keyhole saw or circle cutter equipped with diamond tipped tooling. The hole must be accurately located and cut to size.
- Position cutting station so that wind will blow dust away from the user or others in the working area and allow for ample dust dissipation.
- Never dry sweep. Use wet suppression methods or HEPA vacuum extraction.
- When cutting Magnum Board® ensure the supporting structure is level and preventing distortion. Distortion in Magnum Board® will establish inaccuracy in the edge being cut regardless of correct cutting equipment being involved

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Installation Procedure



GUIDELINES FOR INSTALLING MAGNUM BOARD® 18MM FLOORING UNDERLAY

- Magnum Board® must be installed in strict accordance with this technical documents installation instructions.
- Magnum Board® flooring is to be installed using a staggered layout.
- Where waterproofing or expansion allowance is required, ensure a 5mm gap between butt ends, and to be filled with Mapei PU35 or PU45 sealant prior to application of waterproof membrane.
- Apply a continuous 10mm bead of PU35 or PU45 to the top of steel and timber joists. Specified adhesive to be applied as per the manufactures instructions.
- The T&G is machined into the long edges and enables the product to be installed without the need for supporting dwangs along the long edge joints.
- Ensure a bead of Mapei PU35 or PU45 is applied to the top edge of the profiled tongue prior to joining.
- For instruction on cutting 18mm Magnum Board® Refer page 6
- Ensure framing is level before installation. All butt ends must be fully supported by level framing.
- Ensure Magnum Board® 18mm Flooring Underlay is installed with the shiny side facing up. Refer page 9
- Nail or Screw fixing specification as per page 3
- Ensure all fixings are positioned as per the fixing pattern. Refer page 8
- Install fixings working from the central joist position supporting each sheet to outside edges.
- Screw fixing to framing using Quick Drive attachment Available through Simpson Strong-Tie.
- Screw heads are to finish flush or slightly below flush to surface of 18mm Flooring underlay when installed to timber or steel framing. Embedding the screw head below the recommended level may result in edge cracking. We recommend the use of torque or impact controlled, air or electric screw gun as per page 3.

NOTE: For steel framing - Ensure a 10mm continuous bead of glue is applied to top of steel joists to prevent corrosion of steel coating. **This continuous bead of glue also acts as thermal break between Magnum Board and steel-joists in buildings**, steel framing must have this thermal break, as required per the National Association of Steel Framed Housing (NASH standard).

NOTE: 18mm Magnum Board flooring underlay is a professionally endorsed product in wet areas requiring a puddle flange, like any other construction material installation, it must be done correctly. It's recommended that a Puddle Flange Recess Kit is used when installing a puddle flange into 18mm Magnum Board flooring substrate. Please see link: thewaterproofingshop.com.au

NOTE: Suitable protection preventing contact between copper piping and Magnum Board® Flooring Underlay is required to prevent a risk of long-term corrosion.

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Fixing Pattern
18mm Magnum Board Flooring Underlay

FIXING PATTERN FOR 2700 X 600 X 18MM FLOORING

Suitable for installation onto 450mm and 600mm joist centres (450mm Shown)

A tongue and groove is machined into the long edges and enables the product to be installed without the need for supporting dwangs along the long edge joints.

All butt ends do need to be supported and fixed to framing.

Screw Spacing -	300mm max centres along joists.
Edge Distance -	25mm min in from tongue and groove edges.
End Distance -	15mm in from end of panel.
Corner Distance -	50mm in from corner

900mm Staggered layout as indicated.

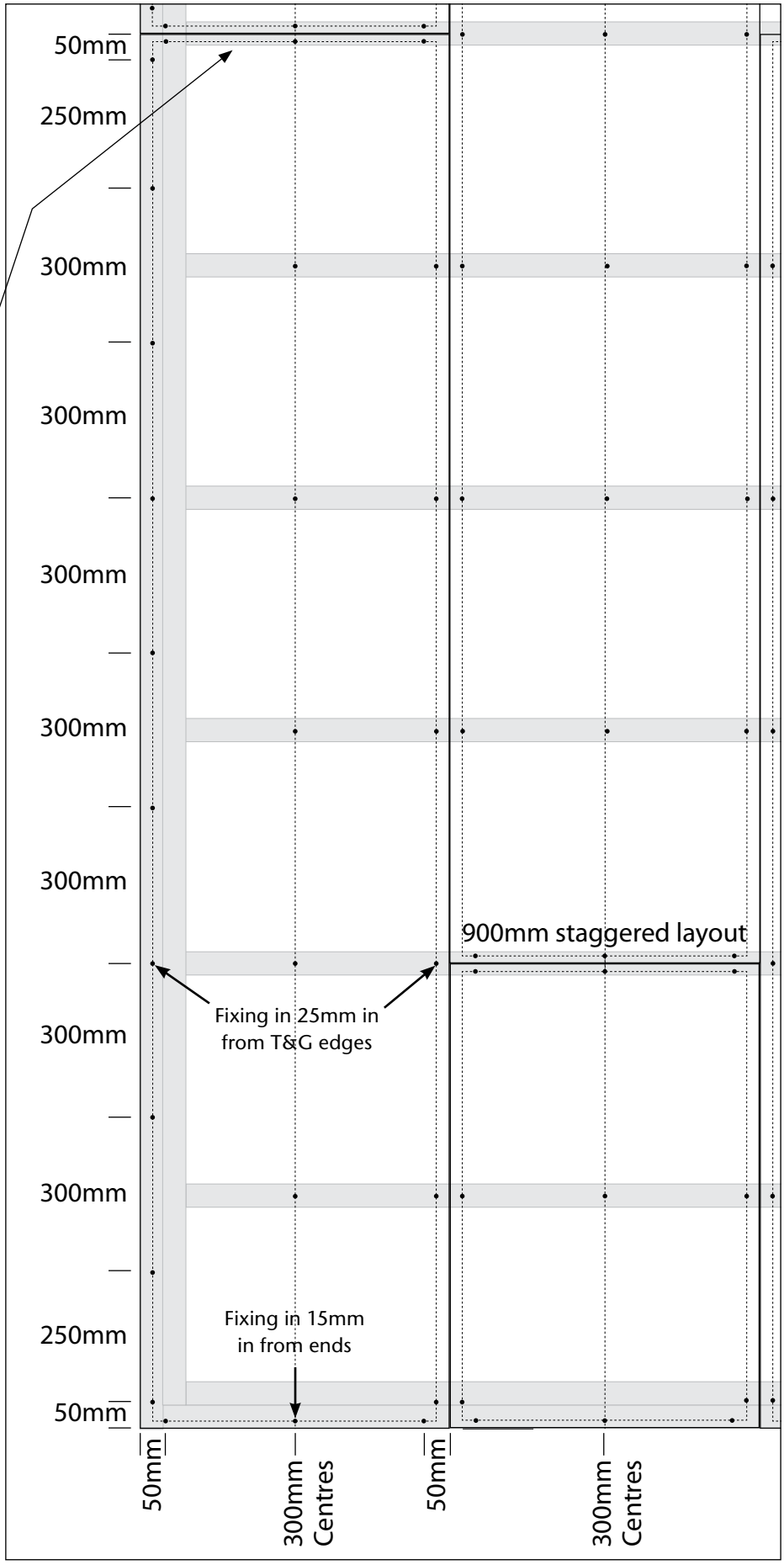
Min. sheet width when trimmed shall be 200mm. Trim and install in a manner to maintain tongue and groove edge profiles. Reinstate as required.

CONTROL JOINT LOCATIONS

Provide control joints (5mm wide) in Magnum Board flooring at the following locations:

- Max. 9,000 mm x 9,000 mm spacing for internal floors.
- Max. 4,800 mm x 4,800 mm spacing in for external floors.
- A change in floor thickness.
- Corresponding to supporting structure steps or control joints.
- Junctions of different floor system types.
- Over structural beams supporting the floor framing members

Control joints perpendicular to the sheet span direction shall have 2 x joists, one under each sheet.



Fixing pattern show for 450mm joist spacing

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Fixing Orientation
18mm Magnum Board Flooring Underlay

FIXING THE CORRECT FACE UP

It's important the Magnum Board 18mm flooring underlay is installed the correct way up as shown.



Magnum Board Front/Top - face up (Smooth side up).



Magnum Board Back - face down (Rough side down).

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Application of Mapei PU35 and PU45 on Timber Joists

APPLICATION OF MAPEI PRODUCT TO TIMBER FLOOR JOISTS

Magnum Board® flooring is installed using a staggered layout.

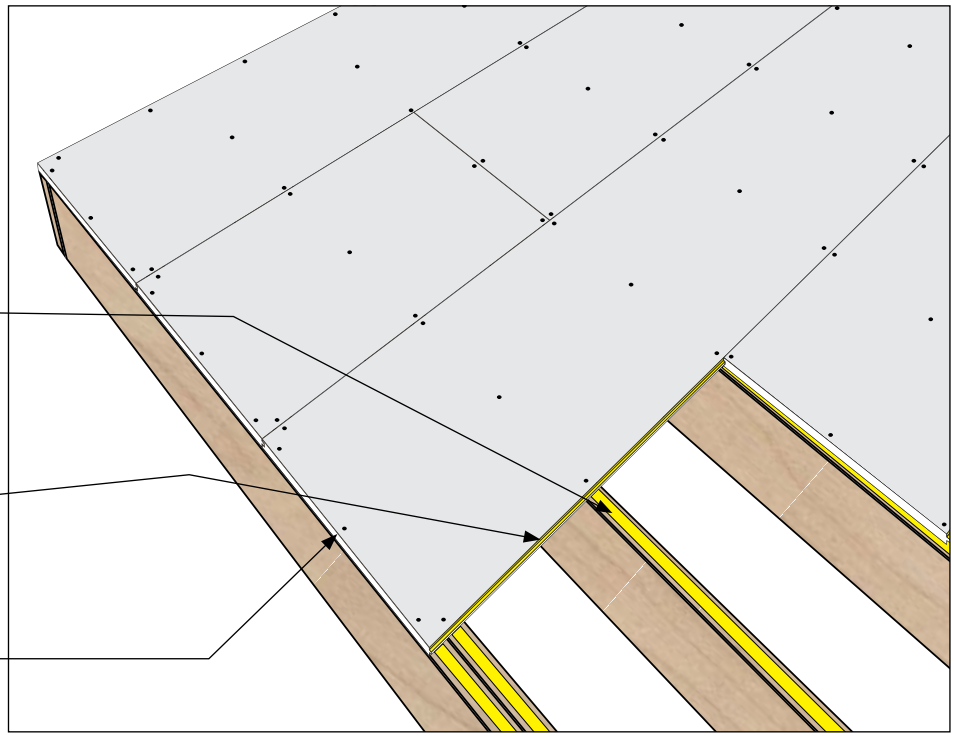
Joists shown @ 450mm c/c's

Ensure a bead of Mapei PU35 or PU45 is applied to the top of the timber joists before the installation of Magnum Board®

Ensure a bead of Mapei PU35 or PU45 is applied to the top edge profile of the T&G joint.

Ensure all fixing locations are as per the fixing pattern. Refer page 8

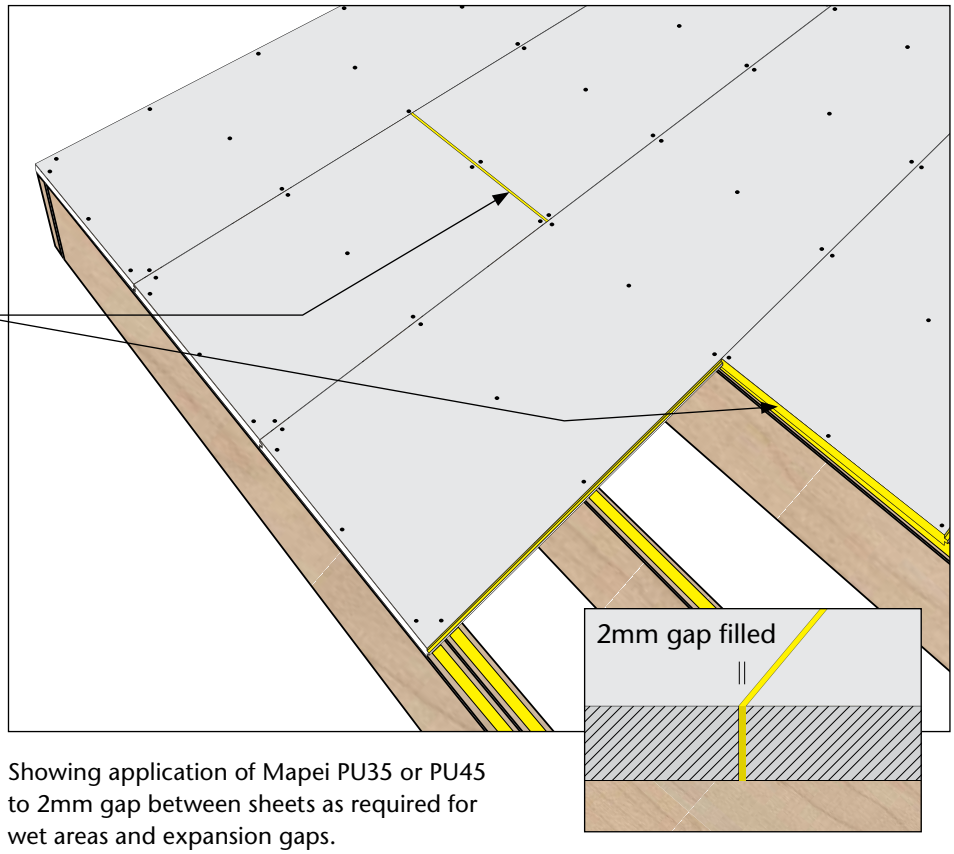
For correct fixing specification. Refer page 3



Staggered layout with application Mapei PU35 or PU45 to top of joists.

APPLICATION OF MAPEI PRODUCT IN WATERPROOF AREAS

Where waterproofing or expansion allowance is required, ensure a 2mm gap between butt end joins, and are filled with Mapei PU35 or PU45 sealant prior to application of waterproof membrane.



Showing application of Mapei PU35 or PU45 to 2mm gap between sheets as required for wet areas and expansion gaps.

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Application of Mapei PU35 and PU45 on Steel Joists

APPLICATION OF MAPEI PRODUCT TO STEEL FLOOR JOISTS

Magnum Board® flooring is installed using a staggered layout.

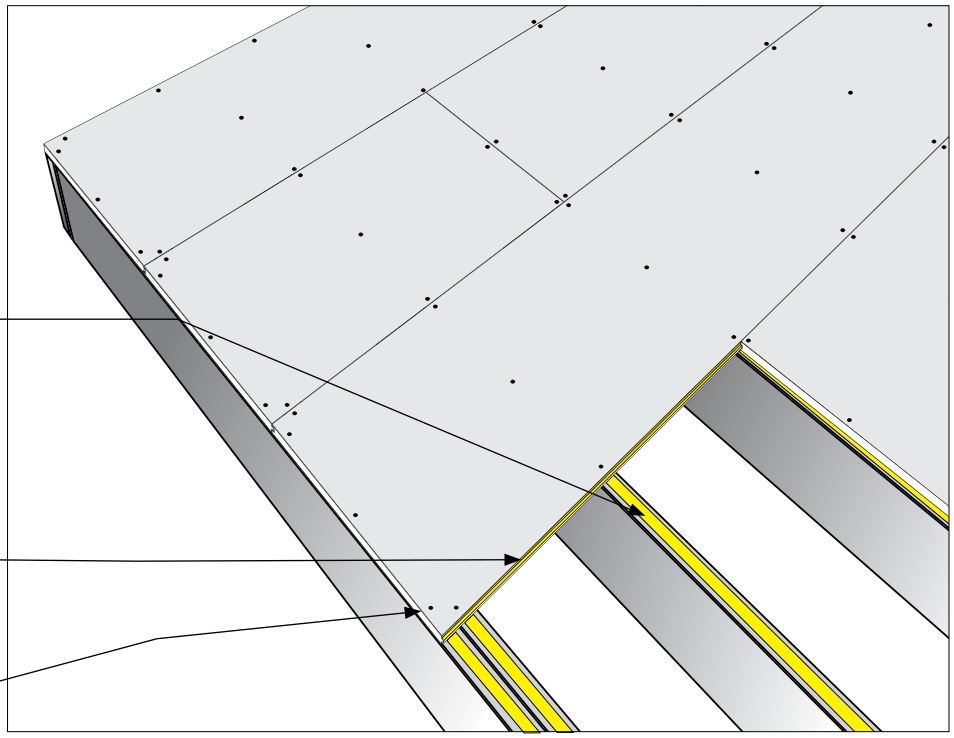
Joists shown @ 450mm c/c's

IMPORTANT: **Ensure a continuous 10mm bead of Mapei PU35 or PU45 is applied to the top of the steel joists before the installation of Magnum Board®**

Ensure a bead of Mapei PU35 or PU45 is applied to the top edge profile of the T&G joint.

Ensure all fixing locations are as per the fixing pattern. Refer page 8

For correct fixing specification. Refer page 3

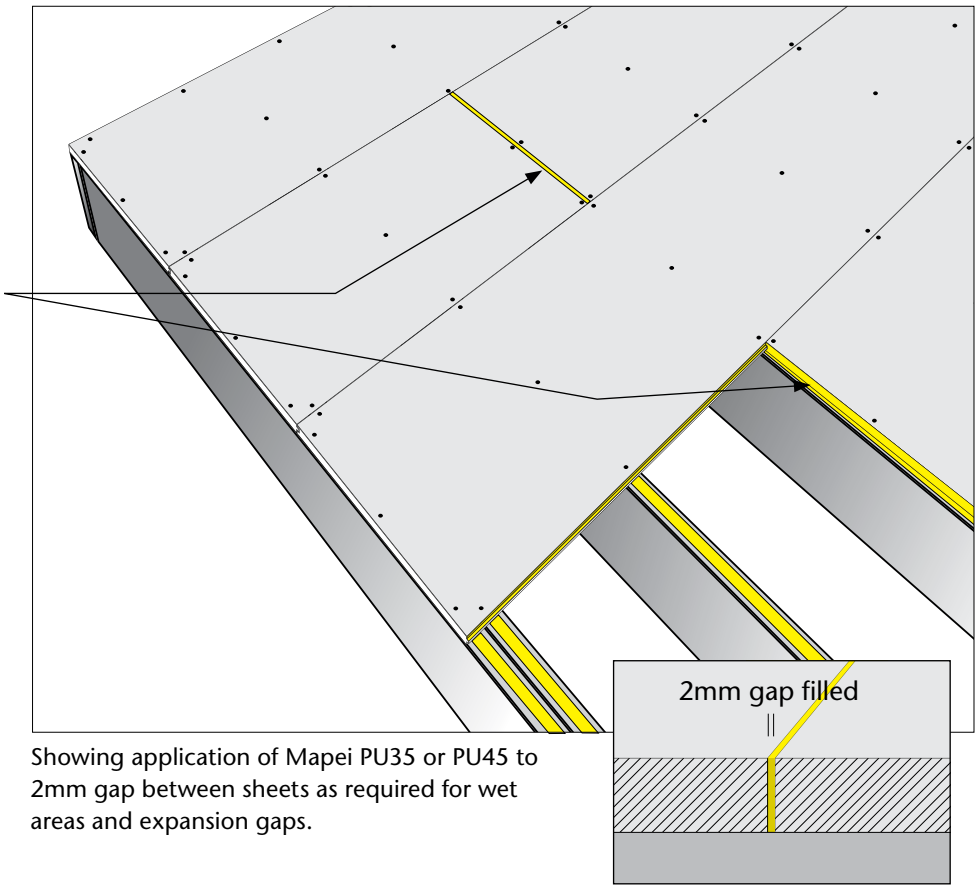


Layer of Mapei PU35 or PU45 applied the top of steel framing to prevent corrosion.

APPLICATION OF MAPEI PRODUCT IN WATERPROOF AREAS

Where waterproofing or expansion allowance is required, ensure a 2mm gap between butt end joins, and are filled with Mapei PU35 or PU45 sealant prior to application of waterproof membrane.

NOTE: Suitable protection preventing contact between copper piping and Magnum Board® Flooring Underlay is required to prevent a risk of long-term corrosion.



Showing application of Mapei PU35 or PU45 to 2mm gap between sheets as required for wet areas and expansion gaps.

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Steel Framing Protection and Thermal Break

Where Magnum Board® Flooring Underlay is installed over steel framing, a continuous 10mm diameter bead of Mapei Mapeflex PU35 or PU45 shall be applied to the top flange of all steel joists and steel support members immediately prior to board installation.

The sealant bead shall remain continuous for the full length of each supporting steel member and shall not be applied as intermittent dabs or spot bonds. The bead shall provide continuous separation between the Magnum Board® Flooring Underlay and the steel framing.

This detail is required to:

- Assist in preventing moisture entrapment at the Magnum Board® / steel interface.
- Reduce the potential for corrosion of steel protective coatings.
- Protect steel surface coatings from abrasion during installation and service life.
- Accommodate differential movement between the steel framing and flooring substrate.
- Reduce vibration transmission between the flooring substrate and steel framing.
- Act as a thermal break between Magnum Board® and steel framing in accordance with the requirements of the National Association of Steel-Framed Housing (NASH) Standard.

The continuous polyurethane sealant interface provides a moisture-isolation and separation function equivalent to proprietary joist protection tapes, EPDM isolation strips, and butyl flashing tape systems commonly used within flooring and decking applications. Installation shall be undertaken in accordance with the current Mapei technical data sheets and project specifications.

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Pre-Installation & Post-Installation Checklist

NOTE: Warranty is valid by completion of this Pre-Installation & Post-Installation inspection checklist.

Site address: _____Inspection Date: _____

Owner/Applicant: _____

Head Contractor / Builder: _____ LBP #:_____

Mobile Phone: _____ Email: _____

Designer: _____ Mobile: _____

MAGNUM BOARD® 18mm Flooring Underlay **PRE-INSTALLATION** CHECK LIST

NOTE: It is the responsibility of the certified installer to inspect their work place prior to beginning the placement, and to ensure that the placed work will meet supplier's requirements. Notify the owner / general contractor of any concerns prior to commencement of work.
NOTE: It is the responsibility of the installer to compile pre- and post- checklists and photographs in accordance with the quality plan.

- ☐ Framing configuration and fixing detail suitable for the installation.
- ☐ Framing moisture content - to be within Building Code Australia guidelines.
- ☐ Framing flush and level.
- ☐ Continuous 10mm bead of Mapei PU35 or PU45 to the top of all steel joists before board installation.
- ☐ Bead of Mapei PU35 or PU45 to the top of all timber joists before board installation.
- ☐ Wet areas defined
- ☐ Access and heights.
- ☐ Services identified.
- ☐ Health and safety plan in place.
- ☐ PPE and dust control in place.

MAGNUM BOARD® 18mm Flooring Underlay **POST-INSTALLATION** CHECK LIST

NOTE: It is the responsibility of the installer to inspect the completion of the placement and to ensure placed work will meet the supplier's requirements. Notify the owner / general contractor of any concerns prior to commencement of work.

- ☐ Fixing details match recommended fixing pattern.
- ☐ Boards are straight and level.
- ☐ Screw heads are to finish flush or slightly below flush to board surface.
- ☐ Correct fixings Class 4 or 316 stainless steel (as per page 3) have been used
- ☐ Wet areas are defined, and areas to be tiled have been sealed at butt ends
- ☐ Areas to be tiled have a 2mm gap at butt ends sealed with Mapei PU35 or PU45.
- ☐ Control joints have a 5mm gap at butt ends sealed with Mapei PU35 or PU45.
- ☐ Waste material is removed or positioned for removal as a non-toxic material.
- ☐ Health and safety plan in place.
- ☐ PPE and dust control in place.

Approved building consent document number : _____

Approval authority : _____

Approval date : _____

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Installation Procedure For Exterior Use Balconies & Tiled Decks

EXTERNAL installation of tiles in external areas shown.

NOTE: For further information please refer to the Mapei work method statement on the following pages 16-19

25x25mm fillet to support waterproof membrane (as shown), to be screw-fixed and primed prior to application of ECO Prim Grip.

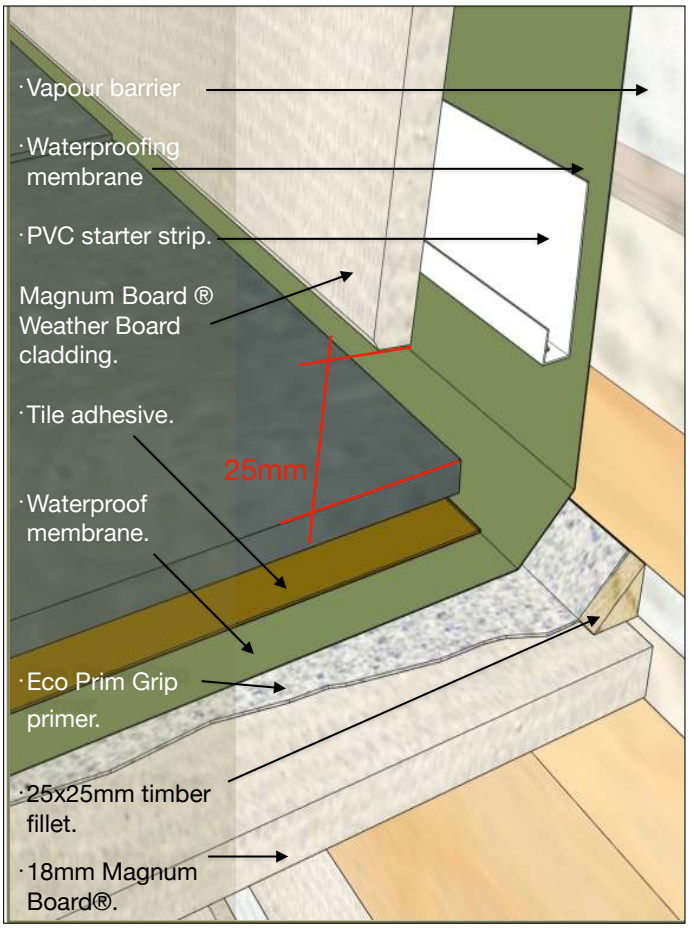
Waterproof Mapei membrane to be applied over prepared and primed Magnum Board® surface.

Mapeband SA to be applied at expansion joints as outlined in the Mapei work method statement page 16-19.

Ceramic or similar tile to be laid in strict accordance with sound practice as recommended in BRANZ Good Practice Guide to Tiling, Section 10.11.10.

Allow for a 25mm clearance between the underside of the cladding and the top surface of the deck or balcony.

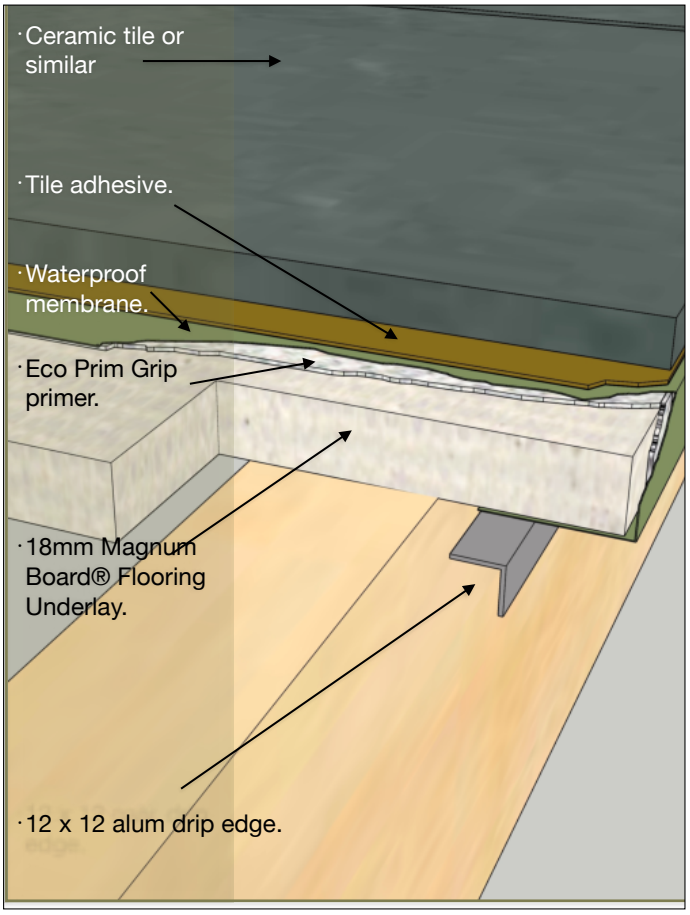
Ensure F.F.L (finished floor level) 20mm min above finished surface of balcony or deck.



Magnum Board® Flooring Underlay to be fixed to compliant framing - allow a 1° min fall to framing away from the exterior wall.

12 x 12 aluminium angle to be fixed as indicated to provide drip edge at minimum 25mm back from leading edge.

Note: Magnum Board must not be installed in design solutions that place Magnum Board® in direct contact with soil or within designs that place Magnum Board below ground.



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External Tiled Deck System
Critical Installation Requirements

These requirements apply to Magnum Board® 18mm Flooring Underlay used in external tiled decks and balconies. They are additional to the installation detail shown on page 14, and are to be read together with the Magnum Board Installation Guide.

NOTE: The current Mapei Work Method Statement for this system - Ceramic/Stone System - External, Installation of Tiles in External Areas - follows on **pages 16-19.** Installation is to be carried out in strict accordance with that Mapei-approved methodology, in conjunction with the requirements set out below.

FALLS AND DRAINAGE

- Minimum 1° fall away from the building, set in the framing - refer page 14.
- Positive drainage is required across the full deck area.
- Maintain the fall right through to the deck edge - it must not flatten out at the perimeter.
- No ponding water anywhere on the deck, including against the drip edge.

STEEL FRAMING

- Apply a continuous 10mm bead of Mapei PU35 or PU45 to the top of every steel joist.
- Boards must not be laid until the bead is in place - it cannot be added afterwards.
- The bead assists corrosion protection and provides a thermal break between steel and board.

JOINTS

- Apply Mapei PU35 or PU45 to all T&G joints as the boards are laid.
- Seal every butt joint before any waterproofing is applied.
- Install Mapeband SA at all movement joints.

FIXINGS

- 316 stainless steel fixings are recommended for external, wet and coastal environments.
- Class 4 fixings are permitted only where the Magnum Board Installation Guide allows them.

ENDS AND EDGES

- Ends and edges are the most exposed part of the system and need the most care.
- Carry the waterproof membrane through every perimeter detail - it must not stop short of the edge.
- Fix the 12 x 12 aluminium drip edge as detailed on page 14, a minimum 25mm back from the leading edge.
- Hold the 25mm minimum clearance between cladding and deck surface - refer page 14.
- No board edge or board end is to be left exposed or unsealed.

WATERPROOFING

- Prime the prepared Magnum Board® surface with Eco Prim Grip.
- Install Mapeband SA to junctions and movement joints.
- Apply Mapelastic Smart membrane with Mapenet 150 reinforcement mesh.
- Minimum two-coat application.
- Waterproofing is to be complete before tiling begins.

WARRANTY

- Install in accordance with the Magnum Board Installation Guide.
- Follow the Mapei Work Method Statement, pages 16-19.
- Continuous 10mm bead of Mapei PU35 or PU45 to the top of all steel joists before boards are laid.
- Bead of Mapei PU35 or PU45 to the top of all timber joists before boards are laid.
- Complete the pre-installation and post-installation checklists on page 13.

COMMON CAUSES OF FAILURE

- No falls, or ponding water.
- Missing PU35 or PU45 to steel framing.
- Incorrect or non-compliant fixings.
- Unsealed joints and board ends.
- Poor edge detailing, or a missing drip edge.
- Incomplete or single-coat waterproofing.

IMPORTANT

Magnum Board® is one component of a complete deck system. Long-term performance depends on correct framing, falls, joint sealing, edge detailing and waterproofing, and on installation in accordance with the Magnum Board Installation Guide and the Mapei Work Method Statement.

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PART 1 SYSTEM

1.1 INFORMATION

- This work method statement covers the system to install ceramic/stone tiles over Magnum flooring underlay and tile backer in external areas.
- MAPEI provides technical data sheets (TDS) and safety data sheets (SDS) for all products which should be read in conjunction with this Work Method Statement (WMS). Where necessary, conduct a chemical risk assessment and SWMS to ensure each products' correct and safe use. These documents can be obtained from ***www.mapei.com.au***, or by clicking directly on the products listed within the PDF.
- Products in this WMS can contribute towards satisfying the relevant Green Star credits. The VOC content of products can be found under section 9 on the product SDS, while VOC emissions certificates can be found on the product webpage.
- This Work Method Statement (WMS) provides general recommendations only and is not intended to be interpreted as a generic specification for the application/installation of the listed products. As each project differs in exposure and site conditions, specific recommendations may vary from the information contained above. For recommendations for specific applications/installations please contact MAPEI Australia Pty Ltd.

1.2 USER NOTES

1.3 RELEVANT DOCUMENTATION

A. Australian Standard(s):

1. AS 3958:2023 – Installation of ceramic and stone tiles
2. AS 4654.2-2012 – Waterproofing membranes for external above-ground use – P.2: Design & installation
3. AS 4654.2-2012 – Waterproofing membranes for external above-ground use Design and installation
4. AS 4654.1-2012 – Waterproofing membranes for external above-ground use Materials

B. MAPEI Technical Notebook(s):

1. Ceramic Substrate Preparation Guide
2. Guide for the Installation of Ceramic Materials
3. Grout Troubleshooting Guide
4. Laying Stone Materials

C. Other References:

1. ASAA Natural Stone Manual

PART 2 TILING SYSTEM

2.1 SUBSTRATE PREPARATION

All substrates must be structurally sound, dry, solid and stable. Any laitance, dust, grease, oil, paint or curing compounds present on the surface of the concrete substrate that may inhibit bond, shall be mechanically removed. The substrate should then be cleaned and prepared in accordance with the relevant standards and as per the MAPEI technical data sheets (TDS).

Tiles require the substrate to which it's laid over to be rigid, stable and free of deflection. Some flooring systems present a risk of excessive deflection which can increase the risk of the tile cracking as deflection can exceed the recommended L/360 limit stated in AS 3958:2023. Some stone tiles can be more sensitive to movement, therefore this should be restricted even further to L/480. Seek advice from tile supplier.

2.2 PRIMER

A. ECO PRIM GRIP

Multi-purpose, ready-to-use, low odour, bonding promoter primer with a very low emission of volatile organic compounds (VOC) for render, smoothing and levelling compounds and cementitious adhesives, for internal and external application.

- **APPLICATION:**
  - ◊ Stir ready-to-use primer prior to application, no dilution is required.
  - ◊ Apply primer with either a roller or brush.

2.3 WATERPROOFING MEMBRANE

- **NOTE:** Prior to the application of the waterproofing membrane:
  - ◊ Use a **MAPEFLEX** product as general sealant/adhesive where required.
  - ◊ Ensure all pipe penetrations & angles are primed **ECO PRIM GRIP** to create a suitable mechanically keyed surface prior to the waterproofing.
  - ◊ Apply a waterproofing bandage with **MAPEBAND SA** at wall/wall, wall/floor junctions and all other areas where movement is expected.
  - ◊ Ensure substrate has adequate falls in accordance with AS 4654.2-2012.

A. MAPELASTIC SMART

Two-component, high-flexibility cementitious mortar. Certified to AS 4654.1 and AS/NZS 4858. UV resistant. Suitable for waterproofing balconies, terraces, bathrooms, swimming pools etc. Applied at a wet film thickness (WFT) between 1.0 mm per coat. The total dry film thickness (DFT) of the two or more coats must be at least 1.6 mm.

APPLICATION:

- ◊ Waterproofing membrane must be applied to walls and floors in a minimum of two even coats to form a final flexible, continuous dry film thickness in accordance with which membrane was used.
- ◊ Lay **MAPENET 150** alkali-resistant glass fibre mesh into the first wet coat of the waterproofing membrane, ensuring the mesh is completely embedded, in strict accordance with the TDS.

2.4 ADHESIVE

- **NOTE:** Some natural and engineered stones can be prone to warping (moisture sensitivity) and staining. Therefore, Mapei recommends when using stone materials to consult the manufacturer/supplier for any recommendations or guidelines. Please refer to the Mapei technical notebook 'Laying Stone Materials' for more information.

Adhesive to be chosen from the following options:

A. **KERAQUICK MAXI S1 + LATEX PLUS**

High performance, deformable, fast setting cementitious adhesive, for ceramic tiles and stone material (Class A/B*) with a latex additive to elasticize the adhesive.

B. **KERABOND PLUS + ISOLASTIC**

Cement based powder with superior bond strength suitable for all types of tiles and natural stone (non-moisture sensitive), with a latex additive to improve the adhesive's characteristics and to elasticize the adhesive.

- **APPLICATION:**
  - ◊ Prepare and mix adhesive in strict accordance to the packaging and TDS.
  - ◊ To ensure good adhesion, apply with pressure a thin coat of the adhesive with the straight edge of the trowel. Immediately follow this with a layer of adhesive at the correct thickness using a suitable notched trowel in straight lines.
  - ◊ Adhesive should also be pressure applied to the back of the tile/stone with a thin coat using the straight edge of the trowel (*back-buttering*).
  - ◊ Ensure the adhesive stays "*fresh*" and does not form a skin, especially in hot environments, prior to the application of the tile/stone.
  - ◊ Place the tile/stone firmly into position wet-on-wet with a slight back and forward motion perpendicular to the trowel lines to collapse the notches.
  - ◊ It is recommended to periodically remove and assess adhesive coverage. Continue if acceptable, otherwise reassess trowel and application technique.

2.5 GROUT

- **NOTE:** To estimate the consumption rate according to specific project data, use the **MAPEI GROUTS AND SEALANTS CALCULATOR**.

A. **ULTRACOLOR PLUS**

High-performance, anti-efflorescence, quick-setting and drying polymer-modified mortar with water-repellent technology.

- **APPLICATION:**
  - ◊ Mix the grout and fill the joints completely using a trowel or rubber float. Ensuring the joints are completely compacted with no unevenness.
  - ◊ Remove excess grout while still fresh from the surface of the tile/stone by moving the float diagonally across the joints.
  - ◊ **ULTRACOLOR PLUS***:* When the grout loses plasticity and becomes opaque, clean excess grout with a hard, damp sponge working diagonal to the joints. Rinse sponge regularly using clean water.

2.6 SILICONE

Silicone to be chosen from the following options:

A. **MAPESIL AC**

Solvent-free, acetic crosslinking mildew resistant silicone for ceramics and porcelain.

B. **MAPESIL LM**

Neutral mould resistant silicone sealant for stone and marble.

- **APPLICATION**
  - ◊ Movement joints should be installed in accordance with AS 3958:2023.

PART 1 SYSTEM

1.1 INFORMATION

- This work method statement covers the system to install ceramic/stone tiles over Magnum flooring underlay and tile backer in both dry and wet areas.
- MAPEI provides technical data sheets (TDS) and safety data sheets (SDS) for all products which should be read in conjunction with this Work Method Statement (WMS). Where necessary, conduct a chemical risk assessment and SWMS to ensure each products' correct and safe use. These documents can be obtained from ***www.mapei.com.au,*** or by clicking directly on the products listed within the PDF.
- Products in this WMS can contribute towards satisfying the relevant Green Star credits. The VOC content of products can be found under section 9 on the product SDS, while VOC emissions certificates can be found on the product webpage.
- This Work Method Statement (WMS) provides general recommendations only and is not intended to be interpreted as a generic specification for the application/installation of the listed products. As each project differs in exposure and site conditions, specific recommendations may vary from the information contained above. For recommendations for specific applications/installations please contact MAPEI Australia Pty Ltd.

1.2 USER NOTES

1.3 RELEVANT DOCUMENTATION

A. Australian Standard(s):

1. AS 3958:2023 – Installation of ceramic and stone tiles
2. AS 3740:2021 – Waterproofing of domestic wet areas

B. MAPEI Technical Notebook(s):

1. Ceramic Substrate Preparation Guide
2. Guide for the Installation of Ceramic Materials
3. Grout Troubleshooting Guide
4. Laying Stone Materials

C. Other References:

1. ASAA Natural Stone Manual

PART 2 TILING SYSTEM

2.1 SUBSTRATE PREPARATION

All substrates must be structurally sound, dry, solid and stable. Any laitance, dust, grease, oil, paint or curing compounds present on the surface of the concrete substrate that may inhibit bond, shall be mechanically removed. The substrate should then be cleaned and prepared in accordance with the relevant standards and as per the MAPEI technical data sheets (TDS).

Tiles require the substrate to which it's laid over to be rigid, stable and free of deflection. Some flooring systems present a risk of excessive deflection which can increase the risk of the tile cracking as deflection can exceed the recommended L/360 limit stated in AS 3958:2023. Some stone tiles can be more sensitive to movement, therefore this should be restricted even further to L/480. Seek advice from tile supplier.

2.2 PRIMER

A. ECO PRIM GRIP

Multi-purpose, ready-to-use, low odour, bonding promoter primer with a very low emission of volatile organic compounds (VOC) for render, smoothing and levelling compounds and cementitious adhesives, for internal and external application.

- **APPLICATION:**
  - ◊ Stir ready-to-use primer prior to application, no dilution is required.
  - ◊ Apply primer with either a roller or brush.

2.3 WATERPROOFING MEMBRANE – IF REQUIRED

- **NOTE:** Prior to the application of the waterproofing membrane:
  - ◊ Use a **MAPEFLEX** product as general sealant/adhesive where required.
  - ◊ Ensure all pipe penetrations & angles are primed **ECO PRIM GRIP** to create a suitable mechanically keyed surface prior to the waterproofing.
  - ◊ Apply a waterproofing bandage with **MAPEBAND SA** at wall/wall, wall/floor junctions and all other areas where movement is expected.
  - ◊ Ensure substrate has adequate falls in accordance with AS 3740-2021.

A. MAPELASTIC AQUADEFENSE

Ready-to-use, ultra-quick drying, Class III flexible liquid membrane for internal and external waterproofing applications. Applied at 0.4 mm per coat. Certified to AS/NZS 4858:2004 and AS 4654.1-2012.

- **APPLICATION:**
  - ◊ Waterproofing membrane must be applied to walls and floors in a minimum of two even coats to form a final flexible, continuous dry film thickness in accordance with which membrane was used.
  - ◊ Apply a reinforcement fabric along all joints of the sheet with **MAPETEX 50** embedded in the first coat in accordance with the TDS.

2.4 ADHESIVE

- **NOTE:** Some natural and engineered stones can be prone to warping (moisture sensitivity) and staining. Therefore, Mapei recommends when using stone materials to consult the manufacturer/supplier for any recommendations or guidelines. Please refer to the Mapei technical notebook 'Laying Stone Materials' for more information.

A. KERAFLEX MAXI S1

High performance, deformable cementitious adhesive with an extended open time and no vertical slip, for ceramic tiles. Especially suitable for the installation of large porcelain tiles and natural stone (non-moisture sensitive).

- **APPLICATION:**
  - ◊ Prepare and mix adhesive in strict accordance to the packaging and TDS.
  - ◊ To ensure good adhesion, apply with pressure a thin coat of the adhesive with the straight edge of the trowel. Immediately follow this with a layer of adhesive at the correct thickness using a suitable notched trowel in straight lines.
  - ◊ Adhesive should also be pressure applied to the back of the tile/stone with a thin coat using the straight edge of the trowel (*back-buttering*).
  - ◊ Ensure the adhesive stays "*fresh*" and does not form a skin, especially in hot environments, prior to the application of the tile/stone.
  - ◊ Place the tile/stone firmly into position wet-on-wet with a slight back and forward motion perpendicular to the trowel lines to collapse the notches.
  - ◊ It is recommended to periodically remove and assess adhesive coverage. Continue if acceptable, otherwise reassess trowel and application technique.

2.5 GROUT

- **NOTE:** To estimate the consumption rate according to specific project data, use the **MAPEI GROUTS AND SEALANTS CALCULATOR**.

A. ULTRACOLOR PLUS

High-performance, anti-efflorescence, quick-setting and drying polymer-modified mortar with water-repellent technology.

- **APPLICATION:**
  - ◊ Mix the grout and fill the joints completely using a trowel or rubber float. Ensuring the joints are completely compacted with no unevenness.
  - ◊ Remove excess grout while still fresh from the surface of the tile/stone by moving the float diagonally across the joints.
  - ◊ **ULTRACOLOR PLUS***:* When the grout loses plasticity and becomes opaque, clean excess grout with a hard, damp sponge working diagonal to the joints. Rinse sponge regularly using clean water.

2.6 SILICONE

Silicone to be chosen from the following options:

A. MAPESIL AC

Solvent-free, acetic crosslinking mildew resistant silicone for ceramics and porcelain.

B. MAPESIL LM

Neutral mould resistant silicone sealant for stone and marble.

- **APPLICATION**
  - ◊ Movement joints should be installed in accordance with AS 3958:2023.

PART 1 SYSTEM

1.1 INFORMATION

- This work method statement covers the system to install engineered timber over Magnum flooring underlay.
- MAPEI provides technical data sheets (TDS) and safety data sheets (SDS) for all products which should be read in conjunction with this Work Method Statement (WMS). Where necessary, conduct a chemical risk assessment and SWMS to ensure each products' correct and safe use. These documents can be obtained from ***www.mapei.com.au,*** or by clicking directly on the products listed within the PDF.
- Products in this WMS can contribute towards satisfying the relevant Green Star credits. The VOC content of products can be found under section 9 on the product SDS, while VOC emissions certificates can be found on the product webpage.
- This Work Method Statement (WMS) provides general recommendations only and is not intended to be interpreted as a generic specification for the application/installation of the listed products. As each project differs in exposure and site conditions, specific recommendations may vary from the information contained above. For recommendations for specific applications/installations please contact MAPEI Australia Pty Ltd.

1.2 USER NOTES

PART 2 ENGINEERED TIMBER

2.1 SUBSTRATE PREPARATION

All substrates must be structurally sound, dry, solid, stable and well bonded. Any dust, grease, oil, paint, curing compounds, or other contaminants present on the surface of the concrete substrate that may inhibit bond, shall be mechanically removed. The substrate should then be cleaned and prepared in accordance with the relevant standards, substrate manufacturers guidelines, and as per the MAPEI technical data sheets (TDS).

2.2 PRIMER – IF LEVELLING COMPOUND IS TO BE APPLIED

A. ECO PRIM GRIP

Multi-purpose, ready-to-use bonding promoter primer made from synthetic acrylic resin and silica inerts with a very low emission of volatile organic compounds (VOC) for render, smoothing and levelling compounds and adhesives for ceramic tiles.

- **APPLICATION:**
  - ◊ Stir ready-to-use primer prior to application, no dilution is required.
  - ◊ Apply primer with either a roller or brush.

2.3 LEVELLING COMPOUND – IF REQUIRED

A. ULTRAPLAN RENOVATION

Fibre reinforced levelling compound for interiors applied from 3 to 40 mm in a single application.

- **APPLICATION:**
  - ◊ Pour 3.4 to 3.6 litres of potable water into a clean container then add the 20 kg bag of **ULTRAPLAN RENOVATION** while using an electric mixer. Once a lump-free mix is obtained, let it stand for 2 to 3 minutes then briefly remix.
  - ◊ Spread levelling compound from 3 to 40 mm in thickness using a large metal spreader at a slight angle to obtain the desired thickness.
  - ◊ It is recommended to introduce saw cuts once the levelling compound can be walked on for large areas at high thickness to alleviate stress.
  - ◊ Allow 1-3 days of curing (*depending on leveller thickness*) prior to bonding the timber flooring.

2.4 ADHESIVE

Adhesive to be chosen from the following options:

A. ULTRABOND ECO S955 1K

One component, solvent free, sililated polymer-based adhesive with a very low emission level of volatile organic compounds for all types of parquet.

B. ULTRABOND P990 1K

One component, solvent free, ready to use, elastic polyurethane adhesive with an extremely low emission level of volatile organic compounds, for pre-finished, multi-layered and traditional jointed solid wood parquet.

- **APPLICATION:**
  - ◊ Apply adhesive evenly over substrate with MAPEI notched trowel for wood.

HOME of MAGNUM BOARD®

"The New Generation GREEN Building Material"

"Install it for Health-Install it for life"

Sheathing & Siding Products

TECHNICAL BULLETIN NO:	063024
Subject:	Installation Instructions for a Puddle Flange in Magnum® 18mm Flooring Substrate.
Issue I Revision Date:	August 6, 2018 -Revised July 17, 2025 (Added test data)
Issue No:	03

1.0 PURPOSE

1.1 Many have asked if a puddle flange can be installed in Magnum's 18mm Fiber Reinforced MGO flooring substrate. The answer is yet, but like any other construction material installation, it must be done correctly.

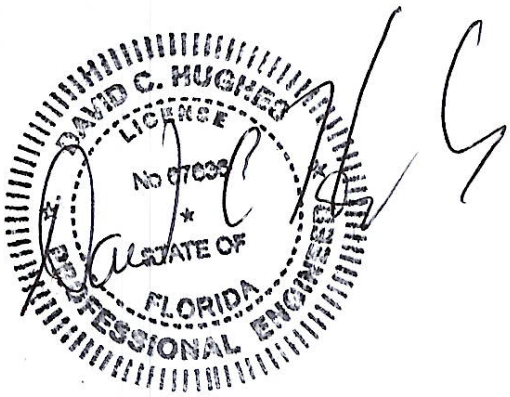
1.2 Although Magnum always recommends installers follow the manufacturers installation instructions, Magnum offers the following general guidelines for installing a Puddle Flange in Magnum® Fiber Reinforced MgO 18mm flooring substrate.

2.0 GENERAL

1.0 Key Considerations for Installing a Puddle Flange in Magnum's 18mm fiber reinforced MGO. flooring substrate:

a. Puddle Flange Purpose: A puddle flange is designed to prevent water or gas from entering buildings through pipe penetrations

b. Magnum's fiber reinforced MGO flooring substrate is Water-Resistant, Not Waterproof. Magnum's 18mm flooring substrate is highly water-resistant and suitable for humid areas like bathrooms, but they are not completely waterproof.



3.0 INSTALLATION GUIDELINE

3.1 Although Magnum Board Products, LLC always recommends that the installer follow the manufacturers recommended installation instructions and local code requirements, the following is a typical and accepted installation procedure.:

a. Cut the drainage pipe flush with the floor.
b. Recess or install the puddle flange flush with the floor to prevent water accumulation.
c. Glue the puddle flange to the drainage pipe and to the floor surface.
d. Apply the selected waterproof method around the flange. To ensure a proper waterproof seal on the cut out when using Magnum® fiber reinforced MGO flooring substrate for a shower pan, Magnum® recommends:
    1. Apply a waterproof membrane over the MGO board before tiling, or finishing; or,
    2. Apply a brush on or roll on coat of concrete sealant such as acrylic, polyurethane, epoxy, elastomeric, silanes, siloxanes, silicates or equal.
    3. All the above are excellent for water proofing Magnum® fiber reinforced MgO flooring substrate.
e. Allow the water proofing to dry completely before proceeding with the floor finishing.
f. Install the floor waste grate over the flange and ensure its securely fastened and level

3.2 Puddle Flange and Waterproofing Connection: The puddle flange acts as a “bridge’ connecting the waterproofing membrane from the Magnum 18mm fiber reinforced MgO substrate to the drainage pipe.

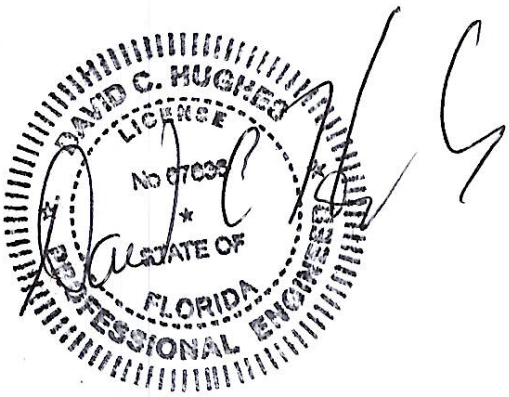
4.0 YOUR SELECTION OF MAGNUM® FIBER REINFORCED 18MM MGO SUB FLOORING

You could not have made a better material choice for this application. All Magnum fiber reinforced MgO building materials are virtually impervious to fire, water and insects; are not a food for mold and mildew; are non-toxic; and as delivered C02 negative. The greenest and safest building materials that are on the market today. Your choice will protect not only your family and co-workers, but your investment as well. Magnum fiber reinforced MgO building materials will last for many generations’. Congratulations on your choice.

5.0 TEST DATA BEFORE AND AFTER PADDLE FLANGE INSTALLATION

THICKNESS	**18MM**		**14MM**	
Test direction	Length	Width	Length	Direction
Maximum Load	5560 N	4946 N	3211 N	3168 N
Flexural Strength	22.14 Mpa	19.69 Mpa	21.13 Mpa	20.85 Mpa
Average Flexural Strength	**20.92 Mpa**		**20.99 Mpa**	

5.1 Magnum fiber reinforced MgO 18mm sheathing exceeds strength requirements for puddle flange installations.



MAGNUM BOARD MSDS

SECTION 1 : PRODUCT INFORMATION

Products :

Magnum Board External Corners 90/70 x 16 x 3.0 Set
Magnum Board Flooring T&G 2700X600X18
Magnum Board Rebated Edge 2.4 X 1.2 X 9
Magnum Board Rebated Edge 2.7 X 1.2 X 12
Magnum Board Rebated Edge 2.7 X 1.2 X 9
Magnum Board Rebated Edge 3.0 X 1.2 X 12
Magnum Board Rebated Edge 3.0 X 1.2 X 9
Magnum Board Shiplap WBD 210 X 16 X 3.0
Magnum Board Square Edge 2.4 x 1.2 x 12
Magnum Board Square Edge 2.4 x 1.2 x 18
Magnum Board Square Edge 2.4 X 1.2 X 9
Magnum Board Square Edge 2.7 X 1.2 X 12
Magnum Board Square Edge 2.7 X 1.2 X 9
Magnum Board Square Edge 3.0 X 1.2 X 12
Magnum Board Square Edge 3.0 X 1.2 X 9
Magnum Board WBD Smooth 3600X180X16

Use :

- **Exterior** : Sheathing, ceiling board, drop ceiling, siding, cladding and trim material
- **Interior** : Wallboard, ceiling board, tile backer board, underlayment and trim materials.
- **Systems** : Structural Insulated Panels (SIPS)
  : Exterior Insulated Finish Systems (EIFS)

Other uses :

SECTION 2 : COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Hazard Class
Magnesium Oxide	1309-48-4	None
Magnesium Chloride	7786-30-3	None
Cellulose	9004-34-6	None
Perlite	93763-70-3	None
Proprietary Additives	N / A	None
Fibreglass Scrim	65997-17-3	None

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SECTION 3 : HAZARDS IDENTIFICATION

Emergency Contact: (03) 9701 2777
43-45 Overseas Drive, Noble Park, North Vic, 3174
www.mccormacksaustralia.com.au

Emergency Overview :

- Non-toxic, non-explosive, not a fire hazard.

Primary Routes of Entry :

Eyes :

- Dust may irritate the eyes from mechanical abrasion causing watering and redness.

Skin :

- Dust may cause irritation of the skin from friction but cannot be absorbed through intact skin.

Ingestion :

- Unlikely under normal conditions of use, but swallowing the dust from this product may result in irritation to the mouth and gastrointestinal tract.

Inhalation :

- Dust may cause irritation of the nose, throat, and airways, resulting in coughing and sneezing.
- Certain susceptible individuals may experience wheezing (spasms of the bronchial airways) on inhaling dust during sanding or sawing operations.

SECTION 4 : FIRST AID MEASURED

Eyes :

- Remove contact lens. Flush with running water or saline for at least 15 minutes.
- Seek medical attention if redness persists or if visual changes occur.

Skin :

- Wash with mild soap and water.
- Contact physician if irritation persists or later develops.

Ingestion :

- If ingested, dilute by drinking large amounts of water.
- Do not induce vomiting.
- Seek medical attention.
- If unconscious, loosen tight clothing and lay the person on his / her side.
- Give nothing by mouth to an individual who is not alert and conscious.
- Seek medical attention.

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Inhalation :

- Remove person to fresh air.
- If shortness of breath or wheezing develops, seek medical attention.

Notes to Physician or First Aid Providers :

- Treat symptomatically.

SECTION 5 : FIRE-FIGHTING MEASURES

Magnum™ Building Products line of “Magnum Board®” Products are non flammable, non explosive and non combustible.

Fire and Explosion Hazard :

- Flash Point : Not applicable.
- Auto-ignition : Not applicable.

Extinguishing Media :

- This material is non combustible.
- Appropriate extinguishing media should be used for surrounding fire.

Fire Fighting :

- Fire fighting personnel should wear normal protective equipment.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

No special precautions are necessary to pick up product that has been dropped. The following applies only to spills or releases of dust generated during cutting or sanding Magnum Board®.

Precautions :

- Good housekeeping practices are necessary for cleaning up areas where dust has been produced. Take measures to either eliminate or minimise the creation of dust.
- Wherever possible, practices likely to generate dust should be controlled with engineering controls such as local exhaust ventilation, dust suppression with water and containment, enclosure or covers.

Cleanup Methods :

- A fine water spray may be used to suppress dust when sweeping - dry sweeping is not recommended. Vacuuming with an industrial vacuum cleaner outfitted with a high-efficiency particulate (HEPA) filter is recommended over sweeping. Waste may be disposed of by landfill in compliance with federal, provincial, state and local requirements governing non-toxic mineral materials.
- Avoid using materials and products that are incompatible with this product. (Refer to section 10.)

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SECTION 7 : HANDLING AND STORAGE

Handling and Storage Products in their intact state do not present a health hazard. The controls below apply to dust generated from the boards by cutting, drilling, routing, sawing, crushing, or otherwise abrading, and cleaning or moving sawdust.

Other Precautions :

- Even though Magnum Board® has been tested and deemed non toxic, Magnum Building Products recommends that exposure to dust be kept as low as reasonably possible.
- Respirable levels should not exceed those specified by OSHA and MSHA and identified in this MISDS. Exposure to respirable (fine) dust depends on a variety of factors, including activity rate (i.e. cutting rate), method of handling (i.e. electric shears), environmental conditions (i.e. weather conditions, workstation orientation) and control measures used.
- Wherever possible, practices likely to generate dust should be carried out in well ventilated areas (i.e. outside). The work practices and engineering controls set out in Section 8 should be followed as precautions to reduce dust exposures.

SECTION 8 : EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls

Cutting Outdoors :

- Magnum Building Products recommends positioning cutting station so that wind will blow dust away from user or others in working area and allow for ample dust dissipation.
- Use one of the following methods based on the required cutting rate and job site conditions.
    - Best :
        - Score and snap using carbide-tipped scoring knife or utility knife (Ability to use this method depends on thickness of Magnum Board® being installed.)
        - Fibre-cement board shears (electric or pneumatic).
    - Better :
        - Dust reducing circular saw equipped with appropriate blade and HEPA vacuum extraction.
    - Good : (for low to moderate cutting only)
        - Dust reducing circular saw with appropriate saw blade.
        - Always use correct tools when executing cutting operations.

Ventilation :

- Use adequate general or local exhaust ventilation to keep airborne
- concentrations below the permissible exposure limit.

Respiratory Protection :

- Dust mask is recommended.

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Eye Protection :

- When cutting material, dust resistant safety goggles / glasses should be worn
- and used in compliance with ANSI Standard Z87.1-1-1989 and applicable
- OSHA (i.e. 29 CFR 1910.133) standards.

Skin Protection :

- Loose comfortable clothing should be worn. Magnum Building Products recommends that direct skin contact with dust and debris be avoided when possible by wearing long sleeved shirts and long trousers, a cap or hat, and gloves.

Sanding / Drilling / Other Machining :

- If sanding, drilling, or other machining is conducted, Magnum Building Products recommends wear a NIOSH-approved dust mask.

Important Notes :

- For maximum protection (lowest respirable dust production), Magnum Building Products recommends always using **"Best"** level cutting methods where feasible.
- Always use a circular saw blade that is appropriate for the specific operation being undertaken.
- Dry sweeping is not the preferred clean up method - Magnum Building Production suggests wet suppression methods or HEPA vacuum.
- It is not recommended that a grinder or continuous rim diamond blade be used for cutting.
- Always follow tool manufacturer's safety recommendations.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

Appearance :

- Various colours depending on application, each with varying dimensions according to product used.

- Odour :
  - Very mild
- Physical State :
  - Solid sheets
- Vapour Pressure :
  - Not relevant.
- Specific Gravity :
  - Not relevant.
- Flammability Limits :
  - Not relevant.
- Boiling Point :
  - Not relevant

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- Melting Points :
  - Not relevant.
- Flash Point :
  - Not relevant.
- Auto-ignition Temperature :
  - Not relevant.
- Volatility :
  - Not relevant.
- Solubility in Water :
  - Not relevant.
- Evaporation rate :
  - Not applicable.

NFPA Ratings (Scale 0 – 4)

- Health = 1
- Flammability = 0
- Reactivity = 0
- Personal Protection = E.

SECTION 10 : STABILITY AND REACTIVITY

Stability :

The Magnum Board® products identified in section 1 are stable under ordinary conditions.

Conditions to Avoid :

- Excessive dust generation without proper dust mask protection.

Materials to Avoid :

Incompatibility :

- Hydrofluoric acid will dissolve Magnesium Oxide and can generate Magnesium Chloride fumes.

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SECTION 11 : TOXICOLOGICAL INFORMATION

Magnum Board® products are non toxic in their intact form. The following applies to dust that may be generated during cutting and sanding.

Chronic Effects :

Inhaled :

- Repeated and prolonged overexposures to dust may cause increased risk of bronchitis. It is possible that repeated inhalation exposure to Magnum Board® fibre dust over time may lead to inflammation of the lungs in humans.
- All necessary precautions should be taken to prevent inhalation of dust to prevent these problems.

Inhalation :

- Remove to fresh air.
- If shortness of breath or wheezing develops, seek medical attention.

SECTION 12 : ECOLOGICAL INFORMATION

Because Magnesium Oxide is a naturally-occurring material, releases that may occur into the environment are not expected to leave any hazardous material that could cause a significant adverse impact.

SECTION 13 : DISPOSAL CONSIDERATIONS

Disposal of material as an inert, inorganic mineral - in conformance with federal, provincial, state and local regulations. Magnum Board® is not an RCRA hazardous waste.

SECTION 14 : TRANSPORT INFORMATION

There are no special requirements for storage and transport of Magnum Board®.

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SECTION 15 : REGULATORY INFORMATION

UN No.	None allocated
Dangerous goods class	None allocated
Hazchem code	None allocated
Poisons schedule	None allocated
Packing group	None allocated
Label	Not a DOT hazardous material

DOT hazard classification	None
Placard requirement	Not a DOT hazardous material
Listed substance	No
Unlisted substance	No
Reportable quantity (RQ)	No
Charachteristics	Not applicable
RCRA waste number	Not applicable

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SECTION 16 : OTHER INFORMATION

Preparation of Information and Disclaimer :

This form has been prepared to meet current Federal OSHA hazard communication regulations and is offered without any warranty or guarantee of any type. Magnum Building Products cannot control the use of its products, and therefore specifically disclaims liability and responsibility arising from the use, misuse and/ or alteration of its products.

The information contained in this MSDS was produced without independent scientific or medical studies analysing the effects of Magnum Board® dust upon human health. The information contained herein is based upon scientific and other data Magnum Building Products believes is valid and reliable and provides the basis for this MSDS. The information contained herein relates only to specific materials listed in the document. It does not address the effects of Magnum Board® dust when used in combination with other materials or substances, or when used in other processes. Because conditions of use are beyond Magnum Building Products control, the company makes no representations, guarantees or warranties, either express or implied warranties as to the fitness of the product for use, and assume no liability related to the information contained above.

Magnum Building Products requires, as a condition of use of its products, that purchasers comply with all applicable Federal, Provincial, State, and Local health and safety laws, regulations, orders, requirements, and strictly adhere to all instructions and warnings which accompany the product.

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