

MAKPROOF WPU

TECHNICAL DATA SHEET

High-Performance One Component Water Based Flexible Polyurethane Class 3 Waterproofing Compound

Makproof WPU is a high-performance one component water-based polyurethane class 3 waterproofing membrane. It meets the requirements of AS3740 by complying with AS/NZ 4858.

RECOMMENDED USES

- As a waterproofing membrane under tile to internal and external wet areas such as showers, bathrooms, kitchens, laundries, toilet areas, balconies and roof decks when installed to AS/NZ 3740
- As a waterproofing membrane under tile or other wearing surface systems to external balconies, rooftops & podium levels when installed to AS/NZ 4654.2
- Suitable for concrete, cement rendered masonry, FC sheeting, water resistant plasterboard and structural plywood
- Internal/External applications

FEATURES AND BENEFITS

- Easy to apply
- Class 3 – High elasticity
- Recoat in 1-2 hours at 23°C & 50% RH
- Can tile the next day in most conditions
- Reinforced with clump free fibres
- No mixing required
- High resistance to detergents and bleach
- Will not re-emulsify after curing
- Does not embrittle with age
- Excellent adhesion to concrete, rendered masonry, wet area plasterboard, FC sheet and plywood
- Fast drying

- May be tiled directly using approved tile adhesive
- Flood test in 48 hours @ 22°C
- Can be applied to damp substrates (no free water)
- Brush, roller or trowel applied
- Waterproofing membrane for most applications
- Australian Made and Australian Owned

APPLICATION INSTRUCTIONS

The following instruction steps as detailed in this Technical Data Sheet may not be applicable in every application. They are provided as a guide to assist in meeting the installation requirements of AS/NZ 3740 and AS/NZ 4654.2

Wherever appropriate, the installation must comply with AS/NZ 3740 'Waterproofing of Internal Wet Areas in Residential Buildings' & AS/NZ 4654.2 "Waterproofing Membrane Systems for Exterior Use – Above Ground Level".

This product is formulated for brush, roller or trowel application to both small and large areas. A wet film gauge must be used regularly to ensure that minimum wet film builds are achieved for each coat.

All vertical terminations, including perimeter walls, hobs and penetrations etc must be of adequate height to satisfy AS/NZ 3740 for internal applications & AS/NZ 4654.2 for external applications.

The minimum film build requirements for vertical surfaces are identical for horizontal applications and must be applied without slump or deformation when cured.

Apply **Makseal Industrial Grade Silicone** or **Makseal Hybrid LM** as a bond breaker joint to all

horizontal/vertical junctions, e.g., wall/floor, wall/wall, hob/ floor, hob/wall & shower set downs etc, prior to all membrane applications.

Allow 72 hours @ 22°C /50% RH before flood testing the installed system. Inspect the joints or other critical areas have been fully dried prior to flood testing.

Critical areas where the membrane is applied greater than 1mm wet film or over bond breakers and other impermeable substrates longer drying time may be required.

Suitable sealants for use as bond breakers (in order of preference and performance) include: **Makseal Industrial Grade Silicone** and **Makseal Hybrid LM**.

Correct bond breaker selection and installation is vital to overall membrane performance. Using an unsuitable sealant can increase the risk of failure and must be avoided. If unsure, please contact the **Makrete** Technical Department for advice.

SUBSTRATE PREPARATION

Read precautions prior to applying any component of the membrane system.

Commencement of membrane system installation shall be taken as acceptance of the substrate suitability and preparation by the applicator.

Check that the surfaces of all substrates to be used are structurally sound, clean, dry or damp with no free surface water. Must be smooth and free of voids & protrusions, oils, grease, curing compounds, coatings, adhesive residues and are uncontaminated by preceding trade activities.

Check that all composite substrates, such as wall & floor sheets are fully supported and installed to the manufacturer's instructions.

Where platform floor sheeting, in particular particleboard, is installed check manufacturer's specification for suitability in wet area

applications and ensure that protective coatings do not impair membrane adhesion.

New concrete and render must have cured for a minimum 28 days. Sand & cement screeds and polymer modified renders must have cured for a minimum 7 days.

Substrates that are not smooth or free of voids and protrusions must be ground and vacuumed clean. All remaining voids must be repaired using, **Maklevel Skim Coat** making sure to follow instructions for preparation, application and curing time.

Makprime MP must be applied as a primer coat on all applications to porous substrates, e.g., concrete, screeds, renders. Refer to **Makprime MP** Technical Data Sheet.

Two coats of **Makproof Moisture Barrier** must be used to seal concrete slabs subject to a hydrostatic head of pressure from the negative side.

Makproof Moisture Barrier must be clean, dry and smooth immediately prior to membrane application. Membranes should not be applied until all preparation steps have been completed.

CRACKS AND JOINT SEALING

Concrete and Masonry Substrates:-

Static cracks up to 2mm in width, i.e., cracks that do not move or continue to propagate, must be filled with **Maklevel Skim Coat** after priming with **Makprime MP** and prior to the first full coat of membrane.

Static cracks greater than 2mm but less than 4 mm in width, i.e., cracks that do not move or continue to propagate, must be filled with **Maklevel Skim Coat** after priming with **Makprime MP** and prior to the first full coat of membrane. Static cracks greater than 5mm must be filled with **Maklevel Rapid Patch**. Cracks greater than 2mm that are subject to movement or propagation must be referred to the builder or engineer for structural assessment and method of rectification to perform as an expansion joint.

Expansion joints must be a minimum 6mm in width and require a backer rod installed prior to the installation of **Makseal Hybrid LM** at a width: depth ratio of 2:1.

Floor and Wall Sheet Junction:

All floor and wall sheets must be installed to sheet manufacturer's specification and primed with **Makprime MP**.

Internal or external sheet floor systems, suitable for wet area applications, require sealant/adhesive application to seal sheet joints at the time of installation to comply with manufacturer's instructions. Where appropriate, the user must confirm that the sealant used is compatible with **Makproof WPU** membrane.

Floor sheet joints that use Polyurethane sealants at installation must be cured for a minimum 7 days prior to the application of the membrane.

All sheet joints must be isolated from the membrane by a min 12mm wide bond breaker tape that covers the entire width & length of the sheet join.

As floor sheet joints are more prone to movement over joist supports, apply an extra 1000 micron (1.0 mm) wet coat extending a minimum 35mm either side of the bond breaker tape. A further 2 full coats, at 1000 microns each, must be applied over the entire area to be waterproofed.

Expansion Joints:

All expansion joints must be isolated from the membrane by a minimum 12mm wide bond breaker tape that covers the entire width & length of the joint.

An extra 800-micron (0.8 mm) wet coat extending a minimum 35mm either side of the bond breaker tape must be applied as an extra coat. A further 2 full coats, at 800 microns wet coat each, is required to the entire area to be waterproofed.

PRIMING

Porous Substrate:

A porous or absorbent substrate will allow a bead of water to easily soak into and wet out the surface of the substrate.

Makprime MP must be used prior to the application of the membrane to avoid pinholes.

Makprime MP must be stirred and not shaken if colour separation is evident. Colour separation will not affect the performance of **Makprime MP**.

Makprime MP must be applied as a primer coat on all applications to porous substrates.

Refer to **Makprime MP** Technical Data Sheet.

Non-Porous Substrate:

A non-porous or impervious substrate will cause a bead of water to be retained on the surface of the substrate as a raised droplet. The droplet does not easily soak into the surface of the substrate.

Concrete that is overworked or burnished at the time of placement can become non-porous when cured. Mechanical abrasion, such as captive shot blasting or vacuumed grinding is required to open substrate pores prior to the application of **Makprime MP**.

APPLICATION

Moist or Damp Surfaces:

Makprime MP can be applied to damp porous substrates, i.e. with no free water on the surface.

Makproof WPU is not a vapour barrier and is not designed to stop a negative hydrostatic head of pressure. Where a substrate is subjected to a hydrostatic head of pressure from the negative side

Makproof Moisture Barrier must be applied and be allowed to fully cure before the membrane application.

Bond Breaker & Membrane Installation:

Internal wet area installation must comply with the minimum requirements of AS/NZ 3740.

External wet area installation must comply with the minimum requirements of AS/NZ 4654.2.

Makseal Industrial Grade Silicone or **Makseal Hybrid LM** is to be installed over the dry primer coat where a bond breaker joint is required, e.g., to internal corners and changes in direction of substrate plane, such as wall/floor; wall/wall; hob/wall junctions, pipe penetrations, tap bodies, water stops, drainage outlets and the like.

Bond breaker joints must be a minimum 12mm x 12mm coved bead of sealant applied by caulking gun continuously into all changes of substrate plane, such as, wall/floor, hob/floor, hob/wall and wall/wall corners to the minimum termination height required by AS/NZ 3740 or AS/NZ 4654.2 as applicable.

The sealant must bridge all gaps and holes with a minimum 6mm contact onto the adjacent substrates.

All bond breaker joint sealant profiles must be a minimum 6mm in depth at the mid-point of the joint.

Substrate gaps at drainage outlets, flashings, and water stops, nail/screw holes etc. must also be sealed using **Makseal Industrial Grade Silicone** or **Makseal Hybrid LM** sealant prior to **Makproof WPU** application.

Where applied, **Makseal Industrial Grade Silicone** or **Makseal Hybrid LM** must be spatula tooled smooth around fittings and at all changes of substrate plane to a minimum 12mm x 12mm coved joint. The sealant must be a minimum 6mm in depth at the mid-point of the bond

breaker joint and extend a minimum 6mm on either side of the joint or gap.

Apply **Makproof WPU** as soon as the bond breaker joint can be over coated without deformation of the coved sealant profile.

Application of the Membrane:

This is a 2-coat system. It can be applied by brush, roller or trowel.

Each coat must be applied at a uniform thickness of 0.8 mm (2 coats will achieve a total wet film thickness of 1.6 mm).

It should not be applied in excess of 1.6 mm thick per coat.

A wet film gauge should be used to regulate adequate coverage of each coat.

Membrane Protection:

Membrane should be protected throughout the application process and during the initial 24-hour cure period by the placement of signs and barriers to deny access to next trades.

Further temporary protection sheets must be installed securely, to protect the cured dry film from damage by following trades, until a protective screed or finished floor system is installed.

Membrane Recoating and/or Repair Recoating:

The surface must be cleaned free of all tile adhesive residue, surface dust and any form of contamination or substrate irregularity. The membrane surface must be washed down with diluted sugar soap, thoroughly rinsed and allowed to dry.

Repairing:

The adjacent membrane must be sound with minimum dry film thickness of 1.0mm that is fully adhered to the substrate.

Membrane must be thoroughly cleaned of all foreign material and left free of all cleaning agent residue, dust or contamination.

Ensure that any exposed porous and non-porous substrates are correctly prepared, primed and sealed.

Apply 2 coats of **Makproof WPU** waterproofing membrane as per "Coverage" instructions.

Ensure that the membrane repair overlaps the existing membrane by a minimum 100mm.

A consistent minimum 1.0mm dry film thickness is required over both previously coated and uncoated repair areas. (Refer to "Coverage" table).

COVERAGE:

This will vary with the porosity of the substrates. Two coats are recommended to get the optimum performance.

For Floors & Walls:

A minimum dry film thickness of 1.0 mm after 2 coats is required. A 15 Litre pail will cover approximately 9.5 m² (based on two coats).

APPLICATION AND COVERAGE		
Application	Wet Film Thickness	Dry Film Thickness
FLOORS	0.75mm	0.45mm
WALLS	0.50mm	0.30mm
Total Film Thickness after 2 coats	0.90mm	0.60mm

YIELD		
Theoretical coverage per 15 Litre Pail	Per coat	2 coats
FLOOR	20 m ²	10 m ²
WALL	30 m ²	15 m ²

Precaution:

This is a one-part system. Do not dilute with water or any liquid.

Must not be installed directly on wet (standing water), contaminated, or friable substrates. Minimum dry film thickness after 2 coats is 1.0mm

Regular checks with a wet film gauge during the application of each coat are advised.

Do not apply the system when air or substrate temperatures are below 5°C. Cold damp conditions will adversely affect application properties and slow rate of curing.

Do not apply **Makproof WPU** when air and substrate temperature is greater than 35°C or below 5°C.

When used in areas subject to ambient conditions below freezing, special installation precautions must be taken.

Membrane is not suitable for immersion applications. Use **Makproof 2 Part** cementitious membrane or immersed applications.

All AS 4654.2 external membrane applications covered with a reinforced tile bed or screed must be separated from the membrane by a minimum one layer of 200-micron plastic sheet as a separation layer in accordance with AS 3958.1 - 3.3.2.3.

The installation of protection board and ballast, such as river pebbles or similar loose laid unbound coverings, must be isolated from the

membrane by a compatible drainage cell and filter fabric system.

It must not be applied directly over lightweight concrete. Hobs constructed of autoclaved aerated blocks, e.g. Hebel, must be saturated with 2 coats of **Makprime MP** to consolidate and seal the substrate. This is to prevent pin holing of the membrane and provide enough strength to support tiling of the hob.

Autoclaved aerated block walls must be rendered prior to the application of the membrane system.

Makproof WPU is not recommended for constantly submerged applications such as swimming pools, ponds and spas. Use **Makproof 2 Part** cementitious membrane.

Makproof WPU waterproofing membrane is not designed to withstand negative side substrate head of pressure. Use **Makproof Moisture Barrier**.

Makrete recommend using approved proprietary tile adhesives. Contact **Makrete** for additional information and recommendations.

PAINTABILITY:

Makproof WPU is paintable. Refer to paint supplier's recommendations.

STORAGE AND SHELF LIFE

Makproof WPU has a 12-month shelf life when stored unopened between 5°C to 30°C.

Protect from excessive heat, direct sunlight, moisture and freeze/thaw.

CLEAN UP

Makproof WPU should be removed with warm soapy water from tools and equipment prior to full cure.

HEALTH AND SAFETY INFORMATION

Please refer to full Safety Data Sheet for this product, which is available from **Makrete Building Solutions**.

PRODUCT CHARACTERISTICS	
Colour	Light Grey
Appearance	Brush/Roller Grade Smooth Paste
Packaging	15L pails
Specific Gravity	Approx 1.3kg/L
Volume Solids	Approx. 60%
2mm Crack Bridging	Pass
Flammability	Non-flammable
Membrane Rating	Class 3
Drying Time Per Coat	1-2 hours @ 23°C and 50% RH (minimum of 2 coats)
Final Drying Time	24 hours @ 23°C and 50% RH (after last coat)
Shore "A" Hardness	Approx. 60
Moisture Vapour Transmission Rate	1.24 grams / m ² / 24hours
Tensile Strength	>1.5 MPa
Elongation	>900%
Coverage	9.5m ² after 2 coats
Minimum Wet Film	0.75mm/coat Minimum 2 coats required
Dry Film Thickness	1.0mm (after 2 coats)

Product	MAKPROOF WPU
Issue Date	AUG 2022
Issue No:	1
Item Code	MAKW10
Size	15 Litre Container

CONTACT & TECHNICAL SUPPORT

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Product disclaimer

This Technical Data Sheet (TDS) summarises our best knowledge of the product, including how to use and apply the product based on the information available at the time.

The TDS should be carefully read and consider the information in the context of how the product will be used, including in conjunction with any other product and the type of surfaces to, and the manner in which, the product will be applied.

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It is recommended that all products be properly stored, handled and applied in accordance with the printed literature (TDS).

PLEASE CONSULT OUR TECHNICAL DEPARTMENT FOR FURTHER INFORMATION.