MAKPROOF 1K

TECHNICAL DATA SHEET

Water Based One Component Flexible Fibre Reinforced Cement Based Waterproofing Membrane System

Makproof 1K is a one component, flexible, cementitious fibre reinforced waterproofing membrane system. It is manufactured with cement modified with special polymers and selected graded aggregates in addition to waterproofing additives to produce a flexible waterproofing surface subject to flexural strain.

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.
- As an exposed waterproofing membrane to external applications subjected to light pedestrian traffic only
- As a waterproofing membrane for planter boxes and retaining walls
- **Makproof 1K** is suitable as a waterproofing membrane for swimming pools
- It is suitable for concrete, cement rendered masonry, FC sheeting, water resistant plasterboard and structural plywood

FEATURES AND BENEFITS

- Flexible waterproofing membrane
- One component product
- Waterproof concrete and masonry substrates
- Waterproofing under tiles
- Fast drying and can recoat within 1-2 hours
- Class 1 – low extensibility when tested to Australian standard AS 4654.1 & AS/NZS 4858
- AS 4020:2018 – potable water certificate
- Brush, roller, trowel or spray equipment applied
- Suitable for residential and commercial use
- Suitable for positive and negative hydrostatic pressure to 50 meters
- Australian Made and Australian Owned

APPLICATION INSTRUCTIONS
SURFACE PREPARATION

Makproof 1K membrane system has been developed for application on graded substrates that provide positive falls to drainage outlets. Overlaying tiling systems must comply with Guide to the Installation of Ceramic Tiles (AS 3958.1).

Ensure the surfaces of all substrates to be used are structurally sound, clean, dry or damp with no free surface water. They must be smooth and free of voids and protrusions, grease, oils, curing compounds, coatings, adhesive residues and clear of preceding trade activities.

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

Where platform floor sheeting such as particleboard is installed review manufacturer's specifications 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 of 28 days.

Sand and cement screeds and polymer modified renders must have cured for a minimum of 7 days.

Substrates that are not smooth or free of voids and protrusions must be ground and vacuum cleaned. Any voids must be repaired using **Maklevel Skim Coat**.

Makproof 1K waterproofing membrane system is recommended for use in swimming pools, ponds and spas when covered by suitable tile finishes bonded with suitable tile adhesives.

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** or **Maklevel Rapid Patch** 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 recommendations.

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 1K** 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 75mm 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 (1.0mm) wet coat extending a minimum of 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 75mm wide bond breaker tape that covers the entire width & length of the joint.

An extra 1000-micron (1.0 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 1000 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.

Makproof 1K can be applied to damp porous substrates, i.e. with no free water on the surface.

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

Makprime MP can 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**. Use **Makprime MP** undiluted.

MIXING

Makproof 1K is a one-part waterproofing membrane which needs to be mixed with water.

The mixing ratio can be adjusted to obtain the consistency and workability desired for the intended application. **DO NOT MIX BY HAND.**

Application Method	Quantity
Roller/Spray	6-7 Litres water per 20kg bag
Brush	5-6 Litres water per 20kg bag
Trowel	4.2-4.5Litres water per 20kg bag

MIXING

Add powder into the water while mixing with a mechanically powered high shear stirrer.

Always add powder to liquid to avoid lumps and incomplete mixing.

Continue mixing until a uniform and lump free mixture is achieved.

APPLICATION

Makproof 1K is a 2-coat system. It can be applied by brush, roller or trowel or spray equipment.

Each coat must be applied at a uniform thickness of 1.0mm (minimum). 2 coats will achieve a total wet film thickness of 2.0mm. It should not be applied more than 2.0mm thick per coat.

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

All vertical terminations, including perimeter walls, hobs etc, must be of adequate height to satisfy AS/NZ 3740 for internal applications and 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 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 24 hours at 22°C/50% RH before flood testing the installed system. Ensure that 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 require longer drying times.

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 35mm x 35mm 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 1K** 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 required coved 35mm x 35mm 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 1K** as soon as the bond breaker joint can be over coated without deformation of the coved sealant profile.

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 1K** 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:

Coverage will vary with the porosity of the substrates.
Two coats of **Makproof 1K** is recommended to get the optimum performance.

PRECAUTION:

Must not be installed directly on wet (standing water), contaminated, or friable substrates.
Minimum dry film thickness after 2 coats is 1.00mm.
Regular checks with a wet film gauge during the application of each coat are advised.
Cold damp conditions will adversely affect application properties and slow rate of curing.
Do not apply **Makproof 1K** 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 suitable for use as an exposed finish or as top coating exterior membrane on applications that are subject to light pedestrian maintenance traffic only.
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.

Makproof 1K 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 1K can be used in constantly submerged applications such as swimming pools, ponds and spas when covered by tiles using approved tile adhesives.

Protect contents from excessive heat, and freeze/thaw prior to use.

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

PAINTABILITY:

Makproof 1K is paintable. Refer to paint supplier's recommendations.

STORAGE AND SHELF LIFE

Makproof 1K 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 1K 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 Solution**

PRODUCT CHARACTERISTICS	
Colour	Cementitious Grey Powder – One Component
Appearance	Smooth, Brush/Roller Grade Cement Grey Paste
Pot Life	>30 min @ 22°C and 50% RH
Specific Gravity	Approx 1.5g/cm3 when mixed
Crack Bridging	>0.5mm
Drying Time Per 1mm Coat	1-2 hours @ 22°C and 50% RH (minimum of 2 coats)
Final Drying Time following Trades	24 hours @ 22°C and 50% RH (after last coat) – 2 weeks if in contact with drinkable water. In pool situations 4 days of curing prior to tiling.
Dry Film Thickness	Trowel at least 2 layers, to a total thickness of 3mm. For general applications 2 coats of minimum of 1mm is recommended.
Shore "A" Hardness	Approx. 80
Resistance against water pressure	5 bars (50 meters) for both negative & positive hydrostatic pressure.
Tensile Strength	>2.00 MPa
Coverage	1.2kg /m^2 /mm thickness
Packaging	20kg bag powder
	*Suitable for positive & negative hydrostatic pressure to 50m

Product	MAKPROOF 1K
Issue Date	AUG 2023
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Size	20 Kg Bag)

CONTACT & TECHNICAL SUPPORT
Makrete Pty Ltd
ABN: 14619437204
PO Box 50, Montmorency, VIC 3094
Ph: 1300 911 161
E: admin@makrete.com.au
W: www.makrete.com.au