

AQUAFLEX S 1K

Ready-to-use liquid membrane, based on silane-terminated polymers, for indoor and outdoor waterproofing, including damp substrates



BENEFITS AND FEATURES

- Ready to use
- Easy to apply
- Excellent resistance to standing water
- Fast drying
- Excellent bond
- Resistant to UV rays and fire
- Certified durability of 10 years

WHERE TO USE

For waterproofing:

- new and existing roofs
- terraces and balconies before the application of tiles
- bathrooms and wet areas in general before the application of tiles

Aquaflex S 1K can be applied on:

- concrete and cementitious screeds
- old bituminous membranes
- on gypsum board panels
- metals
- PVC details, such as piping

TECHNICAL CHARACTERISTICS

Aquaflex S 1K is a one-component, solvent-free, liquid waterproofing membrane based on silane-terminated polymers developed in the MAPEI R&D laboratories.

Once applied, **Aquaflex S 1K** forms a continuous, elastic, seamless membrane with excellent crack-bridging ability and UV resistance.

Thanks to its particular characteristics and a complete range of priming solutions, **Aquaflex S 1K** adheres perfectly to various types of substrates.

Aquaflex S 1K is easy to use: it is applied by roller, trowel, or brush on horizontal, vertical, and sloping surfaces.

RECOMMENDATIONS

- Do not apply **Aquaflex S 1K** if the temperature is lower than +5°C or higher than +35°C, on frozen substrates or on substrates with condensation.
- Do not apply **Aquaflex S 1K** if rain is expected.
- Do not apply **Aquaflex S 1K** on substrates subject to rising damp.
- **Aquaflex S 1K** is not suitable for continuous immersion.

APPLICATION PROCEDURE

Preparing the substrate

The surface to be treated must be sound and perfectly clean. Horizontal surfaces must have a slope of at least 1% to ensure proper drainage of water towards the outside or to designated collection points.

Before applying the product on cementitious surfaces, remove all cement laitance, crumbling material, and any trace of dust, grease, and/or form-release compound. The substrate must be free of irregularities and honeycombing; any such discontinuities, if present, should be repaired or leveled.

Before applying **Aquaflex S 1K** on dry or damp cementitious substrates, apply one coat of **Aquaflex S 1K**. As an alternative, over substrates with residual humidity lower than 4%, it is possible to apply **Primer SN**, two-component epoxy primer with fillers, and broadcast the surface while still wet with **Quartz 0.5**.

Existing bituminous membranes must be thoroughly washed with water to remove oils, greases, dirt, and, in general, any other material that could affect the adhesion of **Aquaflex S 1K**. The membrane must be completely dry before inspection. Any existing damage, such as blisters, tears, or detachment, should be removed and repaired.

If the membrane is smooth, apply **Mapecoat I 600 W** two-component, water-based epoxy primer, diluted 1:1 with water, on all the horizontal surfaces and vertical overlaps by roller, brush, or airless spray.

Metal substrates must be dry-sandblasted to a grade SA 2½ finish (according to Swedish Standards). If dry-sandblasting equipment cannot be used, clean the surface using tools with a scraping or hammering action. Once cleaned and degreased, metal substrates do not require priming.

Gypsum-based substrates must be perfectly dry, sanded, and primed with **Primer G** (generally diluted 1:1 - 1:2 with water to ensure proper penetration).

Before applying **Aquaflex S 1K**, pay particular attention to the expansion joints, fillets between horizontal and vertical surfaces, which must be properly treated. Apply **Mapeband TPE** over structural joints before applying the membrane.

For further details or particular waterproofing requirements, please contact MAPEI Technical Services Department.

Application of the product

The product is supplied ready-mixed; however, stirring the product thoroughly before use is recommended to ensure it is perfectly blended.

Apply **Aquaflex S 1K** using a brush, roller, or trowel to achieve a final dry film thickness of at least 1.5 mm (corresponding to a consumption of approx. 2.4 kg/m²).

If the membrane needs to be reinforced with **Mapetex 50**, or alternatively **Mapetex 110**, non-woven polypropylene fabric, lay the selected fabric on the first coat of liquid membrane, go over the fabric with a spiked roller, and then apply another coat of **Aqua ex S 1K** to achieve the final thickness required.

If it is necessary to bond a ceramic covering onto **Aqua ex S 1K**, **Keralastic**, epoxy-polyurethane adhesive, **Kerapoxy Adhesive** or **Ultrabond EP 2K** epoxy adhesives, or alternatively **Kerabond**, cementitious adhesives, mixed with undiluted **Isolastic** can be used.

The use of **Kerabond + Isolastic** on **Aquaflex S 1K** requires the surfaces to be covered with dry quartz sand immediately after application.

TOOLS CLEANING

It is recommended to clean tools with thinner before the product starts to set. Once hardened, cleaning can only be carried out mechanically.

CONSUMPTION

Approximately 1.6 kg/m² per mm of dry film thickness.

In general, the reported consumption rates refer to a continuous film on a flat surface and may increase on uneven substrates.

Application	Dry film thickness	Consumption
Walkable roofs only for maintenance purposes	1.5 mm	2.4 kg/m ²
Water impermeable membrane beneath ceramic tiling (according to EN 14891)	1.5 mm	2.4 kg/m ²
Aquaflex S 1K System Roof . according to EAD 030350-00-0402	2.5 mm	4 kg/m ² (with embedded Mapetex 50)

PACKAGING

5 and 15 kg buckets.

STORAGE

Aquaflex S 1K can be stored for 12 months in its original packaging in a dry place.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Instructions for the safe use of our products can be found on the latest version of the SDS available from our website www.mapei.com.

PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)

PRODUCT IDENTITY	
Consistency:	paste
Colour:	grey
Density:	1.55 g/cm ³
Dry solids content:	100%
Brookfield viscosity:	8,000 mPa·s (spindle 5 - 20 rpm)

APPLICATION DATA (at +23°C and 50% R.H.)

Recommended application temperature:	from +5°C to +35°C
Rain resistance:	after 1 hour
Ready for use:	48 hours
Service temperature:	from -30°C to +90°C

MECHANICAL CHARACTERISTICS

Elongation at break (ISO 37):	> 100 %
Tensile strength (ISO 37):	2.5 N/mm ²
Tear strength (ISO 34-1):	8 N/mm ²
Shore A hardness (DIN 53505):	50

FINAL PERFORMANCE (1.5 mm thickness)

Performance characteristic	Test method	Requirements according to EN 14891	Performance of product
Impermeability to water under pressure (1.5 bar for 7 days of positive pressure):	EN 14891-A.7	No penetration	No penetration
Crack-bridging ability at 23°C:	EN 14891-A.8.2	≥ 0.75 mm	2.1 mm
Crack-bridging ability at -20°C:	EN 14891-A.8.3	≥ 0.75 mm	2 mm
Initial tensile adhesion strength:	EN 14891-A.6.2	≥ 0.5 N/mm ²	> 1 N/mm²
Tensile adhesion strength after water contact:	EN 14891-A.6.3	≥ 0.5 N/mm ²	≥ 0.5 N/mm²
Tensile adhesion strength after heat ageing:	EN 14891-A.6.5	≥ 0.5 N/mm ²	> 1 N/mm²
Bond after freeze/thaw cycles:	EN 14891-A.6.6	≥ 0.5 N/mm ²	≥ 0.5 N/mm²
Tensile adhesion strength after contact with lime water:	EN 14891-A.6.9	≥ 0.5 N/mm ²	> 0.8 N/mm²
Tensile adhesion strength after contact with chlorinated water:	EN 14891-A.6.8	≥ 0.5 N/mm ²	> 0.8 N/mm²

Adhesion strength values according to EN 14891 determined with **Aquaflex S 1K** and type C2S2 cementitious adhesive in compliance with EN 12004

Other performance characteristics

Reaction to external fire class:

EN 13501-5

B_{roof} t2

FINAL PERFORMANCE (2.5 mm thickness with Mapetex 50)

Performance characteristic	Test method	Performance of product
Bond strength by pull-off (N/mm ²):	EOTA TR 004	> 1 N/mm ²
Water-vapour transmission coefficient:	EN 1931	μ = 1752
Impermeability:	EOTA TR 003	no penetration
Dynamic crack-bridging at -10°C:	EOTA TR 008	pass
Reaction to fire (Euroclass):	EN 13501-1	D, s1-d0
Reaction to external fire class:	EN 13501-5	B _{roof} t1
Slip resistance:	EN 13893	μ = 1.26 (dry surface)

WARNING

Although the technical details and recommendations contained in this product data sheet correspond to the best of our knowledge and experience, all the above information must, in every case, be taken as merely indicative and subject to confirmation after long-term practical application; for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application.

Please refer to the current version of the Technical Data Sheet, available from our website www.mapei.com

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The most up-to-date TDS can be downloaded from our website www.mapei.com. www.mapei.com.

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7547-11-2025 en (IT)

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