

AQUAFLEX S 1K

Ready-to-use liquid membrane, based on silane-terminated polymers, for indoor and outdoor waterproofing, including wet 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 flat roofs;
- terraces and balconies before the application of tiles
- bathrooms and damp spaces in general before the application of tiles

Aquaflex S 1K can be applied over:

- concrete and cementitious screeds;
- existing bituminous membranes;
- gypsum board panels
- metal
- PVC features, such as pipework

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** dries to form a seamless elastic membrane without overlaps with excellent crack-bridging capacity and resistance to UV rays.

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

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

RECOMMENDATIONS

- Do not apply **Aquaflex S 1K** if the surrounding 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 it is about to rain.
- Do not apply **Aquaflex S 1K** on substrates subject to rising damp.
- **Aquaflex S 1K** is not suitable for surfaces that are continuously immersed.

APPLICATION PROCEDURE

Preparation of the substrate

The surface to be treated must be sound and perfectly clean. Horizontal surfaces must have at least 1% slope so that water flows towards the edges of the waterproofed area or towards guttering and drainpipes.

Before applying the product on cementitious surfaces, remove all cement laitance and crumbling material and any trace of dust, grease, and/or form-release compound. There must be no uneven areas or gravel clusters on the surface; if present, repair or skim the surface.

Before applying **Aquaflex S 1K** on dry or damp cementitious substrates, apply one feather edge 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 hosed down to remove any oil, grease, dirt in general, and any other material or substance that could affect the adhesion of **Aquaflex S 1K**. The membrane must be perfectly dry before inspecting the surface and any damage in the membrane, such as blistering, tears, or detached areas, must be repaired before applying the primer.

In the case 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 with a roller, brush, or airless spray.

Metal substrates must be dry-sandblasted to a grade SA 2½ finish (according to Swedish Standards). If it is not possible to use dry-sandblasting equipment, clean the surface with tools with a scraping or hammering action. Once cleaned and degreased, metal substrates do not need to be primed.

Gypsum-based substrates must be perfectly dry, sanded, and pre-treated with **Primer G** (as a general guide, diluted 1:1-1:2 with water for good penetration).

Before applying **Aquaflex S 1K**, pay particular attention to expansion joints and fillets between horizontal and vertical surfaces, which must always be treated according to requirements. Apply **Mapeband TPE** over expansion 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, but mixing thoroughly before use is recommended to ensure it is perfectly blended.

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

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

For installing ceramic covering on **Aquaflex 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.

CLEANING TOOLS

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

CONSUMPTION

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

In general, the consumption rates are for a seamless film on a flat surface and will be higher on uneven substrates.

Application	Dry film thickness	Consumption
Roof walkable for maintenance purposes only	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 Mapetex 50 embedded)

PACKAGING

5 and 15 kg buckets.

STORAGE

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

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Instructions for the safe use of our products can be found on the latest version of the Safety Data Sheet, available from our website www.mapei.it.

PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

Consistency:	paste
Colour:	grey
Bulk density:	1.55 g/cm ³
Dry solids content:	100 %
Brookfield viscosity:	8,000 (rotor 5 - 20 revs)

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

Application temperature:	from +5°C to +35°C
Resistance to rain:	after 1 hour
Ready for use:	48 hours

Service temperature:

from -30°C to +90°C

MECHANICAL CHARACTERISTICS

Elongation at failure (ISO 37):

> 100%

Tensile strength (ISO 37):

2.5 N/mm²

Tear strength (ISO 34-1):

8 N/mm²

Shore A hardness (DIN 53505):

50

FINAL PERFORMANCE (1.5 mm thickness)

Performance characteristic	Test method	Requirements according to EN 14891	Performance of the product
Impermeability to water in pressure (1.5 bar of positive pressure for 7 days):	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
Tensile adhesion strength 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 values according to EN 14891 determined with **Aquaflex S 1K** and C2S2 type cementitious adhesive in accordance to EN 12004

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/mm²
Water-vapour permeability 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)
Reaction to external fire class:	EN 13501-5	B _{roof} t2

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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7547-9-2024 en (IT)

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