AQUAFLEX ROOF HR

Fibre-filled liquid membrane in water emulsion with high solar reflectance and thermal emittance with a solar reflectance index (SRI) of 105





WHERE TO USE

- Protection against UV rays and heat for existing waterproof systems made from a distilled-bitumen/polymer membrane.
- Protecting and waterproofing concrete surfaces, cementitious screeds, screeds made using special binders (such as **Topcem**, **Topcem Pronto**), ceramics or stone coatings.

TECHNICAL CHARACTERISTICS

Aquaflex Roof HR is a ready-to-use waterproofing, white product, with high solar reflectance and thermal emittance, with a solar reflectance index (SRI) of 105, for external applications made from synthetic resins in water dispersion, and when dry forms a continuous, flexible waterproofing membrane.

Aquaflex Roof HR is resistant to all atmospheric conditions and UV rays, and guarantees long-lasting protection for the substrate.

Aquaflex Roof HR is easy to apply using a long-piled roller, brush or spray on horizontal, sloping or vertical surfaces. Once dry, **Aquaflex Roof HR** forms a strong, flexible, tack-free dry surface, suitable for occasional light foot traffic.

Thanks to its flexibility, **Aquaflex Roof HR** will withstand normal expansion/contraction stresses caused by temperature variations and vibrations.

Thanks to its high reflectance index, **Aquaflex Roof HR** helps lower the working temperature of roofs and guarantees good energy performance properties of all the layers of the roof.

Aquaflex Roof HR lowers the surface temperature of the roof by more than 50% compared with a dark-coloured covering.

Thanks to its SRI value of 105, **Aquaflex Roof HR** helps qualify for LEED credits by reducing the heat island effect of roofs.

Aquaflex Roof HR complies with the principles defined in EN 1504-9 ("*Products and systems for the protection and repair of concrete structures: definitions, requirements, quality control and evaluation of conformity. General principles for the use of products and systems*") and the requirements of EN 1504-2 coating (C) according to principles PI, MC and IR ("*Surface protection systems for concrete*").

RECOMMENDATIONS

- Do not apply **Aquaflex Roof HR** if the temperature is lower than +5°C or higher than +35°C, or if it is about to rain.
- Do not apply if there is any dew on the substrate.
- Do not apply **Aquaflex Roof HR** on wet substrates or on substrates with rising damp.
- Apply **Aquaflex Roof HR** on surfaces without depressions or hollows and, where required, with the correct amount of slope.
- Do not apply **Aquaflex Roof HR** on weak or dusty substrates.
- If it rains between one coat and another of **Aquaflex Roof HR**, wait at least 12 hours before applying the next coat, and always until there is no residual moisture; adhesion between the two coats could be affected.
- Do not apply on painted metal surfaces.
- Do not use on bituminous membranes that have only recently been applied (< 6 months). Always wait until the surface to be treated has completely oxidised.

APPLICATION PROCEDURE

Preparation of the substrate

All substrates, whether new or old, must be sound, clean, dry and free of all traces of oil, grease, old paint, rust, mould and any other material which could affect adhesion.

Carefully clean the existing bituminous membrane to provide a clean, dry substrate. Apply **Aquaflex Primer** by brush, with a roller or by airless spray.

Concrete and mineral substrates in general must be sound and dry with no rising damp. Any loose parts must be removed.

All wax, water-repellent treatments, etc. must be removed from the surface of ceramic substrates with a suitable detergent and/or by sanding.

Any hollows in the surface must be repaired with **Mapeslope**. Fill any gaps between ceramic floor tiles with **Adesilex P4** before applying **Aquaflex Roof HR**. Apply **Eco Prim Grip Plus** on non-absorbent ceramic substrates, while on any other type of substrate apply **Aquaflex Roof HR** used as primer diluted with 10% water.

Before applying **Aquaflex Roof HR**, pay particular attention to the expansion joints and the fillets between horizontal and vertical surfaces, which must be waterproofed using **Mapeband Easy**, rubber tape sandwiched between two layers of non-woven fabric or **Mapeband SA**, self-adhesive butyl rubber tape, or by bonding **Mapetex 50** (h 20) to the substrate with **Aquaflex Roof HR**. Structural joints must be waterproofed with **Mapeband TPE** bonded in place with **Adesilex PG4**. Use a suitable kit from the **Drain** range to seal any drains.

Preparation of the product

The product is supplied ready-to-use, but mixing before use is recommended so that it is perfectly blended.

Application of the product

Aquaflex Roof HR must be applied with a long-piled roller, brush or by airless spray. Apply two dry coats of **Aquaflex Roof HR** around 0.4-0.5 mm thick each. Wait until the first coat is completely dry before applying the next coat. The second coat must be applied crossways with respect to the previous coat.

The dry thickness of **Aquaflex Roof HR** must never be less than 0.8-1 mm.

If the substrate has micro-cracks, insert **Mapetex 50**, non woven polypropylene fabric between the two layers of **Aquaflex Roof HR**.

Spread a generous coat of **Aquaflex Roof HR** on the substrate, and while gradually applying the product, immediately lay **Mapetex 50** and go over the surface with a flat spreader or spiked roller to ensure it is perfectly wetted.

When the first coat is completely dry, spread on a second coat of **Aquaflex Roof HR** to cover completely **Mapetex 50**.

Protect the **Aquaflex Roof HR** membrane from rain until it is completely dry.

CLEANING TOOLS

Tools must be cleaned with water immediately after use.

CONSUMPTION

Waterproof membrane: at least 2 kg/m².

Protective finish on bituminous membranes:

- approx. 0.5 kg/m² on smooth membranes;
- approx. 0.9 kg/m² on mineral-filled membranes.

The consumption rates indicated are for a seamless film on a flat surface and could be higher on uneven substrates and depending on the absorbency of the substrate.

PACKAGING

20 kg drums.

STORAGE

Aquaflex Roof HR may be stored for up to 24 months in its original packaging in a dry place. Protect from frost.

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.com.

PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)

Aquaflex Roof HR: ***fibre-filled liquid membrane in water emulsion with high solar reflectance and thermal emittance with a solar reflectance index (SRI) of 105. Complies with the requirements of EN 1504-2 coating (C) principles PI, MC and IR***

PRODUCT IDENTITY	
Consistency:	paste
Colour:	highly reflective white
Density:	1.35 g/cm³
Dry solids content:	61.4%
Brookfield viscosity:	19,000 mPa·s (# 6 - 10 rpm)

APPLICATION DATA	
Application temperature:	from +5°C to +35°C
Waiting time at +23°C and 50% R.H.:	▪ between **Aquaflex Primer** and 1st coat: approx. 5-6 h; ▪ between two coats of **Aquaflex Roof**: approx. 8 h
Ready for use at +23°C and 50% R.H.:	approx. 48 h

MECHANICAL CHARACTERISTICS	
Elongation at failure (ISO 37):	200%
Tensile strength (ISO 37):	1.5 N/mm²

FINAL PERFORMANCE (thickness 1.0 mm)				
Performance characteristics	Test method	Requirements according to EN 1504-2 coating (C) principles PI, MC and IR	Performance figures for Aquaflex Roof HR	
Adhesion to concrete - after 28 days at +20°C and 50% R.H.:	EN 1542	Flexible systems with no traffic: ≥ 0.8	1.3 N/mm²	
Thermal compatibility to freeze/thaw cycles with de-icing salts, measured as adhesion:	EN 13687-1		≥ 1 N/mm²	
Thermal compatibility to thunder showers measured as adhesion:	EN 13687-2		≥ 1 N/mm²	
Static crack-bridging at +23°C expressed as maximum crack width (mm):	EN 1062-7	class A1 (0.1 mm) to class A5 (2.5 mm)	Class A4	
Static crack-bridging at 0°C expressed as maximum crack width (mm):			Class A4	
Dynamic crack-bridging at 0°C expressed as resistance to cracking cycles:		class B1 to class B4.2	Class B2	
Permeability to water vapour – equivalent air thickness S_D:	EN ISO 7783-1	class I: S_D < 5 m (permeable to vapour)	S_D = 1.38 m	Class I
Impermeability to water, expressed as capillary absorption:	EN 1062-3	< 0.1 kg/m²·h$^{0.5}$	0.02 kg/m²·h$^{0.5}$	
Permeability to carbon dioxide (CO_2) – diffusion in equivalent air layer thickness S_{DCO2}:	EN 1062-6	> 50 m	S_{DCO2} = 400 m	
Exposure to artificial atmospheric agents:	EN 1062-11	After 2000 hours of artificial bad weather: ▪ no swelling according to EN ISO 4628-2 ▪ no cracking according to EN ISO 4628-4 ▪ no flacking according to EN ISO 4628-5 Slight colour variation, loss of brightness and crumbling may be accepted	No swelling, cracking or flacking. Slight colour variation	
Reaction to fire:	EN 13501-1	Euroclass	B-s1-d0	
External fire exposure class:	EN 13501-5	-	Broof t1	

Other performance characteristics	Test method	
SRI (Solar Reflectance Index)*:	ASTM E1980	105
Solar reflectance*:	ASTM E903	83%
Emittance*:	ASTM C1371	91%

** Value certified by the EELab, Department of Mechanical and Civil Engineering, University of Modena and Reggio Emilia*

Performance characteristic	Test method	Product performance
Watertightness:	EN 1928 (60 kPa)	no water passage
Dynamic crack bridging at +23°C:	EN 1062-7	class B4.2

Durability after UV exposure (400 MJ/m^2, 2460 hours) spray (492 hours) (EN ISO 4892-3 cycle 3): **- Compliance criteria**	EN ISO 4628-2	no blistering, no cracking, no flaking
Resistance to ageing from heat 7 days at 70 ± 3°C (point 4.1 of EN 1062-11: **- Compliance criteria** **- Watertightness**	UNI EN ISO 4628-2 EN 1928 (60 kPa)	no blistering, no cracking, no flaking no water passage
Durability after freeze/thaw cycles without de-icing salts 20x (EN 13687-3): **- Bond strength by pull-off** **- Compliance criteria**	EN 1542 UNI EN ISO 4628-2	≥ 0.9 N/mm^2 no blistering, no cracking, no flaking

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. In every case, the user alone is fully responsible for any consequences deriving from the use of the product.

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.

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