



# MAPEI



# Aquaflex Roof Plus



**Ready-to-use,  
high-elasticity,  
quick-drying,  
UV-resistant liquid  
waterproofing membrane**

## WHERE TO USE

For waterproofing:

- flat, sloping and curved roofs and roofs with a complex shape;
- new flat roofs and repairs to existing flat roofs.

**Aquaflex Roof Plus** may be applied on:

- concrete;
- cementitious screeds or screeds made from special binders (**Topcem** or **Topcem Pronto**);
- ceramic and stone;
- fibre-cement slabs;
- old bitumen membranes;
- galvanized sheet, copper, aluminium, steel and iron.

## ADVANTAGES

- More elastic than traditional acrylic waterproofing membranes.
- Quick drying.
- Supplied ready-to-use: easy to apply due to its special consistency and high stretching capacity.
- Durability class: 5, 10 and 15 years.

- CE marking in compliance with EN 1504-2.

- Zero VOC content in compliance with SCAQD (South Coast Air Quality Dept.) Rule 1113 and contributes to the awarding of IEQ 4.2 credits “Low-Emitting Materials: Paints and Coatings” according to the LEED US protocol.

## FURTHER ADVANTAGES OF THE HR VERSION (Highly reflective white)

**Aquaflex Roof Plus HR** is a special version that has been specifically formulated to offer high values of reflectance and thermal emissivity and a solar reflectance index (SRI) of 107.

**Aquaflex Roof Plus HR** may be used to create “Cool Roofs”, or light coloured roofs that reduce the “heat island” effect, as well as considerably reduce the working temperature of the actual roof. In so doing, living comfort inside buildings is significantly improved.

**Aquaflex Roof Plus HR** complies with LEED SS Credit 7.2 “Heat Island Effect” as part of the USGBC LEED classification system.

## TECHNICAL CHARACTERISTICS

**Aquaflex Roof Plus** is a ready-mixed liquid waterproofing membrane developed by the MAPEI R&D laboratories. It is an innovative system made from synthetic polyurethane-acrylic resins in water

dispersion containing no solvents and no VOC.

When dry, **Aquaflex Roof Plus** forms a seamless membrane that can extend more than 350% and is resistant to atmospheric agents and UV rays, guaranteeing a long service life for the substrate.

**Aquaflex Roof Plus** adheres strongly to numerous types of substrate and, thanks to its high elasticity, is compatible for roof structures exposed to normal dynamic stresses. Due to its special formula, **Aquaflex Roof Plus** has excellent mechanical properties that remain stable over the years.

**Aquaflex Roof Plus** is easy to apply by brush, roller or spray on horizontal, vertical and sloping surfaces. The product dries very quickly and several coats may be applied in a very short space of time to reduce site waiting times to a minimum.

**Aquaflex Roof Plus** also has a special solvent-free finishing cycle incorporating **Mapecoat TNS Urban** and **Mapecoat TNS Protection** so that roofs may be accessible to foot traffic.

**Aquaflex Roof** complies with the principles defined in EN 1504-9 (*"Products and systems for protecting and repairing concrete structures: definitions, requirements, quality control and conformity assessment. 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 (*"Concrete surface protection systems"*).

## RECOMMENDATIONS

- Do not apply **Aquaflex Roof Plus** if the temperature is lower than +5°C or higher than +35°C or if it is about to rain.
- Always incorporate **Mapetex 50** reinforcement in the membrane on roofs exposed to particularly low temperatures.
- Do not apply if there is dew on the substrate.
- Do not apply **Aquaflex Roof Plus** on substrates with residual humidity higher than 2.5% or on substrates with rising damp.
- Do not apply **Aquaflex Roof Plus** on painted metal surfaces.
- If it rains between one coat and another of **Aquaflex Roof Plus**, 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 use on bitumen 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 solid, clean, dry and free of all traces of oil, grease, old paint, rust, mould and any other material which could affect adhesion.

Remove all loose parts from concrete and mineral-based substrates. Repair any hollows in the surface with **Planitop Fast 330** rapid-setting, fibre-reinforced cementitious mortar or **Adesilex P4** cementitious smoothing and levelling compound. Prime the surface with a coat of **Aquaflex Roof Plus** diluted with 10% water.

All wax, water-repellent treatments, etc. must be removed from the surface of ceramic substrates with a suitable detergent and/or by sanding. Fill any gaps between ceramic floor tiles with **Adesilex P4** before applying **Aquaflex Roof Plus**. On non-absorbent ceramic substrates, apply **Eco Prim Grip** synthetic acrylic resin adhesion promoter with silica aggregates. For all other types of substrate, prime the surface with a coat of **Aquaflex Roof Plus** diluted with 10% water.

When applied on old bitumen membranes, carefully hydro-blast the surface, wait until the water has drained off and prime the surface with **Primer for Aquaflex** synthetic resin-based primer in solvent solution.

When applying the product on metal substrates, thoroughly clean the surface and apply a coat of **Eco Prim Grip** primer.

Before applying **Aquaflex Roof Plus**, pay particular attention to expansion joints and fillets between horizontal and vertical surfaces, which must be waterproofed with **Mapeband SA** self-adhesive butyl rubber tape or by bonding **Mapeband** or **Mapeband PE 120** to the substrate with **Aquaflex Roof Plus**. 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

After preparing and priming the substrate, apply **Aquaflex Roof Plus** with a long-

## TECHNICAL DATA (typical values)

### PRODUCT IDENTITY

Consistency:	paste
Colours:	highly reflective white (HR), grey and brick red
Density (g/cm <sup>3</sup> ):	1.25
Dry solids content (%):	63
Brookfield viscosity (mPa-s):	30,000

### APPLICATION DATA

Application temperature:	+5°C to +35°C
In service temperature range:	-5°C to +80°C (without reinforcement) -10°C to +80°C (with reinforcement)
Waiting time at +23°C - 50% R.H.:	between primer ( <b>Aquaflex Roof Plus</b> diluted 10%) and 1 <sup>st</sup> coat: 1-2 hours between each coat of <b>Aquaflex Roof Plus</b> : 3-4 hours between <b>Aquaflex Roof Plus</b> with <b>Mapetex 50</b> and a coat of <b>Aquaflex Roof Plus</b> : 12 hours between <b>Aquaflex Roof Plus</b> and <b>Mapecoat TNS Urban</b> : 3-4 hours  <i>(please refer to the Technical Data Sheet for waiting times between each coat of <b>Mapecoat TNS</b>)</i>
Ready for service at +23°C and 50% R.H. (h):	approx. 36

### MECHANICAL CHARACTERISTICS

Elongation at failure (ISO 37) (%):	350
Tensile strength (ISO 37) (N/mm <sup>2</sup> ):	1.1

### FINAL PERFORMANCE (thickness 1 mm)

Performance characteristic	Test method	Requirements according to EN 1504-2 coating (C) principles PI, MC and IR	Performance figures for Aquaflex Roof Plus	
Adhesion to concrete – after 28 days at +20°C and 50% R.H. (N/mm <sup>2</sup> ):	EN 1542	For flexible systems: with no traffic: ≥ 0.8	1.1	
Static crack-bridging at +23°C expressed as maximum width of crack (mm):	EN 1062-7	class A1 (0.1 mm) to class A5 (2.5 mm)	Class A5	
Static crack-bridging at 0°C expressed as maximum width of crack (mm):			Class A5	
Dynamic crack-bridging at +23°C expressed as resistance to cracking cycles:			Class B3.2	
Dynamic crack-bridging at 0°C expressed as resistance to cracking cycles:			Class B3.1	
Permeability to water vapour – equivalent air thickness S <sub>D</sub> (m):	EN ISO 7783-1	class I: S <sub>D</sub> < 5 m (permeable to vapour)	S <sub>D</sub> = 0.72	Class I
Impermeability to water expressed as capillary absorption (kg/m <sup>2</sup> ·h <sup>0.5</sup> ):	EN 1062/3	< 0.1	0.01	
Permeability to carbon dioxide (CO <sub>2</sub> ) – diffusion in equivalent air layer thickness S <sub>DCO2</sub> (m):	EN 1062-6	> 50	193	
Reaction to fire:	EN 13501-1	Euroclass	B-s1-d0	
Exposure to artificial atmospheric conditions:	EN 1062-11	After 2,000 hours of artificial inclement weather: – no swelling according to EN ISO 4628-2 – no cracking according to EN ISO 4628-4 – no flaking according to EN ISO 4628-5 Slight colour variation, loss of brightness and crumbling may be acceptable	No swelling, cracking or flaking. Slight colour variation	

## STRATIGRAPHIC LAYOUT AND CONSUMPTION RATES ACCORDING TO SYSTEM DURABILITY CLASS

	System inaccessible to foot traffic		System accessible to foot traffic	
	Layer	Thickness/ consumption	Layer	Thickness/ consumption
5 years	Primer: <b>Aquaflex Roof Plus</b> diluted 10%	50/100 µm / approx. 0.2 kg/m <sup>2</sup>	-	
	2 coats of <b>Aquaflex Roof Plus</b>	0.5 mm / ≥ 1 kg/m <sup>2</sup>		
10 years	Primer: <b>Aquaflex Roof Plus</b> diluted at 10%	50/100 µm / approx. 0.2 kg/m <sup>2</sup>	Primer: <b>Aquaflex Roof Plus</b> diluted 10%	50/100 µm / approx. 0.2 kg/m <sup>2</sup>
	1 coats of <b>Aquaflex Roof Plus</b> with <b>Mapetex 50</b> 2 <sup>nd</sup> and 3 <sup>rd</sup> coat of <b>Aquaflex Roof Plus</b>	1 mm / ≥ 2 kg/m <sup>2</sup>	1 <sup>st</sup> coats of <b>Aquaflex Roof Plus</b> con <b>Mapetex 50</b>	0.8 mm / ≥ 1.6 kg/m <sup>2</sup>
			2 <sup>nd</sup> coat of <b>Aquaflex Roof Plus</b>	
			1 <sup>st</sup> and 2 <sup>nd</sup> coat of <b>Mapecoat TNS Urban</b>	0.4 mm / ≥ 1 kg/m <sup>2</sup>
		Coat of <b>Mapecoat TNS Protection</b>	70 µm / ≥ 0.15 kg/m <sup>2</sup>	
15 years	Primer: <b>Aquaflex Roof Plus</b> diluted 10% 1 <sup>st</sup> and 2 <sup>nd</sup> coat of <b>Aquaflex Roof Plus</b> with <b>Mapetex 50</b> 3 <sup>rd</sup> and 4 <sup>th</sup> coat of <b>Aquaflex Roof Plus</b>	50/100 µm / approx. 0.2 kg/m <sup>2</sup>	Primer: <b>Aquaflex Roof Plus</b> diluted 10%	50/100 µm / approx. 0.2 kg/m <sup>2</sup>
		1.5 mm / ≥ 3 kg/m <sup>2</sup>	1 <sup>st</sup> coat of <b>Aquaflex Roof Plus</b> with <b>Mapetex 50</b>	1 mm / ≥ 2 kg/m <sup>2</sup>
			2 <sup>nd</sup> and 3 <sup>rd</sup> coat of <b>Aquaflex Roof Plus</b>	
			1 <sup>st</sup> and 2 <sup>nd</sup> coat of <b>Mapecoat TNS Urban</b>	0.4 mm / ≥ 1 kg/m <sup>2</sup>
		Coat of <b>Mapecoat TNS Protection</b>	70 µm / ≥ 0.15 kg/m <sup>2</sup>	

piled roller, brush or by airless spray. Apply at least two coats of **Aquaflex Roof Plus** to form an even layer. Apply each coat cross-ways with respect to the previous coat.

Various stratigraphic layouts with increasing durability may be obtained by applying **Aquaflex Roof Plus** in different thicknesses and at different consumption rates; refer to the relevant table for further information.

If there are micro-cracks in the substrate, and around overlaps in bitumen membranes or for systems in durability classes 10 or 15 years, incorporate **Mapetex 50** non-woven polypropylene fabric between the various layers of **Aquaflex Roof Plus** as specified. Spread a generous coat of product on the substrate, lay the **Mapetex 50** fabric on the surface and press it down with a flat trowel or spiked roller so that it becomes embedded in **Aquaflex Roof Plus**.

When this layer is completely dry apply the next coat of **Aquaflex Roof Plus**.

### Cleaning tools

Clean tools used to apply **Aquaflex Roof Plus** with water before the product dries.

### CONSUMPTION

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

Protective finish or reflective coating on an old bitumen membrane: approx. 0.9 kg/m<sup>2</sup>.

Waterproof membrane: 2 kg/m<sup>2</sup>  
(for a 1 mm thick dry layer).

### PACKAGING

5 and 20 kg drums.

## COLOURS AVAILABLE



## STORAGE

**Aquaflex Roof Plus** may be stored for 12 months in its original sealed packaging. Protect from frost.

## SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

**Aquaflex Roof Plus** is not considered hazardous according to current norms and guidelines regarding the classification of mixtures. It is recommended to use protective gloves and goggles and to take the usual precautions for handling chemicals.

For further and complete information about the safe use of our product please refer to the latest version of our Material Safety Data Sheet.

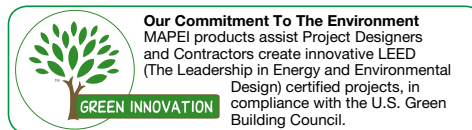
PRODUCT FOR PROFESSIONAL USE.

## 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](http://www.mapei.com)**



**All relevant references for the product are available upon request and from [www.mapei.com](http://www.mapei.com)**



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