



# 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 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-haired 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.

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 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 HR** if the temperature is lower than +5°C or higher than +35°C, or if rain is imminent.
- 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**, wait at least 12 hours before applying the next coat, and only if there is no residual moisture, otherwise adhesion between the two coats could be affected.
- Do not apply on painted metallic substrate.
- 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 they are 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 compromise the bond.

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

Concrete and in general mineral substrates 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**. Infill the gaps between existing ceramic tiles using **Adesilex P4** before applying **Aquaflex Roof HR**. Apply **Eco Prim Grip** on non-absorbent ceramic substrates, while on any other type of substrate apply **Aquaflex Roof HR** used as primer diluted with 10% of 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 butyltape or using **Mapetex 50** (h 20), bonded 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. It is however recommended to mix the contents to perfectly blend the product.

### Application of the product

**Aquaflex Roof HR** must be applied with a long-haired roller or 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 and that it becomes slightly darker in colour before applying the next coat. The second coat must be applied in a criss cross direction 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 on a generous coat of **Aquaflex Roof HR**.

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

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 the tools

Tools must be cleaned with water immediately after use.

### CONSUMPTION

Waterproof membrane: at least 2 kg/m<sup>2</sup>.

Protective finish on bitumen membranes:

– approx. 0.5 kg/m<sup>2</sup>;

– approx. 0.9 kg/m<sup>2</sup> 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

**Aquaflex Roof HR** 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*

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

## TECHNICAL DATA (typical values)

### PRODUCT IDENTITY

|                                      |                          |
|--------------------------------------|--------------------------|
| <b>Consistency:</b>                  | paste                    |
| <b>Colour:</b>                       | highly reflective white  |
| <b>Density (g/cm<sup>3</sup>):</b>   | 1.35                     |
| <b>Dry solids content (%):</b>       | 61.4                     |
| <b>Brookfield viscosity (mPa·s):</b> | 19,000<br>(# 6 - 10 rpm) |

### APPLICATION DATA

|   |  |
|---|--|
| <b>Application temperature:</b>                 | from +5°C to +35°C   |
| <b>Waiting time at +23°C and 50% R.H. (h):</b>  | – between <b>Primer for Aquaflex</b> and 1 <sup>st</sup> coat: approx. 5-6 h;<br>– between two coats of <b>Aquaflex Roof</b> : approx. 8 h |
| <b>Ready for use at +23°C and 50% R.H. (h):</b> | approx. 48   |

### MECHANICAL CHARACTERISTICS

|  |     |
|--|-----|
| <b>Elongation at failure (ISO 37) (%):</b>           | 200 |
| <b>Tensile strength (ISO 37) (N/mm<sup>2</sup>):</b> | 1.5 |

### 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                  |         |
|--|--------------------|---|---|---------|
| <b>Adhesion to concrete - after 28 days at +20°C and 50% R.H. (N/mm<sup>2</sup>):</b>                                      | EN 1542            | Flexible systems with no traffic: $\geq 0.8$  | 1.3   |         |
| <b>Thermal compatibility to freeze thaw cycles with de-icing salts, measured as adhesion (N/mm<sup>2</sup>):</b>           | EN 13687-1         |   | $\geq 1$  |         |
| <b>Thermal compatibility to thunder showers measured as adhesion (N/mm<sup>2</sup>):</b>                                   | EN 13687-2         |   | $\geq 1$  |         |
| <b>Static crack-bridging at +23°C expressed as maximum crack width (mm):</b>   | EN 1062-7          | class A1 (0.1 mm) to class A5 (2.5 mm)  | Class A4  |         |
| <b>Static crack-bridging at 0°C expressed as maximum crack width (mm):</b>   |                    | class B1 to class B4.2  | Class A4  |         |
| <b>Dynamic crack-bridging at 0°C expressed as resistance to cracking cycles:</b>   |                    |   | Class B2  |         |
| <b>Permeability to water vapour – equivalent air thickness S<sub>D</sub> (m):</b>  | EN ISO 7783-1      | class I: S <sub>D</sub> < 5 m (permeable to vapour)   | S <sub>D</sub> = 1.38                                     | Class I |
| <b>Impermeability to water, expressed as capillary absorption (kg/m<sup>2</sup>·h<sup>0.5</sup>):</b>                      | EN 1062-3          | < 0.1   | 0.02  |         |
| <b>Permeability to carbon dioxide (CO<sub>2</sub>) – diffusion in equivalent air layer thickness S<sub>DCO2</sub> (m):</b> | EN 1062-6          | > 50  | S <sub>DCO2</sub> = 400                                   |         |
| <b>Exposure to artificial weather conditions:</b>  | EN 1062-11         | After 2000 hours of artificial inclement weather:<br>– no swelling according to EN ISO 4628-2<br>– no cracking according to EN ISO 4628-4<br>– no flaking according to EN ISO 4628-5<br>slight colour variation, loss of brightness and crumbling may be accepted | No swelling, cracking or flaking. Slight colour variation |         |
| <b>Reaction to fire:</b>   | EN 13501-1         | Euroclass   | B-s1-d0   |         |
| <b>Other performance characteristics</b>   | <b>Test method</b> |   |   |         |
| <b>SRI (Solar Reflectance Index)*:</b>   | ASTM E1980         | 105   |   |         |
| <b>Solar reflectance* (%):</b>   | ASTM E903          | 83  |   |         |
| <b>Emissance* (%):</b>   | ASTM C1371         | 91  |   |         |

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

# Aquaflex Roof HR

*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)

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

