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 bituminous 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 wet substrates 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 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 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 **Mapeslope**. 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 **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 **Aquaflex Primer**, 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 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 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-piled roller, brush or by airless spray. Apply at least two coats of **Aquaflex Roof Plus** to form an even layer.
## TECHNICAL DATA (typical values)

### PRODUCT IDENTITY
- **Consistency:** paste
- **Colours:** according to the chosen colour
- **Density (g/cm³):** 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 (Aquaflex Roof Plus diluted 10%) and 1st coat: 1-2 hours;
- between Aquaflex Primer and 1st coat: approx. 5-6 hours;
- between each coat of Aquaflex Roof Plus: 3-4 hours;
- between Aquaflex Roof Plus with Mapetex 50 and a coat of Aquaflex Roof Plus: 12 hours;
- between Aquaflex Roof Plus and Mapecoat TNS Urban: 3-4 hours

(please refer to the Technical Data Sheet for waiting times between each coat of Mapecoat TNS)

- **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/mm²):** 1.1

### FINAL PERFORMANCE (thickness 1 mm)

<table>
<thead>
<tr>
<th>Performance characteristic</th>
<th>Test method</th>
<th>Requirements according to EN 1504-2 coating (C) principles PI, MC and IR</th>
<th>Performance figures for Aquaflex Roof Plus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adhesion to concrete – after 28 days at +20°C and 50% R.H. (N/mm²)</td>
<td>EN 1542</td>
<td>For flexible systems: with no traffic: ≥ 0.8</td>
<td>1.1</td>
</tr>
<tr>
<td>Static crack-bridging at +23°C expressed as maximum width of crack (mm):</td>
<td>EN 1062-7</td>
<td>class A1 (0.1 mm) to class A5 (2.5 mm)</td>
<td>Class A5</td>
</tr>
<tr>
<td>Static crack-bridging at 0°C expressed as maximum width of crack (mm):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dynamic crack-bridging at +23°C expressed as resistance to cracking cycles:</td>
<td></td>
<td>class B1 to class B4.2</td>
<td>Class B3.2</td>
</tr>
<tr>
<td>Dynamic crack-bridging at 0°C expressed as resistance to cracking cycles:</td>
<td></td>
<td>class B1 to class B4.2</td>
<td></td>
</tr>
<tr>
<td>Permeability to water vapour – equivalent air thickness S₂ (m):</td>
<td>EN ISO 7783-1</td>
<td>class I: S₂ &lt; 5 m (permeable to vapour)</td>
<td>S₂ = 0.72, Class I</td>
</tr>
<tr>
<td>Impermeability to water expressed as capillary absorption (kg/m²-h⁰.5):</td>
<td>EN 1062/3</td>
<td>&lt; 0.1</td>
<td>0.01</td>
</tr>
<tr>
<td>Permeability to carbon dioxide (CO₂) – diffusion in equivalent air layer thickness S₂CO₂ (m):</td>
<td>EN 1062-6</td>
<td>&gt; 50</td>
<td>193</td>
</tr>
<tr>
<td>Reaction to fire:</td>
<td>EN 13501-1</td>
<td>Euroclass</td>
<td>B-s1-d0</td>
</tr>
<tr>
<td>Exposure to artificial atmospheric agents:</td>
<td>EN 1062-11</td>
<td>After 2,000 hours of artificial bad weather:</td>
<td>No swelling, cracking or flaking. Slight colour variation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- no swelling according to EN ISO 4628-2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- no cracking according to EN ISO 4628-4</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>- no flaking according to EN ISO 4628-5</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Slight colour variation, loss of brightness and crumbling may be acceptable</td>
<td></td>
</tr>
</tbody>
</table>
Apply each crossways 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 bituminous 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 follows.

Spread a generous coat of product 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 this layer is completely dry apply the next coat of Aquaflex Roof Plus, to cover completely Mapetex 50.

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

CONSUMPTION
– Protective finish or reflective coating on an old bituminous membrane: approx. 0.9 kg/m².
– Waterproof membrane: 2 kg/m² (for a 1 mm thick dry layer).

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

PACKAGING
5 and 20 kg drums.

COLOURS AVAILABLE
Aquaflex Roof Plus is available in HR white, red, grey and green.

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 regulation 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 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

LEGAL NOTICE

The contents of this Technical Data Sheet (“TDS”) may be copied into another project-related document, but the resulting document shall not supplement or replace requirements per the TDS in force at the time of the MAPEI product installation. The most up-to-date TDS can be downloaded from our website www.mapei.com.

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All relevant references for the product are available upon request and from www.mapei.com