ROOFING

Mapei systems and solutions for waterproofing roofs





MAPEI PRODUCTS FOR WATERPROOFING AND PROTECTING ROOFS. SOUND AND PROTECTED ROOFS.

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From **Mapei** research, certified quality

Mapei's Research & Development sector is heavily committed to offering highly versatile products for all your protection requirements. A range that integrates conventional needs, such as reliability and building integrity, with the most innovative requirements and expectations of clients.

Mapei roofing products and solutions allow the desired results to be achieved in terms of waterproofing and protection for roofs against atmospheric aggression and stresses (mechanical, thermal and chemical). At the same time, they provide a guarantee of durability, quality and environmental sustainability for the constructions themselves.

A dual role with performance properties testified by numerous certifications and markings and the severe testing regimes the products are subjected to. And in the roofing sector too, **Mapei**'s approach is based on **rigorous testing** and the value of experience.









Mapei roofing membranes

The line of products for waterproofing roofs, an **exclusive of the Mapei laboratories**, is made up of **water-based liquid membranes** free of solvents and VOC (volatile organic compounds) and **coloured and transparent polyurethane membranes**.

A complete range of **ready-to-use**, **rapid-drying products that are simple and quick to apply and suitable for use by anybody**.

Ideal for numerous and different types of substrates, such as screeds and cementitious substrates, old flooring, bituminous membranes and metal, **Mapei roofing membranes** can be used to carry out waterproofing work on both **new builds and existing structures**. Also, these membranes are extremely versatile and can be applied by trowel, roller or spray.

Bituminous membranes



Product range



AQUAFLEX ROOF

Ready-to-use, fibre-filled, **elastic, liquid acrylic membrane**, for seamless waterproofing in external environments.



AQUAFLEX ROOF HR

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







AQUAFLEX ROOF PLUS

Ready-to-use, highly elastic, quick-drying, UV-resistant **liquid acrylic-polyurethane waterproofing membrane**. Also available in high reflectance (HR) white.





AQUAFLEX S 1K

One-component, ready-to-use, solvent-free, **liquid waterproofing membrane based on silane-terminated polymers** for waterproofing flat roofs and balconies, bathrooms before the application of tiles.



PURTOP EASY

One-component, elastic polyurethane membrane with a coloured finish for waterproofing new and existing balconies, terraces, roofs and surfaces open to foot traffic.







Product range

AQUAFLEX SYSTEM

Cycle for permanently encasing asbestos cement and for waterproofing mineral-based substrates with a one-component. resin-based elastomeric membrane in water dispersion.





PURTOP EASY T

One-component, transparent, elastic, polyurethane membrane for waterproofing existing balconies, terraces, roofs and surfaces open to foot traffic.

PLASTIMUL HIGH FLEX PLUS

Water-based and ready-to-use multi-purpose, bituminous waterproofing membrane. For roofs and underground structures.







Advantages of Mapei roofing membranes

Mapei roofing products have important characteristics such as excellent workability, durability of the product once applied, elasticity when subjected to stresses and loads typically found in roofs, rapid-drying properties and resistance to UV rays and standing water. Also, Mapei roofing membranes come with important markings and certification, such as EN 1504-2 and EAD 030350-00-0402 (former ETAG 005), and for their fire resistance and solar reflectance properties.







WATERPROOF BARRIER

RAPID-DRYING

EASY TO USE



ADHESION



EXCELLENT ELASTICITY

APPLICABLE ON A VARIETY OF SUBSTRATES

m

FIRE-RESISTANT



SUITABLE FOR FOOT TRAFFIC

SOLAR REFLECTANCE



CERTIFIED PRODUCTS



RESISTANT TO ROOT PENETRATION



RESISTANT TO STANDING WATER



System for waterproofing tiled roofs or roofs with a cementitious substrate



1. Preparation of the substrate

Substrates, whether new or old, mineral-based or tiled, must be solid, clean, dry, consistent, well-bonded and free of all traces of oil, grease, old paint, rust, mould and any other material or substance that could affect adhesion.

Refer to the **Aquaflex Roof** technical data sheet for information on how to prepare substrates correctly.

After preparing the substrate, apply the adhesion promoter.

- Mineral-based substrates: apply a coat of Aquaflex Roof diluted 10% with water.
- Tiled substrates: apply the primer Eco Prim Grip Plus.

2. Application of the product

The product is supplied ready to use: it is recommended, however, to mix it well so that it is perfectly blended. **Aquaflex Roof** must be applied with a long-haired roller, a brush or by airless spray. Apply two coats of **Aquaflex Roof** with a dry thickness of around 0.4-0.5 mm each. The total dry thickness of **Aquaflex Roof** must never be less than 0.8-1 mm for a consumption rate of at least 2 kg/m².

If there are **micro-cracks** in the substrate, embed **Mapetex 50** nonwoven polypropylene fabric between the two coats of **Aquaflex Roof**.



High-reflectance waterproofing system for roofs with a bituminous membrane



1. Preparation of the substrate

Carefully clean the existing bituminous membrane to provide a clean, dry substrate. Inspect the membrane and repair any areas that appear damaged such as blisters, tears and detached areas. Apply **Aquaflex Primer** with a brush, roller or by airless spray.

2. Application of the product

Aquaflex Roof HR must be applied with a long-haired roller, brush or by airless spray in two even coats with a dry thickness of around 0.4 - 0.5 mm each. Wait until the first coat is dry before applying the next coat. Apply the second coat so that it criss-crosses the previous coat. The total dry thickness of **Aquaflex Roof HR** must never be less than 0.8-1 mm for a consumption rate of around 0.5 kg/m² on smooth membranes and around 0.9 kg/m² on slate-chip membranes.



Waterproofing system suitable for foot traffic for roofs with a bituminous membrane, tiled roofs and roofs with a mineral-based substrate



1. Preparation of the substrate

Substrates, whether new or old, mineral-based or tiled, must be solid, clean, dry, consistent, well-bonded and free of all traces of oil, grease, old paint, rust, mould and any other material or substance that could affect adhesion.

Refer to the **Aquaflex Roof Plus** technical data sheet for full information on how to prepare substrates correctly and for the most suitable adhesion promoter.

2. Application of the product

After carefully preparing and then priming the substrate, apply a coat of **Aquaflex Roof Plus** with a long-haired roller, brush or suitable airless spray pump. Layers with increasing durability may be formed by applying **Aquaflex Roof Plus** in different thicknesses and at different consumption rates: for further details please refer to the table on the product technical data sheet.

With reference to the example layout, spread an abundant coat of the product and, while applying **Aquaflex Roof Plus**, immediately lay **Mapetex 50** on the surface and press it down lightly with a flat trowel or spiked roller to make sure it is perfectly wetted. When this layer is completely dry, apply the next coat of **Aquaflex Roof Plus** so that it completely covers the **Mapetex 50**. For this system the total thickness is 0.8-1 mm and the consumption rate is 1.6 kg/m².

Aquaflex Roof Plus may be made suitable for foot traffic by applying a specific, solvent-free finishing cycle consisting of **Mapecoat TNS Urban** and **Mapecoat TNS Protection**.



Silane-based system for waterproofing new and existing exposed roofs



Aquaflex S 1K

Mapecoat I 600 W

Substrate of smooth

Silane-based system for waterproofing balconies. terraces and bathrooms before applying covering



Keralastic/

Kerapoxy Adhesive/ Kerabond + Isolastic

- Aquaflex S1K Second coat Aquaflex S1K
- first coat Skim coat of
- Aquaflex S 1K
- Cementitious substrate

1. Preparation of the substrate

The surface to be treated must be sound and perfectly clean. Before applying the product on cementitious surfaces, remove any cement laitance, crumbling material and any traces of dust and/or 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.

Treat the surface with a primer suitable for the particular type of substrate according to the Aquaflex S 1K data sheet.

2. Application of the product

The product is supplied ready to use, but mixing the contents of the container is recommended to ensure the product is perfectly blended. Apply Aquaflex S 1K with a brush, roller or trowel to create a final dry thickness of at least 1.5 mm (which corresponds to around 2.4 kg/m²). If the membrane needs to be reinforced, apply Mapetex 50 non-woven polypropylene fabric on the first coat of product while still fresh, go over the surface with a bubble-breaker roller and then apply a second coat of Aquaflex S 1K to achieve the final thickness required.

3. Application of final coating

If Aquaflex S1 K is applied on roofs left with an exposed finish, no final finish is required. When used on balconies, terraces and in bathrooms, ceramic tiling must be bonded over Aquaflex S 1K. In such cases, it is possible to use Keralastic epoxy-polyurethane adhesive or Kerapoxy Adhesive epoxy adhesive. As an alternative, use Kerabond cementitious adhesive mixed with neat Isolastic. When using Kerabond cementitious adhesive, once the 1.5 mm thick layer of Aquaflex S 1K membrane is dry, apply a thin coat of Aquaflex S 1K and broadcast the surface while still fresh with Ouartz 0.5.



Polyurethane waterproofing system

Exposed polyurethane waterproofing system for new and existing roofs



Polyurethane waterproofing system for new and existing roofs before installing a final coating





- Purtop Easy
 - Quartz 0.5
 - Substrate with





1. Preparation of the substrate

After checking and then cleaning the substrate the waterproofing system is to be applied on, the surface needs to be treated with a suitable primer. Which primer to use depends on the nature of the substrate itself.



2. Application of the product

Primer EP4 Fast

Once the primer has cured, apply two coats of **Purtop Easy** with a trowel or roller and lay on **Mapetex FG** glass fibre mesh so it becomes embedded in the membrane.

Alternatively, by admixing the membrane with **Purtop ADY**, only one coat will be required. The final thickness should never be less than 1.2 mm.

Apply **Mapecoat PU 20 N** coloured finish within 24-48 hours. If a non-slip finish is required, add **Mapecoat Filler**.

3. Painting and coating

If a non-slip finish or a more attractive, **coloured finish** that remains stable over time is required, coat **Purtop Easy** within 24-48 hours of application with at least two coats of **Mapecoat PU 20 N** two-component, aliphatic polyurethane finish.

If a non-slip finish is required, add micronized polyamide **Mapecoat Filler** to **Mapecoat PU 20 N** during the mixing stage.

If ceramic tiling needs to be installed on Purtop Easy, use Keralastic epoxy-polyurethane adhesive or Kerapoxy Adhesive epoxy adhesive. As an alternative, use Kerabond cementitious adhesive mixed with neat Isolastic. When using Kerabond cementitious adhesive, apply a thin coat of Purtop Easy over the dry Purtop Easy membrane and broadcast the surface while still wet with Quartz 0.5.





The term **Heat Island** is used to define the phenomenon of an increase in temperature generated in urban areas compared with temperatures recorded in rural areas. This phenomenon has various consequences for the local community.

- Higher current draw.
- Higher air-conditioning costs.
- Higher pollution in urban areas.

Reduce Heat Island phenomenon with Mapei

To reduce **Heat Island** phenomenon, **Mapei** has developed a series of products and systems aimed at the sustainable building market. A light-coloured roof, particularly if in high-reflectance white, has several advantages:

- high reflectance and thermal emissivity;
- reduced "Heat Island" effect;
- lower service temperature of the roof leading to increased durability.

A range that more than meets current standards

The **Mapei Cool Roof range** is made up of a series of systems, all tested by specialised institutes that have defined a **Solar Reflectance Index** (SRI) for each system, in compliance with current standards (ASTM Standard E903, ASTM Standard C 1371 and ASTM Standard E 1980).



Encapsulating and waterproofing system

System for encapsulating and waterproofing asbestos cement roofs



1. Preparation of the substrate

After cleaning and drying the slabs of asbestos-cement, impregnate the slabs with **Malech** micronized acrylic resin undercoat in water dispersion. Mix the product thoroughly before use until completely blended.

Malech may be **applied** with a brush, roller or by airless spray.

2. Application of the product

For application on internal and external exposed structures, apply two coats of **Aquaflex** in contrasting colours (for example, first coat in grey and second coat in white, or vice versa) as specified in Italian Ministerial Decree 20/08/1999 (please refer to the table on page 26).

Apply the product with a trowel, roller or by airless spray. Refer to the consumption table for consumption rates.

CONSUMPTION TABLE					
TYPE OF COATING MATERIAL	Total average thickness (mm)	Average thickness per coat (dry thickness in mm)	Average thickness per coat (wet thickness in mm)	Average consumption per coat (kg/m²)	
А	0.300	0.150	0.215	0.30	
в	0.250	0.125	0.180	0.25	
с	0.200	0.200	0.285	0.40	

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cement

Fibre cement is a composite material used particularly in the building industry made from a mixture of cement and fibres with high tensile strength. Structures made from this mixture have high resistance to corrosion, temperatures and wear and are also particularly light.

Up until the start of the 1990's, when asbestos was used to make fibre cement, it was known as asbestos cement or Eternit, the brand name of one of the Italian manufacturers. Asbestos, however, has shown to be cancerogeneous and has been banned in Italy since 1992. Since then, other types of fibre have been used to make fibre cement.

TYPE OF ENCAPSULATION COATING (ITALIAN MINISTERIAL DECREE 20/08/1999)					
TYPE OF COATING	AREA OF USE	THICKNESS (dry coat)	MAPEI CYCLE		
А	External exposed	Total average thickness: at least $300 \ \mu m$ (at least $250 \ \mu m$ in every point). The average thickness of the last coat must not be more than the average thickness of the previous coat.	 One coat of Malech. One coat of Aquaflex in one colour. One coat of Aquaflex in a second colour. 		
В	Internal exposed	Total average thickness: at least 250 μ m (at least 200 μ m in every point). The average thickness of the last coat must not be more than the average thickness of the previous coat.	 One coat of Malech. One coat of Aquaflex in one colour. One coat of Aquaflex in a second colour. 		
с	Not exposed	Minimum thickness in any point: 200 μm	 One coat of Malech. One coat of Aquaflex. One coat of Aquaflex (optional). 		

Cycle compliant with current legislation

The Aquaflex System cycle may be used as an encapsulating coating for asbestos cement types A, B and C according to the prescriptions of Italian Ministerial Decree 20/08/1999 and complies with all the requirements of current legislation, as certified by laboratories authorised to release compliancy certificates. According to EN 13501-1 fire resistance standards, Aquaflex System is also classified as Bfl-s1 for use on floors and B-s1-d0 for use on walls and ceilings.

Certification





Bituminous waterproofing system

Bituminous waterproofing system for existing roofs with a bituminous membrane



1. Preparation of the substrate

Carefully clean the bituminous membrane by hydro-blasting. Inspect the membrane and repair any areas that appear damaged such as blisters, tears and detached areas. Horizontal surfaces must have **at least 1% slope** so that water flows towards the edges of the waterproofed area or towards guttering and drainpipes.

2. Application of the product

The product is supplied ready to use but it is recommended to mix it thoroughly to ensure it is perfectly blended.

Apply **Plastimul High Flex Plus** in two coats with a brush, roller, trowel or by spray for a total consumption rate of $1.5-2 \text{ kg/m}^2$.



One single product, **multiple applications**

Plastimul High Flex Plus

Plastimul High Flex Plus may be used not only to create waterproof roofing membranes, but also to waterproof underground structures and to protect floor slabs before creating a screed.

In fact, **Plastimul High Flex Plus** meets the requirements of EN 15814 for **polymer-modified textured bituminous coatings** for foundations. **Plastimul High Flex Plus** is certified by the Sachverständiger für Radon Institute in Bonn (Germany) as a passive barrier to radon thanks to its radon gas diffusion coefficient of 6.98 10-13 m2s-1.









Application and layers of Purtop Easy T



Projects completed with Mapei roofs

Purtop Easy T is transparent, which makes it the perfect membrane for waterproofing balconies and terraces without affecting their original beauty.

Existing balconies and terraces



1. Preparation of the substrate

Make sure the tiling is firmly bonded to the substrates and that there are no cracks. Apply a coat of Purtop Easy T Primer with a clean rag.

2. Application of the membrane

Apply two coats of Purtop Easy T with a trowel, roller or brush over the entire surface to form a coat with a **final thickness** of around 1 mm.

To create a **non-slip finish**, broadcast the surface with fine quartz sand and go over the surface again with a roller and a little waterproofing product.











la mapei







Projects completed with Mapei roofs



EVERYTHING'S OK WITH MAPEI

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