PURTOP EASY

One-component, elastic polyurethane waterproofing membrane

CE EN 1504-2 — IN COMPLIANCE WITH EUROPEAN STANDARD EN 1504-2 (C) PRINCIPLES PI-MC-PR-RC-IR MAPEI SURFACE PROTECTION SYSTEMS FOR CONCRETE

CE EN 14891 — IN COMPLIANCE WITH EUROPEAN STANDARD EN 14891 RM02P MAPEI LIQUID-APPLIED WATER IMPERMEABLE PRODUCTS

WHERE TO USE

For waterproofing:

- new roofs and repairs to existing roofs;
- terraces, balconies, walkways, and pedestrian areas in general;
- green roofs.

Purtop Easy can be applied on:

- concrete;
- cementitious screeds;
- ceramics;
- fibre-cement boards;
- old bituminous membranes;
- metal.

ADVANTAGES

- **Purtop Easy** forms a highly elastic and durable membrane (**Purtop Easy System Roof** has a certified service life of 25 years according to ETAG 005).
- **Purtop Easy** is a one-component, ready-to-use product and is very easy to apply.
- When admixed with **Purtop ADY, Purtop Easy** can be applied in a single coat of 1.2 mm thickness, with improved mechanical properties and reduced drying time.
- **Purtop Easy** maintains its mechanical properties at temperatures down to -40°C.

TECHNICAL CHARACTERISTICS

Purtop Easy is a ready-to-use aromatic polyurethane waterproofing membrane developed by MAPEI Research & Development laboratories.
Once applied, in just a few hours **Purtop Easy** forms a seamless, elastic membrane with no overlaps and excellent crack-bridging properties, which is able to withstand normal dynamic stresses acting on structures.
Thanks to the complete range of primers available, **Purtop Easy** adheres perfectly to numerous types of substrate.
Purtop Easy has excellent mechanical properties that remain stable over the years, making the product highly durable.
Purtop Easy is easy to apply by trowel or spray on horizontal, vertical, and sloping surfaces.

MAPEI

Purtop Easy 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 minimum requirements of EN 1504-2 coating (C) according to principles PI, MC, PR, RC e IR ("*Surface protection systems for concrete*").
Purtop Easy is a membrane certified for use as a liquid waterproofing system for roofing in accordance with ETAG 005 (refer to the **Purtop Easy System Roof** System data sheet).

RECOMMENDATIONS

- Do not apply **Purtop Easy** in temperatures lower than +5°C or higher than +35°C, or if it is about to rain.
- Do not apply if dew is present on the substrate.
- Do not apply **Purtop Easy** on substrates with residual humidity higher than 4% or subject to rising damp.
- 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.
- **Purtop Easy** is not suitable for surfaces that are continuously immersed.

APPLICATION PROCEDURE

Preparation of the substrate

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

1. Application on concrete substrates and cementitious screeds

Surfaces must be prepared according to the type of substrate, for example by sand-blasting, shot-blasting, scarifying, bush-hammering or other methods. Then treat the substrate with a suitable primer as follows.
Hollows, cavities, and detached portions in the substrate must be repaired with suitable products from the **Mapegrout** and **Planitop** ranges. Choose the most suitable product according to the thickness to be repaired, the time available, and the operating conditions on site.
After preparing the substrate, apply **Primer PU Fast** two-component polyurethane primer, or **Mapecoat I 600 W**, two-component epoxy primer in water dispersion, diluted in a ratio of 1 : 1 ratio with water, or alternatively **Primer SN** two-component fillerised epoxy primer, and then broadcast the surface while still wet with **Quartz 0.5**.
If the moisture content of the substrate is greater than 4%, and if it is not possible to wait until it drops to a lower value, apply two or more coats of **Primer EP4 Fast**, two-component epoxy primer, depending on the condition of the substrate, until the pores in the substrate are completely sealed.

2. Application on bituminous membranes

Clean the bituminous membrane to remove all traces of oil, grease, dirt in general and any other substances or material which could affect the adhesion of the following coat of primer. Remove all dust with a vacuum cleaner or compressed air. The membrane must be perfectly dry before inspecting the surface and any damage in the membrane, such as blistering, tears, or detached areas, must be repaired before applying the primer. Apply **Mapecoat I 600 W** two-component, water-based epoxy primer, diluted at a ratio of 1: 1 with water, to the existing horizontal surfaces and vertical hems by roller or airless spray, or apply **Primer R30**, a one-component, fast-drying polyurethane primer by roller or brush.

3. Application on metal surfaces

Check the state of the substrate and dry sand-blast the surface to grade SA 2½ (according to Swedish Standards). If it is not possible to dry sand-blast the substrate, prepare the surface using an alternative method, such as with a scrubbing-action or percussion-action cleaning machine.
Once the metal surfaces have been prepared as specified, apply **Primer EP 100W** two-component, water-based epoxy primer with a roller, brush, or airless spray, or alternatively **Primer EP Ruststop** adhesion promoter for polyurethane systems, with a roller.

4. Application on old ceramic floors

Existing ceramic, porcelain, clinker, etc. floors must be well bonded to the substrate and free of substances that could affect adhesion, such as grease, oil, wax, paint, etc. Prepare the surface with suitable tools and/or by sanding to remove traces of material that could affect the adhesion of **Purtop Easy**.
Make sure the existing flooring is well bonded to the substrate and remove any detached areas. Fill these areas and any empty grout lines with an epoxy mortar made using **Primer SN** two-component fillerized epoxy primer mixed with **Quartz 0.5** up to 50% by weight.
Prepare the surface as specified, apply **Primer SN** with a trowel or by spray, and broadcast the surface while still wet with **Quartz 0.5**.

Before applying **Purtop Easy**, pay particular attention to the expansion joints, fillets between horizontal and vertical surfaces, which must be properly treated.
In the case of fillet joints between horizontal and vertical surfaces, it is recommended to form a fillet with **Planitop Fast 330**, quick-setting cementitious mortar, or mixing **Primer SN** at a ratio of 1 : 7/1 : 10 with **Quartz 1.9**.
Structural joints must be previously treated with **Mapeband TPE** bonded to the substrate by means of the epoxy resin **Adesilex PG4** (later, when applying **Purtop Easy** membrane, it is necessary to fix it at the sides of the tape, on **Adesilex PG4**, and avoid it gets in contact with the grey rubber part). Upon completion of the works, these joints must be protected with a suitable metal flashing.

Preparation of the product

Purtop Easy is a one-component, ready-to-use product, but it is recommended to mix it before use to make sure it is perfectly blended.
In case it is required to apply the product in a single coat, it must be admixed with **Purtop ADY**, which is available in pre-dosed packs according to the different packaging formats of **Purtop Easy**.

Application of the product

After thoroughly preparing and priming the substrate, apply **Purtop Easy** starting from the fillet joints between horizontal and vertical surfaces. It is recommended to locally strengthen the membrane on fillet joints with a strip of **Mapetex FG** glass fibre reinforcing mesh, approximately 20 cm wide. The temperature of the substrate must be at least 3°C above the dew point, while its residual moisture should not exceed 4%.
Apply at least two even coats of **Purtop Easy** with a trowel or by spray to form a total thickness higher than 1.2 mm. If **Purtop Easy** had been admixed with **Purtop ADY**, a 1.2 mm thick layer may be applied in a single coat.
When the product is applied in two coats, it is possible to lay **Mapetex FG**, glass fibre reinforcing mesh, on the first coat while it is still wet. Wait until the first coat is completely dry before applying the second coat.
If the application of **Purtop Easy** is interrupted and then taken up again after the maximum covering time (24 hours), an overlap of at least 30 cm must be made after applying a coat of **Primer R30**.
When applying **Purtop Easy** on vertical hems or on surfaces in general with a slope of more than 1.5%, it must be admixed with up to 3.6% by weight of **Additix P** thixotropising agent.
Purtop Easy can also be applied by airless spray, when not admixed with **Purtop ADY** or **Additix P**. When applying **Purtop Easy** by spray, it must be diluted with 5-10% of **Thinner PU**.

Finish of the membrane

When a durable attractive coloured finish or a non-slip finish, coat **Purtop Easy** within 24–48 hours of application with **Mapecoat PU 20 N** two-component, aliphatic polyurethane finish, to be applied in at least two coats. If a finishing product is not applied over the membrane, it may lose its colour or chalk slightly.
If installation of a ceramic covering on **Purtop Easy** is required, use **Keralastic** epoxy-polyurethane adhesive, **Kerapoxy Adhesive,** or **Ultrabond EP 2K** epoxy adhesives or, as an alternative, **Kerabond** cementitious adhesive mixed with neat **Isolastic**.
When using **Kerabond** cementitious adhesive, it is necessary to apply on dry **Purtop Easy** membrane a 1.2 mm thick layer of the same **Purtop Easy** while still fresh with **Quartz 0.5**.

CLEANING TOOLS

It is recommended to clean tools with thinner before the product starts to set. Once hardened, cleaning can be carried out only mechanically.

CONSUMPTION

2 kg/m² corresponds to approx. 1.2 mm dry thickness.
In general, the consumption rates below are for a seamless film on a flat surface and will be higher on uneven substrates.

PACKAGING

15 and 25 kg drums.

STORAGE

Purtop Easy can be stored for 12 months in its original packaging in a covered, dry area at a temperature of +15°C to +35°C.

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)

Purtop Easy: ***One-component polyurethane membrane for waterproofing terraces and roofs, in compliance with the requirements of EN 14891 and EN 1504-2 coating (C) principles PI, MC, PR, RC and IR***

PRODUCT IDENTITY	
Consistency:	thick liquid
Colour:	white, grey
Density:	1.4 g/cm³
Dry solids content:	82%
Brookfield viscosity:	3,000 mPa·s (rotor 5 - 50 RPM)

APPLICATION DATA	
Recommended application temperature:	+5°C to +35°C
Service temperature:	-40°C to +80°C
Waiting time between coats and put-into-service at +23°C and 50% R.H.:	24 hours

MECHANICAL CHARACTERISTICS	
Elongation at failure (ISO 37):	> 400%

Tensile strength (ISO 37):	≥ 2 N/mm² (≥ 4 with **Purtop ADY**)
Tear strength (ISO 34-1):	> 15 N/mm
Shore A hardness (DIN 53505):	50

FINAL PERFORMANCE DATA (1.2 mm thickness)			
Performance characteristics	**Test method**	**Requirements according to EN 1504-2**	**Performance of product (mixed with Purtop ADY)**
Permeability to water vapour:	EN ISO 7783-2	Class I s_D < 5 m Class II 5 m ≤ s_D ≤ 50 m Class III s_D > 50 m	Class I (average s_D = 3 m)
Capillary absorption and water permeability:	EN 1062-3	w < 0.1 kg/m²·$h^{0.5}$	average w = 0.01 kg/m²·$h^{0.5}$
Permeability to CO_2:	EN 1062-6	s_D > 50 m	s_D = 111 m
Bond strength by pull-off:	EN 1542	***Flexible systems*** with no traffic: ≥ 0.8 N/mm² with traffic: ≥ 1.5 N/mm²	1.8 N/mm²
Static crack-bridging expressed as maximum crack width:	EN 1062-7	from class A1 (> 0.1 mm) to class A5 (> 2.5 mm)	Class A4
Dynamic crack-bridging at +23°C:	EN 1062-7	from class B1 to class B4.2	Class B3.2
Impact strength:	EN ISO 6272-1	no cracks or delamination after loading Class I: ≥ 4 Nm Class II: ≥ 10 Nm Class III: ≥ 20 Nm	Class I
Resistance to thermal shock (1x):	EN 13687-5	after thermal cycles a) no blistering, cracking or delamination b) average bond strength by pull-off ***Flexible systems*** with no traffic: ≥ 0.8 N/mm² with traffic: ≥ 1.5 N/mm²	1.6 N/mm²
Abrasion resistance (Taber test):	EN ISO 5470-1	loss in weight less than 3000 mg with H22 abrasive disk/1,000 cycles/1,000 g load	loss in weight < 2000 mg
Exposure to artificial atmospheric agents:	EN 1062-11	after 2000 h of artificial adverse weather conditions: no blistering according to EN ISO 4628-2 no cracking according to EN ISO 4628-4 no flaking according to EN ISO 4628-5 Slight colour variations, loss of brightness and chalking may be acceptable	no blistering, cracking or flaking (colour change)
Resistance to severe chemical attack:	EN 13529	reduction of hardness less than 50% when measured according to the Shore method (EN ISO 868), 24 hours after removing the coating material from immersion in the test liquid Class I: 3 days with no pressure Class II: 28 days with no pressure Class III: 28 days with pressure	NaCl 20%: class II CH_3COOH 10%: class II H_2SO_4 20%: class II KOH 20%: class II
Reaction to fire:	EN 13501-1	Euroclass	E/C_{FL}-s1

Performance characteristics	Test method	Requirements according to EN 14891	Performance of product (mixed with Purtop ADY)
Impermeability to water in pressure (1.5 bar for 7 days of positive side):	EN 14891-A.7	no penetration	no penetration
Crack-bridging ability at +23°C:	EN 14891-A.8.2	≥ 0.75 mm	5 mm
Crack-bridging ability at -20°C:	EN 14891-A.8.3	≥ 0.75 mm	4 mm
Initial bond strength:	EN 14891-A.6.2	≥ 0.5 N/mm²	> 0.80 N/mm²
Adhesion after immersion in water:	EN 14891-A.6.3	≥ 0.5 N/mm²	≥ 0.50 N/mm²
Adhesion after application of heat source:	EN 14891-A.6.5	≥ 0.5 N/mm²	> 1.00 N/mm²
Adhesion after freeze-thaw cycles:	EN 14891-A.6.6	≥ 0.5 N/mm²	> 0.70 N/mm²
Adhesion after immersion in basic water:	EN 14891-A.6.9	≥ 0.5 N/mm²	> 0.60 N/mm²
Adhesion after immersion in chlorinated water:	EN 14891-A.6.8	≥ 0.5 N/mm²	> 0.55 N/mm²

*Adhesion values according to EN 14891 determined with **Purtop Easy** and C2S2 type cementitious adhesive in accordance to EN 12004*

FINAL PERFORMANCE	
Resistance to root penetration (EN 13948):	no penetration
External fire exposure class of Purtop Easy System Roof (EN 13501-5):	Broof t1 and Broof t4

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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