

PURTOP 200

Two-component polyurea-based membrane applied manually for waterproofing roofs



WHERE TO USE

Thanks to its excellent elasticity and tear strength, **Purtop 200** is suitable for use as a waterproofing membrane for terraces and flat roofs, and for repairing surfaces waterproofed with hybrid polyurea and/or pure polyurea-based membranes.

ADVANTAGES

Purtop 200 bonds extremely firmly to various types of substrate, if treated with a suitable primer beforehand, and, once fully cured, forms a strong, seamless elastic membrane.

Purtop 200 offers the following advantages:

- excellent tear strength;
- high static and dynamic crack-bridging capacity, including at low temperatures;
- elongation properties above 500% (ISO 37);
- excellent resistance to alkalis and diluted acids;
- no strengthening reinforcement required;
- does not form overloads on load-bearing structures.

TECHNICAL CHARACTERISTICS

Purtop 200 is a two-component, solvent-free, pure polyurea-based formulate according to a formula developed in the MAPEI R&D laboratories. The product is applied manually and has a workability time of around 25 minutes.

Apply **Purtop 200** in layers at least 1.5 mm thick. Once fully cured, thanks to its high tensile strength, tear strength and crack-bridging capacity (including at low temperatures), **Purtop 200** forms a seamless, waterproof coating which adapts to substrates with any geometric form without cracking.

Purtop 200 meets the requirements of 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 requirements of EN 1504-2 coating (C) according to PI, MC, PR, RC and IR principles (*"Surface protection systems for concrete"*).

RECOMMENDATIONS

- Do not apply to substrates polluted with oil, grease or dirt in general.
- Do not apply **Purtop 200** on substrates which have not been thoroughly cleaned and primed.
- Do not apply **Purtop 200** on substrates with rising damp.
- A primer for damp substrates such as **Triblock P** must be used whenever the level of residual humidity in the substrate is higher than 4%.
- Do not dilute **Purtop 200** with solvent or water.
- Do not use **Purtop 200** in continuous immersion (e.g. swimming pools, fountains, tanks).

APPLICATION PROCEDURE

Preparation of the substrate

Surfaces must be prepared accordingly depending on the type of substrate, for example by sand-blasting, shot-blasting, scarifying, bush-hammering or other methods. The substrate must then be treated with a suitable primer as described below.

1. Application on concrete substrates, cementitious screeds

Check the substrate to make sure it is suitable for applying the waterproofing system.

The compressive strength and pull-off strength of the surface must be ≥ 25 MPa and ≥ 1.5 MPa, respectively.

Prepare the surface by sanding or shot-blasting to remove all traces of oil, grease, dirt and any other material or substances which could compromise the bond of the waterproofing system. Then remove all dust and any crumbling or detached parts from the substrate to leave a dry, porous, slightly rough surface with no contaminants.

Repair any hollows, cavities and detached parts in the substrate 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 surface as described above, apply a coat of **Primer SN** (two-component epoxy primer with fillers), with a smooth spatula or rake and sprinkle the surface with **Quartz 0.5** or, as an alternative, of **Primer FT** (two-component ultra-rapid polyurea-based primer).

If the level of humidity in the substrate is higher than 4% and it is not possible to wait until it drops to a lower value, apply two or more coats of **Triblock P** three-component epoxy-cementitious primer according to the condition of the substrate, until the system is completely sealed. When the primer has cured sufficiently (3-7 days) apply a coat of epoxy primer (such as **Primer SN** or **Mapecoat I 600 W**); contact MAPEI Technical Services for further details.

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 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 **Primer R30**, ready-to-use solvent polyurethane resin-based primer, on horizontal surfaces and existing vertical hems.

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 use the dry-sanding method, the substrates needs to be prepared using alternative means, such as with a suitable power tool (rotary steel brush, grinding or abrasive discs) or a percussion tool (scaler, needle descaler or power-chisel).

Apply **Primer EP Rustop** two-component epoxy primer on metal surfaces with a brush, roller or by airless spray after cleaning and treating them accordingly. As an alternative, **Mapecoat Guard 155**, adhesion promoter for polyurethane systems can be applied.

4. Application on wooden substrates and OSB panels

Clean the substrate to remove all traces of dust, dirt and other deposits.

Calculate the width and pitch of the joints between the panels in order to select the most suitable product to treat these joints.

Apply a coat of **Primer SN** two-component epoxy primer with fillers on the clean, dry substrate and sprinkle the surface with **Quartz 0.5**.

For any other type of substrate, contact MAPEI Technical Services Department to define the most suitable preparation treatment.

Application of the product

Purtop 200 is supplied in pre-dosed kits (component A + component B) to respect the correct mixing ratio between the two components. Pour all the content of part B into part A, then mix for at least three minutes until they are completely blended.

Do not mix the product manually. Scrape around the sides of the container to make sure all the contents of the two components are thoroughly blended.

Once blended, **Purtop 200** is easy to apply by pouring it on the surface and spreading it out evenly with a notched trowel.

Apply **Purtop 200** in a continuous coat over all the horizontal surfaces and vertical overlaps, and on the inside of drainage outlets positioned in the surface.

If application of **Purtop 200** 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**.

Finish of the membrane

Purtop 200 gradually turns yellow if exposed to UV rays.

If the membrane is exposed to UV rays, apply **Mapecoat PU 20 N** two-component, aliphatic polyurethane topcoat, with a roller or by spray, to guarantee durability.

Coat **Purtop 200** as soon as it is dry and in any case no later than 24-48 hours after application.

For further information, please refer to the Technical Data Sheet of this product.

CLEANING

Because of the high bond strength of **Purtop 200**, we recommend cleaning tools with solvent naphtha before it starts to set. Once hardened, cleaning can be carried out only mechanically.

CONSUMPTION

Consumption of **Purtop 200** depends on the roughness of the substrate. The theoretical consumption for a smooth surface with a substrate temperature between +15°C and +25°C is 2.5 kg/m² every 1.5 mm of thickness.

If the substrate is rougher, consumption increases. If the substrate is damaged, we recommend applying a suitable repairing product beforehand.

PACKAGING

Purtop 200 is supplied in metal drums.



Component A: 8 kg.

Component B: 6 kg.

STORAGE

When stored in its original packaging, in a dry, covered area, at a temperature between +15°C and +25°C, the shelf life of **Purtop 200** is 12 months.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

When the product reacts it generates considerable heat. After mixing components A and B, we recommend applying the product as soon as possible and never leaving the container unattended until it is completely empty.

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.

TYPE OF PRIMER ACCORDING TO THE SUBSTRATE

SUBSTRATE	PRIMER	CONSUMPTION	MIN/MAX RE-COAT TIME (approximately)
Concrete	Primer SN sprinkled with Quartz 0.5 Primer FT Triblock P	300-600 g/m ² 300-600 g/m ² 600-1,200 g/m ²	12-24 hours 20-30 min. 2-7 days
Metals	Primer EP Rustop Mapecoat Guard 155	approx. 200 g/m ² approx. 100 g/m ²	6-24 hours 1-3 hours
Wood, OSB panels	Primer SN sprinkled with Quartz 0.5	300-600 g/m ²	12-24 hours
Bituminous membrane	Primer R30	approx. 100 g/m ²	1-2 hours
Purtop 200	without priming Primer R30	- approx. 50 g/m ²	12-24 hours 1-2 h

Note: re-coat times refer to temperatures between +15°C and +25°C and consumption may vary depending on the roughness of the surface.

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

	Component A	Component B
Colour:	grey	light yellow transparent
Consistency:	paste	liquid
Density:	1.8 g/cm ³	1.05 g/cm ³
Brookfield viscosity at +23°C:	6,000 mPa·s (rotor 6 - 50 rpm)	7,000 mPa·s (rotor 6 - 50 rpm)

PRODUCT APPLICATION DATA (A+B) (at +23°C - 50% R.H.)

A/B ratio (by weight):	100/75
Pot life:	25 minutes
Rain-fast:	4-5 hours
Ambient application temperature:	from +5°C to +35°C

PERFORMANCE ON FREE FILM (thickness 1.5 mm)

Mechanical characteristics after 7 days at +23°C:

- tensile strength (ISO 37):	> 4.5 N/mm ²
- elongation at failure (ISO 37):	> 500%
- tear strength (ISO 34-1):	> 30 N/mm
Hardness (DIN 53505):	Shore A = 60
Watertightness (EN 1928, method A):	no water ingress

PERFORMANCE CHARACTERISTICS

Performance characteristics	Test method	Requirements according to EN 1504-2	Performance results Purtop 200
Permeability to water vapour:	EN ISO 7783-2	Class I $S_D < 5$ m Class II $5 \text{ m} \leq S_D \leq 50$ m Class III $S_D > 50$ m	Class I (average $s_D = 1.2$ m)
Capillary absorption and water permeability:	EN 1062-3	$W < 0.1 \text{ kg/m}^2 \cdot \text{h}^{0.5}$	average $w = 0.005 \text{ kg/m}^2 \cdot \text{h}^{0.5}$
Permeability to CO ₂ :	EN 1062-6	$S_D > 50$ m	$S_D = 230$ m
Bond strength by pull-off:	EN 1542	Flexible systems without traffic: ≥ 0.8 N/mm ² with traffic: ≥ 1.5 N/mm ²	1.5 N/mm ²
Static crack-bridging at -10°C expressed as maximum crack width:	EN 1062-7	from class A1 (> 0.1 mm) to class A5 (> 2.5 mm)	Class A5
Dynamic crack-bridging at -10°C:	EN 1062-7	from class B1 to class B4.2	Class B4.2
Impact strenght:	EN ISO 6272-1	No cracks or delamination after loading Class I: ≥ 4 Nm Class II: ≥ 10 Nm Class III: ≥ 20 Nm	Class I
Abrasion resistance (Taber test):	EN ISO 5470-1	Loss in weight less than 3000 mg abrading wheel H22/rotation 1000 cycles/1000 g load	loss in weight < 3000 mg

Exposure to artificial weathering:	EN 1062-11	After 2000 h of artificial adverse weather conditions: 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 shine and crumbling may be accepted.	no swelling, cracking and flaking (change in colour)
Resistance to severe chemical attack:	EN 13529	Reduction of hardness less than 50% when measured according to the Shore method (EN ISO 868), 24 h 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	Group 9*: class II Group 10*: class II Group 11*: class II Group 12*: class II
Reaction to fire:	EN 13501-1	Euroclass Fire reaction class for floorings	E C _{FL-s1}

* Group 9: watery solutions of up to 10% organic acids

Group 10: organic acids up to 20% and acid hydrolysis of salts in water solution (pH < 6) except hydrofluoric acid and oxidising acids and their salts

Group 11: inorganic base solutions and their alkaline hydrolysis of salts in water solution (pH > 8) except ammonium solutions and salt oxidising solutions (such as hypochlorite)

Group 12: solutions of non-oxidising organic salts with pH = 6-8

Performance characteristic	Test method	Product performance
Watertightness:	EN 1928 (60 kPa)	no water passage
Static puncture:	EN 12730 method B	pass (100 N)
Dynamic crack bridging at 0°C:	EN 1062-7	class B4.2
Slip resistance (with Mapecoat PU 20 N mixed with Mapecoat Filler or broadcast with Quartz 0.5):	EN 13036-4	Class III

Durability after UV exposure (400 MJ/m ² , 2460 hours) spray (492 hours) (EN ISO 4892-3 cycle 3): - Compliance criteria - Watertightness	EN ISO 4628-2 EN 1928 (60 kPa)	no blistering, no cracking, no flaking change in colour), no water passage
Resistance to ageing from heat 7 days at 70 ± 3°C (point 4.1 of EN 1062-11): - Watertightness	EN 1928 (60 kPa)	no water passage
Durability after freeze/thaw cycles without de-icing salts 20x (EN 13687-3): - Bond strength by pull-off	EN 1542	≥ 1.2 N/mm ²

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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The most up-to-date TDS can be downloaded from our website www.mapei.com.

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