

PLANISEAL 288

Two-component cementitious mortar for waterproofing underground structures, tanks and concrete structures in general



WHERE TO USE

For waterproofing:

- internal and external surfaces of underground masonry and reinforced concrete structures (up to a maximum of 1.5 bar of counter pressure);
- lift wells;
- ornamental ponds and swimming pools;
- storage tanks and basins in general;
- balconies and small exposed areas for pedestrian use.

ADVANTAGES

- Available in two different colours: white and grey.
- Pre-dosed kits.
- Thanks to its two-component formulation it adheres extremely well to various types of substrate: concrete, cementitious render, bricks and blocks.
- Highly permeable to water vapour.
- Easy to apply.
- Extremely attractive finish, particularly the white version.
- Complies with the performance requirements of European standard EN 1504-2, it protects and increases the durability of concrete surfaces.

TECHNICAL CHARACTERISTICS

Planiseal 288 is a two-component cementitious mortar made from cementitious binders, selected aggregates, special additives and synthetic polymers in water dispersion according to a formula developed in MAPEI research laboratories. When the two components are mixed together they form a fluid mix that may be applied with a trowel or brush. It adheres very strongly to the substrate and guarantees excellent waterproofing for the base layer, including in the presence of water at up to 1.5 bar of pressure.

Planiseal 288 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 MC and IR principles (*"Concrete surface protection systems"*).

RECOMMENDATIONS

- Do not use **Planiseal 288** to solve the problem of internal condensation.
- Do not apply on painted surfaces.
- Do not mix **Planiseal 288** with admixtures, cement or aggregates.
- Do not use on surfaces subject to deformation.
- Do not apply **Planiseal 288** in presence of free-standing water.
- Do not add water to the mix.

- Do not use **Planiseal 288** for thick coatings (more than 2 mm per coat).
- Do not use the product if the packaging is damaged.

APPLICATION PROCEDURE

Preparation of the substrate

The surface to be treated must be sound, clean, perfectly flat (no peaks or hollows) and with no cracks. Remove cement laitance, loose and crumbling parts and traces of dust, grease, oil and form-release compounds by sandblasting or with high pressure water jets. If water keeps leaking through onto concrete structures, block the leaks beforehand with **Lamposilex**.

Cementitious render must be well cured (7 days for each cm of mortar applied in good weather), well bonded to the substrate, strong and free of dust and all kinds of paint.

Integrate any missing areas or repair honeycombs with a suitable product from the **Mapegrout** range.

Round off all sharp edges on horizontal and vertical surfaces and form fillets with the same **Mapegrout** range product.

When applied on balconies and exposed horizontal surfaces, take extra care around joints between horizontal and vertical surfaces by applying 20 cm wide **Mapetex 50** non-woven polypropylene tape, embedded in the two coats of **Planiseal 288**.

Apply **Mapeband TPE** tape to the substrate around structural joints to form flexible waterproof seals; bond the tape in place with **Adesilex PG4** epoxy adhesive.

Absorbent surfaces to be treated with **Planiseal 288** must be wetted slightly with water prior to application.

Preparation of the mortar

Pour component B (liquid) into a suitable clean container and slowly add component A (powder) while stirring with a mixer.

Carefully mix **Planiseal 288** for several minutes; make sure no powder sticks to the sides or bottom of the container. Keep mixing until completely blended. A low-speed mechanical mixer is recommended for this operation to avoid entraining too much air into the mix. Do not mix the product manually.

Application of the mortar

Apply **Planiseal 288** within 60 minutes of mixing using a trowel, roller, brush or by spray. Apply at least two criss-cross coats of product to form a layer at least 2 mm thick. In tanks and swimming pools, apply at least three coats of product to form a layer 3 mm thick. Make sure the previous coat of **Planiseal 288** is sufficiently dry before applying the next one (approximately 5-6 hours, depending on the surrounding temperature and absorbency of the substrate). To ensure good adhesion, do not wait more than 24 hours between each coat.

PRECAUTIONS TO BE TAKEN DURING AND AFTER APPLICATION

- In hot weather do not expose the product to the sun before use (powder and liquid).
- When applying **Planiseal 288** in areas with poor ventilation, set up a ventilation system to guarantee that each coat dries correctly before applying the next one.
- In particularly dry, warm or windy weather, protect the surface with sheets after applying the product to prevent rapid evaporation.
- With tanks and swimming pools, load tanks must only be carried out when **Planiseal 288** has completely hardened (wait at least 7 days after application). Load test must be carried out continuously without interruption.
- Do not apply if it is about to rain or just before freezing weather conditions.

CLEANING

Because of the high adhesion of **Planiseal 288**, we recommend cleaning tools with water before the mortar starts to set. Once hardened, cleaning must be carried out mechanically.

CONSUMPTION

Approx. 1.9 kg/m² per mm of thickness.

The consumption figures indicated are for a seamless film on a flat surface and are higher if applied on uneven substrates.

PACKAGING

25 kg kit:

- component A: 20 kg bag;
- component B: 5 kg canister.

STORAGE

Planiseal 288 component A may be stored for 12 months in its original packaging in a dry place. This product conforms to the prescriptions of Reg. (EC) N. 1907/2006 (REACH) - Annex XVII, item 47.

Planiseal 288 component B may be stored for 24 months.

Store **Planiseal 288** in a dry place at a temperature of at least +5°C.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Planiseal 288 component A contains cement that when in contact with sweat or other body fluids causes irritant alkaline reactions and allergic reactions to those predisposed. It may damage the eyes. **Planiseal 288** component B is not considered hazardous according to current regulation regarding the classification of mixtures.

During use wear protective gloves and goggles and take the usual precautions for handling chemicals. If the product comes into contact with the eyes or skin, wash immediately with plenty of clean water and seek medical attention. 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.

Planiseal 288: two-component normal-setting cementitious mortar for waterproofing and protecting concrete in compliance with the requirements of EN 1504-2 coatings (C) principles MC and IR

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

	comp. A	comp. B
Consistency:	powder	liquid
Colour:	grey or white	white
Maximum size of aggregate (mm):	0.4	–
Bulk density (kg/m ³):	1,300	–
Density (kg/m ³):	–	1,000
Dry solids content (%):	100	25

APPLICATION DATA (at +20°C and 50% R.H.)

Colour of mix:	grey or white
Mixing ratio:	component A : component B = 4:1
Consistency of mix:	brushable
Density of mix (kg/m ³):	1,900
Application temperature range:	+5°C to +35°C
Service temperature:	-30°C to +90°C
Pot life of mix:	approx. 1 hour
Ready to use:	7 days

FINAL PERFORMANCE (thickness 2.0 mm)

Performance characteristic	Test method	Requirements according to EN 1504-2 coating (C) principles MC and IR	Product performance
Compressive strength (MPa):	EN 12190	not required	5 (after 2 days) 15 (after 7 days) 25 (after 28 days)
Flexural strength (MPa):	EN 196/1	not required	2.0 (after 2 days) 5.0 (after 7 days) 8.0 (after 28 days)
Adhesion to concrete after 28 days (MPa):	EN 1542	For rigid systems with no traffic: ≥ 1.0 with traffic: ≥ 2.0	≥ 2
Impermeability expressed as capillary absorption ($\text{kg/m}^2 \cdot \text{h}^{0.5}$):	EN 1062-3	$W < 0.1$	$W < 0.04$ (class III - low permeability according to EN 1062-1)
Permeability to water vapour – equivalent air thickness S_D (m):	EN ISO 7783-1	Class I $S_D < 5$ m Class II $5 \text{ m} \leq S_D \leq 50$ m Class III $S_D > 50$ m	$S_D < 5$ (class I - permeable to water vapour)
Thermal compatibility measured as adhesion according to EN 1542 – freeze-thaw cycles with de-icing salts (MPa):	EN 13687-1	≥ 2 after 50 cycles	≥ 2.0
Reaction to fire:	EN 13501-1	Euroclass	E

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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