# PLANISEAL 288

**Two-component cementitious mortar for waterproofing structures below ground level and storage tanks**






## BENEFITS AND FEATURES

- Excellent adhesion to various types of substrates
- Highly permeable to water vapour
- Easy to apply
- Covering with excellent aesthetic effect

## 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.

## 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

| TECHNICAL INFORMATION FOR THE APPLICATION | |
|---|---|
| **Mixing ratio:** | component A : component B = 4 : 1<br>*(one 20 kg of component A with one 5 kg tank of component B)* |
| **Coat thickness:** | 2 -3 mm<br>*(see application of the mortar paragraph)* |
| **Application temperature range:** | surrounding and substrate temperature from +5°C to +35°C |
| **Service temperature:** | -30°C to +90°C |
| **Pot life of mix:** | approx. 60 mins. (at +20°C) |
| **Put in service:** | 7 days |

## 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.

The directions for preparing mortar intended for making laboratory test samples are contained in the TECHNICAL DATA section.

### 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/m$^2$ 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.

## TECHNICAL DATA (typical values)

| PRODUCT IDENTITY | | |
|---|---|---|
| Identification according to EN 1504-2: (methods and principles) | Coating (C) – principles MC and IR | |
| | Component A | Component B |
| Consistency: | powder | liquid |
| Colour: | grey or white | white |
| Maximum size of aggregate: | 0.4 mm | - |

| TECHNICAL INFORMATION FOR PRODUCT APPLICATION | |
|---|---|
| Mixing ratio: | component A : component B = 4 : 1 |
| Preparation of the mix: | Mixing with low-speed drill for approx. 1' 30'' until a homogeneous mix with the correct density is obtained |

| CHARACTERISTICS OF FRESH MIX (at +20°C - 50% R.H.) | |
|---|---|
| Colour of mix: | grey or white |
| Consistency of mix: | brushable |
| Density of mix: | 1900 kg/m$^3$ |

**FINAL PERFORMANCES**

***Curing at +23°C – 50% R.H. if not differently specified in test methods (2.0 mm dry thickness)***

| Performance characteristic | Test method | Requirements EN 1504-2 (C) MC and IR | Product performance |
|---|---|---|---|
| Compressive strength:<br>- 2 days<br>- 7 days<br>- 28 days | EN 12190 | not required | <br>5 MPa<br>15 MPa<br>25 MPa |
| Flexural strength:<br>- 2 days<br>- 7 days<br>- 28 days | EN 196-1 | not required | <br>2 MPa<br>5 MPa<br>8 MPa |
| Adhesion to concrete by pull-off: | EN 1542 | for flexible systems<br>without traffic ≥ 0.8 MPa<br>with traffic ≥ 2.0 MPa | ≥ 2.0 MPa |

| | | | |
|---|---|---|---|
| **Thermal compatibility - freeze/thaw cycles with de-icing salts (50 cycles) after storm cycles (10 cycles):** | EN 13687-1<br>EN 13687-2 | for flexible systems<br><br>without traffic ≥ 0.8 MPa<br>with traffic ≥ 2.0 MPa | **≥ 2.0 MPa** |
| **Permeability to water vapour (wet cup-B method) – equivalent air thickness $S_D$ (m):** | EN ISO 7783 | Class I<br>$S_d$ < 5 m<br>Class II<br>5 m ≤ $S_d$ ≤ 50 m<br>Class III<br>$S_d$ > 50 m | **$S_d$ < 5 m**<br>**Classe I**<br>*(permeable to water vapour)* |
| **Impermeability expressed as water permeability coefficient *W*:** | EN 1062-3 | W < 0.1 kg/m$^2$·h$^{0.5}$ | ***W* < 0.04 kg/m$^2$·h$^{0.5}$**<br>Class $W_3$<br>*(low permeability to water according to EN 1062-1* |
| **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.*

*The values declared in the TECHNICAL DATA table (typical values) were obtained in compliance with test methods and curing cycles defined in the technical standards referenced therein. Therefore, please note that the use of test procedures or methods other than those indicated in the table could lead to different values and that, in such cases, any liability of our company is excluded.*

**Please refer to the current version of the Technical Data Sheet, available from our website www.mapei.com**

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