PLANISEAL 88

Osmotic cementitious mortar suitable for contact with drinking water, for waterproofing masonry and concrete structures





WHERE TO USE

· Waterproofing basins, reservoirs, concrete or masonry tanks containing drinking water
· Waterproofing concrete or masonry tanks containing sewage water
· Renovation of structures subject to water and moisture seepage including underground structures and similar locations subject to negative pressure up to 1 bar
· As a smoothing and waterproofing compound of underground walls before laying of bituminous membranes

Some application examples

· Drinking water reservoirs
· Interior and exterior cellar and basement walls
· Wet areas (kitchens and bathrooms)
· Swimming pools and water features
· Lift-pits
· Underground passages
· Planters
· Foundation walls
· Irrigation canals
· Non-critical damp proof courses

TECHNICAL CHARACTERISTICS

Planiseal 88 is a pre-blended powder, composed of a cement-based compound, selected graded aggregates, and special synthetic polymers according to a formula developed in the MAPEI research laboratories.

When mixed with water, **Planiseal 88** becomes a fluid mortar that can be applied by trowel, brush, or by spray with excellent adhesion to the substrate for complete waterproofing.

Planiseal 88 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 the MC and IR principles (“*Protection systems for concrete surfaces*”).

RECOMMENDATIONS

· Do not use **Planiseal 88** for solving internal condensation problems (use dehumidifying renders, improve ventilation to the area and/or provide adequate insulation)
· Do not use on de-bonded render, plasterboards, painted walls, plywood, chipboard, or asbestos cement
· Do not mix **Planiseal 88** with additives, cement, or aggregates
· Do not use on flexible substrates or unstable surfaces. In no case should **Planiseal 88** be applied to a substrate that has standing water on the surface
· Do not mix **Planiseal 88** with more water than specified
· Do not use the product if the packaging has been previously opened or is damaged

APPLICATION PROCEDURE

Preparation of the substrate

The surface to be waterproofed must be clean and sound. Remove any loose or degraded concrete, dust, cement laitance, curing compounds, form release agents, all coatings, and any other deleterious materials by mechanical means, high-pressure water jetting, or other approved preparation methods.

If water keeps leaking through concrete structures, block the leak beforehand with **Lamposilex**.

Renders must be perfectly bonded to the substrate. Seal cracks in the substrate and repair damaged areas with one of the **Mapegrout** range products as well as **Planitop 400 ME**.

Wait for the evaporation of the excess water. If necessary, in order to accelerate the operation, use a sponge or oil-free compressed air.

Preparation of the mortar

Pour 5.25-5.75 litres of potable grade water into a suitable, clean, rust-free container and slowly add **Planiseal 88** while mixing with a slow-speed mechanical mixer (300-500 rpm).

Mix thoroughly for 2-3 minutes, taking care to blend in all the unmixed powder deposited on the sides and bottom of the bucket, until the mortar is completely blended (free from lumps). Leave the mortar to stand for 10 minutes, then remix for a further minute before applying.

Application of the mortar

Apply **Planiseal 88** with a brush, trowel, or by spray. In order to achieve the required thickness, application by brush may require 2-3 coats. Make sure the previous coat is sufficiently dry before applying the next coat. (generally, 5-6 hours depending on the temperature and the absorption of the substrate. In order to have perfect adhesion between the coats, it is recommended not to exceed 24 hours between the coats).

To achieve proper application, particular care in detailing corners and coves should be taken.

When the application is by trowel, it is recommended to treat the substrate with **Planiseal 88** using a brush for the first coat.

If the application is by spray, a normal rendering machine (with a bowl-type spray gun) can be used to make sure that the product is mixed correctly beforehand. After having pre-soaked the substrate, apply the mix by spraying in two layers. Apply the second coat when the first has partially hardened. The final thickness of **Planiseal 88** should be approximately 2-3 mm.

The properties of the hardened **Planiseal 88** are such that it can be used only for rigid waterproofing.

Planiseal 88 should not be exposed to vehicular traffic. Where a risk of damage exists, suitable protection should be provided.

Precautions to be observed during application

Only use bags of **Planiseal 88** which have been stored correctly, covered, and stored in a dry place.

In hot weather working conditions, the following precautions should be taken:
- Avoid direct exposure to sunlight for stored material and also mixing equipment
- Use cool water (approx. 20°C) for mixing
- Avoid application during the hottest time of the day and/or direct sunlight
- Mix only sufficient material that can be applied using available labour and equipment to ensure a continuous and uninterrupted application
- In windy and/or direct sunlight situations, it is recommended to spray the surface following application with water as a precaution to prevent rapid evaporation of mixing water
- Before allowing drinking water to come into contact with **Planiseal 88**, make sure it has been completely set by keeping to recommended waiting times. Then thoroughly clean all the surfaces and remove all the water used for cleaning before filling

Cleaning

Planiseal 88 can be removed from tools with water before it hardens. Once hardened, cleaning becomes and can only be carried out by mechanical means.



Planiseal 88 mixed with water



*Application of **Planiseal 88** by spray gun in a hydroelectric canal*



*Application of **Planiseal 88** by trowel*

CONSUMPTION

1.5 kg/m² per mm of thickness.

PACKAGING

25 kg bags.

STORAGE

When stored in a dry condition in the original, unopened bags, **Planiseal 88** has a shelf life of 12 months. If stored at high temperatures and or high humidity, the shelf life may be reduced.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Planiseal 88 contains cement that when in contact with sweat or other body fluids causes irritant alkaline reactions and allergic reactions to those predisposed. When applying the product, use protective gloves and goggles and take the usual precautions for handling chemicals. If the product comes in contact with the eyes or skin, wash immediately with plenty of 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 Material Safety Data Sheet.

Planiseal 88: single component, normal-setting, osmotic cementitious mortar for protecting and waterproofing concrete: conforms to the requirements of EN 1504-2 coating (C) according to the MC and IR principles	
TECHNICAL DATA (typical values)	
PRODUCT IDENTIFICATION	
Consistency:	powder
Colour:	grey or white
Maximum size of aggregate (mm):	0.4
Bulk density (kg/m³):	1300
Dry solids content (%):	100
APPLICATION DATA (at +20°C - 50% R.H.)	
Colour of mix:	grey or white

Mixing ratio:	100 parts of **Planiseal 88** with 21-23 parts of water (5.25-5.75 litres of water per 25 kg bag)		
Consistency of mix:	fluid - applicable by trowel		
Density of the mix (kg/m³):	1800		
Application temperature range:	from +5°C to +40°C		
In service temperature range:	from +5°C to +90°C		
Pot life of mix:	approx. 1 hour		
Application of successive layer:	after 5 hours, and no later than 24 hours		
Waiting time before putting into service:	7 days		
FINAL PERFORMANCE (with 23% mixing water - thickness 2.5 mm)			
Performance characteristic	**Test method**	**Requirements according to EN 1504-2 coating (C) (MC and IR principles)**	**Performance of product**
Compressive strength (MPa):	EN 12190	not required	> 6 (after 1 day) > 15 (after 7 days) > 25 (after 28 days)
Flexural strength (MPa):	EN 196/1	not required	> 2.0 (after 1 day) > 4.0 (after 7 days) > 6.0 (after 28 days)
Bond strength on concrete (substrate in MC 0.40) according to EN 1766 (MPa):	EN 1542	for rigid systems without traffic: > 1.0 with traffic: > 2.0	> 2 (after 28 days)
Impermeability expressed as coefficient of permeability to free water ($kg/m^2 \cdot h^{0.5}$):	EN 1062-3	W < 0.1	W < 0.05 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 m < S_D < 50 m Class III S_D > 50 m	S_D < 1 Class I (permeable to water vapour)
Reaction to fire:	EN 13501-1	Euroclass	E

IMPORTANT NOTES

Whilst we try to ensure that any advice, recommendations or information given in our literature is accurate and correct, we have no control over the circumstances in which our product is used. It is therefore important that installers satisfy themselves that the product and conditions are suitable for the envisaged application. No warranty can be given or responsibility accepted other than, that the product supplied by us will meet our written specification. The installer should ensure that our latest product data and safety information sheets have been consulted prior to use.

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





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