PLANISEAL WR 100

Ready-mixed pure silane-based, hydrophobising, protective, migrating liquid applied to the surface of reinforced concrete structures

CE EN 1504-2

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

WHERE TO USE

Thanks to its hydrophobising properties, **Planiseal WR 100** is particularly recommended for protecting all reinforced concrete structures exposed to aggressive agents such as chlorides and to damage caused by freeze-thaw cycles. Thanks to its special formulation, **Planiseal WR 100** may be applied directly on both vertical and horizontal surfaces of porous and compact concrete, on new concrete and on concrete that has already been repaired or with no evident signs of detachment from the reinforcing steel.

Some application examples

- Piles and abutments on bridges and viaducts.
- Floor slabs.
- Structures in marine environments such as quaysides, jetties, etc.
- Prestressed reinforced concrete structures.
- Front edges of balconies.
- String courses.
- Foundations.
- Prefabricated structures (buffer panels, beams, columns, etc.).
- Internal and external reinforced concrete structures in general.

TECHNICAL CHARACTERISTICS

Planiseal WR 100 is a pure silane-based, very low-denisity hydrophobising liquid with high penetration capacity that is applied directly on the surface of the concrete to be treated.
Thanks to its special composition, **Planiseal WR 100** travels through the capillary pores and penetrates deep down into concrete to form a protective, hydrophobic coating that, over the years, helps to prevent the degradation and detachment of concrete.
Despite the unchanged aspect and breathability of the substrate, **Planiseal WR 100** drastically reduces water and chloride absorption and helps to prevent corrosion of the reinforcement steel in concrete. Thanks to its special properties, it also helps to prevent deterioration of new and repaired concrete caused by freeze-thaw cycles and de-icing salts and increases its durability, especially when used as part of a repair and protection cycle on reinforced concrete.
Planiseal WR 100 complies with Euronorm 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 ("*Surface protection systems for concrete*") according to principles PI, MC and IR for class: H – hydrophobic impregnation: surface protection products.

RECOMMENDATIONS

- Do not dilute **Planiseal WR 100** with water during preparation.
- Do not add any other product (solvent, cement, etc.).
- Do not apply to the surface of concrete in direct contact with drinking water.
- Do not apply the product if the surrounding temperature is less than +5°C.
- Protect adjacent surfaces, including metal, glass and wood. Immediately remove all accidental splashes with water or ethanol.

APPLICATION PROCEDURE

Substrate preparation

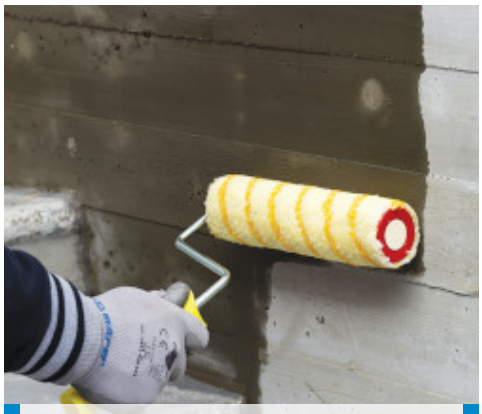
Concrete must be well cured, sound, and clean and free of all traces of oil, grease, cement laitance, old paint and any other material or substance that could prevent **Planiseal WR 100** from penetrating into the concrete. When treating old concrete, the cleaning method adopted depends on the type of dirt or stain to be removed. Hydro-blasting with cold water is generally sufficient to open surface pores and thus facilitate the penetration of the product. Hydro-blasting with hot water is particularly effective in removing oil and grease. If there are no stains or dirt, to blow the surface down with compressed air is usually sufficient. Before applying **Planiseal WR 100** wait until the surfaces are dry.

Preparation of the product

Planiseal WR 100 is supplied ready-mixed and must not be diluted with water or solvent. The product must be well mixed before use, in order to ensure it is perfectly blended.

Application of the product

Make sure the surface of the concrete is not frozen and that rain or a drop in temperature to below +5°C is forecast for at least 12 hours after application. The effectiveness of **Planiseal WR 100** depends on its penetration depth and this in turn depends on the type and absorbency of the concrete. The product may be applied by low-pressure airless spray on large surfaces or with a roller for smaller areas. It is recommended to apply two coats of product to get a more uniform distribution. The second coat may be applied while the first coat is still wet, as long as it has penetrated into the substrate. Remove any excess product with a roller while still wet. The surrounding temperature, the temperature of the substrate and the absorbency of the substrate will all affect the product's drying time.
Do not apply **Planiseal WR 100** on substrates that are not sufficiently cured. Areas that are still moist could limit the spread of the product deep down into the concrete.
Contact MAPEI Technical Services for advice regarding application on substrates or in conditions not mentioned in this Data Sheet.



Application of Planiseal WR 100 by roller

Application of Planiseal WR 100 by spray

PRECAUTIONS TO BE TAKEN DURING APPLICATION

- Do not apply **Planiseal WR 100** if it is about to rain or if rain is forecast within 12 hours of application.
- Apply at a temperature of +5°C to +35°C.
- Do not apply the product in strong winds.
- Do not apply the product on wet or damp concrete.
- Do not apply on external hot surfaces exposed to direct sunlight.

CLEANING

Rinse tools and remove all traces and splashes of product immediately after application with water or ethanol.

CONSUMPTION

Consumption varies according to the porosity of the substrate and is generally around 0.1-0.2 kg/m² per coat.

PACKAGING

Planiseal WR 100 is available in 5 kg tanks.

STORAGE

Planiseal WR 100 may be stored for 24 months in its original packaging in a covered, dry area. Store the product in an area with a temperature of +5°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)

PRODUCT IDENTITY	
Identification according to EN 1504-2 (methods and principles):	hydrophobic impregnation (H) - PI, MC and IR principles
Consistency:	liquid
Colour:	trasparent
Density:	0.88 g/cm^3

APPLICATION DATA	
Application temperature:	from +5°C to +35°C
Dilution rate:	ready-mixed

FINAL PERFORMANCE
According to the curing times defined in the test methods

Performance characteristics	Test method	Requirements EN 1504-2 hydrophobic impregnation (H) (PI, MC and IR principles)	Product performance
Penetration depth:	EN 1504-2 (table 3, n. 19)	Class I: < 10 mm Class II: ≥ 10 mm	Class II: ≥ 10 mm
Water absorption and resistance to alkali:	EN 13580	absorption rate < 7.5% compared with untreated test sample	< 7.5%

		absorption ratio < 10% after immersion in alkali solution	< 10%
Drying speed coefficient:	EN 13579	Class I: > 30% Class II: > 10%	Class I: > 30%
Loss in mass after freeze-thaw cycles with de-icing salts:	EN 13581	the loss of mass of the surface of the impregnated specimen must occur at least 20 cycles later than that of the not impregnated specimen	**ΔC > 20**
Reduction in chloride ion diffusion:	NT Build 515	not requested	**> 60%**

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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