

MasterShield® PEL 303

Alkyl Alkoxysilane Based Water Repellent

Material Description

MasterShield® PEL 303 is a water-based alkyl alkoxy silane having a volatile organic content lower than 350 grams per litre. It penetrates into the substrate and chemically reacts within the pores of the cementitious substrates.

Areas of Application

MasterShield® PEL 303 is a clear penetrating water repellent to protect both vertical and horizontal concrete surfaces exposed to weathering effects and chloride ions. MasterShield® PEL 303 can be used on old and new (cured) structures;

- Bridge decks, piers columns and beams.
- Multi-Storey car parks, building facades and balconies.
- Chimneys, cooling towers.
- Concrete pavements and pedestrian ways.
- Airport runways and taxiways.
- Exposed concrete surfaces (e.g. building façades).
- Precast concrete elements.
- Marine structures and jetties.
- Water repellence treatment of; sand – lime brickwork, hard - bake brickwork, küfeki stone, mineral rendering, absorbent natural stones.

Characteristics and Benefits

- Improves the aesthetics by reducing efflorescence, algae growth and dirt build-up.
- Surface appearance remains unchanged.

- Penetrates deep into the concrete
- Prevents water and chloride ion penetration into the concrete and protects it from freezethaw effects.
- Virtually no product evaporates during spray application, therefore more active silane can reach its intended target minimizing wastage and maximizing coverage.
- Ready for use, no dilution on the site, which means constant quality.
- Single layer application.
- Can be applied to damp substrates.
- Application equipment and spillages easily cleaned with soapy water.
- Reduces volatile organic emissions into the atmosphere in comparison with today's commonly-used organic solvent-based water repellents.
- Provides a much safer working environment for the applicator by minimizing health hazards associated with organic solvents.
- Breathable, vapour permeable treatment

Processing Method

(A) Preparation of Substrate

New cured concrete surfaces should be cleaned of all sand, surface dust/dirt, oil, grease, chemical films/coatings and other contaminants before application. A complete water-blast, sandblast or shot blast may be needed to achieve the desired surface condition. Crack control, caulking, patching and expansion joint sealants must be installed before the

Technical Properties

Structure of the Material	Water based alkyl alkoxysilane
Color	White (clear when cured)
Solid Content	% 20
Density (23°C)	1,05 g/cm ³
Chloride Diffusion (vs. reference concrete)	% 7
Water Absorption Test (vs. reference concrete)	% 5,3 – 8,3
Flash Point (ASTM D 3278-82)	> 93

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application of **MasterShield® PEL 303**, and allowed to cure in accordance with the manufacturer's instructions.

(B) Mixing

MasterShield® PEL 303 is a ready to use product, stir slightly.

(C) Processing

Temperature of the surface, the air and the material should be between 5 and 35°C during application. Do not apply **MasterShield® PEL 303** when temperatures are expected to fall below 5°C within 24 hours or rain is expected within 4 hours of completed application. Surfaces to be treated can be slightly damp, but for best results a dry surface is suggested for maximum penetration.

Test a small area of concrete surface before starting general application of any clear, penetrating sealer to assure desired results and coverage rates.

Apply to saturation, with a controlled rundown of maximum 20 cm on vertical surfaces. Low pressure, non-atomizing flooding is recommended or poured followed by brooming for even distribution on horizontal surfaces.

Curing

It is recommended that any surface treated with **MasterShield® PEL 303** be left undisturbed for a minimum of 4 hours in order to allow proper penetration. **MasterShield® H 303** may leave a temporarily slippery surface for several hours after application. Therefore, vehicle traffic areas should not be reopened until the treated surface is dry. Painting of line stripes should be done after **MasterShield® PEL 303** completes its curing.

Working Time

MasterShield® PEL 303 only reacts with mineral based substrates. Therefore it does not react inside the container or application pump. As long as it is kept in its original container or inside a clean sealed pump, it can be used when ever needed during its shelf life.

Consumption

0.15 - 0.3 liter/m² (depends on the substrate porosity)

Point to Consider

- Do not apply at temperatures below 5°C or over 35°C.
- Allow concrete surfaces to dry for between 24 and 72 hours after heavy rain or cleaning with water before applying **MasterShield® PEL 303**.
- Do not apply if rain is expected within 4 hours.
- Do not alter or dilute the material as supplied.

Cleaning of Tools

All the tools and equipments must be cleaned by water after the application. After **MasterShield® PEL 303** is hardened, it can only be removed from the surface mechanically.

Packaging

MasterShield® PEL 303 is available in 5 liters plastic cans.

Shelf Life

12 months after the production date under appropriate storing conditions.

Storage

MasterShield® PEL 303 should be stored under normal warehouse conditions between 5°C and 35°C. It should be stored under cover and clear of the ground and stacked not more than two layers high. Protect from freezing.

Health and Safety

It is dangerous to approach the application sites. During the application, a protective apparel, protective gloves, goggles and masks which comply with the Occupational Health and Safety Rules should be used. Due to the irritation effect of the uncured materials, the mixture should not come into contact with skin and eyes; in case of a contact, the affected area

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should be washed with plenty of water and soap; in case of swallowing, a physician should be consulted immediately. No food or beverages should be brought to the application area. The product should be stored and kept out of reach of children. For detailed information please consult the Material Safety Data Sheet.

Disclaimer

The technical information given in this publication is based on the present state of our best scientific and practical knowledge. **MBT Teknik Yapı Kimyasalları Sanayi ve Ticaret A.Ş.** is only responsible for the quality of the product **MBT Teknik Yapı Kimyasalları Sanayi ve Ticaret A.Ş.** is not responsible for results that may occur because the product is used other than advised and/or out of instructions regarding the place and the method of use. This technical form is valid only till a new version is implemented and nullifies the old ones.

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