

MasterProtect H 303

Alkyl Alkoxysilane Based Water Repellent

MATERIAL DESCRIPTION

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

FIELDS OF APPLICATION

MasterProtect H 303 is a clear penetrating water repellent to protect both vertical and horizontal concrete surfaces exposed to weathering effects and chloride ions.

MasterProtect H 303 can be used on old and new (cured) structures:

- Bridge decks, piers columns and beams.
- Multi-Storey car parks, building facades and balconies.
- Chimeys, 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.

FEATURES 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.

APPLICATION PROCEDURE

Surface Preparation:

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 application of **MasterProtect H 303**, and allowed to cure in accordance with the manufacturer's instructions.

Mixing:

MasterProtect H 303 is a ready to use product, stir slightly.

Application:

Temperature of the surface, the air and the material should be between 5 and 35°C during application. Do not apply **MasterProtect H 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.

Coverage:

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

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Finishing and Cleaning:

Equipment and incidental areas of over-spray should immediately be cleaned with soapy water to avoid eventual staining. **MasterProtect H 303** will leave a visible residue on non-porous materials such as glass, metal and painted surfaces when cured. Dried, polymerized material can be removed by scraping with a metal blade. Protect plant life from over spray.

Curing:

It is recommended that any surface treated with **MasterProtect H 303** be left undisturbed for a minimum of 4 hours in order to allow proper penetration.

MasterProtect 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 **MasterProtect H 303** completes its curing.

Working Time:

MasterProtect H 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.

PACKAGING

MasterProtect H 303 is available in 5 liters plastic cans.

STORAGE

MasterProtect H 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.

SHELF LIFE

12 months if stored in undamaged, unopened containers at above mentioned storage conditions.

WATCH POINTS

- 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 **MasterProtect H 303**.
- Do not apply if rain is expected within 4 hours.
- Do not alter or dilute the material as supplied.

HEALTH AND SAFETY PRECAUTIONS

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 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.

ADDITIONAL TEST AND CERTIFICATIONS:

- CTL (USA): Superior protection against water absorption (NCHRP 244, Series II-Cube Test).
- TRL (UK): Superior chloride ion protection.
- CTL (USA): Superior freeze-thaw protection (ASTM C 672). Non-air-entrained concrete.
- CTL (USA): Superior accelerated weathering results (NCHRP 244, Series IV-Southern Climate).
- TNO (NL): Approved by "Rijkswaterstaat" to be used on bridge decks, viaducts and other concrete structures for Portland Based & Slack Cement based concrete.
- SINTEF (N): Chloride diffusion constant.

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NOTE

Technical support, where provided, does not constitute supervisory responsibility. For additional information contact your local MB Construction Chemicals Solutions South Africa (Pty) Ltd representative. MB Construction Chemicals Solutions South Africa (Pty) Ltd shall not be liable for technical advice provided.

MB Construction Chemicals Solutions South Africa (Pty) Ltd reserves the right to have the true cause of any difficulty determined by accepted test methods. Undertaking such tests is not, and shall not be deemed to be, an admission of liability or an assumption of any risk, loss, damage or liability.

QUALITY AND RESPONSIBLE CARE

All products originating from MB Construction Chemicals Solutions South Africa (Pty) Ltd are manufactured under a management system independently certified to conform to the requirements of the quality standards ISO 9001, environmental and occupational health and safety standards.

* Properties listed are based on laboratory controlled tests.

TECHNICAL DATA*

Property	Standard	Data	Unit
Chemical Bae	-	Water based alkyl alkoxy silane	-
Solid Content	-	20	%
Color	-	White (Clear when cured)	-
Density (23°C)	-	1.01	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	Celsius
Water Vapor Transmission Rate	Oklahoma DOT-OHD-L-35	102	%

DISCLAIMER

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