MasterProtect 8500CI

Dual phase silane and corrosion inhibitor

Material Description

MasterProtect 8500CI is a single component, ready to use, low viscosity, clear liquid, that combines the power of a 100% reactive, dual-function silane-based penetrating corrosion inhibitor, with a latent-phase corrosion inhibitor, to mitigate electrochemical corrosion of reinforcing steel in new or aged concrete.

Only MasterProtect 8500CI couples the primary reactive penetrant with a second, latent-phase corrosion inhibitor. This latent-phase inhibitor activates when the concrete cracks, migrating to the reinforcing steel to provide an extra level of protection when it is most needed.

Areas of Application

MasterProtect 8500CI is sprayed directly onto the surface of steel reinforced concrete structures and buildings. It is equally suited to cast in situ, precast, post tensioned, pre-stressed, GFRC, or other steel reinforced concrete.

MasterProtect 8500CI can be used as part of an overall repair strategy using MasterEmaco concrete repair systems to mitigate corrosion rates within the balance of the structure and significantly reduce the possibility of "ring anode" induced spalling later.

Equally MasterProtect 8500CI can be used as a cost-effective preventative measure before the onset of corrosion induced problems occur.

Contact your local Master Builders Solutions representative for further information.

It is particularly suited for the protection of:

- Steel reinforced concrete, including cast-in place, precast, pre-stressed and post tensioned
- Building facades and balconies, parking structures, pedestrian walks, bridge decks and supporting elements (beams, columns, etc.), concrete docks and piers
- Marine and other high humidity environments not subject to hydrostatic pressure
- External surfaces of concrete water structures such as tanks, dams, spillways and culverts
- Steel-reinforced concrete exposed to de-icing salts or salt water/chloride environments

Characteristics and Benefits

- 100% reactive ingredients. No diluents or fillers, non-flammable, low odour.
- Easy to apply and quick-drying for faster installation time.
- Provides water repellent surface to prevent penetration of moisture and chlorides.
- Reduces corrosion due to the ring (incipient) anode or "halo" effect.
- Suitable for use in new construction and repair applications.
- Effective in chloride-contaminated and carbonated concrete to significantly slow the rate of corrosion.
- Latent-phase corrosion inhibitor activates if concrete cracks, or if moisture penetrates the concrete, providing extended protection when it is most needed.
- Vapor-permeable to prevent moisture entrapment.
- Effective in high humidity environments to mitigate corrosion of reinforcing steel.
- Surface treatment that penetrates the concrete to bond with steel and the concrete matrix, to inhibit macrocell (mat-to-mat) and microcell (along rebar) corrosion.
- Normally does not require removal prior to subsequent coating applications, thereby reducing downstream labor costs compared with many other corrosion inhibitors. Based on substrate absorption rate, allow min 72 hours prior to overcoating and test adhesion as required.

Application

Surface Preparation

New concrete must be properly cured. Concrete should obtain 80% of design strength, which typically takes 14–28 days, depending on mix design. Ideally apply after 3-4 days over repairs.

Concrete surfaces must be dry and cleaned to remove all traces of mould oil, curing compounds, dirt, dust, efflorescence, mould, algae, grease, oil asphalt, paint, lacquers, or other coatings or any other materials that would prevent penetration.

Acceptable cleaning methods include shot or sand blasting, high-medium pressure water blasting, or grinding. An ICRI 310.2R CSP 3 – 5 is preferred for best penetration.

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All delaminated, loose or spalled concrete must be removed and repaired with an approved product from the MasterEmaco or other approved concrete repair range. Repair mortars must be properly cured and obtain 80% of their design strength.
MasterProtect 8500CI can, as an additional protective measure, be applied directly to exposed rebar before repair work commences.
Non-moving shallow shrinkage cracks (<0.3mm) with no structural significance are simply treated with multiple coats or ponding of MasterProtect 8500CI.
Other cracks or failed joint sealants should be routed clean and treated with MasterProtect 8500CI before being filled with suitable joint sealant from the MasterSeal range or similar approved.

Mixing

MasterProtect 8500CI is a ready to use product. Do not mix or add anything in to the material. Shake the drum before opening.

Application

1. Use MasterProtect 8500CI as supplied. Do not alter or dilute the product in any way.
2. During application, precautions should be taken to protect the surrounding area from overspray and run-off.
3. Apply MasterProtect 8500CI to dry concrete. Air and concrete temperatures must be between 5°C and 38°C. Lower or higher application temperatures require prior written approval from Master Builders Solutions Technical Service.
4. Apply MasterProtect 8500CI to all concrete surfaces, including repairs, in a multiple coat application. Allow a minimum of 15 minutes between coats but do not re-coat before previous application is visibly dry.
5. Most applications require two or three coats applied at a rate of 230 – 180 ml/m2 each. Apply minimum 600 ml/m2 in total. The exact amount of MasterProtect 8500CI may vary due to concrete porosity, application environment and with the degree of corrosion, chloride content of the concrete and the severity of expected service conditions. Contact your Master Buiders Solutions Technical Sales Representative to discuss specific project requirements.
6. MasterProtect 8500CI can be applied with low pressure, non-atomizing spray equipment with a wet fan-type spray nozzle, or by brush or roller. Sprayers should be fitted with solvent-resistant hoses and gaskets. The product can also be poured when pre-treating cracks in horizontal surfaces.

Notes

- Do not apply at temperatures below 5°C or over 38°C.
- Do not apply if rain is expected within four hours following application, or if high winds or other conditions prevent proper application.
- Allow concrete surfaces to dry for between 24 and 72 hours after heavy rain or cleaning with water before applying MasterProtect 8500CI.
- The effectiveness of MasterProtect 8500CI depends on existing corrosion rates, condition of the reinforcing steel and service conditions.
- For professional use only.
- Make certain the most current versions of product data sheet and SDS are being used; visit master-builders-solutions.com/en-au to verify the most current versions.
- Proper application is the responsibility of the user. Field visits by Master Builders Solutions personnel are for making technical recommendations only and not for supervising or providing quality control on the jobsite.
- Do not alter or dilute the material as supplied.

Coverage

0.6 litre/m^2 – 0.5 kg/m^2

Cleaning

Clean tools and mixer after use with water.

Curing

MasterProtect 8500CI finishes its chemical reactions in two weeks.

Packaging

MasterProtect 8500CI is available in 18.9 litre pails and 208 lt drums (and 1040 litre IBC's MTO).

Storage & Shelf Life

MasterProtect 8500CI should be stored under normal warehouse conditions between -17°C and 50°C. Keep containers closed when not in use and away from naked flames, heat sources and sparks. MasterProtect 8500CI has a shelf life of 18 months if stored in undamaged, unopened containers at above mentioned storage conditions.

Precautions

For the full health and safety hazard information and how to safely handle and use this product, make sure that you obtain a copy of the Safety Data Sheet (SDS) from our office or website.

Technical Data

Property	Standard	Data
Chemical base		Silane
Colour		Clear to light amber
Density (@ 23°C)	DIN 51757	0.88 g/cm^3
Viscosity (@ 24.6°C)	Anton Paar MCR 301	0.82 cP
Flash point	EN ISO 2719	>60 °C
Water absorption and alkali resistance [Concrete type C (0.45) Serie A] - Compared with the untreated specimen - After immersion in alkali solution	EN 13580	 <7.5% <10%
Drying rate (for hydrophobic impregnation)	EN 13579	>30%
Application temperature (ambient and substrate)		+5 to +38°C
Resistance Against Freeze – Thaw Salt Stress of Impregnated Hydrophobic Concrete [C (0.70) type]	EN 13581	>20 cycles

Typical values obtained under controlled laboratory conditions

Evaluation	Property	Results
Alberta B388, Type 1b	Moisture vapor transmission performance Waterproofing performance after abrasion	>75% >85%
NCHRP Report 244, Series II (Northern Exposure – USA)	Chloride reduction Water absorption reduction	>88% >88%
NCHRP Report 244, Series IV (Southern Exposure – USA)	Chloride reduction Weathering	>90% No yellowing or discolouration

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Disclaimer

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