

MasterProtect 8500 CI

Double action migrating corrosion inhibitor for the prevention and slowing down of corrosion of reinforced concrete structures even with cracks.

MATERIAL DESCRIPTION

MasterProtect 8500 CI is a single component, ready to use, low viscosity, clear liquid that, combines the power of a 100% reactive penetrating corrosion inhibitor and 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.

FIELDS OF APPLICATION

MasterProtect 8500 CI 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 8500 CI 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 8500 CI 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
- Steel-reinforced concrete exposed to de-icing salts

FEATURES AND BENEFITS

MasterProtect 8500 CI has the following features:

- 100% reactive ingredients. No thinners or fillers.
- Easy to apply and quick drying for faster installation time.

- Provides a water repellent surface to prevent moisture and chlorides from penetrating.
- Reduces corrosion due to the ring anode or "halo" effect.
- Suitable for use in new construction and repair applications.
- Effective in chloride and carbonate contaminated concrete to significantly slow down the corrosion rate. The table below shows a significant decrease in the minimum concrete cover for durability, or an extension of the useful life of the structure with the same concrete cover (ref. Study of migrating corrosion inhibitor additives for concrete, Prof Luigi Coppola - UNIVERSITY OF BERGAMO) .

	Exposure class	Reduction of c _{fmin} , dur [mm]
Nominal life 50 years	XD1/XS1	16,12
	XD2/XS2	12,22
	XD3/XS3	12,22
Nominal life 100 years	XD1/XS1	22,81
	XD2/XS2	17,28
	XD3/XS3	17,28

- The latent phase corrosion inhibitor is activated if the concrete cracks or if moisture penetrates the concrete, extending the protection when it is most needed.
- Permeable to vapor, to prevent the incorporation of moisture.
- Effective in environments with high humidity to mitigate corrosion of reinforced concrete.
- Easy-to-apply surface treatment that penetrates the concrete to bond with the steel and the concrete matrix to inhibit macrocell (mat-to-mat) and microcell (along the reinforcement bar) corrosion of the reinforced concrete.
- Normally does not require removal prior to subsequent coating applications, thus reducing downstream labor costs compared to many other corrosion inhibitors.

MasterProtect 8500 CI

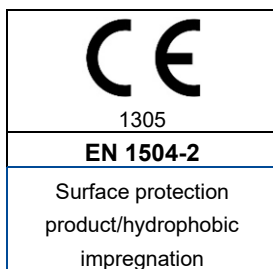
Double action migrating corrosion inhibitor for the prevention and slowing down of corrosion of reinforced concrete structures even with cracks.

TEST REPORTS

MasterProtect 8500 CI's superior performance has been proved by several independent test reports.

Test Method	Description
ICCET Testing	Evaluation of performance of the surface applied corrosion inhibitors under chloride attack and carbonation.
ASTM G109	Determines corrosion effects of steel reinforcement in concrete when exposed to chloride environments
FHWA-HRT-07-043	Corrosion tests on cracked concrete beams exposed to chlorides
M-82 Testing	Evaluates the performance of corrosion mitigation technologies in concrete repairs
ASTM C 876	Measures corrosion potentials of uncoated reinforcing steel in concrete
EIS Testing	Electrical Impedance Spectroscopy for measuring corrosion rates on reinforced concrete elements

In compliance with the European Regulation (EU No 305/2011 and EU No. 574/2014) the product is provided with the CE marking according to UNI EN 1504-2 and the relative DoP (Declaration of Performance).



COVERAGE

0.6 liter/m² – 0.5 kg/m² (82 ft²/gal – 9.8 ft²/lbs)

PACKAGING

MasterProtect 8500 CI is available in 20 liter plastic drums, and 1030 liter IBCs.

STORAGE

MasterProtect 8500 CI should be stored under normal warehouse conditions between -17 and 50 °C (0 - 120 °F). Keep containers closed when not in use and away from naked flames, heat sources and sparks.

SHELF LIFE

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

MasterProtect 8500 CI

Double action migrating corrosion inhibitor for the prevention and slowing down of corrosion of reinforced concrete structures even with cracks.

Technical Information		
Chemical basis	Silan based	
Color	Clear tending to slightly amber	
Application temperature	From + 5 ° C to + 38 ° C	
Polymerization time	14 days	
Consumption	0.6 liters / m ² - 0.5 kg / m ²	
Packaging	20 liter plastic packs and 1030 liter drums.	
Essential characteristic according to UNI EN 1504-2		Performances
Density (23 °C)	DIN 51757	0,88 – 8,81g/cm ³ - lbs
Viscosity (24.6 °C)	Anton Paar MCR 301	0,82cP
Flash point	EN ISO 2719	> 60 – 140°C – °F
Water absorption and alkali resistance (Concrete type C (0.45) Series A)	EN 13580	compared to the untreated sample <7.5% after immersion in alkaline solution <10%
Drying speed (for hydrophobic impregnation)	EN 13579	> 30%
Application temperature (environment and substrate)	-	+5 a +38°C
Resistance against freezing - Stresses of de-icing salts of impregnated hydrophobic concrete (type C (0.70))	EN 13581	> 20cycles
Test Methods	Property	results
Alberta B388, Tipo 1b	Water vapor transmission performance Waterproofing performance after abrasion	>75% >85%
NCHRP Report 244, Series II (North exposure - USA)	Reduction of chloride Reduction of water absorption	>88% >88%
NCHRP Report 244, Series IV (Southern exposure - USA)	Reduction of chloride Alteration from bad weather	>90% No yellowing or discoloration

APPLICATION SHEET

PREPARING THE SUBSTRATE

New concrete must be properly cured. Concrete should obtain 80% of design strength, which typically takes 14–28 days, depending on mix design.

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.

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 8500 CI 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 8500 CI.

MasterProtect 8500 CI

Double action migrating corrosion inhibitor for the prevention and slowing down of corrosion of reinforced concrete structures even with cracks.

Other cracks or failed joint sealants should be routed clean and treated with MasterProtect 8500 CI before being filled with suitable joint sealant from the MasterSeal range or similar approved.

MIXING

MasterProtect 8500 CI 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 (40 °F) and 38 °C (100 °F). 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 (210 – 270 ft²/gal) each. Apply minimum 600 ml/m² (82 ft²/gal) in total. The exact amount of MasterProtect 8500CI will 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 BUILDERS SOLUTIONS 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.

FINISHING AND CLEANING

Tools and mixer must be cleaned after use with water.

CURING

MasterProtect 8500 CI finishes its chemical reactions in two weeks.

WORKING TIME

MasterProtect 8500 CI 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.

WATCH POINTS

- 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 8500 CI.
- The effectiveness of MasterProtect 8500CI depends on existing corrosion rates, condition of the reinforcing steel and service conditions.
- For professional use only; not for sale to or use by the general public.
- 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.

SAFETY INSTRUCTION

For information on the correct and safe use, transport, storage and disposal of the product, consult the most recent Safety Data Sheet.

MasterProtect 8500 CI

Double action migrating corrosion inhibitor for the prevention and slowing down of corrosion of reinforced concrete structures even with cracks.

OTHER SERVICES

For price analysis, specifications, supplementary brochures, references, reports and technical assistance, visit the website www.master-builders-solutions.com/it-it or contact infomac@mbcc-group.com.

Scan the QR code to visit the product page and download the latest version of this datasheet.



Since 16/12/1992, Master Builders Solutions Italia Spa has been operating under a Certified Quality System compliant with the UNI EN ISO 9001 Standard. Furthermore, the Environmental Management System is certified according to the UNI EN ISO 14001 Standard and the Safety Management System is certified according to the UNI ISO 45001 Standard.

Master Builders Solutions Italia Spa

Via Vicinale delle Corti, 21 – 31100 Treviso – Italia

T +39 0422 429200 F +39 0422 421802

www.master-builders-solutions.com/it-it

e-mail: infomac@mbcc-group.com

For further information, please consult the local Technician of Master Builders Solutions. The technical advice on how to use our products, either written or verbally given, are based on the current state of our scientific and practical expertise, and does not imply the assumption of any guarantee and/or responsibility for the final results of works executed using our products.

Therefore, the customer is not exempted from the exclusive task and responsibility of verifying the suitability of our products for the intended use and purposes.

This version supersedes all the previous ones.