MasterProtect® 8500 CI

Dual-phase Corrosion Inhibitor

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® 8500 CI** 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

TEST REPORTS

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

FEATURES and BENEFITS

100% reactive ingredients. No dilutents or fillers.
• 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 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.
• Easy to apply 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 of steel reinforced concrete
• Normally does not require removal prior to subsequent coating applications, thereby reducing downstream labor costs compared with many other corrosion inhibitors

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

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APPLICATION METHOD

(a) 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.
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, lose 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**
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.

(b) 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.

(c) Application

1. Use **MasterProtect® 8500 CI** 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® 8500 CI** 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® 8500 CI** 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 250 – 180 ml/m² each. Apply minimum 500 - 600 ml/m^2 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® 8500 CI** 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.

COVERAGE

0.6 liter/m^2 – 0.5 kg/m^2

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® 8500 CI** 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.
• Make certain the most current versions of product data sheet and SDS are being used; visit master-builders-solutions.basf.us 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.

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• Do not alter or dilute the material as supplied

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.

PACKAGING

MasterProtect® 8500 CI is available in 20 liter plastic drums.

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

HANDLING AND TRANSPORT

Usual preventive measures for the handling of chemical products should be observed when using this product, for example do not eat, smoke or drink while working and wash hands when taking a break or when the job is completed.
Specific safety information referring the handling and transport of this product can be found in the Material Safety Data Sheet. For full information on Health and Safety matters regarding this product the relevant Health and Safety Data Sheet should be consulted.
Disposal of product and its container should be carried out according to the local legislation in force. Responsibility for this lies with the final owner of the product.

DISCLAIMER

The technical information given in this publication is based on the present state of our best scientific and practical knowledge. Master Builders Solutions Yapı Kimyasalları Sanayi ve Ticaret Ltd.Şti. is only responsible for the quality of the product. Master Builders Solutions Yapı Kimyasalları Sanayi ve Ticaret Ltd.Şti. 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

CONTACT INFORMATION

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MasterProtect® 8500 CI Technical Data Sheet -Revision Date: 12/2020

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Product Data			
Property	**Standard**	**Data**	**Unit**
Chemical Base	-	Silane	-
Colour	-	Clear to light amber	-
Density (23 ºC – 73 °F)	DIN 51757	0.88 – 8.81	g/cm3 - lbs
Viscosity (24.6 ºC – 76 °F)	Anton Paar MCR 301	0.82	cP
Flash Point	EN ISO 2719	> 60 – 140	°C – °F
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 Salts Stress of Impregnated Hydrophobic Concrete (C (0.70) type	EN 13581	>20	cycles

Typical values obtained under controlled laboratory conditions.

Product Data		
Evaluation	**Property**	**Results**
Alberta B388, Type 1b	Moisture Vapor Transmission Performance Waterproofing	>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 discoloration

Typical values obtained under controlled laboratory condition