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# 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 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.

### FIELD 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.

| 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 |

CE

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**No 850001**

**EN 1504-2**
**Principles 1.1/2.1/8.1**
Surface protection product / hydrophobic impregnation

| | |
|---|---|
| Water absorption and resistance to alkali | Absorption ratio < 7,5% compared with the untreated specimen<br>< 10% after immersion in alkali solution |
| Drying rate for hydrophobic impregnation | Class I > 30% |
| Loss of mass after freeze-thaw salt stress | at least 20 cycles later than that of the not impregnated specimen |
| Dangerous substances | Comply with 5.3 (EN 1504-2) |

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### 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.

### 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 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 BASF 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/m$^2$ (210 – 270 ft$^2$/gal) each. Apply minimum 600 ml/m$^2$ (82 ft$^2$/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 BASF representative to discuss specific project requirements.

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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.

### COVERAGE

0.6 liter/$m^2$ – 0.5 kg/$m^2$ (82 $ft^2$/gal – 9.8 $ft^2$/lbs)

### 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, 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.

### 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.
- 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 BASF 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.

### 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.

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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/cm$^3$ - 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)<br>compared with the untreated specimen<br>after immersion in alkali solution | EN 13580 | <br><7.5<br><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<br>Waterproofing Performance After Abrasion | >75%<br>>85% |
| **NCHRP Report 244**, Series II (Northern Exposure – USA) | Chloride Reduction<br>Water Absorption Reduction | >88%<br>>88% |
| **NCHRP Report 244**, Series IV (Southern Exposure – USA) | Chloride Reduction<br>Weathering | >90%<br>No yellowing or discoloration |

*Typical values obtained under controlled laboratory conditions.*

**Disclaimer:**
In view of widely varying site conditions and fields of application of our products, this technical data sheet is meant to provide general application guidelines only. This information is based on our present knowledge and experience. The customer is not released from the obligation to conduct careful testing of suitability and possible application for the intended use. The customer is obliged to contact the technical help-line for fields of application not expressly stated in the technical data sheet under "Fields of Application". Use of the product beyond the fields of application as stated in the technical data sheet without previous consultation with BASF and possible resulting damages are in the sole responsibility of the customer.

All descriptions, drawings, photographs, data, ratios, weights i.e. stated herein can be changed without advance notice and do not represent the condition of the product as stipulated by contract. It is the sole responsibility of the recipient of our products to observe possible proprietary rights as well as existing laws and provisions. The reference of trade names of other companies is no recommendation and does not exclude the use of products of similar type. Our information only describes the quality of our products and services and is no warranty. Liability is accepted for incomplete or incorrect particulars in our data sheets only in the event of intent or gross negligence, without prejudice to claims under product liability laws.
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Technical Data Sheet MasterProtect 8500 CI – 1st Edition 05 2019

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