

# MasterProtect<sup>®</sup> 8000CI

## Advanced Organo functional Silane based Corrosion Inhibitor

### DESCRIPTION

**MasterProtect 8000CI** is a single component, ready to use, low viscosity, clear liquid which combines the proven effectiveness of penetrative silane treatments for the control of moisture and Chloride ion ingress with advanced organo functional corrosion inhibition.

### TYPICAL APPLICATIONS

**MasterProtect 8000CI** is sprayed directly onto the surface of steel reinforced concrete structures and buildings.

It is equally suited to cast in situ, precast, post tensioned, prestressed, GFRC, or other steel reinforced concrete.

It is particularly suited for the protection of:

- Bridge decks, piers columns and beams
- Multi-Storey Car Parks, building facades and balconies
- Marine jetties and structures

**MasterProtect 8000CI** 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 at a later date.

Equally **MasterProtect 8000CI** can be used as a cost-effective preventative measure before the onset of corrosion induced problems occur.

Contact the Technical Department of your local Master Builders Solutions Construction Chemicals for further information.

### ADVANTAGES

- Dramatically reduces chloride induced corrosion of concrete steel reinforcement
- Reduces corrosion in carbonated reinforced concrete
- Works at the molecular level to effectively inhibit macrocell (rebar to rebar) and microcell (on the same rebar) corrosion
- Proven long term effectiveness in laboratory and field trials >10 years proven performance

in aggressive environment subject to deicing salts and vehicular traffic

- Equally effective in high humidity conditions
- Chemically bonds to steel, cement paste and other silaceous material – will not wash and leach out during wetting / drying cycles, ensuring extended active life
- Simple and easy to use
- Does not discolour or change appearance of concrete
- Breathable vapour permeable treatment
- Repels further ingress by chlorides and water

### PACKAGING

**MasterProtect 8000CI** is supplied in 205 litre and 20 litre containers.

### TECHNICAL DATA / TYPICAL PROPERTIES\*

Colour	Clear
Density	0,88 g/cm <sup>3</sup>
pH	7 to 8
Flash Point	63°C
Viscosity	0,95 mPas

### PERFORMANCE DATA

U.S. Federal Highways Administration Test protocol for cracked Beam Concrete

### TEST METHOD

**MasterProtect 8000CI** was sprayed at the approved application rate onto standard test specimens where the concrete (W/C ratio 0,47) had been deliberately cracked along the length of the reinforcing steel to simulate real life experiences of transverse bridge deck cracking. Some specimens showed existing corrosion before application while others were others did not.

The specimens were then subject to the following rigorous conditions 48 weeks cyclic salt water ponding (15% salt solution)  
 High Relative Humidities:70–80%  
 Elevated temperatures: 37°C

The results are summarised below.

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## CORROSION INHIBITION

Specimen conditioning	Observed results compared with untreated control specimens
Cracked concrete: NO preexisting corrosion	99% reduction in corrosion
Cracked concrete WITH existing corrosion	92% reduction in corrosion

## REDUCTION IN CHLORIDE INGRESS

Tests according to ASTM 1152 at depths of 12,5mm, 32mm, 50mm and 69 mm

Control			MasterProtect 8000CI treated		
12 weeks	24 weeks	48 weeks	12 weeks	24 weeks	48 weeks
0,703*	0,861	1,020	<0.007	0,010	<0.007
0.321	0,628	0,645	<0.007	<0.007	<0.007
0.032	0,386	0,0386	<0.007	<0.007	<0.007
<0.007	0,040	0,040	<0.007	<0.007	<0.007

\* Chlorides measured according to ASTM 1152

## APPLICATION GUIDELINES

### Preparation of Substrate

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 shotblasting, high pressure water blasting, or grinding.

All delaminated, loose or spalled concrete must be removed and repaired with an approved product from the **MasterEmaco** or other approved Concrete Repair range.

**MasterProtect 8000CI** can, as an additional protective measure, be applied directly to exposed rebar before repair work commences.

Non moving shallow shrinkage cracks with no structural significance are simply treated with multiple coats or ponding of **MasterProtect 8000CI**.

Other cracks or failed joint sealants should be routed clean and treated with **MasterProtect 8000CI** before being filled with suitable joint sealant from the **MasterSeal** range or similar approved.

Apply **MasterProtect 8000CI** to the entire surface to be protected, including any repaired areas, using low pressure spray equipment with a suitable fan nozzle.

A total application of 600ml/m<sup>2</sup> is usually required applied in two or three separate applications.

(e.g. Horizontal applications 2 x 300ml while vertical and overhead 3 x 200ml)

Allow a minimum of 15 minutes between coats (or until visibly dry).

## COVERAGE / YIELD

600ml/m<sup>2</sup> applied in two or three coats

*Horizontal surfaces* : 2 coats @300ml/m<sup>2</sup>

*Vertical or overhead surfaces*: 3 coats @ 200ml/m<sup>2</sup>

## WATCHPOINTS

In cases where the temperature is below 5°C and above 35°C, please contact Master Builders Solutions Technical Services for guidance. The concrete surfaces should be surface dry after heavy rain or cleaning with water before applying **MasterProtect 8000CI**.

Do not apply if rain is expected within 4 hours.

Do not alter or dilute the material as supplied.

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## STORAGE AND SHELF LIFE

**MasterProtect 8000CI** should be stored under normal warehouse conditions between  $-15^{\circ}\text{C}$  and  $50^{\circ}\text{C}$ .

**MasterProtect 8000CI** has a shelf life of 12 months when stored in undamaged, unopened containers

Keep containers closed when not in use and away from naked flames, heat sources and sparks.

## QUALITY AND CARE

All products originating from Master Builders Solutions Dubai, UAE facility are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001 and ISO 14001.

\* Properties listed are based on laboratory controlled tests.

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### STATEMENT OF RESPONSIBILITY

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### NOTE

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