

DRACOSTEEL

PROTECTIVE RE-ALKALISATION TREATMENT OF REBARS AGAINST CORROSION



DRACOSTEEL is a two-component cementitious mortar based on water-dispersed polymers, cementitious binders and corrosion inhibitors that can be applied by brush to create a protective passivation layer on rebars. **DRACOSTEEL** is applied on reinforced concrete rebars to protect them from anodic and cathodic corrosion. **DRACOSTEEL** is ideal as protective realkalisation treatment of rebars when repairing concrete, reinforced concrete and prestressed concrete structures. It is also suitable as bonding bridge on concrete.

ADVANTAGES

DRACOSTEEL is an anti-corrosion cementitious mortar for the protection of rebars with the following features:

- ✓ **EASY TO APPLY:** due to its brushable consistency, **DRACOSTEEL** can be applied easily and quickly by brush to create a uniform protective layer on rebars.
- ✓ **PROTECTION FROM CORROSION AND AGGRESSIVE ENVIRONMENTS:** **DRACOSTEEL** protects rebars from corrosion and rust. Its formulation makes it impermeable to aggressive environmental agents like chlorides, sulphates and carbon dioxide.
- ✓ **PERFECT ADHESION:** **DRACOSTEEL** has an excellent adhesion to rebars, concrete and most materials used in the construction industry.
- ✓ **WATERPROOF:** once it has hardened, **DRACOSTEEL** is waterproof and resistant to salt mist, gas and weather.
- ✓ **PROMOTES ADHESION OF SUBSEQUENT MORTAR LAYERS:** **DRACOSTEEL** guarantees excellent adhesion of structural FLUECO mortars applied on the treated rebars.
- ✓ **REALKALISATION PROTECTION:** **DRACOSTEEL** brings the alkalinity of the passivation film of rebars back to values that protect them from electrochemical corrosion which affects their durability.
- ✓ **DRACOSTEEL** is compatible with FLUECO structural mortars, skim coats and DRACO products for structural repair and restoration.
- ✓ **BONDING BRIDGE FOR MORTARS ON CONCRETE.**

USES

DRACOSTEEL can be used as:

- ✓ anticorrosion protective treatment of rebars that increases the durability of repair work carried out using conventional cementitious mortars or shrinkage-compensated mortars like FLUECO mortar;
- ✓ preventive protection treatment of reinforcing steel of newly constructed thin structures in extremely aggressive environments.



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SUBSTRATE PREPARATION

For proper application of **DRACOSTEEL**, it is necessary to:

- ▶ remove the concrete around the rebars for an easier treatment;
- ▶ remove all deteriorated concrete using suitable equipment;
- ▶ verify the penetration of carbon dioxide in concrete (carbonation) through the phenolphthalein test and remove the most affected layer.

PREPARATION OF REBARS

Properly clean the rebars to be treated and remove any rust, oil, grease etc. We recommend blast cleaning or brushing back to a bright metal surface finish such as to Sa 2 or Sa 3 (white metal).

Remove any traces of grease and calamine from new rebars by blast cleaning or brushing.

Apply **DRACOSTEEL** immediately after clearing the rebars; do not leave them unprotected for too long.

APPLICATION

PRODUCT PREPARATION

Pour component B into a container; then pour component A and mix thoroughly. Do not add water. **DRACOSTEEL** must have a creamy and brushable consistency. The working time of the product is approx. 1 hour at 20°C.

PRODUCT APPLICATION

Apply two coats of **DRACOSTEEL** by stiff-bristle brush. Wait two to three hours before applying the second coat (and however within 24 hours). Total thickness must be of approx. 2 mm. Cover the exposed surface of rebars uniformly.

- ▶ When you apply **DRACOSTEEL**, some of the product will end up on the surrounding concrete. It does not affect in any way the application of the subsequent layer of mortar, but it rather enhances adhesion.
- ▶ You can apply FLUECO mortars for structural repair after about 4 hours of the application of **DRACOSTEEL**.
- ▶ When epoxy products like EPOMALT, EPOBETON or EP FIX are used for the repair, wait at least 24 hours before their application.

To complete the repair and make the surface uniform, it is possible to use the following products:

- ▶ CONCRETE FINISHER, cementitious skim mortar;
- ▶ DRACOSEAL, waterproof osmotic cementitious mortar applied by brush;
- ▶ ACRIPAIN, anti-carbonation pigmented acrylic paint for outdoor use;
- ▶ EPOMALT, epoxy-cement smoothing mortar.
- ▶ All the products above ensure protection against environmental chemical attack from carbon dioxide, sulphates, sulphides, chlorides, aggressive water etc.

PACKAGING AND STORAGE

DRACOSTEEL is available in a 3 kg pail that contains two components:

- ▶ A - 2 kg bag (powder) special mix of hydraulic binders, corrosion inhibitors;
- ▶ B - 1 kg bottle (liquid) aqueous synthetic polymer dispersion.

If stored properly in original, unopened packaging, in a dry place, the product maintains its original features for 12 months.



TECHNICAL CHARACTERISTICS

APPEARANCE AND COLOUR	A: powder B: liquid
PACKAGING	3 kg pail containing: 2 kg (A) bag + 1 kg (B) bottle
SHELF LIFE	12 months

APPLICATION SPECIFICATIONS (+20°C - 50% R.H.)

MIX COLOUR	Green
MIXING RATIO	A:B = 2:1 parts by weight
CONSISTENCY	plastic-brushable
MIX DENSITY	1760 kg/m ³
APPLICATION THICKNESS	approx. 2 mm in two coats
APPLICATION TEMPERATURE	+ 5°C to + 35°C
START OF SETTING AT +20°C	1 hour from mixing
END OF SETTING AT +20°C	4 hours from mixing
OVERLAY TIME	2-3 hours
WAIT TIME BEFORE MORTAR APPLICATION	approx. 4 hours
CONSUMPTION	110 g/m on 8 mm bar (2 mm thickness) as bonding bridge: 1.5-2 kg/m ²

PERFORMANCE CHARACTERISTICS

PERFORMANCE CHARACTERISTIC	TEST METHOD	REQUIREMENTS AS DEFINED IN EN 1504-7	PRODUCT PERFORMANCE
CONCRETE BOND STRENGTH (reference concrete type MC 0.40) according to EN 1766	EN 1542	not required	> 2 MPa
RESISTANCE TO PULL-OUT OF REBARS – load related to 0.1 mm displacement	EN 15184	load calculated on painted bar equal to at least 80% of the load calculated on uncoated bar (on bar blast-cleaned to preparation grade Sa 2 ½ as defined in EN ISO 12944-4)	Meets specifications
CORROSION RESISTANCE – 10 water condensation cycles – 10 sulphur dioxide cycles as defined in EN ISO 6988 – Exposure to salt mist for 5 days as defined in EN 60068-2-11	EN 15183	No corrosion must be found on coated steel bars after the cycles. Rust penetration < 1 mm (on the end side of the uncoated steel plate)	Meets specifications

Legal notes - SLCMP version of 01.03.2017

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