MasterCrete PRI 5000

Single-component, polymer-modified, cementitious corrosion protection mortar for reinforcing steel; also suitable for use as a bonding agent for repair mortars

Product Description

MasterCrete PRI 5000 is a single-component, polymer-modified, cementitious passivating agent with high adhesion and protection against corrosion of reinforcing steel. MasterCrete PRI 5000 is classified as a product for corrosion protection of reinforcement in accordance with EN 1504-7.

The product is mixed with water to form a plastic, brushable coating that is applied by paintbrush or brush to properly prepared reinforcing steel.

MasterCrete PRI 5000 is used to protect exposed reinforcement against corrosive influences as part of concrete repair work using products from the MasterCrete range.

In addition, MasterCrete PRI 5000 can be used as a bonding agent between the prepared concrete substrate and the subsequently applied repair mortar.

Areas of Application

- Corrosion protection of exposed reinforcement prior to reprofiling with repair mortars
- Passivation of reinforcing steel during concrete repairs
- Protection of reinforcement in areas with insufficient concrete cover
- Protection of reinforcement in chloride-contaminated concrete or marine environments
- Use when the repair mortar cannot be applied immediately after cleaning the reinforcement
- Bonding agent to improve the bond between the prepared concrete substrate and repair mortar
- Bonding agent between old and new concrete

For applications not listed here, please contact your technical sales adviser.

Properties

- Single-component product, requiring only mixing with water
- Polymer-modified, cement-based
- Easy to apply, with very good adhesion to properly prepared steel and concrete
- Protects reinforcing steel against corrosion
- Helps restore an alkaline environment around the reinforcement
- Can be overcoated quickly and offers good compatibility with repair mortars from the MasterCrete range
- Can also be used as a bonding agent
- Hardens even in damp or enclosed areas
- Low in chromates
- CE marked in accordance with EN 1504-7

Substrate Preparation

Exposed reinforcement must be thoroughly cleaned of concrete residue, rust, dust, oil, grease and other substances that may impair adhesion. The reinforcement should preferably be prepared by sandblasting or abrasive blasting until all rust and loose material has been completely removed. As a guideline, a minimum preparation grade of Sa 2 in accordance with ISO 8501-1 / ISO 12944-4 must be achieved, unless more stringent project-specific requirements have been stipulated.

The reinforcement must be exposed on all sides and prepared so that MasterCrete PRI 5000 can evenly enclose the entire surface. After cleaning, dust and loose particles must be carefully removed. The prepared reinforcement must be coated promptly.

The concrete substrate must be clean, firm, load-bearing, open-pored, absorbent and sufficiently rough. Unsound layers and adhesion-impairing substances must be removed completely, particularly cement laitance, dust, oil and grease, old coatings, residues of formwork oil or release agents and similar substances.

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The substrate must be prepared using suitable mechanical methods, e.g. sandblasting or high-pressure water jetting. Methods that could damage the substrate through strong vibration or impact must be avoided. When used as a bonding agent, the pull-off strength of the concrete substrate should be at least 1.5 N/mm².

Pre-wetting

When used as a bonding agent, the prepared concrete substrate must be carefully pre-wetted. During application, the concrete substrate must be matt damp or water-saturated and surface-dry. Standing water or accumulations of water must be avoided.

When applied to reinforcing steel, the surface must be clean, dust-free and free from loose material.

Mixing

Use only undamaged containers in their original sealed condition. Pour the required quantity of clean, cool water into a suitable mixing container. Then slowly add MasterCrete PRI 5000 and mix using a slow-speed stirrer fitted with a suitable mixing paddle until a homogeneous, creamy, plastic and lump-free consistency is achieved.

After a short maturing time of approximately 5 minutes, briefly mix again. The water requirement is approximately 1 litre per 5 kg container. The actual quantity of water must be adjusted according to the desired consistency and application method. The maximum permissible quantity of water must not be exceeded. Mortar that has begun to stiffen must not be diluted with water or mixed with fresh mortar.

Application

When used to passivate reinforcement, MasterCrete PRI 5000 is applied to the prepared reinforcing steel using a suitable paintbrush or soft brush.

Apply in two coats. The first coat must be applied evenly over the entire surface of the reinforcement. The reinforcement must be completely and continuously coated. The second coat can be applied after approximately 2 hours and must be applied within 24 hours of the first coat. The total thickness of both coats must be approximately 2 mm.

When used as a bonding agent, MasterCrete PRI 5000 must be brushed thoroughly into the matt-damp concrete substrate using a stiff brush, wide brush or suitable broom. The repair mortar must be applied wet-on-wet to the still-fresh bonding agent. The bonding agent must not be allowed to dry out before the repair mortar is applied. The working time is approximately 30 minutes at +20 °C. Large areas must be worked in sections to ensure wet-on-wet application.

Curing

Freshly applied MasterCrete PRI 5000 must be protected from rain, washout, frost, direct sunlight, strong winds and excessively rapid drying until it has hardened sufficiently.

When used as a bonding agent, the material must not be allowed to begin drying before the repair mortar is applied.

Cleaning of Tools

Tools and mixing equipment must be cleaned with water immediately after use. Hardened material can only be removed mechanically.

Consumption

When used to passivate reinforcement, consumption for a total layer thickness of approximately 2 mm is approximately 0.08 kg/m for a reinforcement diameter of 8 mm and approximately 0.15 kg/m for a reinforcement diameter of 14 mm.

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When used as a bonding agent, consumption is approximately 2.0 kg/m², and may be higher depending on the roughness and profile of the substrate.

The consumption values are indicative. Actual consumption depends on the reinforcement diameter, surface roughness, application method, substrate profile and site conditions and must be determined for the specific project.

Packaging

MasterCrete PRI 5000 is available in 5 kg containers.

Storage Conditions

Store in a dry, cool place, protected from moisture, in the unopened original packaging. Avoid prolonged storage at temperatures above +35 °C. When stored correctly, MasterCrete PRI 5000 has a shelf life of 12 months.

Handling and Transport

The usual precautions for handling chemical products must be observed when using this product.

Specific safety information on handling and transporting this product can be found in the material safety data sheet.

The product and its packaging must be disposed of in accordance with applicable legislation and are the responsibility of the product's final owner.

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Technical data			
Property	Standard	Value	Unit
Chemical base	-	polymer-modified cementitious mortar	-
Colour	-	grey to light grey	-
Mixing water per 25 kg bag	-	approx. 0.2	l / kg powder
Fresh mortar density	EN 1015-6	approx. 1.9	g/cm³
Powder bulk density	EN 459-2	approx. 1.44	g/cm³
Working time	at +20°C	approx. 90-120	min
Open time as a bonding agent	at +20°C	approx. 30	min
Application temperature	-	from +5 to +35	°C
Consumption as a bonding agent	-	approx. 2.0	kg/m²
Corrosion protection	EN 15183	passed	-
Pull-out resistance of coated reinforcing bars	EN 15184	passed	-
Pull-off strength on steel: After 1 day: After 7 days: After 28 days:	EN 12188	 ≥ 1.0 ≥ 2.0 ≥ 3.5	N/mm²
Pull-off strength on concrete:	EN 1542	> 2.0	N/mm²

Legal Notice

This technical data sheet, like our other technical notes and information, serves only to describe the nature of this product, its processing and application possibilities. However, it does not guarantee certain properties of the product or its suitability for a purpose, nor does the description contain complete instructions for use. As we reserve the right to make changes to our technical data sheets, it is the customers' responsibility to ensure that the latest technical data sheet is available. Current technical data sheets can be requested at all our locations or downloaded from our website at www.master-builders-solutions.com/de-at, in the category "Products". In addition, our current general terms and conditions apply.

The processor shall remain obliged to carry out its own investigations and tests in order to take responsibility for the processing and application of our products in its specific business sector. With the publication of this data sheet, any previous editions shall become invalid.

The information in this data sheet has been compiled to the best of our knowledge and reflects the current state of our knowledge and experience.