

# MasterCrete PRI 5000 (formerly MasterEmaco P 5000AP)

Single component, cement based, multi-use, bonding and active protective primer

## Material Description

**MasterCrete PRI 5000** is an acrylic modified cementitious coating with active corrosion inhibition, not only reinstates a high pH environment it also contains active corrosion inhibiting additives for the protection of reinforcement steel. It can also be used as an adhesive bonding slurry for subsequent repair mortars. When mixed with water, it forms a slurry that can be applied by brush to the clean exposed reinforcement, or directly on the dampened, prepared concrete substrate when used as a bonding coat.

## Areas of Application

**MasterCrete PRI 5000** is used for the protection of reinforcement steel:

- When steel is visible and the available depth of cover is less than 10 mm.
- When concrete is contaminated with chlorides
- In critical environments when extra protection is specified.
- When the timing at the jobsite does not allow for the repair mortars to be applied immediately after cleaning the steel.

**MasterCrete PRI 5000** can also be used to aid bond and application properties of hand applied repair mortars in extreme thicknesses and conditions

## Characteristics and Benefits

- Meets all major international norms - for steel priming in concrete repair systems.
- Excellent rust inhibiting properties - as it reinstates a high pH environment.
- Contains active corrosion inhibitors - to further protect the steel.
- Polymer modified - for additional adhesive bond to the steel.
- Long life repairs - does not reduce adhesion of repair mortars to steel
- Wide compatibility - with steel reinforcing bars and concrete or repair mortars.
- Fast curing - to save time and money.
- Simply mixing – just add water.

- Multi-use - can also be used as a bonding slurry to improve bond and application thicknesses of MasterCrete repair mortars on prepared concrete surfaces.
- Orange - for easy site control of reinforcement coverage
- Only use what is needed - supplied in re-usable air-tight containers
- Low hazard - low chromate ( $\text{Cr[VI]} < 2 \text{ ppm}$ )
- Approved to AS/NZS 4020:2018 (tested to the maximum exposure level) - suitable for contact with potable water.

## Properties

Property	Values
Appearance	Orange powder
Layer thickness	2mm in layers
Density	Approx. 1.8 g/cm <sup>3</sup>
Mixing water	Approx. 0.22 – 0.26 l/kg
Working time	Approx. 60 minutes
Temperature for application (support and material)	Between +5 and +35°C
Pull out strength of coated rebar	≥ 80% Comparison vs uncoated
ZTV-Sib90 compliance testing TL PE-PCC - total halogen content - corrosion stimulation - corrosion resistance - accelerated weathering 10 cycles DIN 50017 10 cycles DIN 50018 120 hours DIN 50021	<p>≤ 0.05 Weight <math>\mu\text{A}/\text{cm}^2</math></p> <p>≤ 10 <math>\mu\text{A}/\text{cm}^2</math></p> <p>≤ 1 mm (migration of rust underneath the coating starting from uncoated edge)</p> <p>No corrosion / no delamination / max. crack width ≤ 0.1mm</p>
VOC Content : 9g/L Test method: ASTM D3960	

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## Application

### Surface Preparation

All corrosion and its by-products must be removed from. The preparation should meet the requirements of ISO 8501-1 / ISO 12944-4 class SA 2.5 for the full 360° circumference of the steel reinforcement to be coated. When used as a bond coat on concrete, the surface must be completely clean and structurally sound. Remove deteriorated or contaminated concrete or mortar, e.g. by grit or high pressure water blasting. Saturate the concrete surface with water but remove excess before application. Surface profile as required by the repair mortar usually CSP 5 or greater.

### Mixing

In a suitable container, mix **MasterCrete PRI 5000** with a paddle mounted on a slow-speed drill, or by hand, until a smooth, thick consistency is achieved. Use only clean, uncontaminated water. Mixing water needed: 0.22 to 0.26 litres per kg of powder, depending upon consistency required. Leave to stand for approx. 5 minutes and re-mix briefly before use, adjusting the consistency when required, without exceeding the maximum water demand.

### Application of Slurry

Substrate and ambient temperatures must be a minimum of +5°C and a maximum of +35°C. The minimum temperatures must be maintained during application and for at least 24 hours thereafter for optimum curing of the product.

As a reinforcement primer: Apply the mixed material in an even layer at least 1mm thick (approx 1.5kg/m<sup>2</sup>) to the full circumference of the prepared reinforcement using a soft paint brush. When the first coat has hardened sufficiently, (approx. 30-90 minutes) apply a second coat also 1mm thick. It is important that this second layer has sufficiently hardened before the repair mortar is applied. When applying the repair mortar by hand this can be done after approximately 2 hours. However, when spraying a repair mortar the priming coat must be left to dry completely (min. 8 hours @ 20°C).

As a bonding slurry: Work the mixed material well into the prepared and pre-soaked, damp surface by using a suitable brush. Typical application rates are 2-3 kg per m<sup>2</sup>. Apply the repair mortar wet on wet. Never allow the slurry bond coat to dry out.

## Estimating Data

Approx. 1.5 kg of dry powder per m<sup>2</sup> and mm layer thickness. This consumption is theoretical and depends on the roughness of the substrate. It should be verified on each particular job by means of "in situ" tests.

MasterCrete PRI 5000			
Dry powder	Thickness in mm /m <sup>2</sup>	As a reinforcement primer	As a bonding slurry
1.5 kg	1mm	2mm: 3 kg/m <sup>2</sup>	2-3kg/m <sup>2</sup>

## Packaging

**MasterCrete PRI 5000** is available in 5kg plastic re-sealable pails.

## Storage & Shelf Life

**MasterCrete PRI 5000** has a shelf life of 12 months. Store out of direct sunlight, clear of the ground on pallets protected from rainfall.

## Precautions

For the full health and safety hazard information and how to safely handle and use this product, make sure that you obtain a copy of the Safety Data Sheet (SDS) from our office or website.

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## Disclaimer

MasterCrete PRI 5000 -ANZ-VI-I 124

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