

MasterCrete CI 5200 (formerly MasterEmaco N 5200CI)

Universal, fast-setting, polymer modified, fibre reinforced, light weight repair mortar with active corrosion inhibition

Material Description

MasterCrete CI 5200 is a universal, single component, polymer modified, fast setting, repair, re-profiling and levelling mortar containing active corrosion inhibition. **MasterCrete CI 5200** contains special cements, graded sands, selected polymers and fibres to reduce shrinkage and improve physical and application properties. When mixed with water, it forms a mortar with an exceptionally wide range of applications. **MasterCrete CI 5200** can easily be hand or trowel applied in thicknesses from 3mm to 100mm.

Areas of Application

- Non-structural repair of concrete elements like balconies edges, building facades, parapet walls, precast panels, beam edges and stair nosing's.
- Can be applied as a smoothing or levelling coat at 3mm thickness on large vertical and overhead areas to achieve a more aesthetic finish e.g. prior to painting.
- Can be applied in environments where active corrosion inhibition is necessary.

Characteristics and Benefits

- Shrinkage compensation systems and fibre reinforcement - minimise crack tendency
- Smooth, creamy, non-slump mortar - easy to create profiles and corners without formwork
- Excellent high build capacity - can be applied 80 - 100 mm in vertical applications or 70 - 80 mm overhead in one layer
- Multi-use - fairing coat and patch repair mortar in one with active corrosion inhibition
- Fast setting - can be over-coated in only 4 hours
- Good strength development - exceeding requirement of Class R2 of EN1504 part 3
- Low modulus of elasticity - copes with thermal movement of structures
- Low chromate (Cr[VI] < 2 ppm) - low risk of skin irritation
- Chloride-free - does not add to chloride load of structure

Properties

Appearance	Grey powder
Layer thickness	Min. 3mm (fairing coating) Max. 100mm (vertical & horizontal), 80mm (overhead)
Density	Approx. 1.8 g/cm ³
Working time	30 – 45 minutes
Setting time - initial	45 – 75 minutes
- final	60 – 120 minutes
Temperature for application (substrate and material)	Between +5°C and +35°C
Compressive strength - after 1 day - after 28 days AS 1478.2 Appendix A (Restrained)	≥ 12 MPa ≥ 40 MPa
Adhesion (28 days) EN 1542	≥ 0.8 MPa
Cracking tendency (I) Coutinho type ring	No cracking after 180 days
Chloride Ion diffusion (NORD test)	5.29E-12m ² /sec
Resistivity	4000 Ω.cm
Permeability risk for Chlorides and sulphates FM5-578	High
E modulus	16 GPa
Shrinkage AS 1012-13 56 days	470 microstrain
Capillary absorption EN 13057	≤ 0.5 kg/m ² h ^{0.5}
Electrical resistance 28 days	3900 Ω.cm
56 days	6280 Ω.cm
AS/NZS 4020	Suitable for contact with potable water
VOC Content SCAQMD Test method 304-91	8g/L

Hardening times are measured at 21°C ± 2°C and 60% ± 10% relative humidity. Higher temperatures will reduce these times and lower temperatures will extend them. Technical data shown are statistical results and do not correspond to guaranteed mini-ma. Tolerances are those described in appropriate performance standards.

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Application

Surface Preparation

Concrete must be fully cured, clean and sound to ensure good adhesion. All traces of loose concrete or mortar, dust, grease oil, etc. must be removed. Damaged or contaminated concrete should be removed to obtain a keyed surface. Non-impact/ vibrating cleaning methods, e.g. grit or high water pressure blasting are recommended. Aggregate should be clearly visible on the surface of the concrete structure after surface preparation. A CSP 5 or greater profile is recommended. Cut the edges of the repair vertically to a minimum depth of 3 mm. If reinforcing steel is visible, clean to a minimum grade of SA 2 according to ISO 8501-1 / ISO 12944-4. For extra protection, or when the steel is left exposed before repair work is completed, apply **MasterCrete PRI 5000** active protection cement based primer.

Mixing

Only full bags are mixed. Damaged or opened sacks should not be used. Mix **MasterCrete CI 5200** with a helical paddle attached to a slow speed (300-600 rpm) mixer or in a forced action pan mixer for 3 minutes until a lump free, plastic consistency is achieved. Only use clean water. Mixing water needed: 3.5 to 4.0 litres per 20kg bag depending upon consistency required. Allow the mortar to rest for 2 - 3 minutes and then remix briefly, adjusting the consistency as required. NB: Never exceed the maximum water demand.

Priming

The prepared substrate should be pre-soaked, preferably for 24 hours, but at least 2 hours before applying **MasterCrete CI 5200**. The surface must be saturated surface dry, but without standing water.

For improved build thicknesses or when working on large areas, apply bond or contact layer of the **MasterCrete CI 5200** mortar. Alternatively a bonding coat of **MasterCrete PRI 5000** can be applied.

Mortar application - The minimum temperatures must be maintained during application and for at least 12 hours thereafter for optimum curing of the product.

Application

MasterCrete CI 5200 can be hand or trowel applied. Apply mixed product directly to the prepared damp substrate, or wet on wet onto the primed surface. A thin scratch coat or contact layer (a slurry coat of the **MasterCrete CI 5200**) before building up to the required thickness, wet on wet, will improve the wet adhesion and cohesion of the mortar. Apply to the desired layer thickness of 3 to max. 100 mm. Smoothing with a trowel and finishing by float or sponge can be done as soon as the mortar has begun to stiffen, typically after approximately 45 - 60 minutes at 20°C. In these environmental conditions, **MasterCrete CI 5200** can be over-coated, after approximately 4 hours, with MasterProtect anti-carbonation coatings as required. NB: At lower temperatures and/or higher humidity these times will be extended.

Estimating Data

One 20kg bag mixed with 3.8L of water will yield approximately 13 litres of mortar.

MasterCrete CI 5200				
L	Thickness in mm /m ²	m ³	bags /m ³	m ² /mm thickness
13	13mm	(0.013)	77	13 m ²

Packaging

MasterCrete CI 5200 is available in 20kg bags.

Storage & Shelf Life

Store in cool and dry warehouse conditions. Shelf life in these conditions is 12 months in unopened original bags.

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-CI5200-ANZ-VI-I025

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