

MasterEmaco[®] S 5300 CI (formerly known as Emaco Nanocrete R3)

Lightweight, mid strength, polymer modified, fibre reinforced, structural repair mortar with active corrosion inhibition

DESCRIPTION

MasterEmaco S 5300 CI is a single component, lightweight, polymer modified, high build structural repair mortar with active corrosion inhibition.

MasterEmaco S 5300 CI has been specifically formulated to produce a mortar with the compressive strength and modulus characteristics defined in class R3 of EN 1504 part 3.

RECOMMENDED USES

MasterEmaco S 5300 CI is used for the structural repair of lower strength concrete elements such as, balcony edges, soffits and decks, window ledges, lintels and beams or, anywhere where concrete structures need to be repaired or re-profiled by hand.

FEATURES AND BENEFITS

- **Shrinkage compensation and fibre reinforcement** - Minimise crack tendency creating a longer lasting repair
- **Medium strengths and lower modulus of elasticity** - Allows the repair of medium strength concrete without problems of differential movement
- **Highly thixotropic and lightweight** - Allows single high build layers
- **High build** - Applied up to 75 mm in vertical applications and 50 mm overhead
- **Outstanding workability** - Easy to create profiles and corners without formwork
- **Very low shrinkage** - Excellent crack resistance
- **Durable and weather resistant** - Good water and chloride impermeability
- **Low chromate (Cr[VI] < 2 ppm)** - Low risk of skin irritation
- **Chloride-free** - Does not add to chloride load of contaminated structures
- **Active corrosion inhibition** – Suitable for extreme environments.

PROPERTIES

Appearance	Grey powder
Layer thickness	5mm to 75mm
Density	Approx. 2.0 g/cm ³
Mixing water per 20kg bag	Approx. 3.8 – 4.2 litres
Working time	45 – 60 minutes

Temperature for application (support and material)	Between +5 and +35°C
VOC Content SCAQMD 304-91	21g/L

Compressive strength - after 1 day - after 7 days - after 28 days	AS 1478.2 Appendix A (Restrained)	≥15 MPa ≥ 30 MPa ≥ 45 MPa
E-Modulus (28 days)	prEN13412	≥ 1.0 GPa
Adhesion (28 days)	EN 1542	≥ 1.5 MPa
Adhesion after Freeze/Thaw (50 cycles with salt)	EN 13687-1	≥ 1.5 MPa
Adhesion after Thunder/Shower (50 cycles)	EN 13687-2	≥ 1.5 MPa
Adhesion after dry cycling (50 cycles)	EN 13687-4	≥ 1.5 MPa
Carbonation resistance	prEN 13295	≤ reference concrete
Capillary absorption	EN 13057	≤ 0.5 kg/m ² h ^{0.5}
Cracking tendency (I)	Coutinho type ring	No cracking after 180 days
Cracking tendency (II)	DIN type V-channel	No cracking after 180 days

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 minimal. Tolerances are those described in appropriate performance standards

APPLICATION

Surface preparation - Concrete must be fully cured with a minimum direct tensile strength of 1.0 MPa. All loose concrete or mortar, dust, grease, oil and curing compounds must be mechanically removed. Aggregate should be clearly visible on the surface of the concrete structure after preparation. Non-



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impact/vibrating cleaning methods, e.g. grit or high water pressure blasting are recommended. Cut the edges of the repair vertically to a minimum depth of 5 mm. Clean all exposed reinforcement to a minimum grade of Sa 2 according to ISO 8501-1 / ISO 12944-4. In case of chloride contamination of the concrete, when depth of cover is less than 5 mm or when the steel is left exposed before the repair work is completed, should the reinforcement be protected by using **MasterEmaco N104 CI**.

Mixing - Only full bags are mixed. Damaged or opened bags should not be used. Mix **MasterEmaco S 5300 CI** with clean water only, in a forced action pan mixer, or with a helical paddle attached to a slow speed (300-600 rpm) mixer for 3 minutes until the required lump-free, plastic consistency is achieved. Mixing water needed: 3.8 to 4.2 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, without exceeding the maximum water demand.

Priming Concrete - The prepared substrate should be pre-soaked, preferably for 24 hours, but at least 2 hours before applying **MasterEmaco S 5300 CI**. The surface must be saturated surface dry, but without standing water. Bonding slurries can improve the adhesion of the mortar, especially for hand applications: Mix **MasterEmaco S 5300 CI** to a stiff brushable slurry consistency, and apply onto the pre-dampened surface using a brush. Alternatively, **MasterEmaco N 5000 CI** can also be applied as the bonding slurry

Mortar application - The minimum temperatures must be maintained during application and for at least 24 hours thereafter for optimum curing of the product. **MasterEmaco S 5300 CI** can be hand,

trowel or spray applied. Apply mixed product directly to the prepared damp substrate, or wet in wet onto the primed surface. A thin scrape coat or contact layer before building up to the required thickness, wet on wet, will improve the wet adhesion and cohesion of the mortar, especially in case of hand application. Apply to the desired layer thickness of 5 to max 75 mm and level using a screeding beam, trowel or wooden board. Can be applied in thicker layers in smaller patches or where additional reinforcement is present. Smoothing with a trowel or finishing by float or sponge can be done as soon as the mortar has begun to stiffen.

CURING

Following curing methods are advised - polyethylene film, damp cloths, **MasterKure** curing agent

ESTIMATING DATA

One 20kg bag will yield approximately 12.4 litres of mortar. Approx. 2.0 kg of mixed product per m2 and mm layer thickness (approx. 1.8 kg of dry powder per m2 and mm layer thickness).

PACKAGING

MasterEmaco S 5300 CI is available in 20kg bags.

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, please make sure that you obtain a copy of the BASF Material Safety Data Sheet (MSDS) from our office or our website.

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STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this BASF publication are based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by law. The user is responsible for checking the suitability of products for their intended use.

NOTE

Field service where provided does not constitute supervisory responsibility. Suggestions made by BASF either orally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not BASF, are responsible for carrying out procedures appropriate to a specific application.

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