

EMACO[®] NANOCRETE R2

Universal, fast-setting, polymer modified, fibre reinforced, light weight repair and levelling mortar

DESCRIPTION

Emaco Nanocrete R2 is a universal, single component, polymer modified, fast setting, repair, re-profiling and levelling mortar. **Emaco Nanocrete R2** is a ready-to-use material that contains special cements, well graded sands, carefully selected polymers and fibres to reduce shrinkage and improve physical and application properties. When mixed with water, it forms a mortar with an exceptional wide range of applications. **Emaco Nanocrete R2** can easily be hand or trowel applied in thicknesses from 3 up to 100 mm.

RECOMMENDED FOR

Emaco Nanocrete R2 is used for the non-structural repair of concrete elements like balconies edges, building facades, parapet walls, precast panels, beam edges and stair nosings. **Emaco Nanocrete R2** is ideal for general, nonstructural patch repairs where fast setting properties with short over-coating times are needed. It exhibits excellent high build properties allowing up to 100 mm thickness in one layer. Can be overcoated after only 4 hours @ 20°C **Emaco Nanocrete R2** can be applied as a smoothing or levelling coat at only 3 mm thick on large vertical and overhead areas to achieve a more aesthetic finish e.g. prior to painting. **Emaco Nanocrete R2** can be applied inside and outside, on horizontal, vertical and overhead surfaces, in dry and wet environments.

FEATURES AND BENEFITS

- Formulated with shrinkage compensation systems and fibre reinforcement to minimise crack tendency by controlling the Nanostructures in the matrix
- Smooth, creamy, non-slump mortar - Superb application properties and feel on the trowel; easy to create profiles and corners without formwork
- Excellent high build capacity - can be applied 80 - 100 mm in horizontal or vertical applications in one layer, or even 70 – 80 mm overhead
- Minimum layer thickness of 3 mm so can be used as large area fairing coat
- Multi-use- fairing coat and patch repair mortar in one
- 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
- Low chromate (Cr[VI] < 2 ppm)
- Chloride-free.

PROPERTIES

PROPERTY	VALUES
Appearance	Grey powder
Grain size	Max 1.0mm
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 - final
	45 – 75 minutes 60 – 120 minutes
Temperature for application (support and material)	Between +5°C and +35°C

APPLICATION

Surface preparation - Concrete must be fully cured, clean and sound to ensure good adhesion. All loose traces of 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. 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 **Emaco Nanocrete AP** active protection cement based primer (see technical data sheet).

Priming - The prepared substrate should be pre-soaked, preferably for 24 hours, but at least 2 hours before applying **Emaco Nanocrete R2**. The surface must be mat-damp, but without standing water. For improved build thicknesses or when working on large areas, apply bond or contact layer of the **Emaco Nanocrete R2** mortar. Alternatively a bonding coat of **Emaco Nanocrete AP** can be applied. Always apply **Emaco Nanocrete R2** mortar wet-in-wet onto the bond or contact layer.

Mixing - It is strongly recommended that only full bags are mixed. Damaged or opened sacks should not be used. Mix **Emaco Nanocrete R2** with a suitable paddle attached to a powerful, slow speed electric drill or in a forced action pan mixer for 3 minutes until a lumpfree, plastic consistency is achieved. Only use clean uncontaminated water. Mixing water needed: 3.5 to 4.0 litres per 20kg bag depending upon consistency required. (Use stiffer consistency for overhead and vertical patching application and softer more creamy consistency for use as a fairing coat at 3mm thick). 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.

Mortar application - The minimum temperatures must be maintained during application and for at least 12 hours thereafter for optimum curing of the product. The surface must be mat-damp, but without standing water. **Emaco Nanocrete R2** 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 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.

Apply to the desired layer thickness of 3 to max. 100 mm. Smoothing with a trowel or 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, **Emaco Nanocrete R2** can



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be over-coated, after approximately 4 hours, with **Masterseal** as required. NB: At lower temperatures and/or higher humidity these times will be extended

NOTE

- Do not add cement, sand or other substances that could affect the properties of the material.
- Never add water or fresh mortar to a mortar mix which has already begun to set.

ESTIMATING DATA

One 20kg bag will yield approximately 13 litres of mortar. Approx. 1.8 kg of mixed product per m² and mm layer thickness (approx. 1.5 kg of dry powder per m² and mm layer thickness). This consumption is theoretical and depends on the roughness of the support, for which reason it should be adjusted in each particular job by means of "in situ" tests.

CLEANING

While still wet clean with water. Once dry/cured the material can only be removed mechanically.

PACKAGING

Emaco Nanocrete R2 is available in 20kg bags.

STORAGE

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

PRECAUTIONS

Usual preventive measures for the handling of chemical products should be observed. Do not eat, smoke or drink while working. Avoid contact with eyes and prolonged contact with skin. The disposal of the product and its container should be carried out according to the legislation in force. Responsibility for this lies with the final owner of the product.

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 Construction Chemicals **Material Safety Data Sheet (MSDS)** from our office or our website.

TECHNICAL DATA

Compressive strength - after 1 day - after 7 days - after 28 days	AS 1478.2 Appendix A (Restrained)	≥15 MPa ≥ 30 MPa ≥ 40 MPa
Adhesion (28 days)	EN 1542	≥ 0.8 MPa
Adhesion after Freeze/Thaw (50 cycles with salt)	EN 13687-1	≥ 0.8 MPa
Adhesion after Thunder/Shower (50 cycles)	EN 13687-2	≥ 0.8 MPa
Adhesion after dry cycling (50 cycles)	EN 13687-4	≥ 0.8 MPa
Cracking tendency (I)	Coutinho type ring	No cracking after 180 days
Cracking tendency (II)	DIN type V-channel	No cracking after 180 days
Capillary absorption	EN 13057	≤ 0.5 Kg/m ² h ^{0.5}
Electrical resistance	28 days 56 days	3900 Ω.cm 6280 Ω.cm
VOC Content: 8g/L SCAQMD Test method 304-91		

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 minima. Tolerances are those described in appropriate performance standards

AENcreteR2/4/0210

STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this **BASF Construction Chemicals** 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. **BASF Construction Chemicals data sheets are updated on a regular basis and it is the user's responsibility to obtain the most recent issue.**

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 Construction Chemicals**, are responsible for carrying out procedures appropriate to a specific application.

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