

# EMACO<sup>®</sup> Nanocrete FC

Fast setting, polymer modified, fibre reinforced fine levelling mortar

## Description

Emaco<sup>®</sup> Nanocrete FC is a single component, polymer modified, fast setting levelling mortar for finishing of repair works.

Emaco<sup>®</sup> Nanocrete FC 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 a very fine creamy consistency. Emaco<sup>®</sup> Nanocrete FC can easily be trowel applied in thicknesses from 0.5 mm (blowhole filling) up to 7 mm. Small patch repair areas can be reprofiled up to 10 mm thickness.

## Fields of application

Emaco<sup>®</sup> Nanocrete FC is used for thin layer repairs, fine finishing and levelling of concrete elements such as:


- Balconies
- Building facades
- Parapet walls
- Precast panels
- Beam edges

Emaco<sup>®</sup> Nanocrete FC is ideal for fine finishing and levelling repairs on large vertical and overhead areas where fast setting properties with short over-coating times are needed as it can be overcoated after only 4 hours @ 20°C

Emaco<sup>®</sup> Nanocrete FC can be used as a blowhole filler in the pre-cast industry or anywhere where minor defects in concrete structures have to be repaired.

Emaco<sup>®</sup> Nanocrete FC can be applied inside and outside, on vertical and overhead surfaces, in dry and wet environments.



 <b>0749</b>	
<b>BASF Construction Chemicals Belgium NV</b> Nijverheidsweg 89, B3945 Ham	
<b>08</b> <b>0749 - CPD</b> <b>BC2-563-0013-0002-001</b>	
<b>EN 1504-3</b> <b>PCC mortar (based on hydraulic cement, polymer modified)</b>	
Compressive strength	class R2
Chloride ion content	≤ 0,05 %
Adhesive bond	≥ 0,8 MPa
Restrained shrinkage	≥ 0,8 MPa
Thermal compatibility	
- Freeze-Thaw	≥ 0,8 MPa
- Thunder Shower	≥ 0,8 MPa
- Dry cycling	≥ 0,8 MPa
Capillary absorption	≤ 0,5 kg m <sup>-2</sup> h <sup>0,5</sup>
Reaction to fire	F
Dangerous substances	complies with 5.4

## Technical Data

Property	Standard	Unit	Values
Appearance	-		Grey Powder
Grain size	-	mm	Max. 0.3
Layer thickness: Minimum	-	mm	0.5 (featheredge / blowhole filling)
: Maximum		mm	7 (levelling mortar) 10 (small patch repair)
Density of fresh mortar	-	g/cm <sup>3</sup>	approx. 1.8
Mixing water per sack of 20kg	-	litre	approx. 3.6 – 4.5
Working time	-	minutes	30 - 45
Setting time	-	minutes	
- initial			45 - 75
- final			60 - 120
Temperature for application (support and material)	-	°C	Between +5 and +30
Compressive strength	EN 12190	N/mm <sup>2</sup>	
- after 1 day			≥ 12
- after 7 days			≥ 20
- after 28 days			≥ 25
Adhesion to concrete (28 days)	EN 1542	N/mm <sup>2</sup>	≥ 0.8
Adhesion to concrete after Freeze/Thaw (50 cycles with salt)	EN 13687-1	N/mm <sup>2</sup>	≥ 0.8
Adhesion to concrete after Thunder/Shower (30 cycles)	EN 13687-2	N/mm <sup>2</sup>	≥ 0.8
Adhesion to concrete after Dry Cycling (30 cycles)	EN 13687-4	N/mm <sup>2</sup>	≥ 0.8
Cracking tendency (I)	Coutinho type ring		No cracking after 150 days
Cracking tendency (II)	DIN type V-channel		No cracking after 150 days
Capillary absorption	EN 13057	kg.m <sup>-2</sup> .h <sup>-0.5</sup>	≤ 0.5

*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.*

### Features and benefits

- Formulated with new nanotechnology to minimise shrinkage and crack tendency
- Superb application properties and feel on the trowel
- Smooth, creamy but non-slump mortar
- Excellent smoothing properties
- Can be used down to featheredge and for filling blowholes in concrete
- Fast setting: can be over-coated in only 4 hours
- Good strength development exceeding requirement of Class R2 of EN1504 part 3
- Light concrete coloured mortar
- Low modulus of elasticity
- Low chromate (Cr[VI] < 2 ppm )
- Chloride-free.

### Application guidelines

#### (a) Surface preparation: Concrete

Concrete must be fully cured, clean and sound to ensure good adhesion. All loose traces of concrete or mortar, dust, grease, oil, formwork release agents, 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.

#### (b) Priming:

The prepared substrate should be pre-soaked, preferably for 24 hours, but at least 2 hours before applying Emaco<sup>®</sup> Nanocrete FC.

#### (c) Mixing:

It is strongly recommended that only full sacks are mixed. Damaged or opened sacks should not be used.

Mix Emaco<sup>®</sup> Nanocrete FC with a suitable paddle attached to a powerful, slow speed electric drill or in a forced action pan mixer for 3 minutes until a lump-free, plastic consistency is achieved. Only use clean tap water.

Mixing water needed: 3.6 to 4.5 litres per 20kg sack 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.

#### (d) Mortar application:

The minimum temperatures must be maintained during application and for at least 8 hours thereafter for optimum curing of the product.

The surface must be mat-damp, but without standing water.

The material can be hand or trowel applied. When used as levelling coat apply a thin scrape coat or contact layer of mixed Emaco<sup>®</sup> Nanocrete FC directly to the prepared damp substrate before building up to the required thickness.

When the product is to be used to fill blowholes only, rub the material directly into the pores using e.g. a jute cloth or scrape it in with a trowel. Remove all excess material, as soon as possible.

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 20 - 60 minutes (depending on layer thickness) at 20°C. In these environmental conditions, Emaco<sup>®</sup> Nanocrete FC can be over-coated with Masterseal<sup>®</sup> protective coatings\*, after approximately 4

\* Contact your local BASF Construction Chemicals office for more information, on the type of products available in the Masterseal<sup>®</sup> range.

NB: At lower temperatures and/or higher humidity these times will be extended

### Cleaning of tools

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

### Coverage / Yield

One 20kg sack will yield approximately 13.5 litres of mortar.

Approx. 1.8 kg of mixed product per m<sup>2</sup> per mm layer thickness (approx. 1.5 kg of dry powder per m<sup>2</sup> per 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.

### Packaging

Emaco<sup>®</sup> Nanocrete FC is available in 20 kg bags.

### Storage

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

### Watch points

- Do not apply at temperatures below +5°C nor above +30°C.
- 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.
- Protect the freshly applied material against rainfall for minimum 24 h
- Emaco Nanocrete FC is basically self-curing and does not need prolonged water or high humidity curing, nor should it be covered with plastic sheets for more than 24 hours.
- In dry, hot and windy conditions use e.g. Masterkure<sup>®</sup> curing compounds for optimum curing.
- Contact the Technical Department of your local BASF Construction Chemicals office regarding any information required not mentioned here.

### Handling and transport

Usual preventive measures for the handling of chemical products should be observed when using this product, for example do not eat, smoke or drink while working and wash your hands when taking a break or when the job is completed.

Specific safety information in the handling and transport of this product can be found in the Material Safety Data Sheet.

Avoid contact with eyes and prolonged contact with skin. In case of contact with eyes, immediately flush with plenty of water for at least 15 minutes.

Call a physician. In case of contact with skin, wash skin thoroughly.

The disposal of the product and its container should be carried out according to local legislation in force. Responsibility for this lies with the final owner of the product.

**BASF Construction Chemicals (UK) Ltd**

**PO Box 4**

**Earl Road**

**Cheadle Hulme**

**Cheadle**

**Cheshire**

**SK8 6QG**

**Tel: +44 (0) 161 485 6222 Fax +44 (0) 161 488 5220**

**[www.basf-cc.co.uk](http://www.basf-cc.co.uk)**

#### NOTE:

Similar to all the other recommendations and technical information, this technical data sheet serves only as a description of the product characteristics, mode of use and applications. The data and information given are based on our technical knowledge obtained in the bibliography, laboratory tests and in practice. The data on consumption and dosage contained in this data sheet are based on our own experience and are therefore subject to variations due to different work conditions. Real consumption and dosage should be determined on the job by means of prior tests and are the liability of the client. Our Technical Service is at your disposal for any additional advice.

BASF Construction Chemicals reserves the right to modify the composition of the products provided these continue to comply with the characteristics described in the data sheet.

Other applications of the product not covered by those indicated shall not be our liability. In the case of defects in the manufacturing quality of our products we provide a guarantee, any additional claims being exempt and our liability being only to return the value of the goods supplied. The possible reservations with respect to patents or third party rights should be noted.

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The present data sheet becomes null and void on issuance of a new edition.

