



degussa.

creating essentials

# EMACO<sup>®</sup> Nanocrete AP

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

## Description

Emaco<sup>®</sup> Nanocrete AP active primer, 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.

Emaco<sup>®</sup> Nanocrete AP is a ready-to-use material that contains portland cement, well graded fine fillers, re-dispersible powder and special additives.

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.



## Field of application

Emaco<sup>®</sup> Nanocrete AP 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
- With Emaco<sup>®</sup> Nanocrete R2 repairs when steel is visible
- When the timing at the jobsite does not allow for the repair mortars to be applied immediately after cleaning the steel

Emaco<sup>®</sup> Nanocrete AP can also be used to aid bond and application properties of hand applied repair mortars in extreme thicknesses and conditions.



## Technical Data

Property	Standard	Unit	Values
Appearance	-		Light Grey Powder
Layer thickness	-		2 mm in two layers
Density	-	g/cm <sup>3</sup>	approx. 1.8
Mixing water	-	l/ kg	approx. 0.22– 0.26
Working time	-	minutes	approx. 60 minutes
Temperature for application (support and material)	-	°C	Between +5 and +35
Pull out strength of coated rebar	Comparison vs. uncoated	%	≥ 80
ZTV-Sib90 compliance testing	TL BE-PCC		
- total halogen content		Weight %	≤ 0.05
- corrosion stimulation		µA/cm <sup>2</sup>	≤ 10
- corrosion resistance		mm	≤ 1 (migration of rust underneath the coating starting from uncoated edge)
- accelerated weathering 10 cycles DIN 50017 10 cycles DIN 50018 120 hours DIN 50021			No corrosion/No delamination/ max. crack width ≤ 0.1 mm

*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.*

## Benefits

- Meets all major national and 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.
- Does not affect the pull out strength of reinforcement steel.
- Perfect compatibility with steel rebars and concrete or repair mortars.
- Fast curing to save time and money
- Simply mixed with water
- Multi-use: can also be used as a bonding slurry to improve bond and application thicknesses of Emaco<sup>®</sup> repair mortars on prepared concrete surfaces.
- Light grey/off white colour for easy site control of reinforcement coverage
- Supplied in re-usable air-tight containers
- Low chromate (Cr[VI] < 2 ppm )

## Application guidelines

### (a) Surface preparation: Steel reinforcement

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 for the full 360° circumference of the steel reinforcement to be coated.

### (b) Surface preparation: Concrete

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.

### (c) Mixing:

In a suitable container, mix Emaco<sup>®</sup> Nanocrete AP 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.

### (d) Application of slurry:

Substrate 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/mm<sup>2</sup>) to the full circumference of the prepared reinforcement using a soft paint brush. When the first coat has hardened sufficiently, (approx. 30-90minutes) 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 (e.g. the Emaco<sup>®</sup> Nanocrete brush).

Typical application rates are 2-3kg per m<sup>2</sup>.

Apply the repair mortar wet in wet. Never allow the slurry bond coat to dry out!

## Cleaning of tools

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

## Curing

Curing times are dependent on the environmental conditions. Protect from rainfall until finally set.

## Coverage

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.

## Packaging

Emaco<sup>®</sup> Nanocrete AP is available in 4 kg and 15 kg plastic re-sealable cans.

## 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 +35°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.
- Contact Technical Department of your local Degussa 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 manipulating 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.

#### 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.

Degussa Construction Chemicals Belgium N.V. 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.

Edition 1/04/06

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

### Degussa Construction Chemicals Belgium NV.

Nijverheidsweg 89  
Industrieterrein  
"Ravenshout" / 3711  
B-3945 Ham

Tel: +32 11 34 04 10  
Fax: +32 11 40 29 33