

Emaco[®] Nanocrete

For simple, successful concrete repair



 **BASF**

The Chemical Company

EMACO® NanoCrete

R2

Universal, single component, polymer modified, fast setting, repair and reprofiling mortar

Emaco® NanoCrete R2 is ideal for:

- cosmetic repairs on buildings and structures especially where hand reprofiling is necessary e.g. balcony and beam edge repairs
- minor damage repairs on pre-cast panels
- general repairs where fast setting is needed
- smoothing large areas to achieve aesthetic finish e.g. prior to painting

Multi-use repair product with superb application properties

- superb application properties and feel on the trowel
- lightweight 20 kg sack for easy handling
- smooth, creamy but non-slump mortar
- can be applied horizontally, vertically and overhead
- excellent high build capability:
 - 80 to 100 mm in one layer by hand in vertical patches
 - 70 to 80 mm overhead
 - Tip: for improved build thicknesses apply bond or contact layer of mortar or Emaco® NanoCrete AP using special Emaco® NanoCrete brush
- Levelling coat: minimum layer thickness 3 mm
- perfect for reforming corners or other profiles, without formwork
- multi-use material for convenience on site:
 - can also be used as a large area fairing coat to level out surfaces
 - perfect for cosmetic repairs prior to painting
- fast setting: can be overcoated in only 4 hours at 21 °C
- saves time and labour costs on the job site

Useful facts

- pack size: 20 kg
- water addition: 3.5 to 4.0 litres per bag depending on use
- usage rate: 1 x 20 kg bag covers 1.3 m² at 10 mm thick
- open work time: 30 to 45 minutes at 21 °C
- finishing time: with sponge or similar approx. 60 to 90 minutes
- minimum application temperature: > 5 °C
- shelf life: 12 months in unopened sacks
- curing: in hot, dry or windy conditions ensure correct curing

Technical data

- shrinkage compensated, polymer modified, fibre reinforced and contains nanotechnology to minimise shrinkage and possibility of cracking
- compressive strength > 25 MPa at 28 days
- low elastic modulus to reduce differential stresses on low strength concrete structures



EMACO® NanoCrete

R3

R3

Single component, lightweight, polymer modified, high build, fibre reinforced, structural repair mortar

Emaco® Nanocrete R3 is recommended for use:

- where reprofiling by hand is necessary e.g. stair nosings, balcony edges, precast panel edges, beam and column edges
- large area repairs where high build is necessary e.g. building facades
- for horizontal patching in traffic areas

Lightweight and easy to use but strong

- easy lightweight application properties by trowel, hand or spray
- lightweight formulation allows high build in single layers
 - up to 75 mm horizontally, vertically or even 50 mm overhead
 - for improved build thicknesses apply bond or contact layer of mortar or Emaco® Nanocrete AP using special Emaco® Nanocrete brush
- minimum layer thickness 5 mm
- easy to create profiles and corners without formwork
- easy to create fair finish with trowel
- high yield 20 kg sack easy for carrying

Useful facts

- pack size: 20 kg
- water addition: 4.2 to 4.6 litres/bag depending on consistency required
- consumption: each 20 kg bag covers 1.4 m² at 10 mm thick
- open work time: 45 to 60 minutes at 21 °C
- finishing time: with sponge or similar approx. 90 minutes
- minimum application temperature: > 5 °C
- shelf life: 12 months in unopened sacks
- curing: in hot, dry or windy conditions ensure correct curing

Technical data

- medium strength structural repair (exceeds the requirements of class R3 of EN 1504 part 3) > 35 MPa at 28 days
- lower modulus > 15 GPa at 28 days (class R3 of EN 1504 part 3)
- applied nanotechnology, fibre reinforced and newly developed shrinkage compensation to minimise shrinkage



NanoCrete

R4

R4

Single component, very high strength, high modulus, fibre reinforced, shrinkage compensated, expansive, structural repair mortar

Emaco® Nanocrete R4 is ideal for the following repairs:

- columns, piers and cross beams of all bridges, marine and other civil structures
- tunnels, pipes, outfalls and all below ground construction in aggressive ground conditions
- cooling towers and chimneys and other industrial environments
- water treatment and sewerage facilities

Excellent application properties and high strength

- formulated for spray and trowel application
- excellent thixotropy allows vertical and overhead application in layers of up to 50 mm without the need for secondary reinforcement
 - can be applied in thicker layers in smaller patches or where additional reinforcement is present
- no need for bonding slurries or steel reinforcing primer saving time and money!
 - Tip: always pre-soak concrete and apply thin scrape coat or contact layer before building up to required thicknesses
- cement rich formula so easy to create smooth fairfaced finish
- only simple standard surface preparation required

Useful facts

- pack size: 20 kg
- water addition: 3.0 to 3.4 litres/bag depending on consistency required
- usage rate: 20 kg bag covers 1.2 m² at 10 mm thick
- open work time: 45 to 60 minutes at 21 °C
- finishing time: with sponge or similar approx. 90 min
- minimum application temperature: > 5 °C
- shelf life: 12 months in unopened sacks
- curing: in hot, dry or windy conditions ensure correct curing

Technical data

- very high compressive strength (class R4 in EN 1504 part 3) > 60 MPa at 28 days
- high strength gain during early age curing > 18 MPa at 24 hours
- high modulus of elasticity (EN 1504 part 3 class R4) > 25 GPa at 28 days
- excellent carbonation resistance
- high sulphate resistance
- low permeability and excellent freeze thaw resistance > 2 MPa tensile bond strength after 50 cycles according to EN 1504 with no delamination
- formulated with new nanotechnology, shrinkage compensation systems, and fibre reinforcement to minimise cracking



EMACO® NanoCrete

R4 Flowable

Single component, high strength, high modulus, fibre reinforced, shrinkage compensated, flowable structural repair mortar

Emaco® Nanocrete R4 Fluid is designed for the following repairs:

- columns, cross beams and piers of all bridges
- marine and other civil structures
- water treatment and sewerage facilities
- large area structural repairs using the formwork and casting method
- areas of congested reinforcement where hand or spray application is not possible

Flowable but high strength structural repair mortar

- for concrete replacements up to 200 mm thick in one layer
- long open time
- no segregation or bleeding
 - for pourable or pumpable application
- extra low shrinkage for durability
- only simple standard surface preparation required
- high flow for full compaction even in areas with congested steelwork

Useful facts

- pack size: 20 kg
- water addition: 1.0 to 2.0 litres/bag depending on consistency required
- consumption: 20 kg bag covers 0.9 m² at 10 mm thick
- setting time: 300 min. (initial), 380 min. (final) at 21 °C
- minimum application temperature: > 5 °C
- shelf life: 12 months in unopened sacks
- curing: in hot, dry or windy conditions ensure correct curing using a MASTERKURE curing compound after removing formwork



Technical data

- very high compressive strength (class R4 in EN 1504 part 3) > 55 MPa at 28 days
- high strength gain during early age curing > 20 MPa at 24 hours
- high modulus of elasticity (EN 1504 part 3 class R4) > 25 GPa at 28 days
- long open time ensures consistent flow of material
- formulated with new nanotechnology, shrinkage compensation systems, and fibre reinforcement to minimise cracking
- high sulphate resistance
- max. grain size < 4 mm



EMACO® NanoCrete

FC

FC

**Single component, polymer modified,
fast setting levelling mortar**

Emaco® Nanocrete FC is used:

- for thin layer repairs, fine finishing and levelling of concrete elements e.g. balconies, building facades, parapet walls, precast panels, beam edges
- for fine finishing and levelling repairs on large vertical and overhead areas where fast setting properties with short over-coating times are needed
- to repair honeycomb areas
- as a blowhole filler in precast industry or anywhere where minor defects in concrete structures have to be repaired
- inside and outside, on vertical and overhead surfaces, in dry and wet environments

Ready-to-use and fast setting

- superb application properties and feel on the trowel
- smooth, creamy but non-slump mortar
- excellent smoothing properties
- can be used down to featheredge
- fast setting: can be over-coated in only 4 hours
- can easily be trowel applied in thickness from 0.5 (blowhole filling) up to 7 mm

Useful facts

- pack size: 20 kg
- water addition: 3.8 – 4.5 litres/bag
- cures to a light concrete grey colour
- consumption: 20 kg bag covers 13 m² at 1 mm thick
- open work time: 30 to 45 minutes (at 21 °C)
- finishing time: with sponge or similar approx. after 30 to 60 minutes (depending on layer thickness and temperature)
- minimum application temperature: > 5 °C
- shelf life: 12 months in unopened sacks
- curing: in hot, dry or windy conditions ensure correct curing

Technical data

- good strength development exceeding requirement of class R2 of EN 1504 part 3 > 25 MPa at 28 days
- high strength gain during early age curing > 15 MPa at 24 hours
- low modulus of elasticity
- chloride-free
- low capillary absorption according EN 13057 (< 0.5 kg/m²/h^{0.5})
- formulated with new nanotechnology shrinkage compensation systems
- fibre reinforced to minimise crack tendency



EMACO® NanoCrete

AP



Single component, cementitious based active protective primer for reinforcement steel and adhesive bonding slurry

Emaco® Nanocrete AP should be used:

- in critical environments or when specified by the engineer
- when steel is visible and available concrete cover is less than 10 mm
- with Emaco® Nanocrete R2 repairs when steel is visible
- to aid bond and application properties of hand applied mortars at extreme thicknesses*

*NB Emaco® Nanocrete AP is not normally required with Emaco® Nanocrete R4.

Easy and simple to use

- handy re-sealable packaging can also be used for mixing
 - simply mix to a stiff/semi-fluid consistency
 - apply using stiff brush e.g. Emaco® Nanocrete brush
- fast setting to reduce waiting times and reduce costs on job site
 - second coat (only required on rebars) can be applied after only 30 to 90 minutes
 - hand applied repairs can be completed directly in wet second coat
 - NB when spraying repair mortars allow second coat to dry overnight!
- multi-use can also be used as a bonding slurry to improve bond and application thicknesses
 - mix as above to stiff/semi fluid consistency and work well into pre-soaked surface
 - Tip: to save time and costs apply this bonding slurry at the same time as the second priming coat on reinforcing steel!

Useful facts

- pack size: 4 kg and 15 kg re-sealable plastic buckets
- water amount : mix 0.22 to 0.26 litre per kg powder
- open work time: approx. 60 minutes at 21 °C
- overcoat time: 30 to 90 minutes
- consumption : 2 – 3 kg/m²
- shelf life: 12 months in unopened containers

Technical data

- actively passivates the steel and contains active corrosion inhibitors for further protection
- does not affect pull out strength of reinforced steel
- fulfils all requirements for active primers as described in EN 1504 part 7
- polymer modified
- ensures adhesive bond strengths as required by EN 1504 part 3
- bright colour for easy site control



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