

## MasterEmaco<sup>®</sup> N 5100

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(EMACO Nanocrete FC)

**Fast-setting fiber reinforced, polymer modified fine mortar for levelling and finishing concrete surfaces. Application thickness varies from 0.5 mm to 7 mm.**

### DESCRIPTION

MasterEmaco N 5100 is a one-component fast-setting polymer modified leveling mortar for finishing concrete surfaces after repair.



MasterEmaco N 5100 is a ready-to-use material, containing special cements, optimally matched by grain size sand, a mixture of polymer additives, and a polymer fiber.

MasterEmaco N 5100 may be used for interior and exterior operations on vertical and overhead surfaces, in dry or humid environments.

When mixed with water, it forms a fine rheoplastic mortar. MasterEmaco N 5100 can easily be trowel applied in layers with a thicknesses of 0,5 mm up to 7 mm. Small patch repair areas may be refilled, using a layer with a thickness of up to 10mm.

### FIELD OF APPLICATION

MasterEmaco N 5100 is used for fine finishing and levelling of concrete elements such as:

- Balconies;
- Building facades;
- Parapet walls;
- Reinforced concrete items following formwork removal at the workplace;
- Beam edges;
- Elimination of defects following formwork removal.

MasterEmaco N 5100 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. The next coating may be applied in only 4 hours at +20°C.

### FEATURES

- Full compliance to EN 1504-3 Class R2;
- The mortar has been formulated using nanotechnologies to minimize shrinkage and cracking tendency;
- Easy to apply, may be applied with a trowel, spatula, etc.;
- Thixotropic non-shrink homogeneous mortar;
- Excellent leveling properties;
- May be used for applying a thin layer and for filling voids in concrete;
- Fast setting: can be over-coated in only 4 hours
- Low modulus of elasticity;
- Low chromate content (Cr[VI] < 2 ppm);
- Does not contain chlorides.

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## SPECIFICATIONS\*

Properties	Standard	Units	Value
Appearance	-		grey powder
Aggregate grain size	-	mm	max 0.315
Applied layer thickness: minimum	-	mm	0.5 (thin edge/ void filling)
maximum			7 (leveling mortar) 10 (patch repair)
Fresh mortar density	-	g/cm <sup>3</sup>	Appr. 1.8
Mixing water consumption per 25kg bag	-	liters	Appr. 4.75 – 5.25
Placeability time	-	Minutes	30 – 45
Curing time ** - Initial - Final		Minutes	45 – 75 80 - 100
Application temperature (substrate and material)	-	°C	+ 5 ... + 30
Compressive strength - in 24 hours - in 28 days	STO 70386662-010- 2014	MPa	≥ 12 ≥ 25
Adhesion to concrete (28 days)	STO 70386662-010- 2014	MPa	≥ 0.8
Adhesion to concrete after freeze/ thaw (50 cycles with salt)	STO 70386662-010- 2014	MPa	≥ 0.8
Adhesion to concrete after water saturation/ drying (30 cycles)	STO 70386662-010- 2014	MPa	≥ 0.8
Cracking tendency (I)	Coutinho ring		No cracks in 180 days
Cracking tendency (II)	V-channel (DIN)		No cracks in 180 days
Capillary absorption	STO 70386662-010- 2014	kg.m <sup>-2</sup> h <sup>-0.5</sup>	≤ 0.5

\* Tests were performed according to STO 70386662-010-2014 "MasterEmaco dry repair mortars (EMACO<sup>®</sup> Nanocrete)"

\*\* Setting time is measured at a temperature of +20°C (±2°C) and a relative humidity of 60%±10%. Higher and lower temperatures tend to shorten and extend this time interval, respectively.



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## APPLICATION NOTES

### (a) Surface preparation:

Concrete must be clean and strong to ensure good adhesion. Any loose concrete, dust, grease, oil, formwork release agents, etc., must be removed. Non-impact/ vibrating cleaning methods, e.g. sandblasting or high-pressure water cleaning, are recommended. After preparation, fine aggregates should be clearly visible on the reinforced concrete structure surface.

### (b) Substrate saturation with water:

The prepared substrate must be moistened. Use compressed air or rags to remove excess water.

### (c) Mixing:

Use the entire bag for mixing. Damaged or opened bags shall not be used.

Use a hand mixer with a special nozzle or a forced action mortar mixer for mixing MasterEmaco N 5100 for 2-3 minutes, until a homogeneous plastic mass is obtained.

Leave the mortar for 3-4 minutes and then mix it again for 2-3 minutes.

Attention: Never exceed required mixing water amount!

Mixing water consumption: 4.75 – 5.25 liters per bag (25 kg), depending on the desired consistency.

### (d) Mortar application:

Minimum product application temperature is +5°C. Use a trowel or spatula to apply the product.

When used as a leveling coating, first apply a thin contact layer of the prepared MasterEmaco N 5100 mortar.

Smoothing with a trowel or finishing with a float or sponge may be started as soon as the solution starts to set, typically, in 20 - 60 minutes (dependent on the layer thickness) at +20°C. Under these environmental conditions, MasterEmaco N 5100 may be covered atop with the MasterProtect or MasterSeal vapor-permeable protective coatings\* in about 4 hours.

Note: at lower temperatures and/or higher humidity the specified time interval will increase!

\* Contact BASF Construction Chemicals for more information on the type of materials available in the MasterSeal nomenclature.

## Tool cleaning

Use water to remove unset material on the tool. Dry/cured material may be removed only mechanically.

## CONSUMPTION

One bag (25 kg) is enough to obtain about 18 liters of the mortar.

The consumption is about 1.8 kg of the mixed product per 1 m<sup>2</sup> of the surface under repair at the applied layer thickness of 1mm (about 1.5 kg of dry powder per 1 m<sup>2</sup> at the layer thickness of 1mm).

This is a theoretical consumption, which depends on the substrate roughness. For this reason, the consumption should be established for each case by performing the in-situ tests.

## PACKING

MasterEmaco N 5100 is supplied in 25 kg moisture-proof bags.

## SHELF LIFE AND STORAGE CONDITIONS

Store bags in cool and dry storage conditions. Shelf-life of the product in the original undamaged packaging at the above mentioned conditions is 12 months.

## CAUTION

- Do not use the product at temperatures below +5°C or above +30°C;
- Do not add cement, sand or other substances, which may affect the properties of the product;
- Never add water to a fresh mortar that you have begun to use;
- Freshly applied material shall be protected against rainfall for at least 24 hours;
- MasterEmaco N 5100 does not require moisture treatment;
- In dry, hot and windy conditions use the MasterKure film-forming compounds to ensure optimum curing.

For any required information, not specified herein, please contact BASF Construction Chemicals.



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### PRECAUTIONS

While using MasterEmaco N 5100, well-known safety measures, applicable to chemical handling, must be observed. Having finished the work, wash your hands thoroughly. MasterEmaco N 5100 contains cement. While mixing with water, an alkaline reaction occurs.

Chemical burns of mucous membranes (e.g., eyes) may happen, so extended contact with the product should be avoided. In case of a contact with the mucous membranes, immediately rinse

eyes thoroughly with water and then seek medical attention. In case of a skin contact, immediately remove contaminated clothing and wash skin with plenty of soap and water. Use appropriate protective gloves (e.g., cotton nitrile impregnated gloves). If swallowed, immediately consult a doctor, providing the information about the product properties.

Represented information is based on our current experience. In case of various factors affecting the result, information does not mean legal responsibility. For additional information, please contact your local advisor.

### Limited company "BASF Stroitelnye Sistemy"

Office in Moscow: +7 495 225 6436

Office in St. Petersburg: +7 812 332 0412

Office in Kazan: +7 843 212 5506

Office in Krasnodar: +7 861 202 22 99

Office in Minsk: +375 17 202 2471

Office in Kiev: BASF T.O.V. +380 44 5915595

E-mail: [stroysist@basf.com](mailto:stroysist@basf.com) [www.master-builders-solutions.basf.ru](http://www.master-builders-solutions.basf.ru)

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