

MasterEmaco[®] N 900

(EMACO 90)

Non-shrink fast-hardening thixotropic mortar, containing polymer fiber, designed for concrete surface finishing. Application thickness varies from 3 to 20 mm.

MasterEmaco N 900 is a ready to use product in the form of a dry mortar of modified polymers based on cement and graded sand with a maximum grain size of 0.63 mm. When the dry mortar is mixed with water, it forms a thixotropic, non-segregating grout with high bonding to concrete. MasterEmaco N 900 is durable material, resistant to aggressive impacts, intended for finishing and recovery of concrete surfaces as well as for conferring protective properties to concrete surfaces. To be applied in 3-20mm-thick layers.

RECOMMENDED USE

- Repair and finish concrete and reinforced concrete structures;
- Repair inactive cracks with an opening up to 1 mm;
- Level concrete surfaces during routine repair and new construction;
- Protect concrete against aggressive waters containing sulphates, sulphides, chlorides, etc.
- Provide in-situ leveling of floors of civil and industrial facilities, experiencing light and medium loads.

PACKING

MasterEmaco N 900 is packed in 30kg waterproof bags.

CONSUMPTION

To prepare a mix for applying a 3mm-thick layer onto 1m² surface, 4.5 kg of the MasterEmaco N 900 dry mortar are required.

SHELF LIFE AND STORAGE CONDITIONS

Guaranteed shelf life of the product in a closed undamaged packaging is 12 months. Store in an enclosed dry room at a humidity no more than 70% and at a temperature of not lower than +5°C. Do not use the product from a damaged packaging.

TEMPERATURE INFLUENCE

MasterEmaco N 900 may be used at the ambient temperature of +5°C to +50°C during the performance of the work.

At the low ambient temperatures (+5°C to +10°C), the strength tends to increase more slowly. If a high early strength is required, the following is recommended:

- 1) Store bags with MasterEmaco N 900 in cold-proof places;
- 2) Use hot water for mixing (+30°C to +40°C);
- 3) After pouring, cover MasterEmaco N 900 with heat insulating materials.

If the ambient temperature is below +5°C, please contact the manufacturer.

If the ambient temperature is very high (above +30°C), the only problem is a rapid loss of fluidity by the repair mortar.

In this case, the following is recommended:

- Store bags with MasterEmaco N 900 in a cool place;
- Use cold water for mixing;
- Mix the repair mortar in the coolest time of the day.

WATER CONSUMPTION* for MasterEmaco N 900 (Table 1)

Water amount in liters per 30kg of the dry mortar	
Minimum	Maximum
5.1	5.6

* Approximate water consumption. The exact amount of mixing water is specified in the product quality certificate.

REPAIR INSTRUCTIONS

The following recommendations and suggestions are based on the practical experience of using MasterEmaco N 900.

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1. REPAIR SURFACE PREPARATION

Broken concrete must be removed by using a light perforator, needle gun or water/sand-blasting equipment.

Furthermore, it's necessary:

- 1) Remove rust from reinforcement and install additional reinforcement, if required. If the repaired structure operated in environments corrosive to concrete and steel, it is recommended to treat the reinforcement with MasterEmaco P 5000 AP;
- 2) Remove all active leaks on the surface to be repaired, using MasterSeal 590.
- 3) Clean the surface to remove grease, paint, lime, dirt or dust.

2. SURFACE WATER IMPREGNATION

Prior to pouring MasterEmaco N 900, thoroughly soak the surface under repair with water. Perform soaking every 10-15 minutes for at least 3 hours. Prior to application, use compressed air or rags to remove excess water. Prior to pouring MasterEmaco N 900, the surface under repair should be damp, but not wet.

3. MIXING

Prior to mixing MasterEmaco N 900 with water, the following is required:

- Check that MasterEmaco N 900 is available in sufficient amounts, taking into account its consumption (4.5 kg of MasterEmaco N 900 to repair 1m² using a 3mm-thick layer);
- Make sure that all the necessary materials (mixer, trolleys, buckets, trowels, etc.) are close at hand;
- Verify the performance of the preliminary operations described in the section "Repair instructions".

To properly prepare the repair compound, follow the below-mentioned instructions:

- 1) Open the bags with the MasterEmaco N 900 dry mortar, required for work, shortly before mixing;
- 2) Pour minimum quantity of water indicated in Table 1 into a mixer;
- 3) Turn on the mixer and quickly and continuously add MasterEmaco N 900. Once all MasterEmaco N 900 dry mortar is added, continue mixing for 3-4 minutes,

until lumps disappear and the mix becomes homogenous;

- 4) Add water, if required (in the amounts stated in Table 1), until the desired consistency is reached, and mix for 2-3 minutes once again.

Water content may slightly differ from that indicated in Table 1, dependent on the ambient temperature and relative humidity. More or less water may be required during hot & dry and cold & wet weather, respectively.

For mixing small amounts, a mixer (max 300-400 rpm) with a spiral nozzle may be used. Mixing MasterEmaco N 900 by gravity mixers or by hand is not recommended.

4. APPLICATION

The prepared repair mortar may be applied using plastering trowel stations or a trowel. Optionally, use a wooden, plastic or synthetic sponge trowel to smoothen the surface. Post-application trowel treatment may be started only when the repair compound have already set, i.e. when the fingers, pressing the compound, do not drown and only leave a light footprint.

5. MAINTENANCE

Wet treatment of the repaired area shall be provided for at least 24 hours; in the hot, dry, windy weather, this period should last up to 2 days. For this purpose, standard cement-containing material maintenance methods are used (covering the surface with a film or wet burlap, water spray), or special MasterKure[®] (MasterTop[®] C) film-forming compounds are applied.

6. PRECAUTIONS

The product contains cement, irritating the skin and mucous membranes. Therefore, avoid contacts with eyes and skin. In case of irritation, thoroughly rinse the affected areas with water and consult a doctor, providing the information about the product properties.



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SPECIFICATIONS (Table 2)

Index name	Index
Maximum size of a filler, mm	0,63
Mortar agility by flow cone, mm	180-200
Agility persistence, min.	Minimum 30
Determination of line enlargement - shrinkage, %, maximum	0,05
Compressive strength, MPa, minimum	
24 hours	10
28 days	40
Bond strength to concrete, MPa, minimum	1,5
Water absorption at capillary inleakage $\text{kg/m}^2 \cdot \text{h}^{0.5}$	0,5
Freeze resistance grade for all types of concretes, except concretes as roads and airfield pavements, used in mineralized environment, minimum	F ₁₃₀₀
Grade of water resistance, minimum	W12
Ratio of sulfate resistance (1 year), %	minimum 0,9

* Tests were performed according to STO 70386662-010-2014 "MasterEmaco fast-hardening dry repair mortars (EMACO®)"

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 www.master-builders-solutions.basf.ru

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