

# MasterEmaco N 405 FC



Single-component skim coat, modified polymer with fine grain size. High durability and high resistance to cracking for smoothing of reinforced concrete structures. from 1 to 3 mm.

## MATERIAL DESCRIPTION

Cementitious mortar, premixed, modified polymer, single-component, thixotropic with fine grain size, containing polyacrylonitrile fibers.



In compliance with the European Regulation (EU No 305/2011 and EU No. 574/2014) the product is provided with the CE marking according to UNI EN 1504-3 and 1504-2 and the relative DoP (Declaration of Performance).

 1305	 1305
<b>EN 1504-3</b>	<b>EN 1504-2</b>
Cement based mortar (CC) for structural repair of concrete structures	CC mortar for restoring concrete structures based on hydraulic cement. EN 1504-2 methods 2.8 / 8.2.
<b>R2 class</b>	

## FIELDS OF APPLICATION

MasterEmaco N 405 FC is indicated for restoring concrete elements that:

- have executive imperfections such as crawl spaces, exposed reinforcement, poor visible face;
- show the first evident signs of deterioration on the external surface;
- require surface regularization.

## FEATURES AND BENEFITS

The peculiar characteristics of MasterEmaco N 405 FC are:

- high adhesion to the substrate: it adheres to simply sandblasted concrete, thanks to the adhesive capacity of the polymer;
- resistance to cracking in the plastic phase: to combat microcracking in the plastic phase, MasterEmaco N 405 FC is enriched with polyacrylonitrile PAN fibers;
- resistance to aggressive environmental agents: MasterEmaco N 405 FC, thanks to the very particular chemistry and nature of its components, is impermeable to water, aggressive environmental agents such as chlorides and sulphates, resists freeze / thaw cycles (thermal compatibility) and it is not subject to carbonation phenomena.

## CONSUMPTION

The coverage is about 1.55 kg/m<sup>2</sup> with a coat that is 1 mm thick.

## PACKAGING

MasterEmaco N 405 FC is available in 25 kg bags.

## STORAGE

Store the product in a dry and sheltered place at a temperature anywhere between 5 and +35°C.

# MasterEmaco N 405 FC

Single-component skim coat, modified polymer with fine grain size. High durability and high resistance to cracking for smoothing of reinforced concrete structures. from 1 to 3 mm.

Technical Information			
1504-3 class		R2	
Typology		CC	
Chloride content EN 1015-17		<0.05%	
Colour of mix		Grey	
Mixing ratio		4.3-4.8 l for bag (17-19%)	
Consistency of mix		Tixotropic	
Temperature of application		From 5°C to 35°C	
Packaging		25 kg bag.	
Consumption		1.55 kg/m <sup>2</sup> for 1 mm	
Workability time (at 20°C)		60 minutes	
Minimum thickness		1 mm	
Maximum thickness in single layer		3 mm	
Essential characteristic in accordance to 1504-3 with a dosage of water of 19%		Limits and class	Performances
Adhesion to concrete	UNI EN 1542 on MC 0.40 substrate (with w/c ratio = 0.40) according to UNI EN 1766	≥ 1,5 MPa	≥ 2,5 MPa
Resistance to freezing-thawing cycles with deicing salts measured as adhesion	UNI EN 1542 after cycles UNI EN 13687/1 on MC 0.40 substrate	≥ 1,5 MPa	≥ 2,5 MPa
Resistance to accelerated carbonation	UNI EN 13295	Carbonation depth ≤ that of reference concrete MC 0.45 (with w/c ratio = 0.45) according to UNI EN 1766	Specification obsolete
Water impermeability measured as capillary absorption coefficient	UNI EN 13057	≤ 0,5 kg·m <sup>-2</sup> ·h <sup>-0,5</sup>	≤ 0,5 kg·m <sup>-2</sup> ·h <sup>-0,5</sup>
Elastic modulus	UNI EN 13412		14.000 (± 2.000) MPa
Compression strength	UNI EN 12190	a 28 gg ≥ 15 MPa	1 gg > 12 MPa 7 gg > 24 MPa 28 gg > 35 MPa
Tensile strength in bending	UNI EN 196-1	-	1 gg > 4 MPa 7 gg > 5 MPa 28 gg > 7 MPa

## APPLICATION SHEET

### PREPARING THE SUBSTRATE

Preparation by sandblasting or hydro-sandblasting of all surfaces to be smoothed to remove incoherent or contaminated surface parts and to ensure a minimum of roughness.

### CLEANING THE ARMOR BARS

In the presence of corroded reinforcing bars, after having completely freed and cleaned them by metal brushing or

sandblasting to eliminate the rust, the Designer / Works Manager, at his discretion, can decide whether to apply the MasterEmaco P 5000 AP protective iron before proceed with the reconstruction of the section with MasterEmaco S 1120 TIX mortar. In fact, this treatment is not strictly necessary using the MasterEmaco S 1120 TIX mortar since, thanks to the innovative formulation, it guarantees complete protection of the rods (Steel Protection: dk = 0) as long as the minimum covering thickness of the rod is at least 10 mm.

# MasterEmaco N 405 FC

Single-component skim coat, modified polymer with fine grain size. High durability and high resistance to cracking for smoothing of reinforced concrete structures. from 1 to 3 mm.

## CLEANING AND SATURATION OF CONCRETE

The cleaning and saturation of the supporting concrete must be carried out with pressurized water (80 ÷ 100 atm and hot water in the winter). This operation is essential to prevent the concrete support from removing water from the mix. Inaccurate saturation results in loss of adhesion and cracking of the applied material. The use of pressurized water also guarantees an effective cleaning of the surfaces to remove dust and small incoherent parts, which may be present after the concrete has been scarified. Cleaning and saturation of the surfaces are essential to obtain high adhesion values between the substrate and the applied material.

## APPLICATION TEMPERATURE

MasterEmaco N 405 FC can be applied when the ambient temperature is between + 5 ° C and + 40 ° C. When the temperature is 5 ÷ 10 ° C, the development of mechanical resistance is slower; however, it is advisable to keep the bags of MasterEmaco in a heated environment and to apply the mortar in the middle of the morning. It is recommended not to apply at temperatures below + 5 ° C, as indeed should be the case for any cement conglomerate when no special precautions are taken.

When the temperature is 30 ÷ 40 ° C it is recommended to keep the bags of MasterEmaco in a cool place, to use low temperature mixing water, to apply the mortar in the cooler hours.

## PREPARING THE MIXTURE

The mixing should preferably be carried out using a cement mixer; if a drill with whisk is used, it is necessary to mix at low speed, so as not to favor the incorporation of air into the mortar. Mixing must continue until a plastic, homogeneous and lump-free mixture is obtained. Hand mixing is not recommended.

Each 25 kg bag of MasterEmaco N 405 FC must be mixed with 4.3 ÷ 4.8 liters (17-19%) of water.

## APPLICATION

MasterEmaco N 405 FC must be applied on perfectly sandblasted, clean and water saturated surfaces. At the time of application, the surfaces must be free of water veil.

MasterEmaco N 405 FC must be applied in thicknesses from 1 to 3 mm manually with an American trowel or a stainless steel trowel (small surfaces) or by spraying machines (large surfaces) with screw or piston (not continuous cycle).

During the spray interruption phases (also depending on the external temperature) it is necessary to provide for the thorough cleaning of the pipes and the pump itself using pressurized water and a soft rubber ball to clean the pipes.

## FLOATING

Proper floating is essential to effectively counter the formation of micro-cracks resulting from plastic shrinkage. Floating must be applied with a sponge float after sufficient time has elapsed following the application, depending on the weather.

The time interval between the application and the float finish depends on the first hardening phase of the mortar, which is determined by placing your hand on the surface and your fingers do not sink but leave a light mark on the mortar.

## PROTECTION

To lengthen the useful life of the structure, enhancing durability even in areas which require no maintenance, it is always recommended to apply a protective system of the MasterProtect line on the entire structure. This acts as a barrier to the entrance of aggressive environmental agents, also improving the aesthetic appearance of the structure.

## SAFETY INSTRUCTION

For information on the correct and safe use, transport, storage and disposal of the product, consult the most recent Safety Data Sheet.

## OTHER SERVICES

For price analysis, specifications, supplementary brochures, references, reports and technical assistance, visit the website [www.master-builders-solutions.com/it-it](http://www.master-builders-solutions.com/it-it) or contact [infomac@mbcc-group.com](mailto:infomac@mbcc-group.com).

Scan the QR code to visit the product page and download the latest version of this datasheet.

## MasterEmaco N 405 FC

---

Single-component skim coat, modified polymer with fine grain size. High durability and high resistance to cracking for smoothing of reinforced concrete structures. from 1 to 3 mm.



---

Since 16/12/1992, Master Builders Solutions Italia Spa has been operating under a Certified Quality System compliant with the UNI EN ISO 9001 Standard. Furthermore, the Environmental Management System is certified according to the UNI EN ISO 14001 Standard and the Safety Management System is certified according to the UNI ISO 45001 Standard.

**Master Builders Solutions Italia Spa**

Via Vicinale delle Corti, 21 – 31100 Treviso – Italia  
T +39 0422 429200 F +39 0422 421802  
[www.master-builders-solutions.com/it-it](http://www.master-builders-solutions.com/it-it)  
e-mail: [infomac@mbcc-group.com](mailto:infomac@mbcc-group.com)

For further information, please consult the local Technician of Master Builders Solutions. The technical advice on how to use our products, either written or verbally given, are based on the current state of our scientific and practical expertise, and does not imply the assumption of any guarantee and/or responsibility for the final results of works executed using our products.

Therefore, the customer is not exempted from the exclusive task and responsibility of verifying the suitability of our products for the intended use and purposes.

This version supersedes all the previous ones.