

PRODUCT DATA SHEET

SikaEmaco® N 5100 FC

(formerly MEmaco N 5100FC)

Fast setting, polymer modified, fibre reinforced fairing coat mortar

DESCRIPTION

SikaEmaco® N 5100 FC is a single component, polymer modified, fast setting fairing coat mortar for finishing repair works. It meets the requirements of class R2 according to EN 1504-3.

SikaEmaco® N 5100 FC is a ready-to-use material that contains special cements, well graded sands, carefully selected polymers and fibres (polyacrylonitril) to reduce shrinkage and improve physical and application properties.

When mixed with water, it forms a mortar with a very fine creamy consistency. SikaEmaco® N 5100 FC can easily be hand or trowel applied or sprayed from 0.5 mm (blowhole filling) up to 7 mm thickness. Small patch repair areas can be reprofiled up to 10 mm thickness.

USES

SikaEmaco® N 5100 FC 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.

SikaEmaco® N 5100 FC can be used as blow hole filler in the precast industry or anywhere where minor defects in concrete structures have to be repaired. It can be applied inside and outside, on vertical and overhead surfaces, in dry and wet environments:

- Balconies edges
- Building facades
- Parapet walls
- Precast panels
- Beam edges

FEATURES

- Formulated with nanotechnology to minimise shrinkage and crack tendency.
- Superb application properties and feel on the trowel.
- Easy and efficient spray-application possible for large applications
- Smooth, creamy but non-slump mortar.
- Excellent smoothing properties.
- Can be used down to featheredge and for filling blowholes in concrete.
- Fast setting: can be over-coated in only 4 hours (at +20 °C)
- Good strength development exceeding requirement of class R2 of EN 1504 part 3.
- Uniform concrete grey coloured mortar.
- Low modulus of elasticity.
- It is basically self-curing

TECHNICAL INFORMATION

Compressive strength	<u>1 day</u>	<u>≥ 15 N/mm²</u>	(EN 12190)
	<u>7 days</u>	<u>≥ 20 N/mm²</u>	
	<u>28 days</u>	<u>≥ 25 N/mm²</u>	
Modulus of elasticity in compression	approx. 11,000 N/mm ²		(EN 13412)
Pull-out resistance	<u>Concrete</u>	<u>28 days</u>	<u>≥ 2.5 N/mm²</u>
	<u>Concrete after Freeze-Thaw (50 cycles with salt)</u>	<u>28 days</u>	<u>≥ 2.5 N/mm²</u>
	<u>Concrete after Thunder-Shower (50 cycles)</u>	<u>28 days</u>	<u>≥ 2.5 N/mm²</u>
	<u>Concrete after Dry Cycling (50 cycles)</u>	<u>28 days</u>	<u>≥ 2.5 N/mm²</u>
	(EN 1542) (EN 13687-1) (EN 13687-2) (EN 13687-4)		
Shrinkage	<u>Cracking Tendency in DIN type V-channel</u>	<u>no cracking up to 150 days</u>	
Capillary absorption	<u>28 days</u>	<u>≤ 0.5 kg·m⁻²·h^{-0.5}</u>	
	(EN 13057)		
Ring test	<u>Coutinho Ring</u>	<u>no cracking up to 150 days</u>	

PRODUCT INFORMATION

Packaging	SikaEmaco® N 5100 FC is available in 20 kg paper bags.		
Shelf life	12 months if stored at below mentioned storage conditions.		
Storage conditions	Store at ambient temperatures, out of direct sunlight, in cool, dry warehouse conditions and clear of the ground on pallets protected from rainfall prior to application. No permanent storage over +30 °C.		
Appearance and colour	concrete grey powder (standard product) light grey powder (available on request)		
Maximum grain size	0.3 mm		
Total chloride ion content	≤ 0.02 %	(EN 1015-17)	

APPLICATION INFORMATION

Fresh mortar density	approx. 1.8 g/cm ³		
Consumption	Approx. 1,500 kg powder is needed to prepare 1 m ³ of fresh mortar. A 20 kg bag will yield approximately 13.6 litres of mortar, when mixed with 3.8 litres water/bag.		
Layer thickness	0.5 mm (for featheredge / blowhole filling) to 7 mm as levelling mortar respectively 10 mm for small patch repairs.		
Material temperature	+5 to +30 °C		
Ambient air temperature	+5 to +30 °C		
Mixing ratio	3.8 – 4.5 l Mixing Water for 20 kg		
Substrate temperature	+5 to +30 °C		
Pot Life	30 - 45 minutes*		
Initial set time	45 - 75 minutes*		

Final set time	60 -120 minutes* *at 21±2°C and 60±10% relative humidity. Higher temperatures will reduce these times and lower temperature will extend them.
Waiting time to overcoating	Can be over-coated with vapour-open Sikagard protective coatings after approximately 4 hours (at +20 °C).

BASIS OF PRODUCT DATA

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

IMPORTANT CONSIDERATIONS

- Do not apply SikaEmaco® N 5100 FC at temperatures below +5 °C nor above +30 °C.
- Do not add cement, sand or other substances that could affect the properties of SikaEmaco® N 5100 FC.
- Never add water or fresh mortar to a mortar mix which has already begun to set.
- Keep the mixing water ratio between the recommended limits.
- Protect the freshly applied material against rainfall for minimum 24 hours.
- In case of high temperatures, windy conditions and direct sunlight protect mortar against too rapid dehydration (e.g. by repeated sprinkling with water or covering with PE foil).

ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY

Hardness and durability of concrete are increasingly important parameters for the preparation of the support. This is particularly valid for repair and/or protection of concrete formulated according to the most recent concrete technology. It is therefore recommended to determine a diagnosis in advance, in order to adapt choices and the way how to prepare the support to these parameters. Consult your local Sika representative for additional information.

SUBSTRATE PREPARATION

Concrete must be fully cured, clean and sound to ensure good adhesion. All loose traces of concrete or mortar, dust, grease oil, etc. must be removed. Damaged or contaminated concrete should be removed to obtain a keyed surface. Non-impact/vibrating cleaning methods, e.g. shot blasting, sandblasting or high-pressure water jetting are recommended.

Aggregate should be clearly visible on the surface of the concrete structure after surface preparation. The prepared substrate should be pre-soaked, preferably for 24 hours, but at least 2 hours before applying SikaEmaco® N 5100 FC. The surface must be mat-damp, but without standing water.

MIXING

Open the bags a short time before the mixing is started. Damaged or opened sacks should not be used. Pour the minimum amount of mixing water into a clean vessel.

Mixing water needed: 3.8 to 4.5 litres per 20 kg bag depending upon consistency required. Only use clean, uncontaminated water.

Add the SikaEmaco® N 5100 FC powder rapidly and continuously and mix with a suitable paddle attached to a powerful, slow speed electric drill (max. 400 rpm) for 3 minutes until plastic consistency is achieved without any lump in the mortar. Allow the mortar to rest for 2 - 3 minutes and then remix briefly, adjusting the consistency when required.

Note: Do not retemper the mortar by adding extra water. Add water if necessary but never exceed the maximum water demand!

APPLICATION

The minimum temperatures must be maintained during application and for at least 8 hours thereafter for optimum curing of the product.

The surface must be mat-damp, but without standing water.

Hand application:

When used as levelling coat apply a thin scrape coat or contact layer of mixed SikaEmaco® N 5100 FC directly to the prepared damp substrate before building up to the required thickness.

When the product is to be used to fill blowholes only, rub the material directly into the pores using e.g. a jute cloth or scrape it in with a trowel. Remove all excess material as soon as possible.

Spray application:

First spray-apply a thin contact layer, then apply SikaEmaco® N 5100 FC until the required layer thickness is obtained. Spraying with the necessary pressure will improve the adhesion of SikaEmaco® N 5100 FC. Note: When over-coating structural elements (like bridges...) always apply SikaEmaco® N 5100 FCC at a minimum thickness of 5 mm.

Finishing:

Smoothing with a trowel or finishing by float or sponge can be done as soon as the mortar has begun to stiffen, typically after approximately 20 to 60 minutes (depending on layer thickness) at 20°C. In these environmental conditions, SikaEmaco® N 5100 FC can be over-coated with vapour-open Sik-agard protective coatings after approximately 4 hours. Consult your local Sika representative for further information.

Note: At lower temperatures and/or higher humidity these times will be extended.

CURING TREATMENT

In case of high temperatures, windy conditions and direct sunlight protect mortar against too rapid dehydration (e.g. by repeated sprinkling with water or covering with PE foil).

CLEANING OF EQUIPMENT

Tools and mixer must be cleaned immediately after use with water. Cured material can only be removed mechanically.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the declared data for this product may vary from country to country. Please consult the local Product Data Sheet for the exact product data.

LEGAL NOTES

Any information or suggestions for use concerning Sika's products, which we either in writing or orally have given buyers or end-users of the product, have been given in good faith based on our own experiences and based on approved praxis and the technological and scientific knowledge on the time of giving such suggestions and information, which are given without any type of guarantees, and which do not lead to any further responsibility from Sika Danmark A/S, besides what is stated in the sales agreement in question. The buyer or end-user should themselves investigate or otherwise make sure, that our products are suitable for the use in question and further make sure that the products are kept and used correct and in agreement with the published rules and considering the actual conditions in order to avoid damages or less satisfactory results. Any order is accepted and any deliverance is affected according to the general terms of sales and delivery from Sika Danmark A/S, which are considered known and accepted, and which could be handed out when asked for. Our catalogues are not up-dated automatically. The present product data sheet is only for use in Denmark. Values stated in the present product data sheet should be seen as recommended, unless stated otherwise.

Sika Danmark A/S

Hirsemarken 5
3520 Farum
Tlf. +45 48 18 85 85
www.sika.dk



PRODUCT DATA SHEET

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