

## PRODUCT DATA SHEET

# SikaEmaco® S 422

(formerly MasterEmaco® S 422)

Single Component, High Strength, Fibre Reinforced, Structural Repair Mortar

### DESCRIPTION

SikaEmaco® S 422 is a single component, cementitious, synthetic fibre reinforced, structural repair mortar that contains Portland Cement, well graded sands, specially selected fibres and additives to improve the fresh and hardened properties. Suitable for use in hot and tropical climatic conditions.

### USES

SikaEmaco® S 422 is used for structural repair work and suitable for:

- Restoration works, repair of spalling and damaged concrete in buildings, bridges, infrastructure and superstructure works.
- Structural strengthening by increasing the bearing capacity of the concrete structure by adding mortar (section enlargement).
- Preserving or restoring passivity by increasing cover with additional mortar and replacing contaminated or carbonated concrete.

### FEATURES

SikaEmaco® S 422 provides the following beneficial properties:

- Structural repair
- Rapid strength gain and high final strength
- Good water and oil resistance
- Low shrinkage behaviour
- High abrasion resistance
- Good adhesion
- Easy to apply
- Reduced cracking tendency
- Low permeability

### PRODUCT INFORMATION

<b>Composition</b>	Polymer containing cementitious mortar with different additives and synthetic fibres
<b>Packaging</b>	25 kg bags
<b>Shelf life</b>	12 months from date of production
<b>Storage conditions</b>	Store in a cool, dry area in original sealed packaging and at temperatures between +5 °C and +35 °C. Protect from direct sunlight, heat and moisture.
<b>Appearance and colour</b>	Grey powder

## TECHNICAL INFORMATION

Compressive strength	<u>w/p = 0.13</u>	<u>28 day</u>	(BS 1881, Part 116)
		<u>≥ 65N/mm<sup>2</sup></u>	
Tensile adhesion strength	≥ 1.5 N/mm <sup>2</sup> (or concrete failure)		(EN 1542)

## APPLICATION INFORMATION

Fresh mortar density	~ 2.21 kg/l (+25 °C)
Layer thickness	Min. 10 mm Max. 40 mm
Ambient air temperature	+5 °C min. / +40 °C max.
Mixing ratio	3.2 - 3.5 L of water per 25 kg bag
Substrate temperature	+5 °C min. / +40 °C max.

## BASIS OF PRODUCT DATA

- All technical data stated in this Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.
- Internal reference - Version: MBS\_CC-UAE/Em\_S422\_10\_06/v3/10\_15/v4/09\_19/v5/09\_21

## FURTHER INFORMATION

Method Statement

## IMPORTANT CONSIDERATIONS

- Repair sections higher than 40 mm should be applied in layers.
- When the ambient temperature is high during summer months, special precautions must be taken so that the mixed material is not above 32 °C. Please consult Sika Technical Department.
- Avoid application in direct sun and/or strong wind.
- Do not add additional water during the surface finishing as this will cause discolouration and cracking.
- Do not over work the finished surface as this will produce a cement rich surface texture, which may cause the formation of random (crazing) cracking in the surface. Over work of the finished surface could also disturb the mortar bond on the concrete substrate.
- Spray application may change the physical properties of the cured material

## ECOLOGY, HEALTH AND SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

## APPLICATION INSTRUCTIONS

### SUBSTRATE QUALITY / PRE-TREATMENT

Substrates must be properly cured, structurally sound, free of any loose or friable particles, clean, dry and free of any contaminants such as dust, dirt, oil, grease, cement laitance or efflorescence.

- Depending on the substrate condition and contaminants to be removed from the surface, perform adequate preparation techniques, such as water-jet washing or blast cleaning, in order to remove all traces of any materials that could reduce the product's adhesion to the substrate.
- For applications in hot climates / environments and / or on absorbent substrates, thoroughly pre-dampen the surface immediately prior to the product application, but avoid any ponding / standing water on the surface, which must not be damp to touch and not with a dark-matt / wet surface appearance i.e. it must be saturated surface dry (SSD).
- Steel surfaces shall be prepared using abrasive blast cleaning techniques or high pressure water-blasting to SA 2 (ISO 8501-1)
- Reference shall be made to EN 1504-10 for specific requirements.

### BONDING AGENT AND STEEL PROTECTION

- Embedded steel reinforcing should be free from scale, rust, oil and grease, and treated with a suitable anticorrosion coating such as SikaTop® Armatec®-110 EpoCem® or SikaEmaco®-8100 AP.
- The application of a suitable bonding agent, such as Sikadur®-32 LP, Sikadur® ADH 1414 or SikaTop® Armatec®-110 EpoCem®, will improve adhesion on large areas or where particularly dense concrete substrates are involved.

## MIXING

Mix the full bag of SikaEmaco® S 422 with the necessary amount of cold water in a clean bucket. Add the SikaEmaco® S 422 powder slowly to the water while mixing continuously for at least 3 to 5 minutes and until a homogeneous consistency is achieved.

SikaEmaco® S 422 is best mixed in a forced action mixer. Slow speed double paddle drill can be also used for mixing. Do not mix at faster rate than 500 rpm. The obtained mix results should be very creamy, easily spreadable and thixotropic.

## APPLICATION

Apply SikaEmaco® S 422 while the bonding agent is still wet. The mortar can be applied by spatula or trowel.

For any thickness more than 40 mm, SikaEmaco® S 422 must be applied in several layers. As soon as the mortar has started to set it can be smoothed by wooden or synthetic float. For fine surface finish SikaEmaco® N 907 or SikaRep® Fine N can be applied over the SikaEmaco® S 422.

## CURING TREATMENT

Where ambient conditions may lead to rapid surface drying, the use of light water fogging, damp hessian and polythene sheet or application of a suitable water based curing compound like Sika® Antisol range is recommended. Do not commence fogging until final set has been reached.

## CLEANING OF EQUIPMENT

Clean all tools and equipment with water immediately after use. Hardened SikaEmaco® S 422 can only be removed mechanically.

## LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for exact product data and uses.

## LEGAL NOTES

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

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ISO 9001, 14001 – SGS  
-Sika Saudi Arabia Limited  
ISO 9001, 14001 – TÜV  
-Sika MB Construction Chemicals LLC  
-Master Builders Solutions LLC

All products are supplied under a management system certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001, ISO 14001 and ISO 45001.



### Product Data Sheet

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