

PRODUCT DATA SHEET

SikaEmaco® S 5400 ID

(formerly MEmaco S 5400)

EXTRA HIGH-STRENGTH, SHRINKAGE COMPENSATED, FIBRE REINFORCED, THIXOTROPIC STRUCTURAL REPAIR MORTAR

DESCRIPTION

SikaEmaco® S 5400 ID is a single component, extra high strength, shrinkage compensated structural repair mortar. SikaEmaco® S 5400 ID is a ready to use material that contains micro silica, micro synthetic fibre, hydraulic binders, well graded sands, and special additives to significantly reduce the risk and incidence of shrinkage cracking.

When mixed with water, SikaEmaco® S 5400 ID forms a highly thixotropic mortar that can easily be spray or trowel applied.

USES

SikaEmaco® S 5400 ID is used for the structural repair of concrete elements such as:

- Columns, piers and cross beams of all bridges
- Cooling towers and chimneys and other industrial environments
- Water treatment and sewerage facilities
- Tunnels, pipes, outfalls and all below ground construction especially in harsh ground conditions
- Marine structures

PRODUCT INFORMATION

Packaging	25 kg bags
Appearance and colour	Grey powder
Shelf life	6 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.
Density	Approx. 2.1 kg/L
Maximum grain size	1.4 mm

TECHNICAL INFORMATION

Compressive strength	1 day	~ 20 N/mm ²	(ASTM C-109)
	7 days	~ 40 N/mm ²	
	28 days	~ 60 N/mm ²	
Tensile adhesion strength	1.5 N/mm ² (substrate failure)		
Service temperature	+10 to +40 °C		

APPLICATION INFORMATION

Mixing ratio	Approx. 3.8 – 4.2 L mixing water for 25 kg
Consumption	~1,850 kg/m ³ of mortar
Yield	~13.80 L with 4L water per 25 kg bag
Layer thickness	5 to 50 mm
Ambient air temperature	+10°C to +35 °C
Substrate temperature	+10°C to +35 °C
Pot Life	45 – 60 Minutes (at 21±2 °C and 60±10 % relative humidity). Higher temperatures will reduce these times and lower temperatures will extend them.

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.

IMPORTANT CONSIDERATIONS

- Do not apply SikaEmaco® S 5400 ID at temperatures below 5°C nor above 35°C.
- Product can be used as usual when material temperature in range 30-35°C, however potlife might be affected. Please conduct site trial to ensure product potlife still meet project requirements.
- Do not add cement, sand or other substances that could affect the properties of SikaEmaco® S 5400 ID.
- 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.

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

Hardness and durability of concrete are increasingly important parameters for the preparation of the sup-

port. 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. Concrete must have a minimum direct tensile strength of 1.5 N/mm². 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. Cut the edges of the repair vertically to a minimum depth of 5 mm.

If reinforcing steel is visible, clean to a minimum grade of Sa 2 according to ISO 8501-1 / ISO 12944-4. Ensure back of rebar is also clean. Only in case of chloride contamination of the concrete or when depth of cover is less than 10 mm, should the reinforcement be protected by using SikaTop®-Armatec®-110 EpoCem®. For hand applications we advise to apply a brushable bonding layer of SikaEmaco® S 5400 ID. For spray applications it is not necessary to apply a bonding layer.

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. Only use clean uncontaminated water. Mixing water needed: 3.8 to 4.2 litres per 25 kg bag depending upon consistency required. Add the SikaEmaco® S 5400 ID 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: Add water if necessary but never exceed the maximum water demand!

APPLICATION

The prepared substrate should be pre-soaked, preferably for 24 hours, but at least 2 hours before applying SikaEmaco® S 5400 ID. The surface must be mat damp, but without standing water. For optimum curing of the product the temperatures during application of SikaEmaco® S 5400 ID are between +5°C and +30°C. In case of hand application, apply a thin scrape coat or contact layer. Then apply the mixed SikaEmaco® S 5400 ID directly wet-on-wet onto the primed surface in the desired thickness between 5 and 50 mm using a screeding beam, trowel or wooden board. In case of application by spray machine, first spray apply a thin contact layer, then apply multiple layers of SikaEmaco® S 5400 ID I until the required layer thickness is obtained. Spraying with the necessary pressure will improve the adhesion of SikaEmaco® S 5400 ID. The surface can be finished with a sponge, wooden float or plastic float) when the mortar has initially set (approx. 45 - 60 minutes after the application at +20°C). At lower temperatures and/or higher humidity these times will be extended.

CURING TREATMENT

Immediately after SikaEmaco® S 5400 ID is placed, cover all exposed mortar with clean wet hessian and keep moist by covering with polythene between 1 to 7 days depending on the weather conditions. To maintain effective curing the use of an approved Sika curing compound is recommended.

CLEANING OF EQUIPMENT

Tools and mixer must be cleaned immediately after use with water. Cured material 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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