

PRODUCT DATA SHEET

SikaEmaco® S 5410 CI

(formerly MEmaco S 5410CI)

High-strength, rapid setting, shrinkage compensated, fiber reinforced, structural repair mortar with active corrosion inhibitor

DESCRIPTION

SikaEmaco® S 5410 CI is a single component, extra high-strength, high modulus, shrinkage compensated structural repair mortar that meets the requirements of the new European Norm EN 1504 – 3 class R4. SikaEmaco® S 5410 CI contains Portland cement, graded sands, selected polymer fibres and special additives to significantly reduce the risk and incidence of shrinkage cracking. When mixed with water, it forms a highly thixotropic mortar that can easily be spray or trowel applied.

USES

SikaEmaco® S 5410 CI 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.
- Tunnels, pipes, outfalls and all below ground construction especially in harsh ground conditions.

PRODUCT INFORMATION

Packaging	20kg bag
Shelf Life	12 months from date of production
Storage Conditions	Store in undamaged, unopened, original sealed packaging in dry conditions, at temperatures between +5°C and +35°C. Protect from direct sunlight, heat and moisture.
Appearance / Colour	Grey Powder

CHARACTERISTICS / ADVANTAGES

Versatile – Can be applied in extreme environments where active corrosion inhibition is required.

- Shrinkage compensation systems and fibre reinforcement – Minimize crack tendency.
- Highly thixotropic – Can be applied up to 50 mm without the need of secondary reinforcement.
- High early and ultimate strengths – Matches high strength concrete found in structures.
- Outstanding workability – Easy placing and finishing for applicators.
- High modulus and excellent adhesion – Ensuring load transfer in structural repair.
- No primer required – Allows rapid application at reduced cost.
- Very low permeability to water and chlorides - Protection of reinforcing steel.

TECHNICAL INFORMATION

Compressive Strength	3 hours	24 hours	7 days	28 days	(EN1260)
	≥ 15 Mpa	≥ 30 Mpa	≥ 40 Mpa	≥ 60 Mpa	
Modulus of Elasticity in Compression	≥ 20 GPa				
Tensile Adhesion Strength	Adhesion ≥ 2 Mpa (28 days)				(1504-3)
	Adhesion after freeze /thaw ≥ 2 Mpa (28 days)				
	Adhesion after dry cycling ≥ 2 Mpa (28 days)				
Capillary Absorption	≥ 0.5 kg/m ² h ^{0.5}				(EN13057)
Chloride Ion Diffusion Resistance	~ 300 coulombs (very low)				(ASTM C 1202:2012)

APPLICATION INFORMATION

Fresh mortar density	~ 2.2 kg/l				
Consumption	This depends on the substrate roughness and thickness of layer applied. As a guide, ~ 2 kg/mm/m ² of powder				
Yield	20 kg of powder yields ~10.0 L of mortar				
Layer Thickness	Horizontal	10 - 50mm /layer			
	Vertical / Overhead	Not more than 30mm /layer			
Ambient Air Temperature	+5 °C min. / +35 °C max.				
Mixing Ratio	2,4 to 2,8 L of water for 20 kg bag				
Substrate Temperature	+5 °C min. / +30 °C max.				

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.

USES

- Avoid application in direct sun and/or strong winds.
- Do not add water over recommended dosage.
- Apply only to stable, prepared substrates.
- Do not add additional water during the surface finishing as this can cause discolouration and cracking.
- Protect freshly applied material from freezing.
- Do not feather edge

ECOLOGY HEALTH AND SAFETY

SUBSTRATE QUALITY / PRE-TREATMENT

Concrete

- The substrate must be thoroughly clean, free from dust, loose material, surface contamination and material which reduce adhesion or prevent suction or wetting by repair materials.
- Remove de-laminated, weak, damaged and deteriorated concrete and where necessary, sound concrete. Remove using mechanical hand-held tools or high / ultra-high-pressure water blasting equipment
- Make sure sufficient concrete is removed from around corroded reinforcement to allow cleaning,

corrosion protection coating (where required) and compaction of the concrete repair mortar.

- Repair surface areas must be prepared to provide simple square or rectangular layouts to avoid shrinkage stress concentrations and cracking while the repair material cures. This can also avoid structural stress concentrations from thermal movement and loading during the service life.

Steel reinforcement

- Remove rust, scale, mortar, concrete, dust and other loose and deleterious material which reduces bond or contributes to corrosion. Prepare surfaces to bright steel using abrasive blast cleaning or high-pressure water blasting equipment.

MIXING

Only full bags are mixed. Damaged or opened bags should not be used. Mix SikaEmaco® S 5410 CI in a forced action pan mixer, or with a helical paddle attached to a low speed (300-600rpm) mixer for 3 minutes until a lump free, plastic consistency is achieved. Only use clean water.

APPLICATION

The minimum temperatures must be maintained during application and for at least 24 hours thereafter for optimum curing of the product. The prepared substrate should be pre-soaked, preferably for 24 hours, but at least 2 hours before applying SikaEmaco® S 5410 CI. The surface must be saturated surface dry,

but without standing water. SikaEmaco® S 5410 CI can be spray or hand applied. Apply mixed product directly to the prepared damp substrate. Spraying the material with the necessary pressure will ensure good adhesion of the material. A thin scraper coat or contact layer before building up to the required thickness, wet on wet, will improve adhesion especially in case of hand application. Apply to the desired layer thickness of 10 to max 50 mm and level using a screeding bar, trowel or wooden board. Can be applied in thicker layers in smaller patches or where additional reinforcement is present. Smoothing with a trowel or finishing by float or sponge can be done as soon as the mortar has begun to stiffen.

CURING TREATMENT

- Protect fresh mortar immediately from premature drying using an appropriate curing method, e.g. curing compound, moist geotextile membrane, polythene sheet, etc.
- Curing compounds must not be used when they could adversely affect subsequently applied products and systems.

CLEANING OF TOOLS

Clean all tools and application equipment with water immediately after use. Hardened material can only be mechanically removed.

LOCAL RESTRICTIONS

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

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.

Sika South Africa (Pty) Ltd

9 Hocking Place,
Westmead, 3608
South Africa
Phone +27 31 792 6500
www.sika.co.za



Product Data Sheet
SikaEmaco® S 5410 CI
September 2024, Version 02.01
02030200000002120

SikaEmacoS5410CI-en-ZA-(09-2024)-2-1.pdf

