

PRODUCT DATA SHEET

SikaEmaco[®] S 420

(formerly MEmaco S 420)

Rapid Setting, High Strength Structural Repair Mortar, Regulation 31 Approved for use in Contact with Potable Water

PRODUCT DESCRIPTION

SikaEmaco[®] S 420 is a rapid setting polymer modified repair mortar for application where high compressive strengths are required. The material cures to a concrete grey colour.

USES

SikaEmaco[®] S 420 is suitable for structural repairs of reinforced and non-reinforced concrete. The material is ideal for repairing damage caused by:

- Corrosion of reinforcement bars.
- Alkali aggregate reaction.
- Impact damage.

When used with SikaLatex[®] 600, the Product is approved for use in contact with potable water.

CHARACTERISTICS / ADVANTAGES

- Separate primers and bonding coats are not required, allowing for complete repair in a single operation with substantial time savings.
- Easy to mix and use.
- Rapid-setting qualities provide high production rates saving access and labour costs.
- High performance for extreme durability and protection of embedded reinforcement.
- Regulation 31 approved for contact with potable water after just three days curing.
- Can be applied at thicknesses 10 to 50mm per layer.

APPROVALS / STANDARDS

Approved for use in contact with potable water under:

- Regulation 31(4) (a) of the water supply (water quality) regulation 2016 for England and 2018 for Wales.
- Approved by Energy and Climate Change Directorate Drinking Water Quality Division, under Water Supply (Water Quality) (Scotland) Regulations 2014,33(3) (a).
- Approved by the Department of Agriculture, Environment and Rural Affairs under Regulation 30 of the Water Supply (Water Quality) Regulations (Northern Ireland) 2017.

IMPORTANT NOTE:

- Specific instructions for use (IFU) for potable water applications must be followed and are available upon request.
- For all other applications follow the guidance within this Product Data Sheet.

PRODUCT INFORMATION

Packaging	SikaEmaco® S 420 is available in 25kg bags. SikaLatex® 600 is available in 20 litre plastic containers.	
Shelf Life		
Storage Conditions	All materials should be stored under cover in a cool, dry environment, sealed in their original packaging, clear of the ground and stacked not more than 6 bags high. Protect the materials from all sources of moisture and frost. Rotate stock in order not to exceed the shelf life of 12 months for SikaEmaco® S 420 and SikaLatex® 600.	
Density	~2180 kg/m ³ (wet density)	
Compressive Strength	Age	Compressive Strength
	4 Hours	~6.3 N/mm ²
	24 Hours	~27.0 N/mm ²
	7 Days	~50.0 N/mm ²
	28 Days	~60.0 N/mm ²
	NOTE: Compressive strengths determined at 20°C.	
Modulus of Elasticity in Compression	~30 kN/mm ²	
Flexural Strength	~8.0 N/mm ² (after 28 days, determined at 20°C)	
Tensile Strength	~4.5 N/mm ² (after 28 days, determined at 20°C)	
Tensile adhesion strength	~1.7 N/mm ² (after 28 days, determined at 20°C)	
Coefficient of Thermal Expansion	6.42 x 10 ⁻⁶ °C ⁻¹ (after 28 days, determined at 20°C)	
Consumption	One 25kg bag yields 12.8 Litres of mortar or 1m ² at 13mm thick. 78 x 25 bags per 1m ³ .	
Pot Life	~10 minutes (at 20°C)	
Initial set time	~10 to 15 minutes (at 20°C)	
Final set time	~16 to 20 minutes (at 20°C)	

VALUE BASE

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.

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 PREPARATION

Remove all damaged concrete back to a sound base. Remove all concrete from around exposed reinforcement to give 15mm clear cover and

50mm at each end. The edges of the repair area must be cut square to give a minimum depth of 10mm. Ultra-high pressure water methods are preferred. If percussion tools are used, ensure that the cutting edges are maintained in a sharp condition.

Remove all loose rust and scale from reinforcement to at least Sa 2.0 by using a needle gun or by abrasive blasting; wire brushing is not recommended.

If chlorides are present, or where it is not possible to apply a minimum of 10mm of SikaEmaco® S 420 over the reinforcement, it is necessary to clean back to bright steel (Sa 2.0 as a minimum) before applying two coats of Sika MonoTop® -1010 bonding primer.

MIXING

LIQUID REQUIREMENT

Dilute SikaLatex® 600 with an equal part of clean potable water; stir gently.

2.5 to 2.8 litres of liquid per 25kg of SikaEmaco® S 420: the recommended level is 2.7 litres.

The quantity will vary slightly depending on ambient conditions. It is the consistency of the mixed material that is important.

BONDING SLURRY

Blend a small amount of SikaEmaco® S 420 powder to part of the mixing liquid, mixing with a trowel until a lump-free slurry consistency is obtained.

APPLICATION

Do not apply to frozen surfaces or if the ambient temperature is below 5°C or expected fall below 5°C within 8 hours.

Apply SikaEmaco® S 420 bonding slurry to a pre-dampened surface using a stiff brush. Brush firmly into the substrate, completely covering the area to be repaired and any reinforcement bars. Do not allow to dry out.

HAND / TROWEL MIXING

Add more SikaEmaco® S 420 powder to the mix until a cohesive mass is formed with sufficient stiffness to be compressed in the hand. Do not over mix.

Larger quantities can be mixed with a small forced-action mixer only.

Do not mix more than can be placed in 5 minutes (at 20°C) or re-temper.

After mixing, trowel apply the thickened SikaEmaco® S 420 mortar into place using firm pressure to fully compact the material, taking particular care around reinforcing bars.

Apply in layers from 10 to 50mm per application allowing approximately 20 minutes (at 20°C) between layers. Scratch previous application to improve bond.

If SikaEmaco® S 420 hardens before completion of repair, re-apply a bonding slurry.

To obtain difficult profiles or sharp arrises simply overfill the repair area, leave until the initial set has taken place and shave to the required shape with a clean trowel.

CURING TREATMENT

Fog-spray all applications with clean water after the initial set has taken place for as long as practicable.

In cool conditions, cover with insulated tarpaulin, polystyrene or other insulating material.

A separate curing compound is not necessary.

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.

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Product Data Sheet

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