

SikaQuick®-506 FG

R3 Quick setting mortar for concrete repair with corrosion inhibitor

Product description	SikaQuick®-506 FG is a cementitious, polymer modified, quick setting concrete repair mortar that meets the requirements of European Standard EN 1504-3 class R3 and has an integrated corrosion inhibitor.
Uses	<p>SikaQuick®-506 FG is used as a mortar for the repair of concrete substrates in refurbishment projects on residential and commercial buildings. It is not designed to be used for the repair civil engineering structures, such as those in transport infrastructure that are subject to freeze / thaw stress for example, without an additional protective coating.</p> <p>SikaQuick®-506 FG is suitable for use in concrete repairs to European Standard EN 1504-9 Principle 3, Method 3.1. For the patch repair of surface damage, including damage caused by spalling over corroding reinforcement on building façades.</p> <p>SikaQuick®-506 FG is suitable for use in concrete repairs to European Standard EN 1504-9 Principle 4, Method 4.4. For the repair and strengthening of the reinforced concrete structure of buildings.</p> <p>SikaQuick®-506 FG can help to increase the durability of concrete structures and elements by adding an additional thickness of mortar.</p>
Characteristics/ Advantages	<ul style="list-style-type: none"> ▪ Fast-setting, with reduced waiting times before over-coating ▪ Hardening within 3 hours, under normal conditions ▪ Generally does not require a bonding primer with recommended substrate preparation ▪ Can be applied in thicknesses of up to 60 mm in a single application ▪ Protection against frost 6 hours after application ▪ Contains corrosion inhibitor
Product Data	
Form	
Appearance/Colours	Grey powder
Packaging	25 kg bag
Storage	
Storage Conditions /Shelf Life	12 months from date of production if stored properly in undamaged, unopened and original sealed packaging, in dry conditions.
Technical Data	
Density	<p>Approx. 1.25 kg/l Mortar bulk density</p> <p>ca. 1.85 kg/l Fresh mortar density (at +20°C)</p> <p>ca. 1.90 kg/l Hardened mortar density after 28 days</p>
Grading	Maximum particle size 1.2 mm
Layer Thickness	<p>Minimum thickness: 6 mm per application layer.</p> <p>Maximum thickness: 60 mm per application layer.</p> <p>For application not bigger than 0.5 m² confined patch repairs of spalled concrete damage up to 60mm thicknesses are possible in a single application.</p>



Mechanical / Physical Properties

Compressive Strength	> 10 N/mm ²	1d / 20°C / EN 196-1
	> 30 N/mm ²	7d / 20°C / EN 196-1
	> 45 N/mm ²	28d / 20°C / EN 196-1
Flexural Strength	> 2 N/mm ²	1d / 20°C / EN 196-1
	> 6 N/mm ²	28d / 20°C / EN 196-1

Requirements The requirements and testing results according to European Standard EN 1504-Part 3, Class R3 (tested using a mix with 3.75 litres of water per 25 kg mortar)

	Test method	Results (ITT)	Requirements (R3)
Compressive strength	EN 12190	49.3 N/mm ² (MPa)	≥ 25 N/mm ²
Chloride ion content	EN 1015-17	< 0.008%	≤ 0.05%
Adhesive bond	EN 1542	1.5 N/mm ² (MPa)	≥ 1.5 N/mm ²
Carbonation resistance	EN 13295	Pass	Lower than control
Elastic modulus	EN 13412	18.6 kN/mm ² (GPa)	≥ 15 GPa
Thermal compatibility Part 4; Dry cycling	EN 13687-4	1.72 N/mm ² (MPa)	≥ 1.5 N/mm ²
Capillary absorption	EN 13057	0.24 kg.m ⁻² .h ^{-0.5}	≤ 0.5 kg x m ⁻² x h ^{-0.5}

System Data

System Structure

System build-ups and intercoat waiting times at +20°C / 75% RH

The Sika 'lightning formulas' for concrete repair & protection		
Concrete repair + protection according to 2+1 = ½ working day	Concrete repair + surface levelling + protection 2+2+1 = ½ working day	Concrete repair + elastic levelling + elastic protection in 1 working day
SikaQuick-506 FG	SikaQuick-506 FG	SikaQuick-506 FG
2-3 hours	2-3 hours	2-3 hours
Sikagard-552 W Aquaprimer	Sika MonoTop-620	Sikagard-552 W Aquaprimer
2-3 hours	2-3 hours	2-3 hours
Sikagard ElastoColor 675 W	Sikagard ElastoColor 675 W	Sikagard 545 W Elastofill
1 hour	1 hour	4 hours
Sikagard ElastoColor 675 W	Sikagard ElastoColor 675 W	Sikagard 550 W Elastic
If these waiting times are respected, the following layers act as "curing agents".		1 hour Sikagard 550 W Elastic

Important Notes:

- Lower temperatures will mean longer waiting times.
- On dense impervious concrete surfaces Sikagard-551 S Primer can be used instead of Sikagard-552 W however, waiting times will be longer. Refer to your local Sika technical department for guidance.

Application Instructions

Consumption Approximately 1.60 kg of mortar powder per m² per mm of ready-mixed mortar. The actual material consumption will depend on the substrate profile, roughness, the method of application and any wastage etc.

Substrate Preparation / priming

Concrete
The concrete shall be free from dust, loose material, surface contamination and materials which reduce bond or prevent suction or wetting by repair materials. When applying in layers, the initial shall not be smooth.

Steel reinforcement
Rust, scale, mortar, concrete, dust and other loose and deleterious material which reduces bond or contributes to corrosion shall be removed. Reference should also be made to EN1504-10 for specific requirements.

Substrate preparation

Concrete

Delaminated, weak, damaged and deteriorated concrete and where necessary sound concrete shall be removed by suitable means. Remove any laitance layer. Protect prepared surfaces from contamination.

Steel reinforcement

Surfaces shall be prepared using abrasive blast cleaning techniques or high pressure water-blasting.

Bonding primer

On a well prepared and roughened substrate a bonding primer is generally not required. When a bonding primer is not required pre-wet the surface. The surface shall not be allowed to dry before application of the concrete repair mortar. The surface shall achieve a dark matt appearance without glistening and surface pores and pits shall not contain water.

When a bonding primer is necessary apply Sika MonoTop®-910 N (refer to the relevant Product Data Sheet) or the same product – SikaQuick®-506 FG mixed with maximum water ratio, pressed well on the substrate. In both cases, subsequent application of the repair mortar shall be done immediately wet on wet. Do **NOT** apply on SikaTop®-Armaterc® 110 EpoCem® as bonding primer.

Limitations Application Conditions /

Application temperature	Minimum: +5°C
	Maximum: +30°C

Application instructions

Mixing Ratio 3.75 – 4.0 litres of water for a 25 kg bag

Mixing Pour the correct quantities of SikaQuick-506 FG and water into a suitable container and mix for minimum 3 minutes using an electric mixer (maximum 500 rpm) until evenly mixed and fully homogeneous.

Application Method / Tools SikaQuick®-506 FG is placed manually by hand, with a trowel or spatula and pressing the mortar onto the prepared substrate. After application, Sika Quick®-506 FG can be finished with a trowel or wooden batten when it has started to stiffen. Protect application from direct sunlight, frost and or wind to prevent the mortar from premature drying.

Cleaning of Tools Clean un-set mortar from tools and mixing equipment with water. Hardened material can only be removed mechanically.

Pot Life 20 minutes at 23°C.

Notes on Application / Limitations

- Refer to the Method Statement for Concrete Repair using Sika MonoTop® system for more information regarding substrate preparation or refer to the recommendations provided in EN 1504-10.
- Avoid application in direct sun and/or strong wind.
- Do not add water over recommended dosage.
- Apply only to sound, prepared substrate.
- Do not add additional water during the surface finishing as this will cause discoloration and cracking.
- Protect freshly applied material from freezing.
- Waiting times will be longer at lower temperatures.
- Due to its fast reactivity, do not apply by mechanical means.
- Do NOT apply on SikaTop®-Armaterc® 110 EpoCem® as bonding primer.
- When using other Sika coating systems not included in this document, refer to your local technical department for guidance

Curing Details

Curing Treatment Normal cement mortar curing techniques are recommended such as covering with damp hessian and plastic sheeting, however curing agents should not be used if additional surface treatments are to be carried out subsequently.

Health and Safety Information

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.


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.

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

CE Labelling

The harmonised European standard EN 1504-3 "Products and systems for the protection and repair of concrete structures – Definitions, requirements, quality control and evaluation of conformity – Part 3 Structural and non-structural repair" specifies the identification, performance (including durability) and safety of products and systems to be used to repair concrete surfaces (either building or civil engineering structures).

Non-structural repair fall under this specification – they need to be CE-labelled as per Annex ZA.2, table ZA.2 conformity 2+ and fulfil the requirements of the given mandate of the EU Construction Products Directive (89/106/CE).

 1139		Notified Body Certification Number
Sika Österreich GmbH Dorfstrasse 23, A-6700 Bludenz 08 1139-CPD-1234/08		
EN 1504-3 Structural concrete repair product PCC mortar (based on polymer hydraulic cement mortar)		Year of CE marking (last 2 digits) Number of the FPC certificate
Compressive strength	Class R3	
Chloride ion content	≤0,05 %	
Adhesive bond	≥1.5 MPa	
Carbonation resistance	Pass	
Thermal Compatibility Part 4: Dry cycling	Class R3	
Elastic Modulus	≥15 GPa	
Capillary Absorption	≤0.5 kg.m ⁻² .h ^{-0.5}	
Reaction to fire	Klass A1	
Dangerous substances comply with 5.4		

Health and Safety Information Legal Notes

See separate Safety Data Sheet.

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 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 proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the Technical Data Sheet for the product concerned, copies of which will be supplied on request. www.sika.se.



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