BUILDING TRUST

PRODUCT DATA SHEET

Sika MonoTop®-412 GH

R4 FIBRE REINFORCED STRUCTURAL REPAIR MORTAR

DESCRIPTION

Sika MonoTop®-412 GH is a 1-component, fibre reinforced, low shrinkage repair mortar meeting the requirement of class-R4 of EN 1504-3.

USES

- Suitable for restoration work (Principle 3, method 3.1 & 3.3 of EN 1504-9). Repair of spalling and damaged concrete in buildings, bridges, infrastructure and superstructure works.
- Suitable for structural strengthening (principle 4, method 4.4 of EN 1504-9). Increasing the bearing capacity of the concrete structure by adding mortar.
- Suitable for preserving or restoring passivity (principle 7, method 7.1 and 7.2 of EN 1504-9). Increasing cover with additional mortar and replacing contaminated or carbonated concrete.
- Tested application under live dynamic loading

FEATURES

- Class R4 of EN 1504-3
- Sulphate resistant
- For hand or machine application
- Easy to apply
- Application up to 50 mm in 1 layer
- Very low shrinkage behaviour
- Does not require a bonding primer even when manually applied
- Low permeability
- A1 fire rating

PRODUCT INFORMATION

Packaging	25 kg bag	
Appearance and colour	Grey powder	
Shelf life	12 months	
Storage conditions	Store properly in undamaged original sealed packaging, in dry cool conditions.	
Density	Fresh mortar density ~ 2.2 kg/l	
Maximum grain size	D_{max} : 2.5 mm	
Soluble chloride ion content	≤ 0.05%	(EN 1015-17)

TECHNICAL INFORMATION

Compressive strength	**1 day**	**7 days**	**28 days**	(EN 12190)
	~ 13 MPa	~ 44 MPa	~ 56 MPa	
Flexural-strength	**1 day**	**7 days**	**28 days**	(EN 12190)
	~ 4 MPa	~ 7 MPa	~ 9 MPa	
Shrinkage	~ 500 µm/m @ 20°C / 65% relative humidity at 28 days			(EN 12617-4)
Restrained shrinkage / expansion	≥ 2.0 MPa			(EN 12617-4)
Tensile adhesion strength	≥ 2.0 MPa			(EN 1542)
Reaction to fire	Euro class A1			(EN 1504-3 cl 5.5)
Capillary absorption	≤ 0.5 kg/(m2.h0.5)			(EN 13057)

APPLICATION INFORMATION

Mixing ratio	3.6 to 3.9 litres of water for 25 kg powder
Layer thickness	min. 6 mm / max. 50 mm
Ambient air temperature	+ 5 °C minimum; + 30 °C maximum
Substrate temperature	+ 5 °C minimum; + 30 °C maximum
Pot Life	~ 40 minutes at + 20°C
Consumption / Yield / Dosage (PRINT single line)	This depends on the substrate roughness and thickness of layer applied. As a guide, ~ 19 kg of powder per cm thick per m^2

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.

LIMITATIONS OF USE

- Refer to the Method Statement for Concrete Repair using Sika MonoTop® system for more information regarding substrate preparation or refer to the re commendations 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 fin ishing as this will cause discolouration and cracking
- Protect freshly applied material from freezing

ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, stor age and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) con taining physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY

Concrete:
The concrete shall be thoroughly clean, free from dust, loose material, surface contamination and materials
which reduce bond or prevent suction or wetting by repair materials. De-laminated, weak, damaged and deteriorated concrete and where necessary sound concrete shall be removed by suitable means.
Steel Reinforcement:
Rust, scale, mortar, concrete, dust and other loose and deleterious material which reduces bond or contributes
to corrosion shall be removed. 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 EN1504-10 for specific requirements.

MIXING

Sika MonoTop®-412 GH can be mixed with a low speed (< 500 rpm) hand drill mixer or for machine applica tion, using a force action mixer 2 to 3 bags or more at once depending the type and size of mixer.
Pour the recommended water in a suitable mixing container. While stirring slowly, add the powder to the water and mix thoroughly at least for 3 minutes adding additional water during the mixing time if necessary to the maximum specified amount and adjust to the required consistency.

APPLICATION

Bonding Primer:
On a well prepared and roughened substrate a bonding
primer is generally not required for this product.
When a bonding primer is required, refer to the System
Information above for compatible Sika products and refer to the relevant Product Data Sheet for instructions.
All small amount of Sika MonoTop®-412 GH can also be mixed slightly wetter than normal and used as a scratch coat to promote adhesion of the repair
mortar to the substrate. Any bonding primer shall be applied on a pre-wet substrate and subsequent application
of the repair mortar shall be applied wet on wet with the bonding primer.
Reinforcement Corrosion Protection:
Where a reinforcement coating is required the application
of a repair mortar shall be applied wet on dry with the reinforcement corrosion protection. Refer to the System Information above for compatible Sika products and refer to the relevant Product Data Sheet for more detailed information about the reinforcement
corrosion product.

CURING TREATMENT

Protect the fresh mortar immediately from premature drying using an appropriate curing method e.g. curing compound, moist geotextile membrane, polythene sheet etc.

CLEANING OF EQUIPMENT

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 coun try 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.