

## PRODUCT DATA SHEET

# Sika MonoTop®-612

### R3 concrete repair mortar

#### DESCRIPTION

Sika MonoTop®-612 is a 1-component, fiber reinforced, containing silica fume, structural repair mortar meeting the requirements of class R3 of EN 1504-3.

#### USES

- Thick layer repair mortar for vertical and overhead applications
- Levelling of concrete and mortars surfaces before the application of coatings
- Restoration of concrete elements
- Filling joints between precast elements
- Suitable for restoration work (Principle 3, method 3.1 and 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

#### CHARACTERISTICS / ADVANTAGES

- Easy to apply
- Ready to use, only need to add clean water
- Class R3 of EN 1504-3
- High mechanical resistances
- Does not require a bonding primer even when manually applied
- Suitable for hand and machine application
- Excellent finishing
- Non- corrosive
- A1 fire rating

#### APPROVALS / CERTIFICATES

Insert local test reports

#### PRODUCT INFORMATION

<b>Composition</b>	Cement, silica fume, polyamide fibers, selected aggregates and additives
<b>Packaging</b>	10 kg and 25 kg bags
<b>Appearance / Colour</b>	Grey powder
<b>Shelf life</b>	12 months
<b>Storage conditions</b>	Store properly in undamaged original sealed packaging, in dry cool conditions
<b>Density</b>	Fresh mortar density 2.1 kg/L at +20 °C
<b>Maximum grain size</b>	D <sub>max</sub> : 2.0 mm
<b>Soluble chloride ion content</b>	< 0.03% (EN 1015)

## TECHNICAL INFORMATION

Compressive strength	~40 MPa	(EN 12190)	
Modulus of elasticity in compression	~25 GPa	(EN 13412)	
Tensile strength in flexure	~8.3 MPa after 28 days	(EN 196-1)	
Restrained shrinkage / expansion	Restrained Shrinkage	~1.8 MPa	(EN 12617-4)
	Restrained Expansion	~1.7 MPa	
Tensile adhesion strength	~1.9 MPa	(EN 1542)	
Reaction to fire	Euro Class A1	Declared	
Capillary absorption	~0.2 kg. m <sup>-2</sup> .h <sup>-0.5</sup>	(EN 13057)	
Carbonation resistance	d <sub>k</sub> ≤ control concrete MC(0.45)	(EN 13295)	

## APPLICATION INFORMATION

Mixing ratio	3.6 litres of water for 25 kg powder	
Consumption	This depends on the substrate roughness and thickness of layer applied. As a guide ~18 kg of powder per cm thick per m <sup>2</sup>	
Yield	25 kg of powder yields approximately 16 litres of mortar	
Layer thickness	minimum 5 mm / maximum 30 mm	
Ambient air temperature	+5 °C minimum; +30 °C maximum	
Substrate temperature	+5 °C minimum; +30 °C maximum	
Pot Life	<b>Temperature</b>	<b>Time</b>
	5 °C	60 min
	20 °C	30 - 40 min
	30 °C	15 - 20 min

## SYSTEMS

System structure	Sika MonoTop®-612 is part of the range of Sika mortars complying with the relevant part of European Standard EN 1504 and comprising of:	
	<b>Bonding Primer/ Reinforcement Corrosion Protection</b>	
	Sika Monotop®- 910 S	Normal Use
	SikaTop® Armatec® 110 EpoCem®	Demanding Requirements
	<b>Repair Mortar</b>	
	Sika MonoTop®-612	Class R3 concrete repair hand and machine applied
<b>Levelling Mortar</b>		
Sika Monotop®- 620	Normal use	

## 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.

## IMPORTANT CONSIDERATIONS

- Refer to the Method Statement for Concrete Repair

using Sika MonoTop® system for more information regarding substrat 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 discolouration and cracking
- Protect freshly applied material from freezing

## ECOLOGY, HEALTH AND SAFETY

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

## APPLICATION INSTRUCTIONS

### SUBSTRATE QUALITY / PRE-TREATMENT

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 EN 1504-10 for specific requirements.

## MIXING

Sika MonoTop®-612 can be mixed with a low speed (<500 rpm) hand drill mixer or for machine application, 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 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.

Sika MonoTop®-612 can be applied either manually using traditional techniques or mechanically using wet spray equipment. Thoroughly pre-wet the prepared substrate a recommended 2 hours before application. Keep the surface wet and do not allow to dry. Before application remove excess water e.g. with a clean sponge. The surface shall appear a dark matt appearance without glistening and surface pores and pits shall not contain water.

When manually applying the mortar first make a scratch coat by firmly scrapping the repair mortar over the substrate surface to form a thin layer and fill any pores or pits in the surface. The surface can be finished according to the requirements using a float or with a relevant wooden or plastic float or damp sponge.

## 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 declared data for this product may vary from country to country. Please consult the local Product Data Sheet for the exact product data.

## 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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