

## PRODUCT DATA SHEET

# Sika MonoTop®-722 MUR E

HIGH PERFORMANCE, 1-COMPONENT FIBRE REINFORCED, CEMENTITIOUS MORTAR WITH POZZOLAN CONTENT FOR REPAIRS & STRENGTHENING OF MASONRIES AND FOR NON-STRUCTURAL CONCRETE REPAIRS



### DESCRIPTION

Sika MonoTop®-722 MUR E is a 1-component, ready to use, fibre reinforced cementitious mortar with reactive pozzolanic components of excellent workability and smooth finishing, used for high performance repair and strengthening works in masonries, according to EN 998-2 & EN 998-1, and for non-structural concrete repair works, according to EN 1504-3 (Class R2). Sika MonoTop®-722 MUR E in combination with SikaWrap®-350 G Grid or SikaWrap®-340 G Grid AR constitutes Sika® Textile Reinforced Mortar (TRM) system, providing an efficient consolidation of masonries and resulting in strengthening and increasing the seismic deformation capacity of them.

### USES

- In combination with SikaWrap®-350G Grid (TRM system) is designed for strengthening works of masonry constructions (load-bearing masonry walls, e.t.c) in order to increase their seismic deformation capacity. TRM system is the ideal solution for improving connection between masonry panels and reinforced concrete frames following both substrates movements without detachment or cracking.
- High performance patch repairs, crack filling, pointing, leveling and rendering of new, existing and also traditional masonries (brick, stone, mixed, e.t.c.)
- Concrete (non-structural) repair and re-profiling or re-surfacing of damaged areas on vertical or horizontal surfaces.
- Suitable for use as a general purpose mortar (type GP CS-IV, according to EN 998-1) for rendering of internal and external applications.
- Suitable for use as designed general purpose masonry mortar (classified as G, according to EN 998-2) for external use in elements subject to structural requirements.
- Suitable for restoration work (Principle 3, Methods 3.1 & 3.3 of EN 1504-9). Repair of spalling and damaged concrete in buildings.
- Suitable for preserving or restoring passivity (Principle 7, Method 7.2 of EN 1504-9). Replacing contaminated or carbonated concrete.

### CHARACTERISTICS / ADVANTAGES

- Class M20/ G type, according to EN 998-2
- General purpose (GP), according to EN 998-1
- Class R2, according to EN 1504-3
- For application thickness of between 5mm and 15mm (per layer)
- Excellent workability and smooth finishing
- Very good adhesion on traditional substrates (brick, stone and porous surfaces such as concrete)
- Low modulus of elasticity: the product follows the substrate movements without detachment
- Suitable for non-structural patch repair works of low to medium concrete strength class, due to similar elastic modulus
- No consolidation of weak substrates required before application
- Good dimension stability / non-sag even overhead
- It is possible to finish / smooth the product with sponge trowel or metal float

### APPROVALS / CERTIFICATES

- CE marking and Declaration of Performance as General purpose rendering / plastering mortar for external and internal use (GP) according to EN 998-1: 2016, based on type testing and factory production control.
- CE marking and Declaration of Performance as Designed general purpose masonry mortar for external use in elements subject to structural requirements according to EN 998-2:2016, based on certificate of factory production control issued by notified factory

production control certification body and type testing.

- CE marking and Declaration of Performance as Repair mortar PCC for non structural repair of concrete structures in buildings and civil engineering works, Class R2 according to EN 1504-3:2005, based on certificate of factory production control issued by notified factory production control certification body and type testing. Principles 3 & 7, Methods 3.1, 3.3 & 7.2 according to EN 1504-9:2008.

## PRODUCT INFORMATION

<b>Composition</b>	Portland cement, selected aggregates and additives		
<b>Packaging</b>	25 kg bags		
<b>Appearance / Colour</b>	Grey, powder		
<b>Shelf life</b>	12 months from date of production		
<b>Storage conditions</b>	Store properly in original, sealed, unopened and undamaged packaging in dry and cool conditions, at temperatures between +5°C and +35°C.		
<b>Density</b>	Fresh mortar: ~ 1,80 kg/lt		(EN 1015-6)
	Dry (hardened) mortar: ~ 1,70 kg/lt		(EN 1015-10)
<b>Maximum grain size</b>	~1.3 mm		
<b>Soluble chloride ion content</b>	≤ 0.05 %		(EN 1015-17)

## TECHNICAL INFORMATION

<b>Compressive strength</b>	Class M20			(EN 998-2)
	Class CS IV			(EN 998-1)
	Class R2			(EN 1504-3)
	<b>1 day</b>	<b>7 days</b>	<b>28 days</b>	(EN 12190)
	≥ 6 MPa	≥ 18 MPa	≥ 22 MPa	
<b>Modulus of elasticity in compression</b>	~10 GPa			(EN 13412)
<b>Tensile strength in flexure</b>	≥ 6 MPa			(EN 196-1)
<b>Tensile adhesion strength</b>	≥ 0.8 MPa			(EN 1542)
	≥ 0.8 MPa (FP: A)			(EN 1015-12)
<b>Shear adhesion strength</b>	0.15 N/mm <sup>2</sup> (tabulated value)			(EN 998-2)
<b>Restrained shrinkage / expansion</b>	≥ 0.8 MPa			(EN 12617-4)
<b>Reaction to fire</b>	NPD			
<b>Permeability to water vapour</b>	(μ) 15/35 (tabulated value)			(EN 1745:2012, Table A.12)
	(μ) ≤ 70			(EN 1015-19)
<b>Water absorption</b>	Wc 2			(EN 1015-18)
	≤ 0.2 [kg/(m <sup>2</sup> ·min <sup>0.5</sup> )]			
<b>Water penetration after capillary absorption</b>	~ 3.00 mm			(EN 1015-18)
<b>Thermal conductivity</b>	(λ <sub>10, dry, mat</sub> ) 0.8 W/m·K			(EN 1745:2012, Table A.12)
	(tab. Mean value, P=50%)			

# SYSTEMS

## System structure

Sika MonoTop®-722 MUR E	Sika MonoTop®-722 MUR E is part of Sika® Textile Reinforced Mortar System (TRM) which comprises of the following products:
SikaRep®-200 Multi	Ready to use, cementitious, leveling mortar for external and internal use prior to masonry strengthening
Sika MonoTop®-722 MUR E	Ready to use, cementitious mortar with reactive pozzolanic components for masonry's repair and strengthening works
SikaWrap®-350 G Grid	Balanced bi-directional glass (E-type) fiber mesh, equipped with an alkali resistant coating, used as mortars' reinforcement and as part of TRM strengthening systems
SikaWrap®-340 G Grid AR	Alkali resistant, balanced bi-directional glass (AR-type) fiber mesh used as mortars reinforcement and as part of TRM strengthening systems
SikaWrap® FX-50C	Carbon fiber string for structural connection and anchoring of TRM strengthening systems
SikaWrap® FX-75G	Glass fiber string for structural connection and anchoring of TRM strengthening systems

## APPLICATION INFORMATION

Mixing ratio	4.6-5.3 lt of water per 25 kg bag
Consumption	~ 1.50 kg/m <sup>2</sup> per mm of application thickness
Yield	25 kg of powder yields approximately 16.5 litres of mortar
Layer thickness	5 mm min. / 15 mm max.
Ambient air temperature	+ 5°C min. / + 35°C max.
Substrate temperature	+ 5°C min. / + 35°C max.
Pot Life	~ 30 minutes at +20°C

## APPLICATION INSTRUCTIONS

### SUBSTRATE QUALITY / PRE-TREATMENT

The substrate must be structurally sound, thoroughly clean and free from dust, dirt, remnants of old renderings and loose material, surface contamination such as oil or grease, cement laitance which reduce bond or prevent suction or wetting. The substrate should be prepared by suitable mechanical preparation techniques, such as high water pressure or grind blasting, mechanical or manual breakers. Non impact / vibrating cleaning methods are preferred.

#### Concrete:

The concrete tensile strength (pull-off) shall be > 0.8 MPa. Delaminated, weak, damaged and deteriorated concrete, masonry and renderings (and where necessary sound substrate) shall be removed by suitable

means. Aggregates should be clearly visible on the surface of the prepared concrete. The edges of the to-be-repaired concrete area must be cut vertically (90°) to a minimum depth of 5mm.

#### Masonries:

In cases of weak masonries with cracks, voids and gaps inside, mechanical performance should be increased by grouting or low-pressure injection using SikaMur® Grout+.

In all cases, rising moisture phenomena must be treated and damp areas must be dry out before the application of the mortar.

#### Steel reinforcement:

Steel surface must be clean from rust products, mill scale, mortar, concrete residues, oil, grease, dust and other loose materials which may reduce bond or may contribute to corrosion. In case of rust, clean uniformly the whole circumference of the steel bars

(where applicable) using abrasive blast cleaning techniques or high pressure waterblasting to a minimum Sa 2<sup>1/2</sup> in accordance with ISO 8501-1. If required, apply around the whole exposed circumference two coats of corrosion inhibitor such as Sika MonoTop®-910 (please refer to the respective Product Data Sheet). Protect cleaned bars from further contamination, prior to application of the mortar.

*Reference should also be made to EN1504-10 for specific requirements.*

## MIXING

Sika MonoTop®-722 MUR E shall be mixed with a low speed (< 500 rpm) electrical hand drill mixer or using a force action pan mixer for large volumes. Pour the water in the correct desired proportion into 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 up to the maximum specified amount, until a homogeneous lump-free required consistency is reached. Mix full bags for best results and correct particle-size distribution of the aggregates.

## APPLICATION

Application can be carried out by trowel using traditional techniques (for masonry rendering, leveling or strengthening, concrete patch repairs, decorations, edges, forming of joints, honey comb filling, e.t.c.), joint trowel or Sika Pointing gun (for pointing or re-pointing) or mechanically using wet spray equipment on the well prepared substrate. Thoroughly pre-wet the prepared substrate, recommended 2 hours before applying Sika MonoTop®-722 MUR E. Keep the surface wet and do not allow drying. Before application remove excess water e.g. with a clean sponge. The surface shall appear a dark matt appearance without glistering and surface pores and pits shall not contain water.

### As a leveling / rendering mortar

Sika MonoTop®-722 MUR E should be applied in 1 or 2 coats using a trowel or spray technique, a preliminary adhesion layer followed by the rendering layer. Once the adhesion layer has set then the rendering layer should be applied. Apply subsequent layers if required. Keep the fresh mortar surface moist over several hours by protecting it from wind and direct sunlight.

### As part of Sika® TRM system

Sika MonoTop®-722 MUR E may be applied directly on the masonry or on a pre-applied leveling layer depending on the roughness of the masonry. As alternative solution for leveling apart from Sika MonoTop®-722 MUR E, SikaRep®-200 Multi may also be applied. Sika MonoTop®-722 MUR E should be applied in 2 coats and always ensure to press the mortar with a trowel firmly on the substrate. Firstly, apply a 5mm thick layer on the substrate. Place SikaWrap®-350 G Grid or SikaWrap®-340 G Grid AG horizontally onto the freshly applied mortar by applying pressure using a trowel, taking care the mesh will not be embedded too deeply. To avoid cracks between consecutive rolls of the mesh and the system to behave uniformly, en-

sure a vertical overlapping of  $\geq 10\text{cm}$  and anchoring using SikaWrap® FX strings. Apply the second 5mm thick layer of Sika MonoTop®-722 MUR E (total layer thickness  $\sim 10\text{mm}$ ). The second layer can be applied either fresh-on-fresh on the set or on the cured mortar. Smooth finishing of fresh mortar surface (as soon as the mortar has started to set / stiffen) according to project requirements is possible, using sponge trowel or metal float.

For large scale applications, the product may be applied using suitable wet spray equipment (e.g. Turgosol or Putzmeister) or using plaster sprayer (e.g. PFT G4 or G5). Follow the same application sequence and apply the same layer thickness as manual application. Allow sufficient curing time before overcoating the product.

## CLEANING OF EQUIPMENT

Removal of fresh remnants from tools and application equipment can be carried out using water immediately after use. Hardened / cured material can only be mechanically removed.

## IMPORTANT CONSIDERATIONS

- Take care to place SikaWrap®-350 G Grid or SikaWrap®-340 G Grid AR on an adequately thick layer of Sika MonoTop®-722 MUR E in order to avoid direct contact between masonry and grid.
- Do not add water over the recommended dosage
- Do not add cement or other substances that could affect the properties of the mortar
- Do not add water or fresh mortar to a mortar mix which has already started setting
- Avoid application during strong wind or in direct sunlight
- Apply only to sound, prepared substrate
- Protect freshly applied material from freezing, rain or condensing water
- Record ambient and substrate temperatures before and during application

## 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.

## 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.

## 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.

## 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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