

PRODUCT DATA SHEET

Sika MonoTop®-225 Colour Match Rapid

Innovative, Class R4, rapid setting, tintable cementitious concrete repair mortar

PRODUCT DESCRIPTION

Sika MonoTop®-225 Colour Match Rapid is a one-component, cementitious, rapid setting concrete repair mortar. The Product is white in colour and can be tinted to all shades of the following colours to aesthetically match the parent concrete to which it is applied:

- Grey or black (using Sika MaxMix® Powder Mortar Tone Black)
- Brown (using Sika MaxMix® Powder Mortar Tone Brown)
- Buff or cream (using Sika MaxMix® Powder Mortar Tone Buff)
- Red or pink (using Sika MaxMix® Powder Mortar Tone Red)

Used for the repair of concrete substrates, the Product is particularly suited for repairing precast concrete elements, or historic buildings of a particular colour. With rapid setting properties, the Product offers early return to service with a high early strength gain. Compliance with EN 1504-3 Class R4 enables the product to be used for all applications and with any concrete.

USES

- Aesthetically matching parent concrete colours (using the appropriate colour of Sika MaxMix® Powder Mortar Tone).
- Plugging of precast concrete panels.
- Sealing of joints prior to grouting operations.
- Rapid repair to concrete units.
- Repairs to historic, heritage and listed buildings.
- Sealing of concrete basements, concrete pipes, sewage systems and foundations.
- Repairs to reinforced concrete structures requiring a Class R4, R3, R2 or R1 mortar.
- Repair of spalling and damaged concrete in infrastructure and superstructure works. Restoration work (Principle 3, method 3.1, 3.2 and 3.3 of EN 1504-9).
- Increasing the bearing capacity of the concrete structure by adding mortar. Structural strengthening

(Principle 4, method 4.4 of EN 1504-9).

- Increasing cover with additional mortar and replacing contaminated or carbonated concrete. Preserving or restoring passivity (Principle 7, method 7.1 and 7.2 of EN 1504-9).
- Horizontal, vertical and overhead repairs.

CHARACTERISTICS / ADVANTAGES

- Straightforward to mix and use - just add water.
- White in colour to enable easy pigmentation (using Sika MaxMix® Powder Mortar Tone) to match almost any colour of concrete.
- Consistency: Stiff workable mortar.
- Very rapid setting to enable a rapid return to service.
- Rapid strength gain.
- Suitable for horizontal, vertical or overhead applications.
- Layer thickness 2 to 25 mm.
- Very low shrinkage.
- Can be safely used in contact with steel (very low chloride content).
- Low permeability.
- EuroClass A1 reaction to fire rating.
- Class R4 of EN 1504-3.
- Sika MonoTop®-225 Colour Match Rapid is suitable for the following repair methods as defined in EN 1504-3:
 - Method 3.1 – Applying mortar by hand.
 - Method 4.4 – Adding mortar.
 - Method 7.1 – Increasing cover to reinforcement with mortar.
 - Method 7.2 – Replacing contaminated concrete.

APPROVALS / STANDARDS

CE marking and declaration of performance based on EN 1504-3 Products and systems for the protection and repair of concrete structures — Structural and non-structural repair.

PRODUCT INFORMATION

Chemical Base	Cementitious powder combined with selected fillers and aggregates, and special synergistic additives.		
Packaging	25 kg bags		
Appearance / Colour	White powder		
Shelf Life	6 months from date of manufacture		
Storage Conditions	Store in original unopened, sealed and undamaged packaging in dry and cool conditions.		
Density	~2150 kg/m ³ (hardened state)		
Maximum Grain Size	D _{max} : <0.25 mm		
Soluble Chloride Ion Content	≤0.05 %		(EN 1015-17)
Compressive Strength	Unpigmented		
	<u>Age</u>	<u>Compressive Strength</u>	(EN 12190)
	28 days	~60 N/mm ²	
	Pigmented (8 % Sika MaxMix® Powder Mortar Tone)		
	<u>Age</u>	<u>Compressive Strength</u>	(EN 12190)
	28 days	~60 N/mm ²	
	NOTE: - Compressive strengths determined with 23 % water content (i.e. 5.75 litres per 25 kg bag). 8 % Sika MaxMix® Powder Mortar Tone is the maximum pigment content.		
Modulus of Elasticity in Compression	>15 GPa		(EN 13412)
Restrained Shrinkage / Expansion	<u>Restrained Shrinkage</u>	<u>Restrained Expansion</u>	(EN 12617-4)
	≥2.0 N/mm ²	≥2.0 N/mm ²	
Tensile adhesion strength	>2.0 N/mm ²		(EN 1542)
Thermal Compatibility	≥2.0 N/mm ² (Part 1 - Freeze-Thaw)		(EN 13687-1)
Capillary Absorption	≤ 0.5 kg·m ⁻² ·h ^{-0.5}		(EN 13057)
Carbonation Resistance	dk ≤ control concrete MC (0.45)		(EN 13295)

APPLICATION INFORMATION

Mixing Ratio	22 to 24 % water content (i.e. 5.5 litres to 6.0 litres of water per 25 kg bag).		
Consumption	~2.0 kg/m ² /mm		
Layer Thickness	2 mm to 25 mm		
Product Temperature	+5°C minimum / +35°C maximum		
Ambient Air Temperature	+5°C minimum / +35°C maximum		
Substrate Temperature	+5°C minimum / +35°C maximum		
Application Time	Up to 20 minutes at +20°C		
Flowability	140 to 170 mm		(Motorised Flow Table)

SYSTEM INFORMATION

System Structure	Description	Products	Consumption / Addition Rates
	Optional Bonding Primer / Reinforcement Corrosion Protection	Sika MonoTop®-1010 (normal applications) SikaTop® Armatec®-110 EpoCem® (demanding applications, such as high chloride exposure)	~1.5 to 2.0 kg/m²
	Concrete Repair Mortar	Sika MonoTop®-225 Colour Match Rapid	~2.0 kg/m² per mm of thickness
	Optional Pigment	Sika MaxMix® Powder Mortar Tone (available in Black, Brown, Buff and Red)	Up to 8 % by mass as required

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.

LIMITATIONS

- Application temperature range +5°C to +35°C.
- Do not apply to substrates that are likely to be affected by frost or freeze-thawing.
- Substrate must be clean, sound and free of loose material.
- Active cracks should be made passive / static prior to application.
- Saturate repair area with water prior to application.
- Once finished, protect the repair from drying conditions using suitable curing measures.

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 QUALITY / PRE-TREATMENT

All contact surfaces must be sound, clean and provide a good mechanical key. Remove all loose material, plaster, paint, oily deposits, and anything that may impair adhesion. If reinforcing steel is exposed, it should be excavated back to full circumference and cleaned by suitable means to achieve at least Sa 2 (as defined in ISO 8501-1). Following cleaning of reinforcement, a suitable primer / corrosion protection coating should be applied, such as Sika MonoTop®-1010 (normal applications) or SikaTop® Armatec®-110 EpoCem® (demanding applications). Repair edges should be cut back to at least 2 mm to avoid feather edging, and smooth concrete should be roughened. No specific

priming is required. Surfaces should be well saturated prior to application to achieve a saturated surface dry (SSD) surface. A minimum saturation period of two hours is recommended. All standing water should be removed prior to application.

MIXING

Sika MonoTop®-225 Colour Match Rapid should be mixed in quantities that can be used during the workable time of the mortar.

The water content shall be 22 % to 24 % (i.e. 5.5 litres to 6.0 litres per 25 kg bag).

For unpigmented use, pour the required volume of clean, potable water into a suitable rigid mixing vessel. Slowly add the Product to the water whilst continuously mixing using a slow speed, high torque drill with mortar stirrer, until the required consistency is obtained. Once mixed, use immediately to avoid wastage.

If Sika MonoTop®-225 Colour Match Rapid is to be pigmented with Sika MaxMix® Powder Mortar Tone (up to a maximum of 8 % by mass), refer to the Product Data Sheet for this Product.

IMPORTANT

When using Sika MonoTop®-225 Colour Match Rapid with Sika MaxMix® Powder Mortar Tone, the pigment shall be blended with the powder first using a slow speed, high torque drill with mortar stirrer in a suitable rigid mixing vessel. Once fully blended, clean, potable water shall then be added to the powder and mixed until homogeneous (which takes approximately three minutes). The water content shall be 22 % to 24 % (i.e. 5.5 litres to 6.0 litres per 25 kg bag) as per unpigmented Product. Use the material without delay.

APPLICATION

Apply Sika MonoTop®-225 Colour Match Rapid firmly onto the repair area. It may be necessary to use a gloved hand to compact the mortar behind steel and into narrow corners and edges. Surface finish the applied mortar with a damp steel trowel. Application thickness should be between 2 mm and 25 mm. Thicker sections can be built up after the material has hardened sufficiently and if a scored surface is left on

the preceding layer.

CURING TREATMENT

Protect the fresh mortar immediately from premature drying for a minimum of three days using an appropriate curing method (e.g. curing compound, wet hessian, moist geotextile membrane, polythene sheet, etc.). Curing compounds shall not be used when they adversely affect subsequently applied products and systems. Reference shall also be made to EN 1504-10 for specific requirements.

CLEANING OF TOOLS

Clean all tools and application equipment with water immediately after use. Hardened / cured 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 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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