

Sika® MonoTop®-R

Polymer modified cementitious patch repair mortar

Product Description

Sika® MonoTop®-R is a 1-part, thixotropic, polymer modified, cementitious mortar containing silica fume. Sika® MonoTop®-R cures to produce a high strength mortar with enhanced polymeric properties. Sika® MonoTop®-R exhibits high bond strength, greatly reduced water and carbon dioxide permeability and improved resistance to oils and chemicals.

Uses

- Fast repairs to horizontal or vertical concrete or mortar surfaces above and below ground level
- Filling/repair mortar for voids, honeycombed areas, etc.
- Repair of spalled concrete caused by reinforcement corrosion
- Repairs with improved resistance to oils, sewage, chemicals, etc.

Characteristics / Advantages

- Fast and easy to apply in layers up to 20 mm thick
- 1-part system requiring only addition of clean water
- Compatible with the thermal expansion properties of concrete
- Chloride free
- Non-corrosive to reinforcing steel
- Non-toxic, suitable for potable water
- Contains fibres to prevent micro cracking
- Non-shrink
- Excellent freeze / thaw resistance
- Good resistance to water immersion

Product Data

Form

Appearance / Colour Concrete grey powder

Packaging 25 kg bags

Storage

Storage Conditions / Shelf Life 6 months from the date of production if stored properly in original, unopened and undamaged packaging in dry and cool conditions.



Technical Data

Density ~ 2.0 kg per litre (freshly mixed mortar)

Layer Thickness

- Minimum 3 mm
- Maximum 20 mm (vertical application)

Water Absorption at 30 mm < 3% (BS 1881: Part 122)

Mechanical / Physical Properties

Compressive Strength (+25°C)

- 1 day > 20.0 N/mm²
- 28 days > 50.0 N/mm²

Bond Strength (on concrete) > 1.5 N/mm² (with bonding bridge)

Modulus of Elasticity < 20,000 N/mm²

Typical Test Results (Seteco Test Ref: K2437 (A/1)/LML)

Compressive Strength	1 day	N/mm ²	27.5
	7 days		49.3
	28 days		72.2
Flexural Strength	7 days	N/mm ²	9.24
	28 days		10.55
Modulus of Elasticity	28 days	GPa	< 29
Coefficient of Thermal Expansion	28 days	Per °C	9,6680 x 10 ⁻⁶
Water Absorption	28 days	%	< 1.1%
Initial Surface Absorption at 28 days	10 minutes	ml / m ² /sec	< 0.005
	30 minutes		< 0.005
	60 minutes		< 0.005
	120 minutes		< 0.005
Rapid Chloride Permeability	28 days	coulombs	700 (very low as per ASTM C1202)

System Information

System Structure Sika[®] MonoTop[®] System comprises:

- Sika[®] MonoTop[®]-610 bonding bridge and reinforcement protection.
- Sika[®] MonoTop[®]-615SD or Sika[®] MonoTop[®]-R or Sika MonoTop[®]-40 repair mortar.
- Sika[®] MonoTop[®]-620 pore sealer / fairing coat.

Application Details

Consumption

- ~ 71 bags per m³
- 1 bag yields ~ 14 litres of mortar

Substrate Quality *Concrete*
All concrete and mortar substrates must be structurally sound, laitance free, clean and free from dirt, oil, grease or other surface contaminants. All loose or friable particles must be removed.

Steel reinforcements
Steel reinforcement surfaces must be clean from rust, oil, grease or any other loosely adhering particles to provide a rust free surface.

Substrate Preparation / Priming	<p><i>Concrete</i> For large concrete areas, grit or grit-water blasting, scarifying or scabbling is recommended. For small areas and “spot” repairs, needle gunning or scabbling is effective.</p> <p>The prepared substrate should be thoroughly soaked with clean water until uniformly saturated but with no standing surface water. This condition is referred to as saturated surface dry (SSD) and care should be taken to remove any cement slurry or dust produced during surface preparation. The use of a “fan” shaped water jet is ideal.</p> <p><i>Steel reinforcement</i> Surfaces should be prepared using approved abrasive blast cleaning techniques e.g. wire-brushed or water / grit blasted and primed with 2 coats of Sika® MonoTop®-610 (refer to Sika® MonoTop®-610 data sheet).</p>
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Application Conditions / Limitations

Application Temperature +6°C minimum / +40°C maximum

Application Instructions

Mixing Ratio Approximately 3.4 – 3.5 litres of clean water per 25 kg bag as per required consistency

Mixing Sika® MonoTop®-R should be mechanically mixed in a clean drum using a drill and paddle. A normal concrete mixer is not suitable.

Pour the mixing water into a clean drum. While stirring slowly, add Sika® MonoTop®-R to the water. Mix for a minimum 3 minutes to ensure that the components are thoroughly blended and at a maximum speed of 500 rpm to minimise air entrainment. Mix only what you require taking into consideration the pot life of the material.

Application Method / Tools Work wet-on-wet the mixed mortar well into the substrate, using a placing rather than a rendering technique to fill all pores and voids. Compact well. Force material against the edge of the repair, working towards the centre.

For repairs in excess of 20 mm deep, apply in layers and form keys for the subsequent layers. If previous layers are over 48 hours old, needle gun the surface and dampen before applying the next layer. Steel trowel the final coat if required.

The Sika® MonoTop®-R and surrounding areas can be further treated with SikaTop® Seal 107 or Sika® MonoTop®-620 to provide a water and carbonation resistant finish.

Cleaning of Tools Clean all tools and application equipment with water immediately after use. Hardened / cured material can only be mechanically removed.

Pot Life (30°C) ~ 20 minutes

Notes on Application / Limitations

- Repairs with Sika® MonoTop® System cannot bridge live cracks or moving joints, etc.
- Repairs in excess of 20 mm must be layered.
- Sika® MonoTop® mortars that are wetted during the initial cure period may produce a white “bloom” on the surface which does not affect the long term properties of the mortar.

Curing Details

Applied Product ready for use To achieve the full potential of any cement based products, curing is essential. This can be carried out with the application of a curing compound such as Antisol®-E or with other curing practices such as covering with polythene sheets or damp hessian for 3 days.

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

Health and Safety Information

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

Legal Note

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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