

Sika® MonoTop®-R40

Polymer modified cementitious patch repair mortar

Product Description

Sika® MonoTop®-R40 is a 1-part, thixotropic, polymer modified, cementitious mortar containing silica fume. It cures to produce a high strength mortar with enhanced polymeric properties.

Sika® MonoTop®-R40 exhibits high bond strength, greatly reduced water and carbon dioxide permeability and improved resistance to oils and chemicals.

Uses

- Fast repairs to horizontal or mortar surfaces above and below ground level
- Filling/repair mortar for voids, honeycomb 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 40 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 cracks
- Non shrink
- Excellent freeze/thaw resistance
- Good resistance to water immersion

Product Data

Form

Appearance / Colour Concrete grey powder

Packaging 25 kg bag

Storage

Storage Conditions / Shelf Life 6 months from the date of production if stored in undamaged and unopened, original sealed containers, in dry conditions at temperatures between +5°C and +30°C.



Technical Data

Density ~ 2.0 kg per litre (freshly mixed mortar)

Layer Thickness 3 mm to 40 mm (vertical application)

Mechanical / Physical Properties

Compressive Strength (at 25°C) Mix ratio 3.4 litres water per 25 kg bag

1 day	7 days	28 days
~ 15 N/mm ²	~ 30 N/mm ²	~ 40 N/mm ²

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

Modulus of Elasticity < 20,000 N/mm²

System Information

System Structure Sika® MonoTop System® comprises:

- Sika® MonoTop®-610 bonding bridge and reinforcement protection
- Sika® MonoTop®-615HB or Sika® MonoTop®-R or Sika® MonoTop®-R40 repair mortar
- Sika® MonoTop®-620 pore sealer/fairing coat

Application Details

Consumption Guide

- ~ 71 x 25 kg per bag per m³
- 1 bag yields ~ 14 litre of mortar

Substrate Quality

Concrete
Surfaces must be sound, clean and free from oils, grease, standing water and any loose or friable adhering particles and any other surface contaminants. The concrete "pull off" (tensile) strength must be > 1.0 N/mm².

Steel Reinforcement
Surfaces must be clean from rust products, oil, grease and other loosely adhering particles to provide a rust free surface.

Substrate Preparation

Concrete
Proper surface preparation is essential to achieve the high adhesive qualities of Sika® MonoTop®-R40. All concrete and mortar substrates must be sound, clean and free from oils, grease and surface contaminants. All loose materials and surface laitance must be removed.

For large areas, grit or grit-water blasting, scarifying or scabbling is recommended. For small areas and 'spot' repairs, needle gunning or scabbling is effective.

The prepared substrate should be thoroughly soaked with clean water until uniformly saturated but with no 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.

Steel Reinforcement
Surfaces must be prepared using approved abrasive blast cleaning techniques.

Bonding Bridge

Concrete
Prior to application of Sika® MonoTop®-R40, Sika® MonoTop®-610 should be applied as a bonding bridge. Always work "wet-on-wet" onto the bonding bridge (refer to Sika® MonoTop®-610 data sheet).

Reinforcement
2 coats of Sika® MonoTop®-610 should be brush applied to the prepared steel (refer to product data sheet).

Application Conditions / Limitations

Substrate Temperature +5°C min. / +40°C max.

Application Temperature +5°C min. / +40°C max.

Application Instructions

Mixing 3.30 - 3.50 litres of clean water per 25 kg bag to suit desired consistency.

Sika® MonoTop®-R40 should be mechanically mixed in a clean container using a drill and paddle. A normal tilting drum concrete mixer is not suitable. Place 3.3 - 3.5 litres of water into a clean drum and add the Sika® MonoTop®-R40 slowly while mixing.

A minimum mixing time of 3 minutes is recommended to thoroughly blend the components with a maximum speed of 500 rpm to minimise air entrainment.

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 40 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®-R40 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

■ +20°C	30 minutes
■ +30°C	25 minutes

Notes on Application / Limitations

- Repairs with Sika® MonoTop® System cannot bridge live cracks or moving joints, etc.
- Repairs in excess of 40 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

Curing Treatment To achieve the full potential of any cement based material, 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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