

# PRODUCT DATA SHEET

## Sika MonoTop® Dynamic

### HIGH-STRENGTH FIBRE REINFORCED STRUCTURAL REPAIR MORTAR

#### DESCRIPTION

Sika MonoTop® Dynamic is a ready mixed polymer modified repair mortar, with high thixotropy and low shrinkage properties, used for structural repair of concrete elements with layer thickness from 0.5 to 3 cm. It contains modified cements with synthetic polymers, silica fume, selected aggregates and synthetic fibres.

#### USES

- Quick thickness repair with smooth finishing surface of structural concrete elements;
- Repair and finish of pre-cast concrete elements.
- Suitable for restoration work (Principle 3, method 3.1 & 3.3 of EN 1504-9:2008). Repair of spalling and damaged concrete in buildings, bridges, infrastructure and superstructure works;
- Suitable for structural strengthening (Principle 4, Method 4.4 of 1504-9:2008). Increasing the bearing capacity of the concrete structure by adding mortar;
- Suitable for preserving or restoring passivity (Principle 7, Method 7.1 & 7.2 of 1504-9:2008). Increasing cover with additional mortar or concrete or replacing contaminated or carbonated concrete;

#### CHARACTERISTICS / ADVANTAGES

- It can be used for high thickness repair and smooth finishing: substantial reduction of working times;
- Excellent workability, high thixotropy;
- Good mechanical strengths and adhesion onto most commonly used building materials (concrete, stone, bricks, etc.);
- Good aesthetic aspect

#### SUSTAINABILITY

- Conformity with LEED v4 MRc 2 (Option 1): Building Product Disclosure and Optimization – Environmental Product Declarations

#### APPROVALS / CERTIFICATES

Sika MonoTop® Dynamic fulfills the performance requirements related to class R4 of EN 1504-3 ; DoP 02 03 02 04 001 0 000074 1026; certified by Factory Production Control Body: 0546; certificate 18774 and provided with the CE-mark.

#### PRODUCT INFORMATION

<b>Composition</b>	Portland cement, selected aggregates, fibres 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>	The product must be stored properly in undamaged original sealed packaging, in dry and cool conditions.
<b>Density</b>	Fresh mortar: ~ 2.05 kg/l
<b>Maximum Grain Size</b>	D <sub>max</sub> 1.2 mm

Soluble Chloride Ion Content ≤ 0.005% (EN 1015-17)

## TECHNICAL INFORMATION

<b>Compressive Strength</b>	Class R4 ~ 53 MPa	(EN 1504-3) (EN 12190)		
<b>Modulus of Elasticity in Compression</b>	~ 20.50 GPa	(EN 13412)		
<b>Tensile Strength in Flexure</b>	1 day ~ 3.5 MPa	7 days ~ 6.0 MPa	28 days ~ 9.0 MPa	(EN 196-1)
<b>Tensile Adhesion Strength</b>	~ 2.50 MPa	(EN 1542)		
<b>Thermal Compatibility</b>	Freeze and thaw (50 cycles) ~ 2.50 MPa	(EN 13687-1)		
<b>Reaction to Fire</b>	Euroclass A1	(EN 13501-1)		
<b>Capillary Absorption</b>	~ 0.29 kg m <sup>-2</sup> h <sup>-0,5</sup>	(EN 13057)		
<b>Chloride Ion Ingress</b>	< 0.05%* * This value was gotten after 6 months at 10 mm depth.	(EN 13396)		
<b>Carbonation Resistance</b>	Pass	(EN 13295)		

## APPLICATION INFORMATION

<b>Mixing Ratio</b>	~ 4.0 - 4.5 l of water for 25 kg powder bag (16-18% in weight)
<b>Consumption</b>	~ 1.75 - 1.85 kg/m <sup>2</sup> /mm, depending on the substrate roughness.
<b>Layer Thickness</b>	Min. 5 mm, max. 30 mm. Higher thickness must be built in subsequent layers when the mortar starts setting (tack free).
<b>Ambient Air Temperature</b>	+ 5°C min. / + 35°C max.
<b>Substrate Temperature</b>	+ 5°C min. / + 35°C max.
<b>Pot Life</b>	~ 60 min at + 20°C

## APPLICATION INSTRUCTIONS

### SUBSTRATE QUALITY / PRE-TREATMENT

#### Concrete:

The substrate must be structurally sound and free from dust, dirt, loose material, surface contamination as oil or grease, cement laitance. The concrete "Pull off" (tensile) strength must be > 1.5 MPa. The substrate should be prepared by suitable mechanical preparation techniques, such as high water pressure or grit blasting, mechanical or manual breakers. Non impact/vibrating cleaning methods are preferred. Aggregates should be clearly visible on the surface of the prepared area. Finish the repair area with sharp edge (90° degree angle) with minimum depth of 5 mm. The surface must be dampened up to saturation, avoiding standing water.

#### Steel reinforcement:

Steel surface must be clean from rust products, oil, grease, dust and other loose materials which may reduce bond or may contribute to corrosion. Surfaces must be prepared using approved abrasive blast cleaning techniques, to a minimum standard of SA 2½.

When the reinforcement is contaminated by chlorides or other materials which may cause corrosion, the reinforcement shall be cleaned by low pressure water-blasting.

#### Priming on concrete:

On a well prepared and roughened substrate a bonding primer is generally not required. When required, priming can be done either using Sika bonding bridge products (refer to the relevant Product Data Sheet). The subsequent application of the repair mortar should be done wet on wet.

#### Reinforcement coating:

If required, apply around the whole exposed circumference two coats of Sika MonoTop®-610 (refer to the relevant Product Data Sheet).

### MIXING

Sika MonoTop® Dynamic can be mixed with a low speed (~ 500 r.p.m.) electric stirrer. For small quantities, the mortar can also be manually mixed. Pour the correct amount of water into a suitable mixing container. While stirring slowly, add the powder to the water. Mix thoroughly at least for 3 minutes, until the

homogeneous lump-free required consistency is reached.

## APPLICATION

Sika MonoTop® Dynamic can be applied either manually using traditional techniques, or mechanically using wet spray equipment. Apply Sika MonoTop® Dynamic using a trowel onto the substrate dampened up to saturation, applying a good pressure and compacting well the subgrade. The application can be carried on using standard spraying mortar machines (e.g. Turbosol, Putzmeister) to coat large surfaces. A good surface finishing can be achieved using a plastering trowel or timber float, as soon as the mortar has started to stiffen.

## CURING TREATMENT

Protect the fresh mortar from early dehydration using the relevant curing methods.

## CLEANING OF EQUIPMENT

Clean all tools and application equipment with water immediately after use. Hardened material can only be mechanically removed.

## IMPORTANT CONSIDERATIONS

- Do not add water over 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 in direct sun and/or strong wind;
- Apply only on sound, prepared substrate;
- Protect freshly applied material from freezing and from early rain.

## 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.

### Sika Italia S.p.A.

Via Luigi Einaudi, 6  
20068 Peschiera Borromeo (MI)  
Phone: +39 02 54778 111  
Fax: +39 02 54778 119  
info@sika.it  
www.sika.it

## 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.