

## PRODUCT DATA SHEET

# Sika MonoTop®-3020

Cementitious, R3 pore filler and levelling mortar containing recycled raw materials

### DESCRIPTION

Sika MonoTop®-3020 is a 1-part, cementitious polymer modified, low shrinkage surfacing and finishing mortar. It contains recycled supplementary cementitious materials and can reduce the carbon footprint application activity calculations.

### USES

The Product is used for:

- Producing a thin layer render
- As a concrete pore filler and levelling mortar
- Repairing minor concrete defects (pores and honey-combed concrete)
- Structures requiring a Class R3, R2 or R1 mortar

### CHARACTERISTICS / ADVANTAGES

- Uses recycled raw materials
- Layer thickness 1–5 mm
- Dust reduced
- Applied up to 5 mm thick in one layer on vertical and horizontal applications
- Good surface finishing
- Low cracking sensitivity
- Sulphate resistant
- Hand and machine application (wet spray technique)
- Very good resistance to water and chloride penetration
- Compatible with Sikagard® overcoat systems

### PRODUCT INFORMATION

|                            |  |
|----------------------------|--|
| <b>Product Declaration</b> | Complies with the general requirements of EN 1504-3: Class R3.                   |
| <b>Chemical Base</b>       | Sulphate resistant cement, selected aggregates, additives and polymers           |
| <b>Packaging</b>           | 25 kg bag<br>Refer to the current price list for available packaging variations. |
| <b>Shelf Life</b>          | 12 months from date of production  |

- Ready to mix with water
- Does not contain chlorides or other corrosion promoting additives
- A1 fire rating
- Class R3 of EN 1504-3
- Restoration work (Principle 3, method 3,1 and 3,3 of EN 1504-9). Repair of spalling and damaged concrete in infrastructure and superstructure works.
- Preserving or restoring passivity (Principle 7, method 7,1 and 7,2 of EN 1504-9) - Increasing cover with additional mortar and replacing contaminated or carbonated concrete

### ENVIRONMENTAL INFORMATION

- Environmental Product Declaration (EPD) in accordance with EN 15804. EPD independently verified by Institut für Bauen und Umwelt e.V. (IBU)
- Specific Environmental Product Declaration (EPD) in accordance with EN 15804. EPD independently verified by BRE Global

### APPROVALS / STANDARDS

- CE marking and declaration of performance based on EN 1504-3:2005 Products and systems for the protection and repair of concrete structures — Structural and non-structural repair

|                                     |   |              |  |
|-------------------------------------|---|--------------|--|
| <b>Storage Conditions</b>           | The Product must be stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between +5 °C and +35 °C. Protect the Product from direct sunlight. Always refer to packaging. Refer to the current Safety Data Sheet for information on safe handling and storage. |              |  |
| <b>Appearance / Colour</b>          | Grey Powder   |              |  |
| <b>Maximum Grain Size</b>           | D <sub>max</sub> : 0.4 mm   |              |  |
| <b>Soluble Chloride Ion Content</b> | ≤ 0.05 %  | (EN 1015-17) |  |

## TECHNICAL INFORMATION

|                                       |   |        |              |
|---------------------------------------|---|--------|--------------|
| <b>Compressive Strength</b>           | 1 day                                     | 8 MPa  | (EN 12190)   |
|                                       | 7 days                                    | 20 MPa |              |
|                                       | 28 days                                   | 40 MPa |              |
| <b>Tensile Strength in Flexure</b>    | 28 days                                   | 6 MPa  | (EN 12190)   |
|                                       | ≥ 1.5 MPa                                 |        | (EN 1542)    |
| <b>Thermal Compatibility</b>          | ≥ 1.5 MPa (Part 1 Freeze-Thaw)            |        | (EN 13687-1) |
| <b>Capillary Absorption</b>           | ≤ 0.5 kg/m <sup>2</sup> ·h <sup>0.5</sup> |        | (EN 13057)   |
| <b>Permeability to Carbon Dioxide</b> | < 2000 μCO <sub>2</sub>                   |        | (EN 1062-6)  |
| <b>Carbonation Resistance</b>         | dk ≤ control concrete MC (0,45)           |        | (EN 13295)   |
| <b>Reaction to Fire</b>               | Class A1                                  |        | (EN 13501-1) |

## SYSTEM INFORMATION

|   |                             |                               |
|---|-----------------------------|-------------------------------|
| <b>System Structure</b>   | <b>Layer</b>                | <b>Product</b>                |
|   | Bonding primer - normal use | Sika MonoTop®-1010            |
|   | Bonding primer - heavy duty | SikaTop® Armatec®-110 EpoCem® |
|   | Repair mortar               | Sika MonoTop®-4012            |
|   | Smoothing coat              | Sika MonoTop®-3020            |
| Note: Other primers can be used. Contact Sika Technical Services for further information. |                             |                               |

## APPLICATION INFORMATION

|                             |  |                |                |
|-----------------------------|--|----------------|----------------|
| <b>Mixing Ratio</b>         | ~4.7 litres of water for 25 kg powder.   |                |                |
| <b>Fresh mortar density</b> | ~2.0 kg/l  |                |                |
| <b>Consumption</b>          | ~1.7 kg/m <sup>2</sup> /mm   |                |                |
|                             | Note: Consumption data is theoretical and does not allow for any additional material due to surface porosity, surface profile, variations in level, wastage or any other variations. Apply product to a test area to calculate the exact consumption for the specific substrate conditions and proposed application equipment. |                |                |
| <b>Yield</b>                | 25 kg of powder yields approximately 14.85 litres of mortar  |                |                |
| <b>Layer Thickness</b>      | <b>Application</b>   | <b>Minimum</b> | <b>Maximum</b> |
|                             | Horizontal   | 1 mm           | 5 mm           |
|                             | Vertical   | 1 mm           | 5 mm           |
|                             | Overhead   | 1 mm           | 5 mm           |
| <b>Product Temperature</b>  | Maximum  | +35 °C         |                |
|                             | Minimum  | +5 °C          |                |

|                                   |  |        |
|-----------------------------------|--|--------|
| <b>Ambient Air Temperature</b>    | Maximum  | +35 °C |
|                                   | Minimum  | +5 °C  |
| <b>Substrate Temperature</b>      | Maximum  | +35 °C |
|                                   | Minimum  | +5 °C  |
| <b>Pot Life</b>                   | ~50 minutes at +20 °C  |        |
| <b>Open Time</b>                  | ~40 minutes at +20 °C  |        |
| <b>Waiting Time / Overcoating</b> | Minimum 24 hours at +20 °C<br>As a guide, depending on weather conditions overcoat 3 days after application (2 days curing + 1 day drying) with the Sikagard® range of protective coatings. For other emulsion paints, refer to the relevant manufacturer's product information. |        |

## 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.

## FURTHER DOCUMENTS

- Concrete repair site handbook
- 850 3201 Method Statement Concrete Repair (01/2021) 3

## 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 Material Safety Data Sheet (MSDS) containing physical, ecological, toxicological and other safety-related data.

## APPLICATION INSTRUCTIONS

### EQUIPMENT

Select the most appropriate equipment required for the project:

#### SUBSTRATE PREPARATION EQUIPMENT

- Mechanical hand-held tools
- High or ultra-high pressure water blasting equipment

#### STEEL REINFORCEMENT EQUIPMENT

- Abrasive blast cleaning equipment
- High pressure water blasting equipment

### MIXING EQUIPMENT

- Clean mixing containers
- Small quantities: low speed electric single or double paddle mixer (< 500 rpm).
- Large quantities: Forced action mixer

### APPLICATION EQUIPMENT

- Hand applied: Plasterers hawk, trowel
- Wet Spray: All in one mixing and spraying machine or separate spraying machine and all associated ancillary equipment to suit application volumes

### FINISHING EQUIPMENT

- Trowel (PVC or wooden)
- Sponge

Also refer to Site Handbook 'Repair of Concrete Structures – Patch Repair and Spray Applications'

### SUBSTRATE PREPARATION

#### CONCRETE

1. Clean the substrate thoroughly so it is free from dust, loose material, surface contamination and material which reduces adhesion, prevents suction or wetting by the repair materials.
2. Remove delaminated, weak, damaged and deteriorated concrete and where necessary, sound concrete. Remove using mechanical hand-held tools, high or ultra-high-pressure water blasting equipment.
3. Remove sufficient concrete from around corroded reinforcement to allow cleaning, application of a corrosion protection coating (where required) and compaction of the concrete repair mortar.
4. Prepare repair surface areas in simple square or rectangular layouts to avoid shrinkage stress concentrations and cracking while the repair material cures. This can also avoid structural stress concentrations from thermal movement and loading during the service life.

## STEEL REINFORCEMENT

1. Remove rust, scale, mortar, concrete, dust and other loose and deleterious material which reduces bond or contributes to corrosion.
2. Prepare surfaces to bright steel, Sa 2 (ISO 8501-1), using abrasive blast cleaning or high-pressure water blasting equipment.

## MIXING

1. Pour the minimum amount of water into a suitable clean mixing container or equipment.
2. Gradually add the powder to the water while stirring slowly.
3. Mix thoroughly for at least for 3 minutes, add additional water if necessary.
  - Note: Do not add more water than the maximum specified amount.
4. Adjust to the required consistency to achieve a smooth consistent mix.
5. Check the consistency after every mix.

## APPLICATION

### IMPORTANT

#### Strictly follow installation procedures

Strictly follow installation procedures as defined in Method Statements, application manuals and working instructions which must always be adjusted to the actual site conditions.

### IMPORTANT

#### Protect from frost

Protect freshly applied material from freezing and frost to prevent cracking.

### IMPORTANT

#### Application in the direct sun or strong winds

Avoid application in direct sun, strong winds or both to reduce the risk of the Product cracking.

## REINFORCEMENT CORROSION PROTECTION COATING

1. Where a reinforcement coating is required, apply to the whole exposed circumference Sika MonoTop®-1010 or SikaTop® Armatec®-110 EpoCem® (Refer to individual Product Data Sheets).

## BONDING PRIMER

When a bonding primer is required to achieve the required adhesion values, use Sika MonoTop®-1010 or SikaTop® Armatec®-110 EpoCem® (Refer to individual Product Data Sheets).

Note: On a well prepared and roughened substrate or for a sprayed application, a bonding primer is generally not required.

## REPAIR MORTAR MANUAL APPLICATION

### IMPORTANT

#### Substrate pre-wetting

Insufficient substrate saturation prior to application will cause the mortar to not gain its full mechanical properties.

1. Only apply the Product to stable, prepared substrates.
2. Thoroughly pre-wet the prepared substrate for a minimum of 2 hours before application.
3. Keep the surface wet and do not allow to dry.
4. The final pre-wetted surface must achieve a dark matt appearance (saturated surface dry).

### IMPORTANT

#### Sagging or slumping of built up layers

Allow each layer to slightly harden and remain wet before applying subsequent layers.

1. Remove excess water from within the surface pores and cavities with a clean sponge.
2. Make a scratch coat using the repair mortar.
3. Apply the scratch coat over the complete substrate surface to form a thin layer to fill surface pores or cavities.
4. **IMPORTANT** Do not apply as a "feather edge". Apply the repair mortar onto the scratch coat 'wet on wet' between the minimum and maximum layer thicknesses without the formation of voids.

## REPAIR MORTAR SPRAYED APPLICATION - WET SPRAY

### IMPORTANT

#### Substrate pre-wetting

Insufficient substrate saturation prior to application will cause the mortar to not gain its full mechanical properties.

1. Only apply the Product to stable, prepared substrates.
2. Thoroughly pre-wet the prepared substrate for a minimum of 2 hours before application.
3. Keep the surface wet and do not allow to dry.
4. The final pre-wetted surface must achieve a dark matt appearance (saturated surface dry).

### IMPORTANT

#### Sagging or slumping of built up layers

Allow each layer to slightly harden and remain wet before applying subsequent layers.

1. Remove excess water from within the surface pores and cavities with a clean sponge.
2. Place the wet mixed repair mortar into the spraying equipment.
3. Spray the repair mortar onto the pre-wetted substrate between the minimum and maximum layer thicknesses without the formation of voids.

## SURFACE FINISHING

### IMPORTANT

#### Adding water during surface finishing

Do not add water during the surface finishing as this can cause discolouration and cracking.

1. Allow mortar to surface harden.
2. Surface finish to the required surface texture using a stainless steel, steel, PVC or wooden float.

## CURING TREATMENT

- Protect fresh mortar immediately from premature drying using an appropriate curing method, such as curing compound, moist geotextile membrane or polythene sheet.
- Curing compounds must not be used when they could adversely affect subsequently applied products and systems.

## CLEANING OF TOOLS

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

## 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. It may be necessary to adapt the above disclaimer to specific local laws and regulations. Any changes to this disclaimer may only be implemented with permission of Sika® Corporate Legal in Baar.

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### Product Data Sheet

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