BUILDING TRUST

PRODUCT DATA SHEET

Sika MonoTop®-3020 ZA

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

DESCRIPTION

Sika MonoTop®-3020 ZA 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 honeycombed 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
- 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

PRODUCT INFORMATION

Product Declaration	Complies with the general requirements of EN 1504-3: Class R3.
Chemical Base	Sulphate resistant cement, selected aggregates, additives and polymers
Packaging	25 kg bag
Shelf Life	12 months from date of production
Storage Conditions	Product must be stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between +5 °C and +35 °C. Always refer to packaging.
Appearance / Colour	Grey Powder
Maximum Grain Size	D_{max}: 0,5 mm

Soluble Chloride Ion Content	≤ 0,05 %	(EN 1015-17)

TECHNICAL INFORMATION

Compressive Strength	1 day 7 days 28 days	~9 MPa ~19 MPa ~40 MPa	(EN 12190)
Modulus of Elasticity in Compression	~11Gpa		
Tensile Strength in Flexure	28 days	6.9 MPa	(EN 12190)
	≥ 1.5 MPa		(EN 1542)
Tensile Adhesion Strength	≥ 1,5 MPa		(EN 1542)
Carbonation Resistance	dk ≤ control concrete MC (0,212)		(EN 13295)
Reaction to Fire	Class A1		(EN 13501-1)

SYSTEM INFORMATION

System Structure

Reinforcement Corrosion Protection/ Bonding Primer*

Sika MonoTop®-1010 ZA	Normal Use
SikaTop® Armatec® 110 EpoCem®	Demanding requirements

Concrete Repair Mortar

- Sika MonoTop®-4012 ZA

Pore Filler/ Smoothing Coat / Levelling Mortar

- Sika MonoTop®-3020 ZA

APPLICATION INFORMATION

Fresh mortar density	~2,0 kg/l		
Consumption	~1,7 kg/m²/mm Consumption depends on the roughness and absorbency of the substrate. This figure is theoretical and does not allow for any additional material due to surface porosity, surface profile, variations in level or wastage etc.		
Yield	25 kg of powder yields approximately 14,37 litres of mortar		
Layer Thickness	**Application** Horizontal Vertical Overhead	**Minimum** 1 mm 1 mm 1 mm	**Maximum** 5 mm 5 mm 5 mm
Ambient Air Temperature	+5 °C min. / +35 °C max.		
Mixing Ratio	~3,75 litres of water for 25 kg powder.		
Substrate Temperature	+5 °C min. / +35 °C max.		
Pot Life	~50 minutes at +20 °C		
Open Time	~40 minutes at +20 °C		
Waiting Time / Overcoating	Minimum 24 hours at +20 °C As a guide, depending on weather conditions overcoat 3 days after application (2 days curing + 1 day drying) with Sikagard® range of protective coatings. For other emulsion paints, refer to the relevant manufacturer's data sheet/ documentation.		

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

LIMITATIONS

- Avoid application in direct sun and/or strong winds.
- Do not add water over recommended dosage.
- Apply only to stable, prepared substrates.
- Do not add additional water during the surface finishing as this can cause discolouration and cracking.
- Protect freshly applied material from freezing.

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.

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 it's 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 it's 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.

Sika South Africa (Pty) Ltd
9 Hocking Place,
Westmead, 3608
South Africa
Phone +27 31 792 6500
www.sika.co.za