

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

PRODUCT INFORMATION

Product declaration	Complies with the general requirements of EN 1504-3: Class R3.
Composition	Sulphate resistant cement, selected aggregates, additives and polymers
Packaging	25 kg bag Refer to the current price list for available packaging variations.
Shelf life	12 months from date of production

- 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

SUSTAINABILITY

- 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 / CERTIFICATES

- 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

Storage conditions	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.
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Appearance and colour	Grey Powder
Maximum grain size	D _{max} : 0.4 mm
Soluble chloride ion content	≤ 0.05 % (EN 1015-17)

TECHNICAL INFORMATION

Compressive strength	1 day	8 MPa	(EN 12190)
	7 days	20 MPa	
	28 days	40 MPa	
Tensile strength in flexure	28 days	6 MPa	(EN 12190)
		≥ 1.5 MPa	(EN 1542)
Thermal compatibility	≥ 1.5 MPa (Part 1 Freeze-Thaw)		(EN 13687-1)
Capillary absorption	≤ 0.5 kg/m ² ·h ^{0.5}		(EN 13057)
Permeability to carbon dioxide	< 2000 μCO ₂		(EN 1062-6)
Carbonation resistance	dk ≤ control concrete MC (0,45)		(EN 13295)
Reaction to fire	Class A1		(EN 13501-1)

SYSTEM INFORMATION

System structure	Layer	Product
	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

Mixing ratio	~4.7 litres of water for 25 kg powder.		
Fresh mortar density	~2.0 kg/l		
Consumption	~1.7 kg/m ² /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.		
Yield	25 kg of powder yields approximately 14.85 litres of mortar		
Layer thickness	Application	Minimum	Maximum
	Horizontal	1 mm	5 mm
	Vertical	1 mm	5 mm
	Overhead	1 mm	5 mm
Material temperature	Maximum	+35 °C	
	Minimum	+5 °C	

Ambient air temperature	Maximum	+35 °C
	Minimum	+5 °C
Substrate temperature	Maximum	+35 °C
	Minimum	+5 °C
Pot Life	~50 minutes at +20 °C	
Open Time	~40 minutes at +20 °C	
Waiting time to 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 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 INFORMATION

- 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 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.

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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 EQUIPMENT

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

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LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the declared data for this product may vary from country to country. Please consult the local Product Data Sheet for the exact product data.

LEGAL NOTES

Any information or suggestions for use concerning Sika's products, which we either in writing or orally have given buyers or end-users of the product, have been given in good faith based on our own experiences and based on approved praxis and the technological and scientific knowledge on the time of giving such suggestions and information, which are given without any type of guarantees, and which do not lead to any further responsibility from Sika Danmark A/S, besides what is stated in the sales agreement in question. The buyer or end-user should themselves investigate or otherwise make sure, that our products are suitable for the use in question and further make sure that the products are kept and used correct and in agreement with the published rules and considering the actual conditions in order to avoid damages or less satisfactory results. Any order is accepted and any deliverance is affected according to the general terms of sales and delivery from Sika Danmark A/S, which are considered known and accepted, and which could be handed out when asked for. Our catalogues are not up-dated automatically. The present product data sheet is only for use in Denmark. Values stated in the present product data sheet should be seen as recommended, unless stated otherwise.

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