



BUILDING TRUST



## PRODUCT DATA SHEET

# Sika MonoTop®-3250 Thick Mortar

Cementitious multipurpose concrete repair mortar for thick applications (Formerly LANKO 731 REPAIR MORTAR)

### DESCRIPTION

Sika MonoTop®-3250 Thick Mortar is a cementitious, 1-part, hand applied, structural concrete repair mortar with high initial and final strengths for very thick applications. Suitable for repairing all types of reinforced concrete buildings, civil engineering and marine structures. Layer thickness up to 90 mm.

### USES

Sika MonoTop®-3250 Thick Mortar may only be used by experienced professionals.

- Repair of spalling and damaged concrete in buildings, dams, bridges, hydraulic structures, infrastructure and superstructure works. Restoration work (Principle 3, method 3.1, 3.2 and 3.3 of EN 1504-9).
- Increasing the bearing capacity of the concrete structure by adding mortar. Structural strengthening (Principle 4, method 4.4 of EN 1504-9).
- Increasing cover with additional mortar and replacing contaminated or carbonated concrete. Preserving or restoring passivity (Principle 7, method 7.1 and 7.2 of EN 1504-9)
- Repairs to reinforced concrete structures requiring a Class R4, R3, R2, R1 mortar
- Horizontal, vertical and overhead repairs

### CHARACTERISTICS / ADVANTAGES

- Thick applications up to 90 mm
- High early and final compressive strengths
- Good adhesion to concrete, mortar, stone and brick substrates
- High compactness, low porosity
- Good abrasion resistance
- Very low shrinkage
- Good surface finishing
- Ready to mix with water
- Excellent workability
- Applied manually or mechanically (wet spray)
- High pH passivates steel reinforcement
- Excellent resistance to sea water
- Does not contain chlorides or other corrosion promoting additives

### PRODUCT INFORMATION

Composition	Portland cement, fibres, additives and selected aggregates
Packaging	25 kg bag
Shelf life	6 months from date of production
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.
Appearance and colour	Powder / Grey
Maximum grain size	D <sub>max</sub> : ~2.0 mm

## TECHNICAL INFORMATION

Compressive strength	<b>Curing time</b>	<b>Compressive strength</b>	(EN 12190)
	1 d	~25 N/mm <sup>2</sup>	
	3 d	~35 N/mm <sup>2</sup>	
	7 d	~45 N/mm <sup>2</sup>	
	28 d	~60 N/mm <sup>2</sup>	
Values measured at water : powder = 0.15, curing temperature +30 °C			
Tensile strength in flexure	<b>Curing time</b>	<b>Flexural strength</b>	(EN 196-1)
	7 d	~8 N/mm <sup>2</sup>	
	28 d	~10 N/mm <sup>2</sup>	
Values measured at water : powder = 0.15, curing temperature +30 °C			
Tensile adhesion strength	≥ 1.5 N/mm <sup>2</sup>		(EN 1542)

## SYSTEM INFORMATION

System structure	<p>Note: Apply concrete repair mortar 'wet on dry' onto reinforcement corrosion protection.</p> <p>Note: Apply concrete repair mortar 'wet on wet' onto bonding primer or scratch coat.</p> <p><b>Rapid System</b></p> <p><b>Reinforcement corrosion protection coating</b></p> <table><tr><td>SikaTop® Armatec®-108 Plus</td><td>Normal Use</td></tr><tr><td>SikaTop® Armatec®-110 EpoCem®</td><td>Demanding requirements</td></tr></table> <p><b>Bonding primer (recommended)</b></p> <table><tr><td>Sikafloor®-09 Primer</td><td>Normal Use</td></tr><tr><td>SikaTop® Armatec®-110 EpoCem®</td><td>Demanding requirements</td></tr></table> <p><b>Concrete repair mortar</b></p> <p>Sika MonoTop®-3250 Thick Mortar</p> <p><b>Concrete protection coating primer</b></p> <p>Sikagard®-552 IN Primer W</p> <p><b>Concrete protection coating</b></p> <p>Sikagard®-550 W IN</p>	SikaTop® Armatec®-108 Plus	Normal Use	SikaTop® Armatec®-110 EpoCem®	Demanding requirements	Sikafloor®-09 Primer	Normal Use	SikaTop® Armatec®-110 EpoCem®	Demanding requirements
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## APPLICATION INFORMATION

Mixing ratio	Water : Powder = 0.14 to 0.16 (by weight) 3.5 L to 4.0 L water per 25 kg bag, dependent on desired consistency		
Fresh mortar density	~2.20 kg/L (water : powder = 0.15, +30 °C)		(EN ISO 2811-1)
Layer thickness	<b>Application area</b>	<b>Minimum</b>	<b>Maximum</b>
	Horizontal	5 mm	90 mm
	Vertical	5 mm	75 mm
	Overhead	5 mm	50 mm
Ambient air temperature	+5 °C min. / +35 °C max.		
Substrate temperature	+5 °C min. / +35 °C max.		
Pot Life	~25 minutes (water : powder = 0.15, +30 °C)		
Initial set time	~120 minutes (water : powder = 0.15, +20 °C)		(EN 196-3)
Final set time	~180 minutes (water : powder = 0.15, +20 °C)		(EN 196-3)

## Waiting time to overcoating

## Application

Sika MonoTop®-3250 Thick Mortar over SikaTop® Armatec®-110 Epo-cem®

Sikagard®-552 IN Primer W over Sika MonoTop®-3250 Thick Mortar

## Overcoating time

30 min

7 d

Above values are at +30 °C and 50 % relative humidity

Note: Times are approximate and will be affected by changing ambient conditions particularly temperature and relative humidity.

## 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

Sika Method Statement: Concrete repair with Sika MonoTop®-3250 Thick Mortar

## ECOLOGY, HEALTH AND SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

## APPLICATION INSTRUCTIONS

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

## EQUIPMENT

Select the most appropriate equipment required for the project:

### Substrate preparation equipment

- Mechanical hand-held tools
- High / ultra-high pressure water blasting system

### Steel reinforcement preparation equipment

- Abrasive blast cleaning system
- High pressure water blasting system
- Low pressure power washing equipment

### Mixing equipment

- Mixing container
- Small quantities: low speed electric single paddle mixer (< 500 rpm) with spiral, helix, hoop, basket or impellor paddle
- Large quantities or machine application - suitable forced action mixer

### Application equipment

Hand application:

- Plasterers hawk
- Trowel
- Protective gloves

Wet spray application:

- All in one mixing and spraying machine or separate spraying machine and all associated ancillary equip-

ment to suit application volumes

### Finishing equipment

- Trowel (Stainless steel, steel, PVC or wooden)
- Sponge
- Protective glove

## SUBSTRATE QUALITY / PRE-TREATMENT

### Concrete

- The substrate must be thoroughly clean, free from dust, loose material, surface contamination and material which reduce adhesion or prevent suction or wetting by repair materials.
- Remove delaminated, weak, damaged and deteriorated concrete and where necessary, sound concrete using appropriate equipment from the list above.
- Make sure sufficient concrete is removed from around the corroded reinforcement to allow cleaning, corrosion protection coating (where required) and compaction of the concrete repair mortar.
- Remove tying wire fragments, nails and other metal debris embedded in the concrete.
- Repair surface areas must be prepared to provide 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

Note: Method and choice of preparation equipment must take into account the type of materials to be removed from the reinforcement bars, bar congestion, contact between bars, and proximity to the concrete substrate.

1. Remove rust, scale, mortar, concrete, dust and other loose and deleterious material which reduces bond or contributes to corrosion.
2. Prepare the surfaces to bright steel finish.
3. Where exposed reinforcement is contaminated with chloride or other material which may cause corrosion, clean the reinforcement using low pressure power washing [up to 18 MPa (2700 psi)] techniques to wash away contaminants.

## MIXING

Note: Mix only as much material as can be processed (max. 25 kg)

1. Pour the minimum recommended clean water quantity into a mixing container / equipment.
2. While stirring slowly, add the powder to the water.
3. Mix thoroughly for at least 3 minutes until a smooth consistency is reached. Add additional water, if ne-

necessary, to the maximum specified amount.

## APPLICATION

### IMPORTANT

Do not apply in direct sun and/or strong winds.

#### Reinforcement corrosion protection coating

1. Immediately after surface preparation, apply the appropriate product to the whole exposed reinforcement circumference. Refer to the 'System structure' and individual Product Data Sheets for equipment and application details.

#### Concrete repair mortar with bonding primer

##### Bonding primer

Note: A bonding primer is normally required for structural repairs to achieve high adhesion values and for application in high temperatures.

1. Pre-wet the prepared concrete substrate with clean potable water (2 hours recommended).
2. Keep the surface wet and do not allow to dry.
3. Remove excess water from within the surface pores and cavities e.g. with a clean sponge.
4. Apply the appropriate bonding primer with a hard brush over the complete substrate surface to form a thin layer to fill surface pores or cavities. Refer to the 'System structure' and individual Product Data Sheets for equipment and application details.

##### Manual application

1. Apply the repair mortar as scratch coat by firmly scraping the repair mortar over the primed substrate to form a thin layer and fill any pores or cavities in the surface. Ensure the whole surface to be repaired is covered by the scratch coat.
2. Apply the repair mortar onto the scratch coat 'wet on wet' using a protective gloved hand or trowel at the minimum and maximum layer thicknesses without the formation of voids.
3. Prevent sagging or slumping of 'built up' repair mortar layers. For subsequent layers, wait until the previous layer is hard enough to accept the next layer without any deformation.

##### Wet spray application

1. Place the wet mixed Sika MonoTop®-3250 Thick Mortar into the spraying equipment and applied onto the primed substrate between the minimum and maximum layer thicknesses without the formation of voids.
2. Prevent sagging or slumping of 'built up' repair mortar layers. For subsequent layers, wait until the previous layer is hard enough to accept the next layer without any deformation.

#### Concrete repair mortar without bonding primer

1. Thoroughly pre-wet the prepared substrate (2 hours recommended).
2. Keep the surface wet and do not allow to dry.

3. Remove excess water from within the surface pores and cavities e.g. with a clean sponge. The final pre-wetted surface must achieve a dark matt appearance (saturated surface dry).

##### Manual application

1. Apply the repair mortar as scratch coat by firmly scraping the repair mortar over the pre-wetted substrate to form a thin layer and fill any pores or cavities in the surface. Ensure the whole surface to be repaired is covered by the scratch coat.
2. Apply the repair mortar onto the scratch coat 'wet on wet' using a protective gloved hand or trowel at the minimum and maximum layer thicknesses without the formation of voids.
3. Prevent sagging or slumping of 'built up' repair mortar layers. For subsequent layers, wait until the previous layer is hard enough to accept the next layer without any deformation.

##### Wet spray application

1. Place the wet mixed Sika MonoTop®-3250 Thick Mortar into the spraying equipment and applied onto the pre-wetted substrate between the minimum and maximum layer thicknesses without the formation of voids.
2. Prevent sagging or slumping of 'built up' repair mortar layers. For subsequent layers, wait until the previous layer is hard enough to accept the next layer without any deformation.

#### Surface finishing

##### IMPORTANT

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

1. Allow mortar to surface harden (~5 min after application).
2. Surface finish to the required surface texture using a stainless steel, steel, PVC or wooden float.

#### Cold weather working

Consider storing bags in a warm environment and using warm water to assist with achieving strength gain and maintaining physical properties.

#### Hot weather working

Consider storing bags in a cool environment and using cold water to ensure sufficient open time, to reduce cracking and maintaining physical properties.

#### CURING TREATMENT

- Protect fresh mortar immediately from premature drying using an appropriate curing method, e.g. curing compound, moist geotextile membrane, polythene sheet, etc.
- 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 or cured material can only be removed mechanically.

## LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for exact product data and uses.

## 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.

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