

PRODUCT DATA SHEET

Sika MonoTop[®]-3180 SA

One component, high early and final strength, thixotropic, cementitious bedding and repair mortar

DESCRIPTION

Sika MonoTop[®]-3180 SA is a 1-component, cement-based bedding mortar, when mixed with water, produces a homogeneous, thixotropic mortar with exceptionally high early and final strengths. It is suitable for use in hot and tropical climates.

USES

The product is specifically designed for critical applications as a bedding and repair mortar such as:

- High strength concrete restoration applications
- Bedding mortar for consecutive precast or cast-in-situ concrete elements in segmental construction
- Sealing and bonding of horizontal joints of onshore precast concrete wind towers
- Patching concrete defects in new construction

Contact the Technical Department of your local Sika office regarding any application not mentioned here.

FEATURES

- High early and ultimate strength development
- Quick return to service due to high early strength development
- Shrinkage-compensated
- Thixotropic consistency
- Long pot life
- Extended open time
- Easy to apply
- Excellent adhesion to concrete
- No segregation or bleeding
- Predictable performance

PRODUCT INFORMATION

Composition	Cement, selected fillers and aggregates, special additives
Packaging	25 kg bags
Appearance and colour	Grey powder
Shelf life	6 months from the date of production
Storage conditions	Store in original unopened packaging in cool and dry condition between +5 °C and +30 °C. Protect from direct sunlight, heat, and moisture.
Maximum grain size	$D_{\max} \sim 1 \text{ mm}$
Soluble chloride ion content	< 0.03%

TECHNICAL INFORMATION

Compressive strength	<u>1 day</u>	<u>≥ 40 N/mm²</u>	(ASTM C 109/C109M)
	<u>3 days</u>	<u>≥ 60 N/mm²</u>	
	<u>7 days</u>	<u>≥ 75 N/mm²</u>	
	<u>28 days</u>	<u>≥ 95 N/mm²</u>	
Expansion	<u>3 hours</u>	<u>> 0.02%</u>	(ASTM C940 modified)
	<u>Difference between 24 hours and 3 hours</u>	<u>0.02-0.5%</u>	
Tensile adhesion strength	≥ 1.5 N/mm ²		(ASTM D4541)
Bleeding	0%		(ASTM C 940)

APPLICATION INFORMATION

Mixing ratio	2.75 litres per 25 kg bag			
Yield	1 bag yields approximately 12.30 litres of mortar			
Layer thickness	<u>Minimum</u>	<u>10 mm</u>		
	<u>Maximum</u>	<u>30 mm</u>		
For higher application thicknesses, consult Sika's technical office.				
Ambient air temperature	+5 °C min. / +50 °C max.			
Pot Life	~ 60 minutes at +50 °C Note: Under laboratory controlled conditions. During hot weather conditions, please contact Sika Technical office for details on hot weather grouting procedure.			
Flowability	<u>Duration</u>	<u>23 °C</u>	<u>50 °C</u>	(ASTM C1437; EN 1015-3)
	<u>Initial</u>	<u>≥ 180 mm</u>	<u>≥ 160 mm</u>	
	<u>After 60 minutes</u>	<u>≥ 150 mm</u>	<u>≥ 110 mm</u>	
Note: Under laboratory controlled conditions.				
Fresh mortar density	~ 2.25 kg/L (+23 °C)			

BASIS OF PRODUCT DATA

All technical data stated in this Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

IMPORTANT CONSIDERATIONS

Sika MonoTop®-3180 SA may only be used by experienced professionals.

- Protect from direct sun and, or strong wind.
- Use only on clean, sound substrate.
- The substrate must be free of ice.
- Do not exceed the recommended water dosage.
- Keep exposed surfaces to a minimum.
- Follow hot weather grouting precautions while applying the product in high ambient temperatures.
- Do not use vibrating pokers.
- Avoid exposing surfaces to rainfall before final set.

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

SUBSTRATE QUALITY / PRE-TREATMENT

Concrete substrates shall be mechanically prepared to achieve a sound, clean, rough (ICRI-CSP 7 and above), and contaminant-free surface profile suitable for cementitious bedding mortars. All laitance, loose particles, curing compounds, oils, and weak surface layers shall be removed by appropriate mechanical means.

Prior to application, the prepared concrete surface shall be saturated with clean water for a minimum of 2 hours to ensure complete absorption into pores and surface voids. In high ambient weather conditions, chilled water shall be used for surface saturation and mixing. The substrate shall be maintained in a saturated condition and shall not be permitted to dry prior to mortar placement.

Immediately before installation of the bedding mortar and closure of formwork (where applicable), all free-

standing or ponded water shall be removed. The substrate must achieve a Saturated Surface Dry (SSD) condition, characterized by a uniform dark matt appearance without surface glistening, and with pores and surface pits adequately wetted but free of visible water.

Sika MonoTop®-3180 SA placement shall not proceed unless the substrate is in proper SSD condition, as excessive surface water or dry substrates may adversely affect bond development and material performance. Please ensure that the upper structural segment is installed immediately up on the placement of mixed Sika MonoTop®-3180 SA.

MIXING

Add the required quantity of clean water into a clean mixing vessel to achieve the desired consistency, then slowly add the Sika MonoTop®-3180 SA powder. Sika MonoTop®-3180 SA should preferably be mixed using a forced-action mixer for 2 to 3 minutes, or until a homogeneous, lump-free consistency is achieved. Do not mix for longer than 5 minutes. A slow-speed drill (≤500 rpm) may also be used. Tumble-type concrete mixers are not suitable. Mix only quantities that can be placed within 15–20 minutes. Do not add extra water or other materials. Mix full bags only

APPLICATION

Sika MonoTop®-3180 SA can be applied either manually using traditional techniques or mechanically. When applied manually, press the mortar firmly against the substrate with a trowel to ensure full contact and compaction. For mechanical placement, it is recommended to carry out a small trial to check suitability of pump & consistency of mixed material. Cure exposed surface as desired as soon as the mortar has started to stiffen. Do not overwork and do not add water to the surface. Overworking or re-tempering may cause surface cracking.

CURING TREATMENT

Curing shall commence immediately after Sika MonoTop®-3180 SA has achieved final set. Exposed surfaces shall be cured using water curing and protected with polyethylene sheeting or wet hessian to maintain adequate moisture retention throughout the curing period. Alternatively, the exposed surface shall be cured using curing compounds from Sika Antisol® range. Fogging or mist spraying shall not begin until final set has been reached to prevent surface damage, washout, or disruption of the mortar matrix.

CLEANING OF EQUIPMENT

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

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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ISO 9001, 14001, 45001 – SGS:
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- Sika International Chemicals LLC
- Sika Gulf B.S.C. (c)
ISO 9001, 14001 – SGS:
- Sika Saudi Arabia Limited
ISO 9001, 14001 – TÜV:
- Sika UAE LLC (Branch)
ISO 9001 – SGS:
- Sika MB LLC

All products are supplied under a management system certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001, ISO 14001 and ISO 45001.



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