

Sikalastic®-1K (au)

One component cementitious mortar fibre reinforced for flexible waterproofing

Product Description

Sikalastic®-1K is a one component, flexible, fibre-reinforced mortar, based on cement modified with special alkali-resistant polymers. It also contains fine fillers, selected graded aggregates, plus special waterproofing additives to produce a flexible mortar that is ideal for waterproofing surfaces subject to flexural strain. Sikalastic®-1K is suitable for application by brush, roller, trowel or spray equipment.

Uses

- Protection of concrete surfaces according to EN 1504-9, principles 1: protection against penetration (coating); 2: control of moisture (coatings); and 8 increasing resistivity (coating)
- Waterproof protection of concrete structures including tanks, basins, pipes, etc.
- Waterproofing external wall surfaces to be backfilled in ground
- Internal waterproofing of walls and floors, in basements
- Waterproofing of terraces and balconies over concrete or prepared existing tiles
- Flexible protection coating for reinforced concrete structures against the effects of de-icing salts, freeze-thaw and carbon dioxide swell consolidation.

Characteristics / Advantages

- Suitable for negative pressure to 25m
- Can be applied on damp substrates
- Easy to apply by brush, roller, trowel or spray equipment
- Good sag resistance and easy to apply, even on vertical surfaces
- Good crack-bridging properties
- Very good adhesion on many substrates including concrete, cement mortars, stone, ceramics, bricks and timber
- Mixing ratio can be adjusted in order to obtain the consistency and workability desired for the intended application

Approvals / Standards

AS4020:2005 - potable water

Product Data

Form

Colours

light grey

Packaging

20kg bags & 10kg pails

Construction



Storage

Storage Conditions / Shelf-Life 12 months from the date of production, if stored properly in the original packaging, in cool and dry conditions. Protect from water.

Technical Data

Chemical Base Cement modified with polymers, selected aggregates, admixtures, additives and fibres.

Mixed Density ~1.5 kg/l

Grading D_{max} : 0.125 mm

Mechanical Properties

Resistance against water pressure positive: 3.0 bar EN 12390-8, with exposition time modified to 5 days
negative: 2.5 bar Internal test according to EN 14891:2007 and DIN 1048-5:1991 with time modified to 6 days

Behaviour after immersion in salt water Adhesion to concrete after curing for 1 week at 20°C and R.H. 60% and then immersion in solution of 35g of sodium chloride for each litre of water (similar to sea water)

immersion for 1 month 1.90 MPa (EN 1542)
immersion for 3 months 1.52 MPa (EN 1542)
immersion for 6 months 1.22 MPa (EN 1542)
immersion for 1 year 1.15 MPa (EN 1542)

Requirements

Requirements as per EN 1504-2

	Test Method	Result	Requirement
CO ₂ permeability	EN 1062-6	$S_D = 61 \pm 7.7m$	$S_D \geq 50 m$
Water vapour Permeability	EN ISO 7783	$S_D = 50$ (class I)	Class I $S_D < 5m$ (permeable) Class II $5m < S_D < 50m$ Class III $S_D > 50m$ (not permeable)
Capillary absorption and liquid-water permeability	EN 1062-3	$0.077 \text{ kg m}^{-2} \text{ h}^{0.5}$	$w < 0.1 \text{ kg.m}^{-2}.\text{h}^{0.5}$
Freeze-thaw cycling (de-icing salt immersion)	EN 13687-1	3.77 MPa	$\geq 0.8 \text{ MPa}$
Bond strength	EN 1542	2.1 MPa	$\geq 0.8 \text{ MPa}$
Crack bridging	EN 1062-7	$L > 0.5 \text{ mm}$	Class A3 (+23°C)
Dangerous substances (Chromium VI)	EN 196-10	$< 0.0002\%$	According to clause 5.4
Reaction to fire	EN 13501-1	A2	Euro class

Application Details

Consumption ~1.2 kg/m²/mm thickness

Substrate Quality Substrates must be structurally sound, clean, dry and free of all contaminants such as dirt, oil, grease, coatings and other surface treatments, etc.

Substrate Preparation Clean surfaces by blast cleaning, high-pressure water-jetting (400 bar), wire-brushing, grinding and abrading of ceramic tiles etc., in order to remove all previous coatings, any traces of grease, rust, release agents, cement laitance and any other material which could reduce adhesion. All dust deposits from this preparation must also be removed i.e. by vacuum.

Repair concrete substrates, if necessary, with an appropriate cementitious mortar from Sika MonoTop® range of repair materials.

The substrate must be adequately dampened before application

Special Requirements	<p>All connections between the substrate and pipe entries, plant and equipment, light switches etc., must be sealed and watertight. Joints in concrete, pipes, anywhere else in the structure must also be sealed and made watertight.</p> <p>Use covered details at the floor/wall junctions</p> <p>Avoid any stagnant water presence or condensation / ponding on the surfaces before application.</p>
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Application Conditions / Limitations

Substrate Temperature	min. + 5°C; max. + 35°C
Ambient Temperature	min. + 5°C; max. + 35°C

Application Instructions

Water Dosage	<p>application by roller: ~ 7 litres water per 20 kg bag</p> <p>application by brush: ~ 6 litres water per 20 kg bag</p> <p>application by trowel: ~ 4.4 litres water per 20 kg bag</p> <p>Note: Product should be gradually added to water while mixing until homogenous.</p>
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Application Method / Tools

Apply Sikalastic®-1K by:

- spatula, exerting good and even pressure onto the substrate;
- short-medium hair roller, maintaining a homogeneous distribution on the substrate;
- brush, in 2 directions (diagonally opposite / cross-wise);
- mechanical spray: refer to local Sika Technical Department for details

Maximum recommended thickness is 2 mm per coat. The final thickness when applied by trowel will depend on the method of application and level or grade of exposure / waterproofing required.

For demanding applications including negative pressure. The optimum waterproofing performance is obtained by applying Sikalastic®-1K by trowel in at least 2 layers, to a total thickness of 3-4mm. For general applications 2 coats of minimum 1mm is recommended.

Application by brush or roller must be undertaken with the maximum attention to uniformly covering the whole surface. The maximum recommended thickness for these methods of application is 1 mm per layer. In these situations, the application of min. 2-3 layers is required. Wait until the first layer is dry before applying subsequent layers.

Do not blast clean or abrade before complete hardening of the material damaged. Wait for complete hardening, and then remove any roughness by light sanding.

Joints

At joints or other critical movement areas (for example junctions with vertical surfaces), the waterproofing can be reinforced by Sika Seal Tape S. It must be applied directly on the fresh first layer and then covered by the second layer of Sikalastic®-1K.

Tiling

Ceramic tiles and vitreous mosaics can be applied on Sikalastic®-1K using a specific adhesive (e.g. cement based adhesive with maximum flexibility according to Class C2 EN 12004). Joints gaps must be sealed with specific cement based products such as found in the Sika Ceram range.

Cleaning of Tools

Tools should be thoroughly cleaned with water before the material has set. Hardened mortar can be only be removed mechanically.

Pot Life	~ 30 min.@ +20°C	
	Sikalastic®-1K must be completely hardened before over-coating or water contact.	
	Guide for waiting times at the following temperatures:	
	+20°C	+10°C
■ Horizontal covering by tiles	~2 days	~7 days
■ Vertical covering by tiles	~2 days	~3 days
■ Water emulsion coating	~2 days	~3 days
■ Immersion in water	~2 days	~7 days
■ Contact with drinkable water	~15 days	~15 days
	Times will vary due to ambient and substrate humidity	

Notes on Application/ Limitations	<ul style="list-style-type: none"> - Sikalastic®-1K cannot be smoothed using a float or trowel - protect from rain for at least 24-48 h after application; - avoid direct contact with chlorinated water i.e. in swimming pools, by using suitable protection e.g. ceramic covering; - avoid application in direct sun light, when rain is imminent or in strong winds; - Setting time can be influenced by high relative humidity, particularly in closed rooms or basements. The use of adequate ventilation is recommended; - Before contact with drinking water, ensure the Sikalastic®-1K is completely hardened and wash carefully to remove dust, loose material or stagnant water in accordance with Italian regulation. - Sikalastic®-1K is permeable to water vapour and does not form a vapour barrier for resin based systems not permeable to gas - If a solvent based paint is to be applied on Sikalastic®-1K, carry out preliminary testing in order to ensure the solvents do not attack and damage the waterproofing layer.
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Health and Safety Information	For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet containing physical, ecological, toxicological and other safety-related data.
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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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