

Sika®-1

Integral Waterproofing Admixture for Concrete & Mortar

Product Description	Sika®-1 is a normal setting waterproofer, the action of which is to block the capillaries and pores in concrete and mortar. While blocking the passage of water it allows the structure to breathe, thus considerably reducing the possibility of condensation. Suitable for use in tropical and hot climatic conditions.
Uses	Sika®-1 is the basis of the internationally known Sika Structural Waterproofing System, which is completely suited to most types of brick and concrete structures subjected to water pressure and dampness both internal and external sources. Sika renderings are applied in two, three or four coats depending on the water pressure being dealt with and the structure involved. The standard rendering, however, normally consists of three coats.
Test Standards	Sika®-1 complies with the requirements of BS 6920 (certified by Water Quality Centre, Thames Water, U.K.) and is approved by the Drinking Water Inspectorate for contact with potable water.
Certificate	Sika®-1 and Sika Waterproofing Systems are certified by the British Board of Agreement (BBA Certificate 95/3174).

Product Data

Type	Specially Selected Chemical Composition
Form	Yellow Liquid
Packaging	5lt. and 25lt. pails, 200 lt. drums and 1000 lt. flow bins
Storage Condition	Store in a dry area between 5°C and 35°C. Protect from direct sunlight
Shelf life	12 months minimum from production date if stored properly in original unopened packaging

Technical Data

Density	Approximately 1.0 kg/lt.
Freezing Point	0° C
Chloride content	Nil (EN 934-2)



Application Details

Dosage	<p>Wall renderings and floor toppings, subjected to heavy water pressure (exceeding 3 metre water head) Wall rendering (min. 3 coats) 25 mm thick 1 litre for 1.3 - 1.5 m² Floor topping (min. 3 coats) 38 mm thick 1 litre for 1.0 - 1.3 m²</p> <p>Wall rendering or dampness, subjected to water pressure (< 3m) Wall rendering (min 3 coats) 20 mm thick 1 litre for 1.8 - 2.4 m² Dampness (min 2 coats) 13 mm thick 1 litre for 2.6 - 3.0 m²</p> <p>General Waterproofer 3.0 litres per 100 kg of cement</p> <p>Watertight concrete 9 litres of Sika®-1 per m³ concrete or 7 litres of Sika®-1 plus 2 litres of appropriate Sikament or Plastiment admixtures (added separately to the mix) Trial mixes should always be conducted to establish the exact water requirements per mix.</p>
Substrate Preparation	<p>All surfaces must be 100% roughened, either by hacking or, for new concrete, by using Sika Rugasol treated shutters and then wire brushed and thoroughly washed down. Immediately prior to application, the substrate must be soaked with clean water, however, no standing water or puddles should be present. All fixtures must be removed. Any cracks, porous patches and generally defective areas should be cut out and made good with Sika Repair Mortars as the work proceeds. Infiltration of water must be stopped with Sika-4a (see separate Data Sheet) or the water table must be lowered.</p>
Mixes	<p>For all uses with mortar, dilute one part Sika®-1 with 10 parts clean water (with wet sand 1:8, with dry sand 1:12). Stir the mixture often and use within 12 hours.</p> <p>For watertight concrete, Sika®-1 can be added neat provided that the concrete is well mixed to achieve a homogeneous consistency.</p> <p>Sika®-1 is a yellow liquid and the solution must be free from lumps before use. To ensure this, first mix equal quantities of Sika®-1 and water slowly, stirring all the time.</p> <p>The cement sand ratios given below are by volume. The use of sand, Grade M according to BS, is recommended.</p>
General waterproofing rendering mortar	<p>The addition of Sika®-1 to mortar for external rendering will increase the water tightness without impeding the breathing of the walls, thus reducing the risk of condensation and damage due to frost and efflorescence. Sika®-1 can be used to advantage in all types of mortar.</p> <p>Sika®-1: Water = 1:10, use 3 litres Sika®-1 per 100 kg of cement.</p>
Permeability reducing agent for concrete	<p>Sika®-1 can be used to produce watertight concrete. The concrete should contain a minimum of 350 kg cement per m³ concrete and a w/c ratio of < 0.45. The standard dosage of Sika®-1 in concrete is 9 litres per m³. Sika®-1 can be used in conjunction with selected Sikament or Plastiment admixtures at a dosage of 2 litres per m³ with Sika®-1 being added separately to the mix at a rate of 7 litres per m³. In ready mix plants, no dilution is required and the admixture can be added neat.</p> <p>Dosage: 9 litres Sika®-1 per m³ or 7 litres Sika®-1 plus 2 litres per m³ of selected Sikament or Plastiment</p>
Sika-1 rendering to resist moisture and dampness above ground level	<p>Prepare the surface as previously mentioned.</p> <p>Apply the first coat of a mortar (cement: sand = 1:1) waterproofed with Sika®-1 at not less than 6 mm thick, taking care to cover the whole surface. Mix to a 'sloppy' consistency and cast on vigorously.</p> <p>Apply the second coat of Sika®-1 mortar at not less than 6 mm, as soon as the previous coat has stiffened sufficiently (usually after 4-5 hrs.). The second coat should be a mortar (cement: sand = 1: 2.5) applied with a wood float finish.</p> <p>Sika®-1 : Water = 1 : 10</p>

Rendering to resist water pressure

Sika®-1 can be used in basements, vaults, swimming pools, tanks etc.

Prepare the surface as previously mentioned.

First day :

Apply the first coat of **Sika®-1** mortar (cement: sand = 1:1) at not less than 6 mm thick, taking care to cover the surface completely. Mix to a sloppy consistency and cast on vigorously.

For the second coat, mix mortar (cement: sand = 1:1.5) with **Sika®-1**. Apply at not less than 6 mm thick as soon as the first coat has stiffened sufficiently (usually after 4-5 hrs.). On completion, apply a splatter coat of the same mortar, mixed to a sloppy consistency, over the whole surface to form a key for the third coat.

Second day

Apply the third coat of **Sika®-1** mortar (cement: sand = 1:1.5) at not less than 6 mm thick. This final coat should be finished with a wood float.

Optional - high water pressure

Where a fourth coat rendering against high water pressure is required, an additional coat (cement: sand = 1:1.5) of **Sika®-1** mortar is applied with a following splatter key coat on the second day, thus extending the process by one day.

Lap joints

To ensure water tightness, careful attention should be paid to all joints in the work. Each coat should be stepped back 100 mm from the finishing line of the previous coat to avoid butt joints.(see diagram)

Dilution of Sika-1 : Water = 1 : 10

Sika®-1 waterproof floor topping

Preparatory work

As for rendering, the surface must be roughened, wire brushed and thoroughly washed down. Sand must be both clean and sharp. It should be graded from 3 mm down except for the main floor coat where it is preferable to use 4.76 mm sand.

Grout

The same **Sika®-1** mortar (Cement : Sand = 1:1) as for bonding coat (see below), but of sloppy, brushable consistency, must be vigorously applied by brush or broom and laid in strips and not walked on before applying the bond coat.

Bonding Coat

Sika®-1 mortar (cement: sand = 1:1) mixed to a plastic consistency and spread with a trowel to not less than 10 mm thick, laid in strips and not walked on before applying the main floor coat.

Main Floor Coat

Sika®-1 mortar (cement: sand = 1:2.5-3.0), preferably using 4.76 mm graded sand, should be laid, in a semi-dry state while the bonding coat is still wet, to a thickness of not less than 28 mm, i.e. a minimum total thickness of 38 mm. The surface must be tamped vigorously until moisture rises from the underlying coats to the surface.

Lap Joints

To ensure water tightness, careful attention must be paid to all joints in the work. The edge of each strip of bonding coat must be covered by the next strip (see diagram). After a prolonged interruption in the work the exposed area of the bonding coat must be carefully hacked and cleaned, wetted, treated with grout and then covered with a fresh layer of bonding coat.

Wall / Floor Angle

The first and second coats of the wall rendering are carried down and out onto the floor 200 mm and 100 mm respectively. Before laying the floor topping these exposed strips should be prepared and treated as in figure 1. The cove in the main floor coat, formed with cove trowel or bottle, helps to strengthen the joint between the wall rendering and the floor topping.

Dilution of Sika®-1: Water = 1 : 10 as for renderings

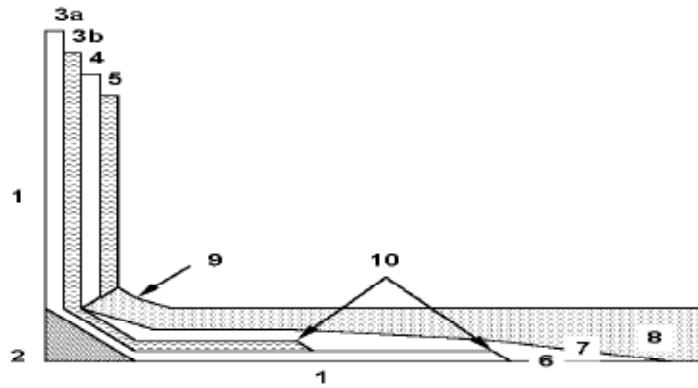


Figure 1

Key to Diagram

1. **Structure:** Surface hacked or roughened, wire-brushed and washed down. See Sika-4a Data Sheet for stopping water infiltrations.
2. **Corner Filler:** Mortar (cement: sand = 1:1-2) with **Sika 1**, after careful cleaning of the angle.
3. **First Day:** First coat, Mortar (cement: sand = 1:1) with **Sika 1**.
Second coat, Mortar (cement: sand = 1:1.5) with **Sika 1**, followed by a splatter coat as before.
4. **Second Day:** Third coat, Mortar (cement: sand = 1:1.5) with **Sika 1** followed by a splatter coat to form a key .
5. **Third Day:** Fourth coat, Mortar (cement: sand = 1:2.5) with **Sika 1**.
6. **Grout:** Mortar (cement: sand = 1:1), same as for bonding coat, but of sloppy consistency, applied with a brush onto a hacked surface after thoroughly wetting.
7. **Bonding Coat:** Mortar (cement: sand = 1:1), 10 mm thick
8. **Main Floor Coat:** Mortar (cement: sand = 1:2.5-3.0), preferably using 4.76 mm sand not less than 28 mm thick, vigorously tamped.
9. **Cove:** Rounded with coving tool or bottle.
10. **Detail:** Lap joints to be formed in grout and bonding coats.

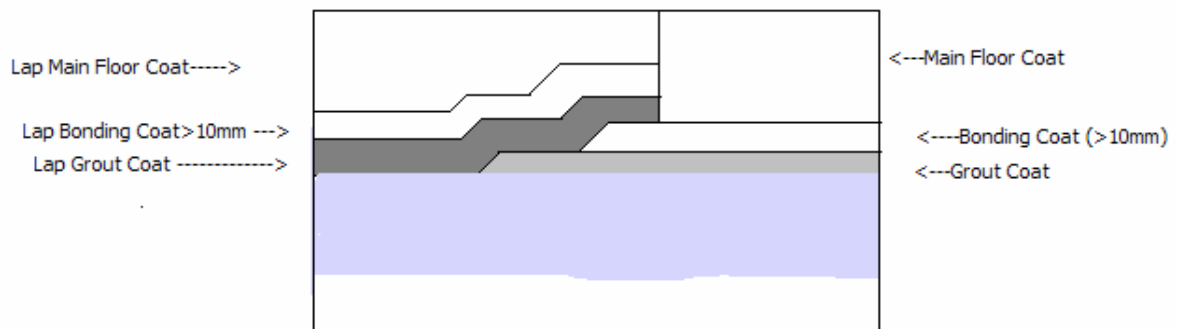


Figure 2

Curing	Fresh concrete must be cured properly, especially at high temperatures in order to prevent plastic and drying shrinkage. Use Sika Antisol products as a curing agent or apply wet hessian.
Compatibility	Sika®-1 can be combined with Sika-Aer and Sikament and Platiment admixtures. It is also compatible with sulfate resistant cement. Please consult our Technical Services Department.
Cleaning	Clean all equipment and tools with water immediately after use.

Remarks	<ol style="list-style-type: none"> 1. Expansion joints can be formed within the rendering where any movement is anticipated, by using Sikaflex Sealants or Sikadur Combiflex Membrane. These materials are also suitable for the joints formed in watertight terraces, flat roofs and paving etc. 2. An application of Purigo 5S to the completed rendering (after 14 days) will increase the surface hardness and resistance to alkaline and slightly acidic solutions. Where higher chemical resistance is required then the use of an epoxy coating from our Sikagard or Sikafloor range may be recommended. 3. For the success of Sika®-1 rendering it is essential that care is taken to explicitly adhere to the instructions, particularly surface preparation and the choice of the sand. The use of fresh Portland Cement is essential. 4. Curing: Sika®-1 renderings and floor screeds must be kept moistened for a minimum of 7 days after application to prevent rapid drying out. 5. Finishes: Consult our Technical Department for full information on coatings, plasters etc. 6. Additives: Do not mix Plasticizers, lime etc. with Sika®-1 mortars. 7. Keying: Always 'key-in' the next coat of mortar with a 'splatter coat', never scratch the previous coat to form a key as this may let dampness through. Always lap coats, never butt join coats. 8. Sand: The correct choice of sand is vital; only washed and well graded sharp sand may be used. The basic sand required is 3 mm down, (4.5mm down for main floor coat). All dry mixed sand: cement should be sieved prior to use. 9. Sika waterproofing systems must not be applied to weak or friable surfaces or to structures not suitable to withstand any developed hydrostatic pressure or other loadings. Should there be any doubts this should be checked by a structural engineer. 10. The use of a specialist waterproofing contractor should be considered for anything other than simple applications. Contact Sika's Technical Services Department for further advice and information. 11. Ensure associated Sika products and construction materials also have Drinking Water Inspectorate Approval, when used in structures where such compliance is required. 12. Sika Ferrogard® 901 Corrosion Inhibitor, can be used in watertight, reinforced concrete at the rate of 2-4% by weight of cement, depending on exposure, to prolong the service life of the structure.
Notes	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.
Safety	For information and advice on the safe handling, storage and disposal of chemical products, users should refer to the most recent Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related data.

Legal note

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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