



PRODUCT DATA SHEET

SikaSwell® S-2

ONE-PART POLYURETHANE, EXTRUDABLE SWELLING WATERSTOP (BENTONITE-FREE)

PRODUCT DESCRIPTION

SikaSwell® S-2 is a specially formulated, high performance, swellable, one-component, polyurethane-based waterstop for use in all kinds of construction joints. Swelling rubber creates a compression seal within joint, blocking the passage of water.

WHERE TO USE

- Designed for construction joints in new watertight concrete structures
- Excellent for sealing pipe penetrations through walls and floor slabs
- May be applied to horizontal, vertical and overhead surfaces
- Material used to seal interlocking joints in sheet pile installations
- Excellent for sealing joints between precast elements
- Ideal for watertight construction joints between new and existing concrete

CHARACTERISTICS / ADVANTAGES

- Swells up to 100 % in potable water, slightly less in salt water and wastewater.
- Permanently water resistant, with no leaching and does not dissolve in water.
- Capable of sealing construction joints with head pressures of up to 345 KPa (50 psi) or 35 m Hydrostatic head (115 ft hyd. head).
- Elastic - withstands wet/dry cycling.
- Easy, simple application.
- Adaptable in the field to suit job requirements.
- No nails, glue, or hooks required.
- Controlled expansion eliminates cracking in fresh concrete.
- Offers resistance to various chemicals.
- Thixotropic properties allow SikaSwell® S-2 to seal irregular joint surfaces.
- Very economical.
- Saves labour by eliminating inverted keyways, split forming, heat splicing, special fittings and tying to rebar associated with conventional PVC waterstops.
- No mixing required.
- Allows more thorough vibration of concrete at joint, resulting in better concrete consolidation which aids in achieving a watertight joint.

PRODUCT INFORMATION

CSC MasterFormat®	03 15 13 WATERSTOPS
Composition / Manufacturing	1-part polyurethane, moisture curing
Packaging	600 mL (20 US fl. oz) sausage, 20/case
Appearance / Colour	Red
Shelf Life	9 months in original, unopened packaging.

Storage Conditions	Storage temperatures: 5–32 °C (41–89 °F). Condition product at temperatures between 10 and 32 °C (50 and 89 °F) before using.														
Density	1.33 kg/L (11.08 lb/US gal.)														
Dimensions	Profile Dimensioning* Suggested dimensions of SikaSwell® S-2 profile depending on concrete thickness <table border="1"> <thead> <tr> <th>Concrete Thickness</th> <th>Number of profiles required</th> <th>Dimensions of side length of triangular section (mm)</th> </tr> </thead> <tbody> <tr> <td>200–300 mm (8–12 in)</td> <td>1</td> <td>16 (5/8 in)</td> </tr> <tr> <td>300–500 mm (12–20 in)</td> <td>1</td> <td>19 (3/4 in)</td> </tr> <tr> <td>> 500 mm (> 20 in)</td> <td>2</td> <td>19 (3/4 in)</td> </tr> </tbody> </table> <p>*For general purposes, it is recommended to use a triangular section with a side length of 16 mm (5/8 in) when maximum diameter of concrete aggregate is ≤ 25 mm (1 in). If maximum diameter of concrete aggregate is > 25 mm (1 in), a triangular section with a side length of 19 mm (3/4 in) is recommended.</p>			Concrete Thickness	Number of profiles required	Dimensions of side length of triangular section (mm)	200–300 mm (8–12 in)	1	16 (5/8 in)	300–500 mm (12–20 in)	1	19 (3/4 in)	> 500 mm (> 20 in)	2	19 (3/4 in)
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TECHNICAL INFORMATION

Shore A Hardness	Before swelling	40–60	(ASTM D2240)
	After swelling	> 10	
Swelling	After 24 hours	< 20 %	(DIN 52451)
	After 7 days	> 100 %	50 °C (122 °F) and 65 % R.H.

APPLICATION INFORMATION

Consumption	600 mL (20 US fl. oz) uni-pac sausage seals:		
	Triangular	Yield	
	16 x 16 x 16 mm (5/8 x 5/8 x 5/8 in)	5.5 m (18 linear ft)	
	19 x 19 x 19 mm (3/4 x 3/4 x 3/4 in)	3.7 m (12 linear ft)	
	Note: Yield may vary based on substrate irregularities.		
Curing Rate	24 hours	2 mm (5/64 in)	
	7 days	10 mm (3/8 in)	
Skinning time	2 hours	(CQP 019-1)	
Ambient Air Temperature	10–32 °C (50–89 °F)		
Substrate Temperature	10–32 °C (50–89 °F) *Product can be extruded best when applied at temperatures exceeding 20 °C (68 °F); lower temperatures increase viscosity. In case of cold weather, product should be stored in rooms heated at 20 °C (68 °F) over the 8 hours before placement.		

BASIS OF PRODUCT DATA

Properties tested at 23 °C (73 °F) and 50 % R.H. unless stated otherwise.

Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.

LIMITATIONS

- Protect from rain and moisture to avoid expansion before placing fresh concrete.
- It is not recommended to use SikaSwell® S-2 in movement joints.
- Do not store in direct contact with sunlight.
- Keep protected from moisture.
- If leakage occurs, the watertightness of the joint will increase as the SikaSwell® S-2 undergoes additional expansion in the presence of moisture.
- If concreting height is higher than 500 mm (20 in) protect SikaSwell® S-2 with a layer of concrete or mortar 100 mm (4 in) thick.
- It is not recommended to leave the product in contact with green concrete or in contact with a surface that has a very high moisture content, for a long time before casting new concrete. This can decrease the adhesion between SikaSwell® S-2 profile and the surface of the joint.
- The smoothness and stiffness of SikaSwell® S-2 may vary depending on the ambient temperature. However, the properties will not be affected.
- Contact Sika Canada for guidance in situations requiring resistance against specific chemical substances.

ENVIRONMENT, HEALTH & 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

SUBSTRATE QUALITY

Substrate must be clean, sound, free of loose particles, dust, laitance, oils, and other contaminants.

SUBSTRATE PREPARATION

Clean all surfaces. Surface may be dry or damp, with no presence of standing water. Do not leave the product in contact with wet concrete, or on a surface with a very high moisture content, for a long period of time, before casting new concrete. These conditions will decrease the adhesion between the SikaSwell® S-2 bead and the surface of the joint.

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APPLICATION METHOD / TOOLS

Recommended application temperatures: 10 to 32 °C (50 to 89 °F). Extrude material using a manual Avon 15 600 mL/20 oz sausage caulking gun, or an air powered Trent 20 Pneu (600 mL/20 oz) sausage caulking gun, both available from Sika, or other approved gun. Cut the nozzle to obtain a triangular extrusion section with a size fulfilling effective needs (or use nozzle included in carton of SikaSwell® S-2). Apply a uniform, continuous bead to the hardened concrete. Wait for approximately 2 hours after placement of the SikaSwell® S-2 before placing concrete. The minimum thickness of concrete around the SikaSwell® S-2 should be 100 mm (4 in) on each side (reinforced concrete) or 150 mm (6 in) on each side (non-reinforced concrete), and 100 mm (4 in) on top. For optimum application, store at 21 °C (70 °F) for a minimum of 8 hours prior to use; if the material appears stiff, knead the sausage for a short time before placing in bulk gun.

CLEAN UP

Clean all tools and equipment immediately after use with Sika® Urethane Thinner and Cleaner. Once hardened, material can only be removed mechanically. Wash soiled hands and skin thoroughly in hot, soapy water or use Sika® Hand Cleaner towels.

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 recommendations, or from any other advice offered. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. 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 or may be downloaded from our website at: www.sika.ca

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Product Data Sheet

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