

## PRODUCT DATA SHEET

# SikaSwell® S-2

### HYDROPHILIC, SWELLABLE JOINT SEALANT

#### DESCRIPTION

SikaSwell® S-2 is a 1-part, hydrophilic polyurethane sealant that expands upon contact with water, effectively sealing construction joints and penetrations in concrete structures. It is used to adhere SikaSwell® A and SikaSwell® P profiles to the concrete structure.

#### USES

SikaSwell® S-2 is used to seal:

- Construction joints
- Pipe and steel work penetrations through walls and floor slabs
- Around all types of penetrations and construction joints
- Construction joints in cable ducts

SikaSwell® S-2 is used for fixing and adhering the following swellable profiles:

- SikaSwell® A
- SikaSwell® P

Please note:

- Do not use SikaSwell® S-2 for movement joints.
- SikaSwell® S-2 is suitable for sealing against water pressures up to 2 bar. For pressures above 2 bar, use an alternative or supplementary Sika® joint sealing solution. For more information, contact Sika Technical Services.

#### PRODUCT INFORMATION

|   |                                      |                       |
|---|--------------------------------------|-----------------------|
| <b>Chemical Base</b>  | 1-part polyurethane, moisture curing |                       |
| <b>Packaging</b>  | 300 ml cartridges                    | 12 cartridges per box |
|   | 600 ml unipacs                       | 20 unipacs per box    |
| Refer to the current price list for available packaging variations. |                                      |                       |
| <b>Colour</b>   | Oxide red                            |                       |
| <b>Shelf Life</b>   | 12 months from date of production    |                       |

#### CHARACTERISTICS / ADVANTAGES

- 1-part, easy and fast to apply
- Highly economical joint sealing solution
- Versatile solution for joints and details
- Optimised expansion rate
- Water-resistant (wet and dry cycles)
- Good adhesion to various substrates
- BBA Agrément Certificate with SikaSwell® A-2010

#### ENVIRONMENTAL INFORMATION

- Contributes towards satisfying Indoor Environmental Quality (EQ) Credit: Low-Emitting Materials under LEED® v4
- Contributes towards satisfying Materials and Resources (MR) Credit: Building Product Disclosure and Optimization — Sourcing of Raw Materials under LEED® v4
- Contributes towards satisfying Materials and Resources (MR) Credit: Building Product Disclosure and Optimization — Material Ingredients under LEED® v4

#### APPROVALS / STANDARDS

- Resistance to water pressure and durability  
SikaSwell® A2010, SikaSwell® S-2, BBA, Certificate No.13/4994

**Storage Conditions**

The Product must be stored in original, unopened and undamaged packaging in dry conditions at temperatures between +5 °C and +25 °C.

Always refer to packaging.

Refer to the current Safety Data Sheet for information on safe handling and storage.

|         |           |                 |
|---------|-----------|-----------------|
| Density | 1.24 kg/L | (EN ISO 2811-1) |
|---------|-----------|-----------------|

**TECHNICAL INFORMATION**

|                  |   |              |
|------------------|---|--------------|
| Shore A Hardness | 30–50, unswollen (7 d / +23 °C / 50 % r.h.) | (EN ISO 868) |
|------------------|---|--------------|

|                     |         |        |
|---------------------|---------|--------|
| Service Temperature | Minimum | -20 °C |
|                     | Maximum | +50 °C |

|                  |             |                            |                            |            |
|------------------|-------------|----------------------------|----------------------------|------------|
| Change of volume | <b>Time</b> | <b>Demineralised water</b> | <b>5 % saline solution</b> | (EN 14498) |
|                  | 1 day       | ~25 %                      | ~8 %                       |            |
|                  | 7 days      | ~100 %                     | ~25 %                      |            |
|                  | 30 days     | ~200 %                     | ~50 %                      |            |

Note: The Product expands when it comes into contact with water, a process that takes several hours. When totally dry, the Product shrinks to its original dimensions. Upon further contact with water, the Product expands again.

|                   |   |
|-------------------|---|
| Swelling pressure | The pressure developed by the material depends on the stiffness of the surrounding concrete structure. The stiffness is influenced by concrete quality, voids, gaps and other weaknesses. If the concrete structure is in perfect condition, the material can create a swelling pressure of > 10 bar. |
|-------------------|---|

**APPLICATION INFORMATION**

|             |                                   |                          |                       |
|-------------|-----------------------------------|--------------------------|-----------------------|
| Consumption | <b>Size of triangular section</b> | <b>300 ml cartridges</b> | <b>600 ml unipacs</b> |
|             | 12 mm                             | 4.1 m                    | 8.2 m                 |
|             | 15 mm                             | 3.1 m                    | 6.2 m                 |
|             | 20 mm                             | 1.8 m                    | 3.6 m                 |

Consumption depends on the roughness and absorbency of the substrate.  
 Note: Consumption data is theoretical and does not allow for any additional material due to surface porosity, surface profile, variations in level, wastage or any other variations. Apply the Product to a test area to calculate the exact consumption for the specific substrate conditions and proposed application equipment.

|          |                                     |            |
|----------|-------------------------------------|------------|
| Sag Flow | Tested at +23 °C / 50 % r.h. < 2 mm | (ISO 7390) |
|----------|-------------------------------------|------------|

|                     |         |        |
|---------------------|---------|--------|
| Product Temperature | Maximum | +35 °C |
|                     | Minimum | +5 °C  |

|                         |         |        |
|-------------------------|---------|--------|
| Ambient Air Temperature | Maximum | +35 °C |
|                         | Minimum | +5 °C  |

|                       |         |        |
|-----------------------|---------|--------|
| Substrate Temperature | Maximum | +35 °C |
|                       | Minimum | +5 °C  |

|                            |  |
|----------------------------|--|
| Substrate Moisture Content | Dry or matt damp. Do not apply in construction joints with standing water. |
|----------------------------|--|

|   |                                     |            |              |
|---|-------------------------------------|------------|--------------|
| <b>Curing Rate</b>  | Cured 1 day at +23 °C / 50 % r.h.   | ~2.0 mm    | (CQP049-2)   |
|   | Cured 10 days at +23 °C / 50 % r.h. | ~10.0 mm   |              |
| <b>Skin Time</b>  | Tested at +23 °C / 50 % r.h.        | 60 minutes | (EN 15651-1) |
| Place SikaSwell® profiles onto SikaSwell® S-2 within a maximum of 30 minutes. |                                     |            |              |

## SYSTEM INFORMATION

|                                  |                      |                     |
|----------------------------------|----------------------|---------------------|
| <b>System Structure</b>          | STAND-ALONE SOLUTION |                     |
|                                  | Sealant              | SikaSwell® S-2      |
| <b>WITH A SIKASWELL® PROFILE</b> | Adhesive             | SikaSwell® S-2      |
|                                  | Swelling profile     | SikaSwell® A        |
|                                  |                      | SikaSwell® P System |

## 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.

## 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

The substrate must be sound, clean, dry or matt damp and free from all surface contaminants that could impair the adhesion of the sealant.

### SUBSTRATE PREPARATION

#### EXISTING CONCRETE

Rough surfaces are susceptible to leaking. If the surface is too irregular for SikaSwell® S-2 to effectively level, the irregularities must be eliminated. Prior to applying SikaSwell® S-2 and the SikaSwell® A or SikaSwell® P profile, smooth the area with a suitable Sika® leveling mortar or through mechanical means.

#### FRESHLY CAST CONCRETE

Freshly cast concrete can be smoothed with a batten where SikaSwell® S-2 is to be placed.

## APPLICATION

### IMPORTANT

#### Poor Product performance due to insufficient concrete covering the SikaSwell® profile

The SikaSwell® profile must be covered with concrete that withstands the pressure created when the SikaSwell® profile expands. If the concrete cover is insufficient, in case of low density concrete or voids, the SikaSwell® profile will not be able to perform its waterproofing function effectively.

1. Place the SikaSwell® profile in the centre of the covering concrete structure.
2. In reinforced concrete, apply a minimum cover of 8 cm on both sides of the SikaSwell® profile.
3. In unreinforced concrete, apply a minimum cover of 15 cm on both sides of the SikaSwell® profile.

### SEALANT WITH A SIKASWELL® PROFILE

1. Apply the SikaSwell® S-2 adhesive in a narrow bed onto the prepared substrate, extruded in a triangular section ~12 mm wide and ~12 mm deep.  
Note: Extrude enough material to level the roughness of the substrate.
2. Press the SikaSwell® profile firmly into the freshly applied SikaSwell® S-2.  
Note: Place the SikaSwell® profile within a maximum of 30 minutes (+23 °C / 50 % r.h.). Ensure that full and continuous contact between the SikaSwell® S-2 adhesive and both the SikaSwell® profile and the substrate is achieved.
3. Allow SikaSwell® S-2 to harden for at least 12 hours before placing concrete. For pouring height > 50 cm, allow SikaSwell® S-2 to harden for at least 24 hours before placing concrete.
4. Protect the SikaSwell® S-2 and the SikaSwell® profile against water – for example, rain – until the concrete is placed.
5. When placing the concrete, compact the fresh concrete well around the SikaSwell® profile to achieve dense concrete without any honeycombing or voids.

### SEALANT AS STAND-ALONE SOLUTION

| <b>Structure thickness</b> | <b>Size of triangular section</b> |
|----------------------------|-----------------------------------|
| < 20 cm                    | 12 mm                             |
| 20–30 cm                   | 15 mm                             |
| 30–50 cm                   | 20 mm                             |

1. Apply SikaSwell® S-2 in a triangular bead onto the prepared substrate.  
Note: Use a triangular nozzle, or cut the nozzle, to obtain a regular triangular extrusion section. Apply SikaSwell® S-2 according to the dimensions specified in the table.
2. Ensure that full and continuous contact between the SikaSwell® S-2 and the substrate is achieved.
3. Allow SikaSwell® S-2 to harden for at least 12 hours before placing concrete. For pouring height > 50 cm, allow SikaSwell® S-2 to harden for at least 24 before placing concrete.
4. Protect the SikaSwell® S-2 against water – for example, rain – until the concrete is placed.

#### **CLEANING OF TOOLS**

Clean all tools and application equipment with Sika® Colma Cleaner immediately after use. Hardened material can only be removed mechanically.

#### **LOCAL RESTRICTIONS**

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

#### **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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#### **Product Data Sheet**

SikaSwell® S-2  
March 2025, Version 07.01  
020703300110000001