

SikaSwell[®]-Profiles

Swellable joint sealing profiles

Product Description

Sealing profiles which swell in contact with water.

Uses

To seal:

- Construction joints
 - Pipe and steel work penetrations through walls and floor slabs
 - Construction joints in precast concrete
 - Construction joints in tunnel segments
 - Construction joints in cable ducts, etc.
 - Around all types of penetrations through concrete
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Characteristics / Advantages

- Easy to apply
 - Can be applied on different substrates
 - With protective coating to avoid premature swelling
 - Highly economical
 - Swells in contact with water
 - Water resistant
 - No hardening time required
 - No welding required
 - Adaptable to fit many different detailing tasks
 - Different types and dimensions available
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Tests

Approval / Standards

STUVA: Water tightness test (October 99).

FH Aachen: Test of resistance to ageing (06.07.01).

PSB Corporation: Testing of hydrophilic sealing profiles (15.08.02).

Hygiene-Institut Gelsenkirchen: Scientific examination according to water-hygienic aspects (14.10.03).

Construction



Product Data

Form

Appearance / Colours

Mono Types:

Plain section swelling profiles

Highly swellable red profiles

Hybrid Types:

Plain-section or hollow-core hybrid swelling profiles

Dual swellable profiles

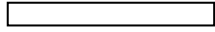
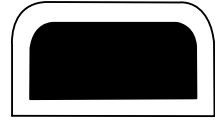

Red outer covering: Highly swellable red part

Black inner core: Swellable part

Packaging

Rolls packed in cardboard boxes, quantity depending on type of profile, consult the following table.

Types

Type	Width (mm)	Thickness (mm)	Cross section (schematically view)	Description	m / box
Mono Types					
P-2003	20	3		Highly swellable profile	7 x 20 = 140
Hybrid Types					
P-2010 H	20	10		Dual swellable profile with stabilizing inner core	1 x 10 = 10 5 x 10 = 50
P-2507 H	25	7		Dual swellable profile with pressure relief chambers	

Other profiles are available to order on request.

Storage

Storage Conditions / Shelf Life

48 months from date of production if stored in unopened, undamaged and sealed original packaging in dry conditions at temperatures between +5°C and +35°C. Protect from UV light.

Technical Data

Chemical Base

Red part: Combination of hydrophilic swelling resins and rubber
Black inner care: EPDM

Change of Volume

Hydrophilic swelling red part:

7 days in tap water: $\geq 100\%$

14 days in tap water: $\geq 150\%$

(DIN 53521)

10 dry-wet cycles in tap water: $\geq 100\%$

(1 cycle = 7 days dry and 7 days in tap water)

(DIN 53521)

Swelling Pressure

≤ 15 bar after 7 days stored in tap water

Mechanical / Physical Properties

Tensile Strength

Hydrophilic swelling red part:

≥ 2.5 N/mm²

(DIN 53504)

	<i>EPDM black part:</i> ≥ 7.0 N/mm ²	(DIN 53504)
Shore A Hardness	<i>Hydrophilic swelling red part:</i> 75 +/- 5	(DIN 53505)
	<i>EPDM black part:</i> 80 +/- 5	(DIN 53505)
Elongation at Break	<i>Hydrophilic swelling red part:</i> ≥ 250%	(DIN 53504)
	<i>EPDM black part:</i> ≥ 100%	(DIN 53504)

System Information

Application Details

Substrate Quality	The substrate must be sound, clean, dry, 'mat damp', free from all surface contaminants.	
Substrate Preparation	All loose particles, release agents, laitance, paint, rust and other poorly adhering materials must be removed by suitable hand or mechanical preparation. Surfaces which are excessively rough tend to leak later on. We recommend smoothing of freshly placed concrete with a batten where the sealing profile is to be placed.	

Application Conditions / Limitations

Substrate Temperature	Dependent on the adhesive which has been selected. Please consult the corresponding Technical Data Sheet.	
Ambient Temperature	Dependent on the adhesive which has been selected. Please consult the corresponding Technical Data Sheet.	
Substrate Moisture Content	The substrate must be dry or "mat damp".	

Application Instructions

Application Method / Tools

Fixing methods:

SikaSwell®-Profiles can be fixed with SikaSwell® S-2

Smooth, flat, dry substrates such as PVC, metals, precast concrete elements etc.

- With SikaSwell® S-2

Apply SikaSwell® S-2 in a narrow bed (size of triangular section ~ 5 mm) to the substrate. The profiles must be placed within max. 30 minutes onto and pressed well into the still fresh SikaSwell® S-2 sealant until small quantities of SikaSwell® S-2 ooze out from both side of the profiles.

Allow SikaSwell® S-2 to harden for 2-3 hours before placing concrete.
Please consult the Technical Data Sheet of SikaSwell® S-2.

Rough, uneven, dry or 'mat damp' substrates (e.g. scabbled concrete):

- With SikaSwell® S-2

SikaSwell® S-2 must be extruded in sufficient quantity to level the roughness of the substrate.

Apply SikaSwell® S-2 in a narrow bed (size of triangular section ~ 5 mm) to the substrate. The profiles must be placed within max. 30 minutes onto and pressed well into the still fresh SikaSwell® S-2 sealant until small quantities of SikaSwell® S-2 ooze out from both side of the profiles.

Allow SikaSwell® S-2 to harden for 2 - 3 hours before placing concrete.
Please consult the Technical Data Sheet of SikaSwell® S-2.

General:

It is important that a full and continuous contact between the SikaSwell®-Profiles and the substrate is achieved.

Place SikaSwell®-Profiles in the centre of the concrete section.

Minimum cover to profiles on both sides must be 10 cm (reinforced concrete) or 15 cm (non reinforced concrete).

Connections and corners must be butt jointed and fixed.

During concreting, compact well around SikaSwell®-Profiles to provide a dense concrete without and honeycombs or voids.

Cleaning of Tools

Clean all tools and application equipment with Sika® Colma-Cleaner immediately after use. Hardened / cured material (adhesive) can only be mechanically removed.

Notes on Application / Limitations

SikaSwell®-Profiles expand in contact with water. This does not happen immediately, but slowly after several hours. Nevertheless it is advisable not to leave SikaSwell®-Profiles any length of time in the open air or exposed to rain water (max. 24 hours as long as water can drain away).

Do not use SikaSwell®-Profiles for movement joints!

Do not use SikaSwell®-Profiles in salty water. For seawater use SikaSwell® P-2003 M / -2005 M or -2507 HM Profiles (separate Technical Datasheet, only available on special order).

If the water level suddenly increases the watertightness of joints will only be achieved when SikaSwell®-Profiles have swollen.

In a totally dry state SikaSwell®-Profiles shrink to their original dimensions, but expand again in contact with water.

Do not use SikaSwell®-Profiles for sealing against water pressures higher than 2 bar because of the limited sealing distance.

If SikaSwell®-Profiles are to be fixed around small diameter pipes use additional mechanical fixing with tie wire or a sleeve.

Value Base

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

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 Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related data.

Legal Notes

The information, and, in particular, the recommendations relating to the application and end-use of Sika's 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 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 proprietary rights of third parties must be observed. All orders are accepted subject of our terms and conditions of sale. Users should always refer to the most recent issue of the Australian version of the Technical Data Sheet for the product concerned, copies of which will be supplied on request.

PLEASE CONSULT OUR TECHNICAL DEPARTMENT FOR FURTHER INFORMATION.

