BUILDING TRUST

PRODUCT DATA SHEET

Sika Waterbar® - Elastomer Clamped Type

Sika Elastomer Clamped Waterbars synthetic rubber based for use in steel clamping constructions

PRODUCT DESCRIPTION

Sika Elastomer Clamped Waterbars are permanently elastic waterbars for sealing expansion joints made of synthetic rubber for use in connection with clamping structures made of steel.
Sika Elastomer Clamped Waterbars are available in different shapes and sizes. Depending on the profile type, the clamped waterbars have one or two clamping legs for use as a single or double-sided clamped waterbar. Clamped waterbars for one-sided clamping are equipped with an internal or external cast-in leg.

USES

PRINCIPLES FOR USE

- Design and installation in accordance with German Standards DIN 18197 and DIN 18533-1
- Jointing technology according to DIN 18197 and DIN 7865
- Vulcanizing of butt joints only by Sika trained and certified people and in accordance with Sika vulcanizing instructions
- Installation of clamping constructions only by Sika trained and certified people

USES

Waterproofing of joints connecting new to existing structures or for movement joints or remedial sealing and waterproofing of joints. Sika Elastomer Clamped Waterbars are commonly used to seal joints in building construction and civil engineering with medium to high loads and exposure requirements.

CHARACTERISTICS / ADVANTAGES

- High tensile strength and elongation
- High permanent elasticity with high resilience
- Suitable for high levels of hydrostatic pressure
- Resistant to naturally occurring materials aggressive to concrete
- Resistant to a broad spectrum of chemical agents (specific testing is always recommended for each situation and exposure level)
- Dimensionally stable in contact with hot bitumen
- Robust cross-sections for handling on site
- Butt joints can be made by vulcanization on site

APPROVALS / STANDARDS

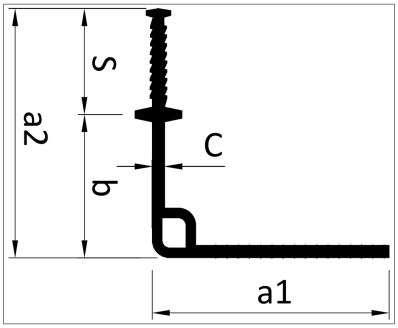
- DIN 18197, as relevant
- DIN 7865-2
- DIN 7865-4, as relevant
- DIN 18533-1, as relevant
- ZTV-ING, RiZ-ING, RiZ-ING Fug 6 for joint covers
- DB AG DS 804.6101
- Sika vulcanizing instructions
- Sika instructions for vulcanizing machines
- Sika Elastomer Clamped Waterbars installation Method Statement

PRODUCT INFORMATION

Chemical Base	Styrene-butadiene-rubber (SBR)
Packaging	▪ Supplied as standard rolls of 20, 25 or 40 m dependent on profile, on Euro or disposable pallets ▪ Prefabricated formpieces, on Euro or disposable pallets dependent on size ▪ Accessories are supplied in a clamping set, as shown on the accessory list, packed on Euro pallets
Shelf Life	The product does not decompose if stored correctly
Storage Conditions	Stored on the pallets as supplied on a flat base ▪ For long term storage > 6 months in enclosed areas: The recommendations of DIN 7716 apply. The storage area should be covered, cool, dry, free from dust and moderately ventilated. The Elastomer waterbars must be protected from heat sources and strong artificial lights with an high UV content ▪ Short term storage > 6 weeks and < 6 months in enclosed areas: The principles of DIN 7716 apply. On construction sites, outdoors: In dry storage, protected by suitable covers from direct sunlight, snow and ice, or any other form of contamination. Store separate from other potentially harmful materials, plant and equipment such as structural steel, reinforcements, fuels etc. Store away from traffic and site roads ▪ Short term storage < 6 weeks on construction sites, outdoors: Protected from contamination or damage. Protected by suitable covers from strong sunlight, snow or ice etc. ▪ Vulcanizing materials should be covered and stored in a cool, dry area free from dust and contamination. It is recommended that the stock requirements be coordinated for a maximum storage period of about 6 weeks.
Appearance / Colour	Black

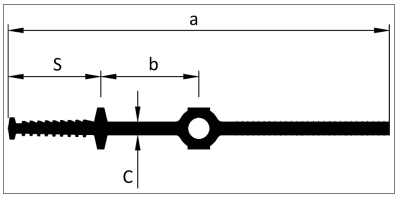
SYSTEM INFORMATION

System Structure	The limits of water pressure and stress given in the tables below apply to standard uses with joint widths w_{nom} of 20 mm or 30 mm, without any specific additional testing being required. Different values may be used when more precise information on all of the relevant stresses and structural requirements of the specific project is available. These systems are normally designed to be clamped on the side of the structure away from the water wherever possible. Forms:

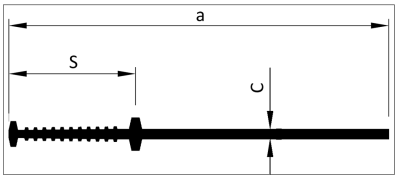


Total width a1/a2 (mm)	Width b (mm)	Width c (mm)	Width s (mm)	Water pressure P (bar)	Resulting movement Vr (mm)
FM 350 K					
190/200	115	10	85	1,5	20

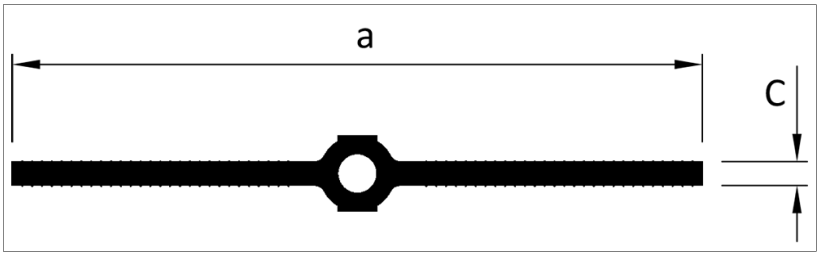
FM 500 K					
225/272	172	13	100	2,0 [2])	20



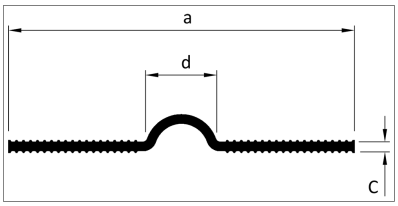
Total width a (mm)	Width b (mm)	Width c (mm)	Width s (mm)	Water pressure P (bar)	Resulting movement Vr (mm)
FM 350 KF					
350	--- [1])	12	85	1,5	20



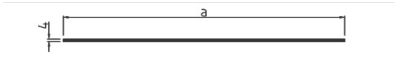
Total width a (mm)	Width b (mm)	Width c (mm)	Width s (mm)	Water pressure P (bar)	Resulting movement Vr (mm)
F 300 KF					
300	--- [1])	8	100	1,5	3 [2])



Total width a (mm)	Width b (mm)	Width c (mm)	Width s (mm)	Water pressure P (bar)	Resulting movement Vr (mm)
FMG 350					
350	--- [1])	12	---	1,5 [3])	20



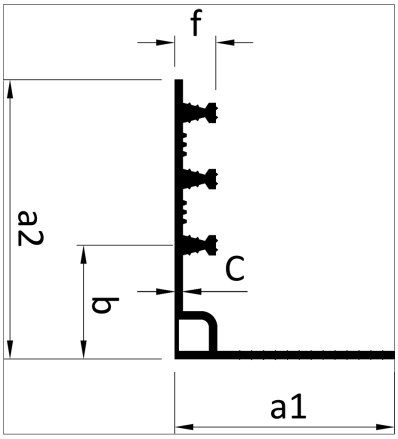
Total width a (mm)	Width b (mm)	Width c (mm)	Width s (mm)	Water pressure P (bar)	Resulting movement Vr (mm)
O 380					
380	80	10	---	0,3	25
OG 380 fabric rein-forced					
380	80	10	---	2,5	15



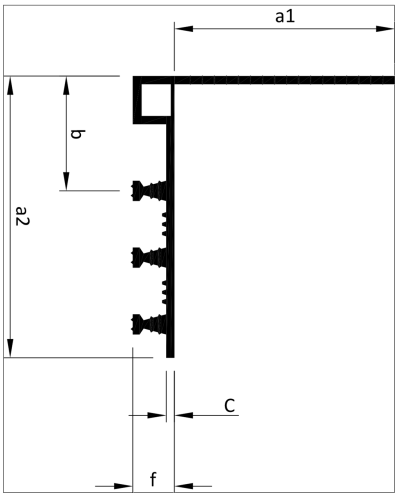
FPK: a = 200, 250, 300, 350, 400, 500 mm

Total width a (mm)	Width b (mm)	Width c (mm)	Width s (mm)	Water pressure P (bar)	Resulting movement Vr (mm)
FPK 250 *					
250	--- [1])	4	---	0,6 [3])	3 [2])
FPK 300					
300	--- [1])	4	---	0,6 [3])	3 [2])
FPK 350*					
350	--- [1])	4	---	0,6 [3])	3 [2])
FPK 400					
400	--- [1])	4	---	0,6 [3])	3 [2])
FPK 500					
500	--- [1])	4	---	0,6 [3])	3 [2])

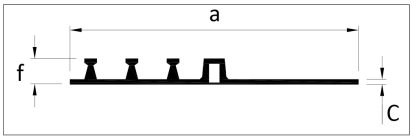
*Stock items
[1]) Dependant on installation position
[2]) Other data dependent on installation position
[3]) Clamping on the side facing water



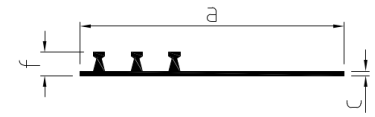
Total width a1/a2 (mm)	Width b (mm)	Width c (mm)	Anchoring ribs N x f (mm)	Water pressure P (bar)	Resulting movement Vr (mm)
AM 350 Ki *					
166/211	86	6	3 x 31	0.7	20



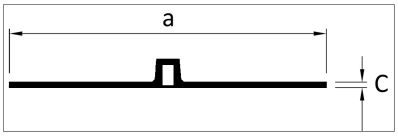
Total width a1/a2 (mm)	Width b (mm)	Width c (mm)	Anchoring ribs N x f (mm)	Water pressure P (bar)	Resulting movement Vr (mm)
AM 350 KA					
166/211	86	6	3 x 31	0.7	20



Total width a (mm)	Width b (mm)	Width c (mm)	Width s (mm)	Water pressure P (bar)	Resulting movement Vr (mm)
AM 350 KF					
350	--- [1])	6	3 x 31	0.7	20



Total width a (mm)	Width b (mm)	Width c (mm)	Width s (mm)	Water pressure P (bar)	Resulting movement Vr (mm)
A 350 KF					
350	--- [1])	6	3 x 31	0.7	3 [2])



Total width a (mm)	Width b (mm)	Width c (mm)	Width s (mm)	Water pressure P (bar)	Resulting movement Vr (mm)
AMG 350					
350	--- [1])	6	3 x 31	0.7	20

*Stock items
[1]) Dependant on installation position
[2]) Other data dependent on installation position
[3]) Clamping on the side facing water
a1= Width of clamping part including central bulb
a2 = Width of cast-in part including central bulb
vr = Resulting movement $(v_x^2 + v_y^2 + v_z^2)$ ½
N No. of anchoring ribs
f Depth of profile (depth of anchoring ribs including base plate)

TECHNICAL INFORMATION

Shore A Hardness	62 ± 5	DIN ISO 7619-1
Tensile Strength	≥ 10 MPa	DIN 53504
Elongation	≥ 380%	DIN 53504
Tear Strength	≥ 8 N/mm	DIN ISO34-1: 2004-07

VALUE BASE

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

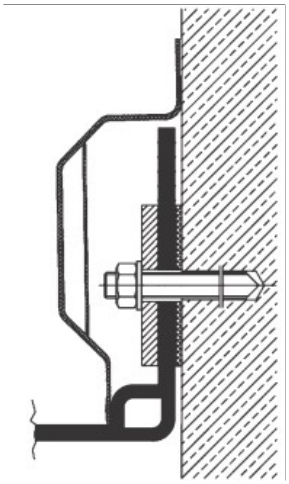
For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related data..

To select an appropriate protective equipment under www.sika.de our info datasheets are available: "General information on OSH" (Code 7510) and "General information on the wearing of protective gloves" (Code 7511).

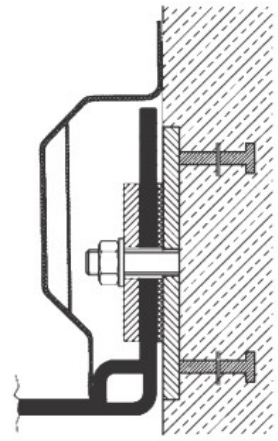
APPLICATION INSTRUCTIONS

APPLICATION METHOD / TOOLS

General:
Structures requiring loose or fixed flange constructions can create very difficult waterproofing situations and details, which should only be carried out by fully trained and experienced personnel. They require precision design and high standards of workmanship throughout. Only butt joints can be done on site with Sika Elastomer Clamped Waterbars; All required formpieces have to be factory manufactured only. The factory production of different formpieces and profiles reduces the required butt joints on site to a minimum.
Construction:
Example of a loose flanges joint design



Example of a loose/fixed flange joint design



Prefabricated formpieces:
Standard formpieces of Sika Elastomer Clamped Waterbars include: vertical edge, flat cross, flat T, flat edge, symmetric croner, angle corner.
Production of these formpieces is preferably in 90°, or in standard internal or external angles 60° - 175°.

Special formpieces:
Combined formpiece systems using combinations of different standard connections and profiles.
The normal maximum total length of formpiece systems: up to 20 m maximum (total for all separate lengths).

Handling
- Careful transport and handling on site
- Installation at ambient and material temperatures ≥ 0°C and in accordance with the requirements of the chemical anchor system
- Protection until the clamped waterbar system is fully cast in the concrete
- Special care must be taken of free waterstop ends
- The waterbars are cleaned before being cast in concrete
- The chemical anchors are placed as stated in the design

Installation
Sika Elastomer Clamped Waterbars are installed only by skilled company or personnel trained by Sika Germany GmbH. The metal flanges of the waterbars are compressed against the substrate (concrete structure or to a fixed flange) by anchors and loose flanges. The required contact pressure and the resultant anchors and flanges required are dependent on the stress and exposure. The design torque should be applied with a torque wrench and normally this is adjusted twice over the specified installation time sequence. The cast-in parts of the clamped waterbars should be installed as specified in DIN 18197.

Detailed information on installation is given in the relevant Sika method statements and instructions for use. If there are very high stresses or difficult concreting conditions, the waterbars can be supplied with integral or integrated injection hoses to additionally inject/grout the cast-in parts at a later date.

Jointing on site
The Sika Elastomer Clamped Waterbars are butt jointed together by vulcanization, i.e. with added rubber strips and the action of heat and pressure in a vulcanizing equipment with moulds dependent on the profile used and longitudinal strain and specified vulcanizing parameters for the specific forms (temperature and time). Jointing with other vulcanizing agents without heat or using adhesives or adhesive tape is not permitted. Site joints must only be formed as stated in the vulcanizing instructions.
Requirement: Minimum ambient temperature + 5 °C and dry weather conditions. Site joints must be done only by trained and qualified personnel. The training certificates must not be more than 2 years old. Training courses leading to such operative certification are run by Sika Deutschland GmbH, Stuttgart.
The requirements of DIN 18197 and DIN 7865 apply.
The key steps for butt joint vulcanization of Sika Elastomer waterbar profiles are fully described in the detailed vulcanizing instructions.

Flanging accessories:
Loose flanges, perforated galvanized steel, standard length 1.448 mm
- 80 x 8 mm * Ø 16 every 150 mm
- 80 x 10 mm * Ø 20 every 150 mm
- 100 x 10 mm * Ø 20 every 150 mm

90° Corners for internal and external angles with chemical anchor M 16/250
- 80 x 10
- 100 x 10

Loose flanges, stainless steel V4A, standard length 1.298 mm
- 40 x 6 mm * Ø 16 every 200 mm
- 80 x 10 mm * Ø 20 every 150 mm
- 100 x 10 mm * Ø 20 every 150 mm

90° Corners for internal and external angles with chemical anchor M 16/250
- 80 x 10
- 100 x 10

Raw rubber sealing layer
- 50 x 4 mm
- 80 x 4 mm
- 100 x 4 mm

- Other dimensions are possible

Chemical anchor mortar cartridges, packed in units of 10 pieces
- M 10
- M 12
- M 16

Anchor bars with nuts and washers, galvanized or stainless steel V4A type, packed in units of 10 pieces
- M 10 x 115
- M 12 x 160
- M 16 x 190

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.

SIKA LIMITED
Watchmead
Welwyn Garden City
Hertfordshire, AL7 1BQ
Tel: 01707 394444
Web: www.sika.co.uk
Twitter: @SikaLimited