BUILDING TRUST

PRODUCT DATA SHEET

Sika Waterbar® - Tricomer® Clamped Type

Sika Waterbar Tricomer Clamped Type thermoplastic for use in steel clamping construtions

DESCRIPTION

Sika Waterbar Tricomer Clamped Type are permanently flexible waterbars for sealing expansion joints made of PVC/NBR copolymer for use in connection with clamping structures made of steel.

Sika Waterbar Tricomer Clamped Type 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 principles in accordance with German Standards DIN 18197 and DIN 18533-1 as for as relevant
- Jointing technology in accordance with German Standards DIN 18197 and DIN 18541
- Welding of butt joints at site only by Sika trained and certified personnel in accordance with Sika welding 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 Waterbar Tricomer Clamped Type are commonly used to seal joints in building construction and civil engineering with low and medium 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)
- Robust cross-sections for handling on site
- Butt joints can be made by welding on site

APPROVALS / STANDARDS

Standards / Guidelines
- DIN 18197 as relevant
- DIN 18541-2
- DIN 18533-1 as relevant

Test Certificates / Approvals
- Manufacturer's test certificate, other tests and approvals as required
- Declaration of Compliance ÜH
- Certificate of Conformity in accordance to DIN 18541
- MPA NRW standard external monitoring test certificate

PRODUCT INFORMATION

Chemical base	Thermoplastic copolymer based on PVC-P with NBR, not bitumen resistant (NB)
Packaging	▪ Standard rolls 20 or 25 m dependent on profile, on euro or disposable pallets ▪ Prefabricated formpieces supplied on euro or disposable pallets dependent on size ▪ Clamping accessory kit for the waterstops as shown on the accessories list, on Euro pallets
Shelf life	The product does not decompose if stored correctly.
Storage conditions	▪ To be stored on the pallets as supplied on a flat base ▪ For long-term storage ≥ 6 months in enclosed areas: The storage area should be covered, cool, dry, free from dust and moderately ventilated. The Tricomer waterstops must be protected from heat sources and strong artificial lights with a high UV content ▪ Short-term storage > 6 weeks and < 6 months in enclosed areas on construction sites, outdoors: As for long-term storage i.e, 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, reinforcement or fuels etc., store away from traffic and site roads in a dry area ▪ Short-term storage ≤ 6 weeks on construction sites, outdoors: Protected from contamination or damage, Protected by suitable covers from strong sunlight and snow or ice
Appearance / Colour	Black

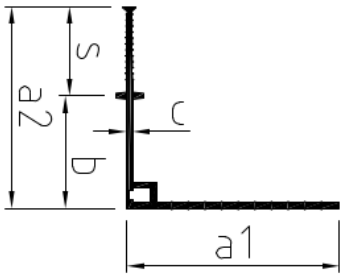
TECHNICAL INFORMATION

Shore A Hardness	67 ± 5	DIN 53505
Tensile Strength	≥ 10 MPa	EN ISO 527-2
Elongation	350%	EN ISO 527-2
Tear Strength	≥ 12 N/mm	ISO34-1

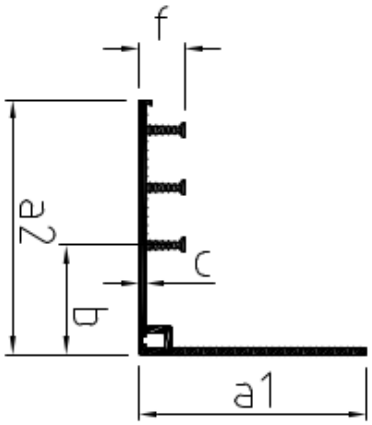
SYSTEM INFORMATION

System Structure

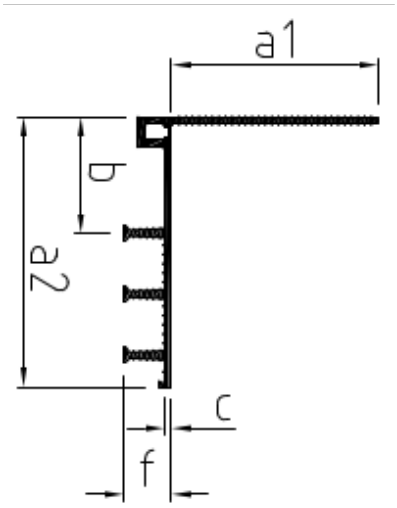
The limits of water pressure and stress given in the tables below apply to standard uses with joint widths w_{nom} of 20 mm or 30 mm, without any specific additional testing being required. Different values may be used when more precise information on all of the relevant stresses and structural requirements 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:



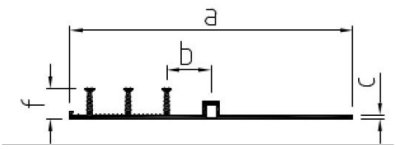
Total width a1/a2 (mm)	Width b (mm)	Thickness c (mm)	Width s (mm)	Water pressure P (bar)	Resulting movement Vr (mm)
D 320 K					
179/170	95	5	75	0.6	10
D 350 K TS					
220/267	100	11	167	1.5 [1)]	10



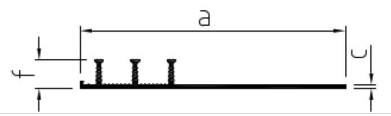
Total width a1/a2 (mm)	Width b (mm)	Thickness c (mm)	Anchoring ribs N x f (mm)	Water pressure P (bar)	Resulting movement Vr (mm)
DA 320/35 KI					
180/204	88	5	3 x 35	0.6	10



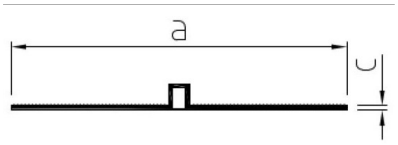
Total width a1/a2 (mm)	Width b (mm)	Thickness c (mm)	Anchoring ribs N x f (mm)	Water pressure P (bar)	Resulting movement Vr (mm)
DA 320/35 KA					
180/204	88	5	3 x 35	0.6	10



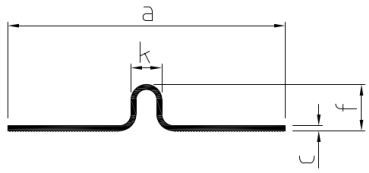
Total width a (mm)	Width b (mm)	Thickness c (mm)	Anchoring ribs N x f (mm)	Water pressure P (bar)	Resulting movement Vr (mm)
DA 320/35 KF					
320	≈ 73	5	3 x 35	0.6 [3]	10



Total width a (mm)	Width b (mm)	Thickness c (mm)	Anchoring ribs N x f (mm)	Water pressure P (bar)	Resulting movement Vr (mm)
AA 320/35 KF					
320	≈ 73	5	3 x 35	0.6 [3]	3 [2]



Total width a (mm)	Width b (mm)	Thickness c (mm)	Anchoring ribs N x f (mm)	Water pressure P (bar)	Resulting movement Vr (mm)
LF 320					
320	≈ 40	5	---	0.6 [3]	10



Total width a (mm)	Width b (mm)	Thickness c (mm)	Anchoring ribs N x f (mm)	Water pressure P (bar)	Resulting movement Vr (mm)
ZW 360					
360	66	7	---	0.3 [3]	20

Total width a (mm)	Width b (mm)	Thickness c (mm)	Anchoring ribs N x f (mm)	Water pressure P (bar)	Resulting movement Vr (mm)
FP 300					
300	≈ 30	5	---	0.6 [3]	3 [2]

[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)

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.

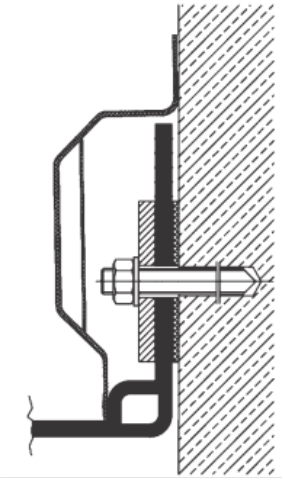
ECOLOGY, HEALTH AND SAFETY

APPLICATION INSTRUCTIONS

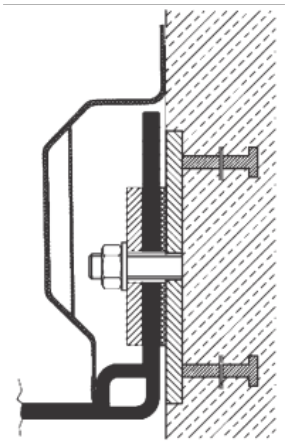
APPLICATION METHOD / TOOLS

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 Waterbar Tricomer Clamped Type; 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 Waterbar Tricomer Clamped Type 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 watebar ends
The waterbars are cleaned before being cast in concrete
The chemical anchors are placed as stated in the design

Installation:
Sika Waterbar Tricomer Clamped Type 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 injection hoses to additionally inject/grout the cast-in parts at a later date.

Jointing on site:
The thermoplastic Sika Waterbar Tricomer Clamped Type are butt jointed on site by welding with Sika welding equipement. The welding steps are described in full for all thermoplastic waterbar types in the Sika welding instructions for thermoplastic waterbars. These instructions are enclosed with every welding jig unit or are supplied direct to the contract on request.
General welding requirements: minimum ambient temperature + 5°C and dry weather conditions. The welding jigs used must allow a weld over the full cross-section of the waterstop, be temperature controlled and allow measured jointing pressure.
Site joints must be formed as stated in the welding instructionsructions and only by Sika trained and certified personnel. Their welding training completion cer-

tificates must not be more than 2 years old. Training courses leading to operative certification are run by Sika Deutschland GmbH.
All welding work is subject to the relevant local Health and Safety regulations.

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

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

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

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

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

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 declared data for this product may vary from country to country. Please consult the local Product Data Sheet for the exact product data.

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 (Vietnam)
Nhon Trach 1 Industrial Zone,
Nhon Trach Dist., Dong Nai Province,
Vietnam
Tel: (84-251) 3560 700
Fax: (84-251) 3560 699
sikavietnam@vn.sika.com