

PRODUCT DATA SHEET

Sika Waterbar® - Omega Clamped Type

Elastomer based, Ω - shaped waterbars for use as clamped waterbars in tilt flange constructions

DESCRIPTION

Sika Waterbar - Omega Clamped Type are Ω -shaped, exchangeable clamping profiles based on synthetic rubber for installation in certain tilting flange constructions for the permanent sealing of wide joints. Sika Waterbar - Omega Clamped Type are available without or with additional reinforcement with synthetic fabric, depending on the water pressure to be applied.

Designation

Sika Waterbar - Omega Clamped Type OK are synthetic rubber based, Ω - shaped clamped profiles without additional reinforcement by synthetic fabric.

USES

Sealing of wide joints with the inclusion of a tilting flange construction designed for the specific requirements.

- Sika Waterbar - Omega Clamped Type OK for sealing wide joints with high deformation and low water pressure
- Sika Waterbar - Omega Clamped Type OKB for sealing wide joints with high deformation and high water pressure

Typical structures and areas of use: tunnels, power plants, docks, locks and other hydraulic structures.

CHARACTERISTICS / ADVANTAGES

- Permanent elasticity with high recoverability
- High strength
- Increased stress absorption capabilities by fabric reinforcement
- High deformation
- Resistant to naturally occurring media that are 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 jointing by vulcanization possible on site

APPROVALS / STANDARDS

Certificates / Testings

- Factory Quality Certificate
- Certificate of Conformity for synthetic rubber quality in accordance with DIN 7865-2
- Other testing as agreed
- CAD production drawings and details for prefabricated Sika Waterbar - Omega Clamped Type systems

Standards / Regulations

- DIN 7865-4
- DIN 18533-1 as relevant
- DIN 18197 as relevant
- Sika Omega vulcanizing instructions
- Operating instructions for Sika vulcanizing equipment
- Sika Method Statement for the installation of Omega waterbars

PRODUCT INFORMATION

Chemical Base	<u>Standard design:</u> OK: Styrene-Butadiene-Rubber (SBR) OKB: Styrene-Butadiene-Rubber (SBR) + Polyester Fabric <u>Special design:</u> OK: Chloroprene Rubber (air side) and Natural Rubber (water side) OKB: Chloroprene Rubber (air side) and Natural Rubber (water side) + Polyester Fabric
Packaging	<ul style="list-style-type: none">▪ 20 m rolls on Euro or disposable pallets▪ Prefabricated waterbar systems according to size on Euro or disposable pallets
Appearance / Colour	Black
Shelf Life	The product does not decompose if stored correctly
Storage Conditions	<ul style="list-style-type: none">▪ 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 a 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.

TECHNICAL INFORMATION

Shore A Hardness	62 ± 5 Reaction to heat storage Shore-A hardness change ≤ +8°C	DIN 53505 DIN 53505
Elongation	≥ 380 % Reaction to heat storage: ≥ 300 %	EN ISO 527-2 DIN 53508
Tear Strength	≥ 10 N/mm Reaction to heat storage: ≥ 9 N/mm Tear propagation resistance ≥ 8 N/mm	DIN 53504 DIN 53508 ISO34-1: 2004-07

Maximum Resulting Movement

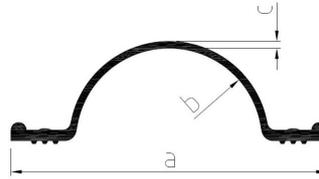
Compression Set
 ≤ 20% 168 h / 23°C
 ≤ 35% 24 h / 70°C

DIN ISO 815

DIN ISO 815

SYSTEM INFORMATION**System Structure**

Sika Waterbar - Omega Clamped Type OK and OKB profiles are not stock items, as they are all custom made for specific project dimensions and requirements.



Total width a (mm)	Radius b (mm)	Thickness of expansion part c (mm)	Water pres- sure p (bar)	Resulting movement Vr (mm)
OK 24	Elastomer			
240	96	8	0.1	40
OK 30	Elastomer			
300	156	8	-- ¹⁾	50
OKB 24	Fabric reinforced elastomer			
240	96	8	3.0	30
OKB 30	Fabric reinforced elastomer			
300	156	8	3.0	45
OKB 35	Fabric reinforced elastomer			
350	200	9	3.0	55
OKB 41	Fabric reinforced elastomer			
411	242	9	3.0	65

¹⁾ Dependent on installation

$V_r = \text{Resulting movement } (\sqrt{v_x^2 + v_y^2 + v_z^2})^{1/2}$

v_x In the waterbar plane and transverse to it (expansion or compression)

v_y Perpendicular to the waterbar plane (shear transverse to the waterbar)

v_z In the waterbar plane and longitudinal to it (longitudinal shear)

Note: Water pressure and deformation affect each other and are dependent on the specific installation situation and the waterbar design selected. The values in the above table apply to a typical situation. Different values may apply when the system design and details i.e. tilt flange construction, exposure stresses etc. and its installation requirements are fully known.

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 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

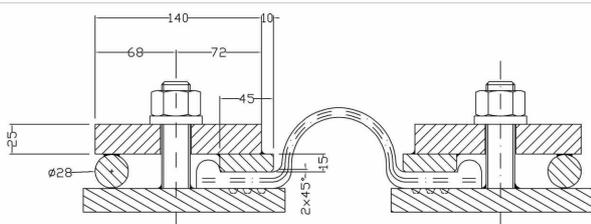
General:

Wide joints, the sealing of which require the use of Sika Waterbar - Omega Clamped Types with a specially designed tilting flange construction, place high demands on their design and execution and should therefore only be carried out by experienced, trained and certified personnel. They require a precise design and high quality workmanship.

Butt joints in these waterbars are the only site produced joints allowed for Sika Waterbar - Omega Clamped Type. All other profiles and section requirements must be factory prefabricated. The fact that these special waterbars are manufactured to order is also used to reduce the number of these butt joints required on site to a minimum.

Construction:

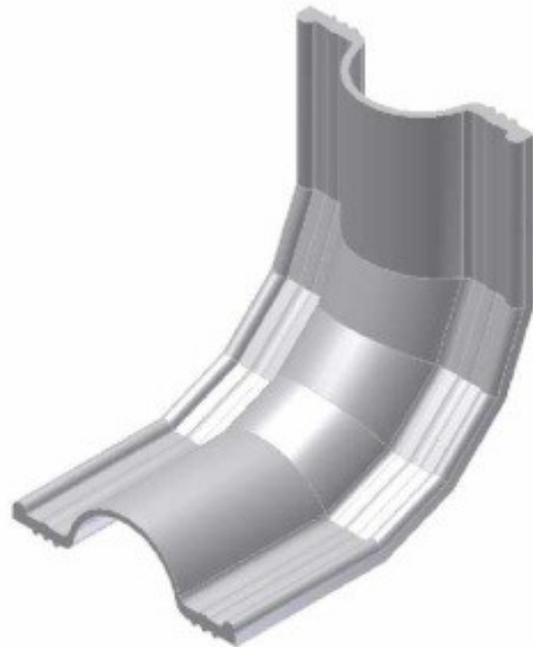
Example of tilt flange construction with Sika Waterbar - Omega Clamp Type



The drawing shows a typical design layout for these joints and connections. The joint and the waterproofing system must always be designed and installed as specified to suit the specific project requirements. The design tightening torque for the Sika Waterbar - Omega Clamped Types must only be applied with a torque wrench and adjusted twice in the specified time as detailed in the Installation Method Statement.

Factory prefabricated systems:

Prefabricated parts and sections for integration in specific project designed Sika Waterbar - Omega Clamped Type system solutions. The length of these prefabricated sections can be up to ca. 20 m. Standard types include:

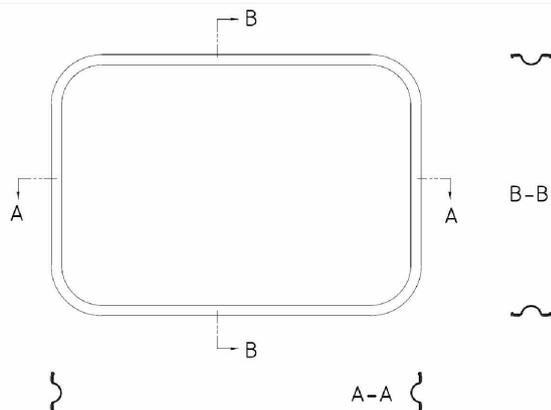


Curved sections R = 400 mm for Sika Waterbar - Omega Clamped Types OK / OKB



Flat L-sections for Sika Waterbar - Omega Clamped Types OK

Typical layout for a Sika Waterbar - Omega Clamped Type installation frame



Handling on site and installation:

- Handle with care and as recommended
- Only install the waterbars when the materials temperature is $\geq 0^{\circ}\text{C}$
- Protect the joint during installation and until all construction work is completed
- Clean the waterbar surfaces before installation, especially the clamping areas
- Sika Waterbar - Omega Clamped Types are installed with the help of a specially developed tilting flange clamp construction which is anchored in the building as a loose/fixed flange construction
- The installed Sika Waterbar - Omega Clamped Types must be tensioned and re-tensioned in a defined time
- Sika Waterbar - Omega Clamped Type systems assembly must only be carried out by skilled Company or with other personell trained and certified by Sika Germany GmbH

Connection on Site:

The Sika Waterbar - Omega Clamped Types are joined by vulcanizing. This involves applying heat and pressure in a vulcanizing equipment between profiled moulds and then holding the joint clamped for specific parameters (time and temperature). Vulcanizing materials without heat exposure or by using adhesives is not permitted (in accordance with DIN 18197). All site produced joints must be formed in accordance with the systems detailed vulcanizing instructions and all relevant health and safety regulations and safety must be complied with.

These site joints must only be made by trained and certified personnel. Training certificates are valid for 2 years. The requirements of DIN 18197 and DIN 7865-4 are applicable.

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Product Data Sheet

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Vulcanizing equipment:

- Vulcanizing equipment VG 450 with long clamping pins/eye bolts
- Moulds – specific made to the different Sika Waterbar - Omega Clamped Types
- Clamping tools for longitudinal clamping

Vulcanizing materials:

The vulcanizing materials must be ordered separately next to the vulcanizing equipment. The main vulcanizing material is natural rubber based and therefore must be stored in a cool, dark place and away from dust.

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. It may be necessary to adapt the above disclaimer to specific local laws and regulations. Any changes to this disclaimer may only be implemented with permission of Sika® Corporate Legal in Baar.

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