



SIKA® WATERBAR PVC WATERSTOPS FOR JOINTS IN CONCRETE

BUILDING TRUST



SIKA® WATERBAR

SIKA® WATERBAR made from PVC-P can be used as flexible waterstops and are designed for the sealing of movement/expansion and construction joints in new watertight concrete structures. Their geometries and material characteristics are varied to make them suitable for use as effective waterstops in many different types of structures and joints.



JOINT WATERPROOFING FOR CONCRETE STRUCTURES

MOVEMENT / EXPANSION JOINTS

Split components through their full thickness with joint gap of defined width. The reinforcement in movement joint is discontinuous. Movement/expansion joints allow differential movement due to temperature variations and/or load settlement in one or more directions of the area, sections or structures separates by the joint.



CONSTRUCTION JOINTS

Designed to split areas of the structure into separate concrete sections for work scheduling reasons or as a structural measure to transfer load. The reinforcement in construction joints is therefore continuous through the joint.



CONNECTION JOINTS

Flat or indented joints which split the concrete section through its full thickness without a defined joint gap. The reinforcement in connection joint is discontinuous. When the concrete section contracts, joint movement (joint opening) is possible, and when it expands then pressure transmission is possible.



WATERBARS FOR DIFFERENT APPLICATIONS

JOINT TYPE

WATERSTOPPING WATERBAR TYPE

WATERBARS TYPE

MOVEMENT / EXPANSION JOINTS

Internal movement / Expansion joint waterbar

Waterbar O



External expansion joint waterbar

Waterbar DR



CONSTRUCTION JOINTS

Internal construction joint waterbar

Waterbar V



External construction joint waterbar

Waterbar AR




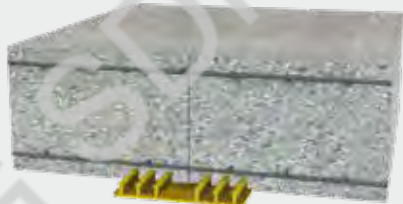
CONNECTION JOINTS

Internal connection joint waterbar

Waterbar DWall



ADVANTAGES AND DISADVANTAGES OF INTERNAL AND EXTERNAL WATERBARS

WATERBAR TYPE AND LOCATION	
	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Internal waterbar</p>  </div> <div style="text-align: center;"> <p>External waterbar</p>  </div> </div>
Advantage	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%; background-color: #e0f2f1; padding: 5px;"> <ul style="list-style-type: none"> ■ Suitable for high water pressure ■ Protected from damage after concrete placement ■ Can be used with water pressure from the inside or outside without additional precautions </div> <div style="width: 48%; background-color: #e1f5fe; padding: 5px;"> <ul style="list-style-type: none"> ■ Particularly suitable for thinner concrete components ■ Reinforcement adaptation to the waterbar is not always necessary if the concrete cover is sufficient ■ Split stop-end formwork is not necessary ■ Easy to fix to the formwork or binding to the concrete base </div> </div>
Disadvantage	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%; background-color: #e0f2f1; padding: 5px;"> <ul style="list-style-type: none"> ■ Not suitable for thinner components ■ Reinforcement adaptation to the waterbar is always necessary ■ Concrete placement is more difficult with horizontal waterbar ■ Split stop-end formwork is necessary </div> <div style="width: 48%; background-color: #e1f5fe; padding: 5px;"> <ul style="list-style-type: none"> ■ Hard to clean ■ Can loosen during formwork stripping ■ Waterbars can be fitted without additional precautions only on the water contact side. Water pressure can be absorbed only from this side without support ■ Not suitable for slab soffits because the downward facing stop anchors cannot be reliably cast in ■ Damage is possible during subsequent construction works </div> </div>

DESIGN PRINCIPLES FOR JOINT WATERPROOFING WITH WATERBARS

The waterbars must stop water penetrating through the joints into a structure and/or out of it; both in the case drinking water reservoirs and tanks, keeping the clean water in and dirty or contaminated ground water out. Successful joint waterproofing design principles and factors include:

- Correct design and dimensioning of the joint as a movement / expansion, connection or construction joint
- Selection of the waterbar material
- Selection of the form, profile and dimensions of waterbars
- Correct location of the waterbars in the concrete structure or component
- Correct fabrication and assembly of the complete waterstop system, including watertight butt joints and connections
- Correct installation of the waterstop system

The design engineer should always consider all of these factors as early as possible in the design and specification stage, with subsequent changes only allowed with the engineer's specific approval and written permission.



WATERBARS FORMS AND PROFILES

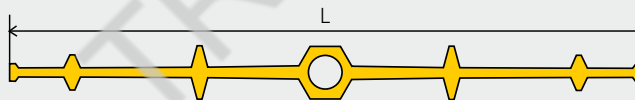
At Sika we can produce the profiles to meet the most demanding applications.

Internal waterbars: Installation in the center of concrete structures

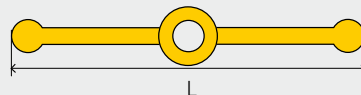
Use	Type	With (L) (mm) (±5 mm)	Roll Length (m)	Normal Thickness (mm) (±1.0 mm)
Construction Joints	V-15	150	20	3.0 - 5.0
	V-20	200	20	3.0 - 5.0
	V-25	250	20	3.0 - 5.0
	V-32	320	15	3.0 - 8.0



Use	Type	With (L) (mm) (±5 mm)	Roll Length (m)	Normal Thickness (mm) (±1.0 mm)
Movement / Expansion joints	0-20	200	20	3.0 - 4.5
	0-25	250	20	3.0 - 4.5
	0-32	320	15	3.0 - 8.0

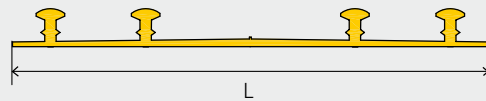


Use	Type	With (L) (mm) (±5 mm)	Roll Length (m)	Normal Thickness (mm) (±1.0 mm)
Connection Joint	0-20 DWall	200	12	9.5
	0-25 DWall	250	12	9.5



External waterbars: Installation on the surface of concrete structures

Use	Type	With (L) (mm) (±5 mm)	Roll Length (m)	Normal Thickness (mm) (±1.0 mm)
Construction Joints	AR-25	250	20	4.0



Use	Type	With (L) (mm) (±5 mm)	Roll Length (m)	Normal Thickness (mm) (±1.0 mm)
Movement / Expansion Joints	DR-25	250	20	4.0



WATERBAR PHYSICAL PROPERTIES

Property	Requirement	Test
Density	~ 1.40 (±0.2) kg / l	BS 2782:620
Tensile	12 Mpa (±5 %)	ISO 527-2 ASTM D412
Elongation at break	300 % (±5 %)	ISO 527-2 ASTM D412
Shore-A hardness	≥70	ISO 868-2003 (E)
Water absorption	≤1 %	ISO 62

WATERBAR JOINTING AND WELDING TECHNOLOGY

Waterbars must be joined together to form a closed waterstopping system. All of the anchor ribs in waterbar connection and butt joint areas must remain continuous and able to form a waterproof joint. Joints in the waterstopping system at corner, T-joints, intersections and junctions must be formed by prefabricated waterbar profiles wherever possible, with only simple butt joints being produced on site.



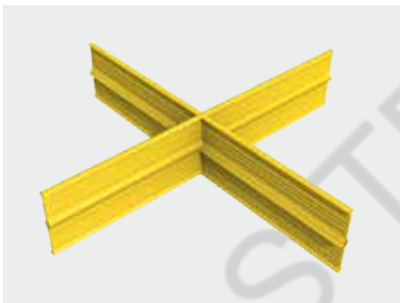
CROSS PIECE FLAT



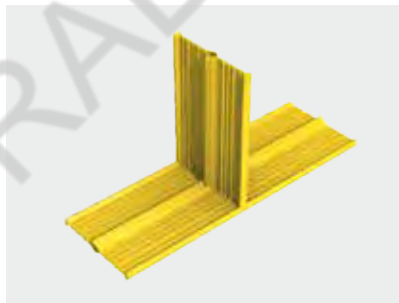
T-PIECE FLAT



L-PIECE FLAT



CROSS PIECE VERTICAL

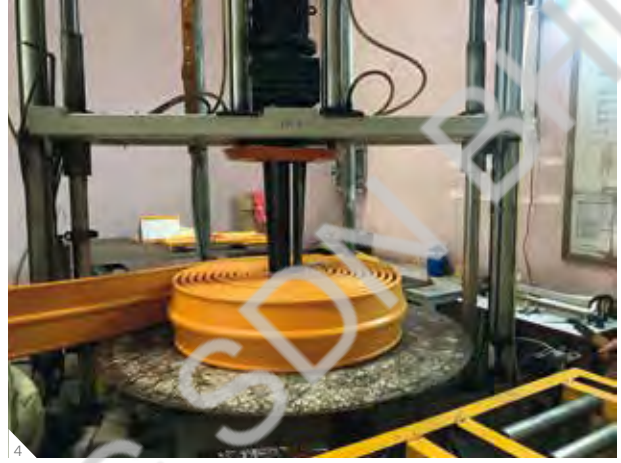


T-PIECE VERTICAL



L-PIECE VERTICAL

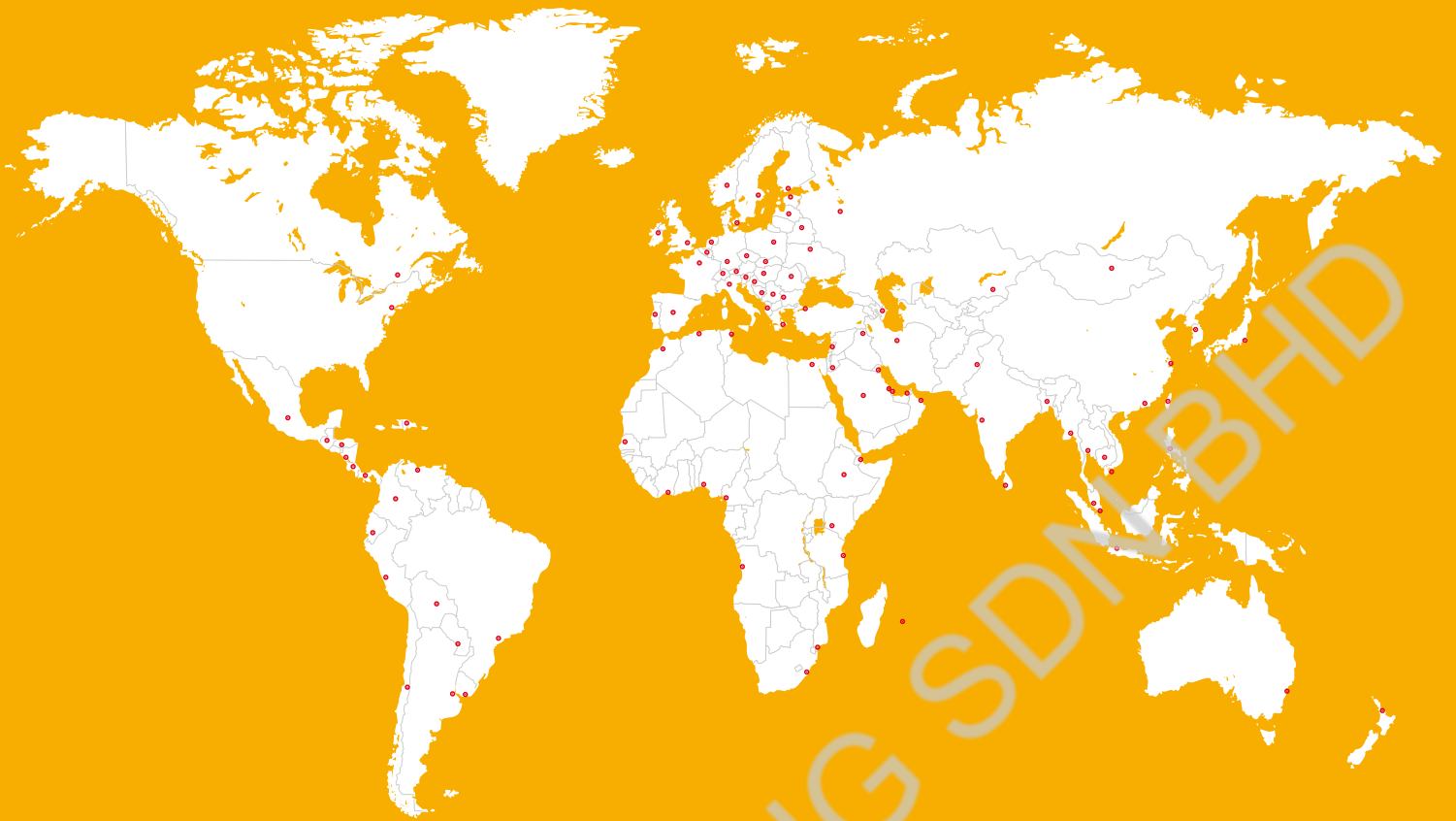
MANUFACTURE AND STORAGE



INSTALLATION



GLOBAL BUT LOCAL PARTNERSHIP



WE ARE SIKA

Sika is a specialty chemicals company with a leading position in the development and production of systems and products for bonding, sealing, damping, reinforcing and protecting in the building sector and the motor vehicle industry. Sika's product lines feature concrete admixtures, mortars, sealants and adhesives, structural strengthening systems, industrial flooring as well as roofing and waterproofing systems.

Our most current General Sales Conditions shall apply. Please consult the most current local Product Data Sheet prior to any use.

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