



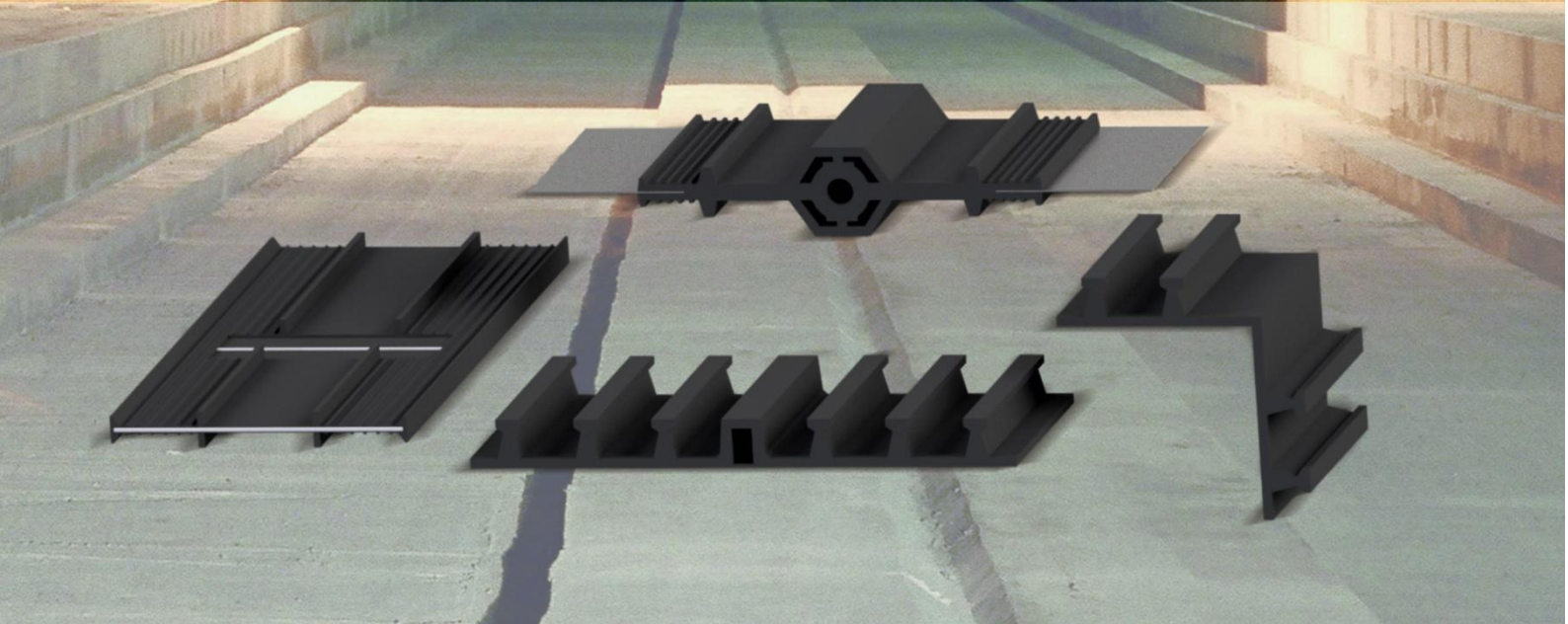
**SK H<sub>2</sub>O<sup>protec</sup>**  
*new science. balanced nature.*

# Product overview

## sealing of buildings

## waterstops

- DIN 7865
- DIN 18541
- factory standard
- special waterstops







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# Product catalogue



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# Product catalogue



## About us

SK H2O was founded in 2003 with the aim of offering innovative and customised solutions in the field of elastomer sealing for engineering and construction projects.



In 2004, the production of sealing systems consisting of elastomer profiles using the latest autoclave, injection moulding and pressing technologies, began at the Rhede site and has been further developed here. Effective restructuring measures in 2015 have significantly increased productivity and enabled us to meet the market demand for sealing systems.

Over the years, apart from elastomers conforming to DIN 7865 specifications, we started producing thermoplastic profiles conforming to the factory standard and DIN 18541, so that our portfolio now covers the entire range of waterstop sealing solutions.

# Product catalogue



Our staff are trained in vulcanising and welding techniques and receive ongoing training. In-house training of young, committed and experienced employees ensures that a strong and motivated team of around 15 vulcanisers is at your disposal, ready to respond to your requirements at any time. Our employees also have in-depth knowledge of the installation of waterstop systems. So, whether it involves connecting new and existing structures or providing training in construction and expansion joints, they can help you on site as well.



The sealing of joints between existing and new structures has recently become especially significant. We're happy to serve you as a competent partner in this field.

With qualified project management and ongoing consultation, we have been able to solve many difficult tasks and plan and deliver suitable systems for underground car parks, dams, sluices, ship canal lifts, tunnels, railway stations and more. We have a team of experienced employees at your disposal in these areas as well.

We have also been active in the international market for some time. We are no strangers to planning, production and logistics.



## Product overview

Waterstops made of thermoplastic or elastomer are used for sealing expansion and movement joints as well as construction joints. The sealing effect of concrete-embedded waterstops follows the labyrinth principle. This principle is based on a considerably longer water circulation path with frequent changes of direction. It works for PVC-P, PVC/NBR and elastomer waterstops with a profiled surface. The sealing is effective transverse to the ribs, whereby several small ribs or a few large ones can be arranged. Both the labyrinth and embedding principles are used for elastomer tapes with steel straps. Clamped waterstops suitable for sealing joints between existing structures and new concrete structures are an exception. These waterstops seal the existing structure using contact pressure, while also sealing the new structure by means of the labyrinth principle.

### Movement joints

Waterstops with a central tube are available on the market as external and internal tapes for sealing joints with expansion and shearing movements. Movement expansion waterstops normally consist of an expansion part and a sealing part. The expansion part is designed to absorb the water pressure and the differences in movement of the adjacent components. The dimensions and shape of the expansion part must be selected according to the stress on the joints. The sealing parts are designed to prevent water from circulating around concrete-embedded waterstop junctures. The expansion and sealing parts are usually separated by anchoring ribs. Their purpose is to transfer all tensile forces in the waterstop into the expansion part and into the concrete, so that the sealing part remains largely stress-free.

### Construction joints

External and internal waterstops are used to seal construction joints. However, internal waterstop tapes for construction joints should never be subjected to shear strain. If there is no joint gap, joint movements across the tape can lead to shearing and thus to the destruction of the tape, regardless of the material of the tape.

## Product overview

- Elastomeric waterstops according to DIN 7865, part 1 and 2
- Special profiles according to DIN 7865, part 2
- Special joint profiles for mass-spring system in undergrounds and rail tunnels
- Development and configuration of special profiles on enquiry
- Polymeric waterstops according to DIN 18541, part 1 and 2
- Development and configuration of special profiles on enquiry
- Polymeric waterstops according to factory standard
- Development and configuration of special profiles on enquiry





## Capabilities

### Elastomeric waterstops according to DIN 7865

- Engineering structures
- Trough structures
- Bridge construction
- Tunnel construction
- Wastewater treatment plants
- Flood protection walls
- Hydraulic engineering
- Sluices / ship canal lifts
- Interchangeable sealing systems
- Buildings with constantly changing loads
- Buildings that are consistently exposed to low temperatures


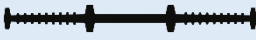
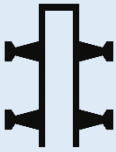

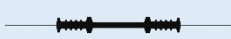




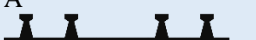

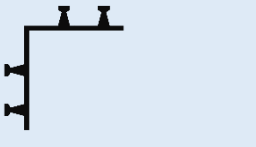
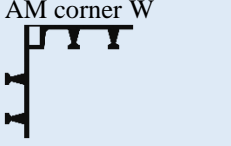
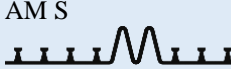
### Polymeric waterstops according to DIN 18541

- Private building and housing construction
- Wastewater treatment plants
- Rainwater retention basin
- Retaining walls
- Connecting new to old

### Polymeric waterstops according to factory standard

- Private building and housing construction

## Profile designs and materials

material		expansion waterstops	construction waterstops	capping joint waterstops
elastomer (DIN 7865)	internal	FM 	F 	FAE 
		FM MU 		
		FS 		
		FMS 		
		FMS RMD 		
		FMS MU 		
	external	AM 	A 	
		AM corner A 	A corner A 	
		AM corner W 		
		AM S 		

# Product catalogue



## Profile designs and materials

material	clamped waterstops	capping joint waterstops, clamped	Special profiles
elastomer (DIN 7865)	FM K 	FAE mod 	FN 
	FM KF 		HK 
	FM KF2 		GK 
	KFB 		D 
	AM KI 		
	AM KA 		
	AM KF 		
	AM KF2 		
	O 		
	FK 		

# Product catalogue



## Profile designs and materials

material		expansion waterstops	construction waterstops	capping joint waterstops
PVC-P PVC-NBR (DIN 18541)	internal	D 	A 	FA 
	external	DA 	AA 	
		DA corner A 	AA corner A 	
		DA corner W 	AA corner W 	
			Flex 	

material	clamped waterstops	clamped waterstops
PVC-P PVC-NBR (DIN 18541)	D K 	DA KF 
	DA KA 	DA KF2 
	DA corner, both sides smooth 	DA KFV 
	DA KI 	
	DA KF2 corner 	



# Product catalogue



## Profile designs and materials

material		expansion waterstops	construction waterstops	capping joint waterstops
PVC-P (factory standard)	internal	D 	A  Flex  A SM 	FV 
	external	DA 	AA 	


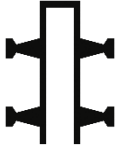

material		weld-on wires for expansion joints	weld-on wires for construction joints
FPO (factory standard)	external	SDA 	SAA 

## Specifications for the design of waterstops according to DIN 18197

DIN 18197 regulates the planning principles, the installation and joining technology as well as the dimensioning of the waterstops, taking into account all the principles mentioned in this DIN.

### 1. Joint width

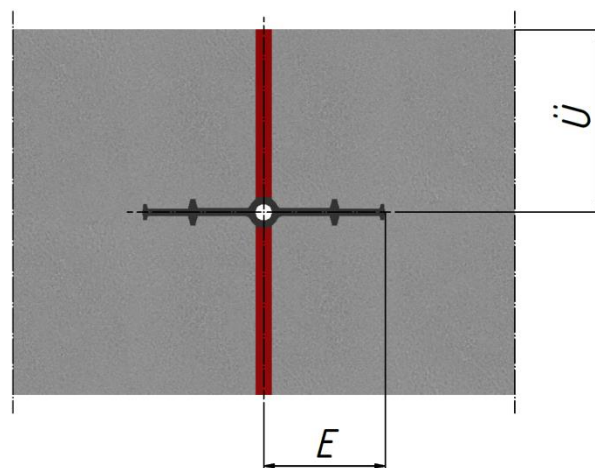
The dimensioning diagrams are valid for an initial joint width / nominal joint width  $W_{nom}$  for internal expansion waterstops and capping joint waterstops of 20–30mm, and for external expansion waterstops of 20–25mm.

Waterstop	Design / Type	Joint width $W_{nom}$
	FM, FMS, DA	20 - 30 mm
	FAE, FA	20 - 30 mm
	AM, DA	20 - 25 mm

### 2. Position in the component

Coverage rule:

Depth of integration  $E \leq \text{Coverage } \ddot{U}$

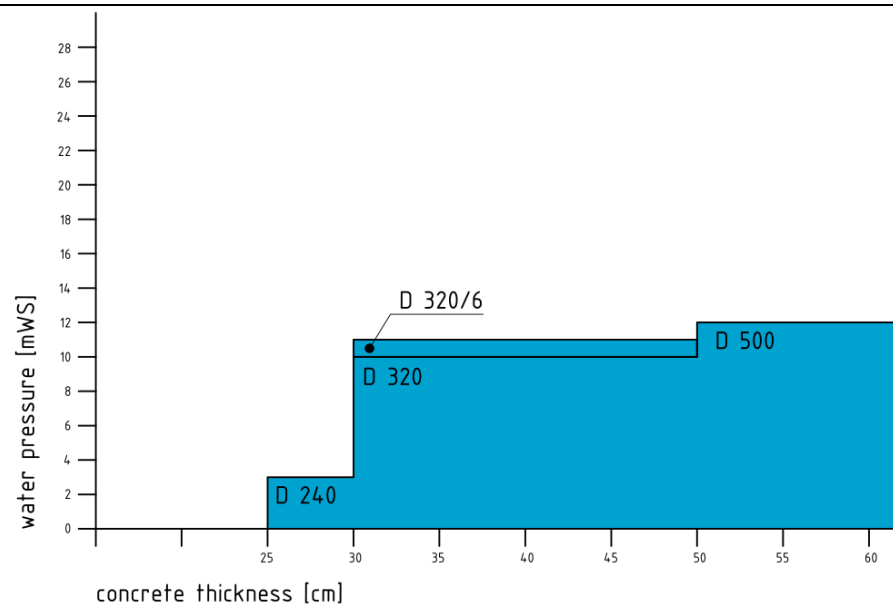
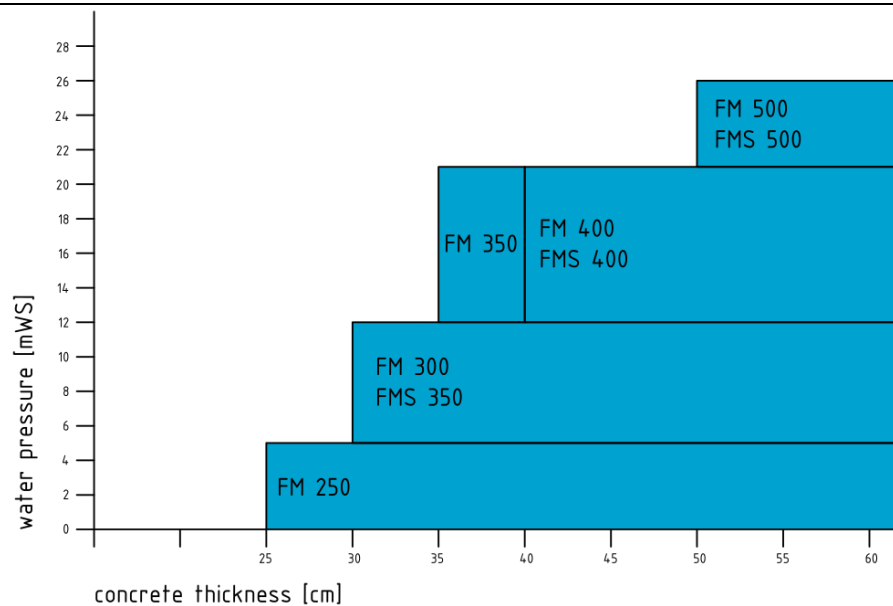


## Specifications for the design of waterstops according DIN 18197

### 3. Minimum component thickness for internal waterstops

Rule of thumb:

Component thickness in the area of the waterstop  $\geq$  waterstop width  
(there are exceptions)



## Specifications for the design of waterstops according DIN 18197

### 4. Dimensioning (water pressure and deformation)

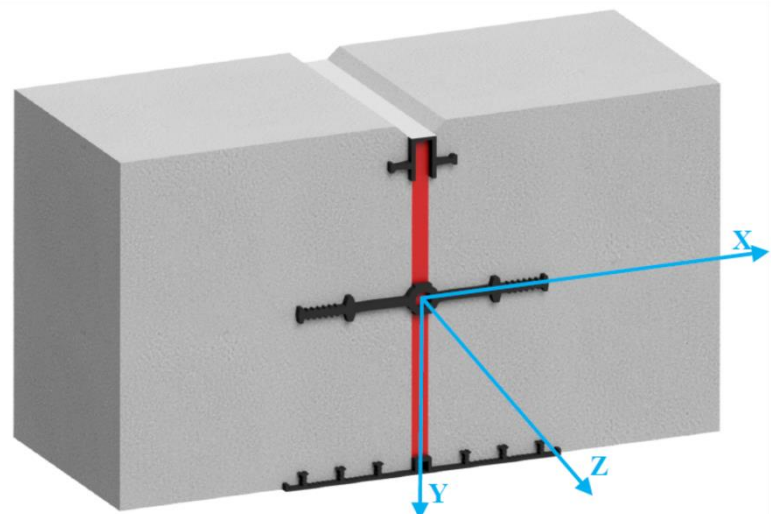
- The basic dimensioning rules specified in DIN 18197 apply to waterstops in accordance with DIN 7865 and DIN 18541. The respective profiles may also be suitable for higher loads, depending on assessment of the individual case.
- For PVC-P waterstops, the dimensions specified in the ABP (general test certificate issued by the building supervisory authority) apply.

Water level for dimensioning:

The highest groundwater level, stratum water level or flood level to be expected.

Filling water level for containers.

$v_r$  = resulting movement  
 $v_x$  = deformation in x-axis  
 $v_y$  = deformation in y-axis  
 $v_z$  = deformation in z-axis



$$v_r = \sqrt{v_x^2 + v_y^2 + v_z^2}$$





## **Project management (Service and consulting)**

As special profiles we develop for the startup joint insertion profiles, which are part of s. g. Mass-spring systems are installed. In conjunction with the mass-spring system shocks in the environment of the running rail traffic are to be contained. The delivery occurs either in EPDM quality as a flame retardant elastomer according B1 fire protection or as SBR quality with a stainless steel cap according geclipsten fire A1.

Detailed product description with material data sheet, installation drawing and standard cross-section are available upon request.

As project planning and engineering company, we are developing the planning documents for the realization of individual sealing systems in the structure with you.

### **Steps of project management:**

- design discussion at site
- preparation of sealing plans
- transfer of sealing plans into production drawings
- production of waterstops according to the production drawings
- delivery of the produced waterstops
- individual follow-up at site

## Waterstops according to DIN 7865, part 1 and 2

### Elastomere

Elastomers are dimensionally stable, highly elastic plastics with very long interlocking molecule chains. They are produced using a vulcanisation process and therefore require a special type of joining technology.

They are particularly suitable for buildings with large joint movements, high water pressure, frequently changing load cycles and also at low temperatures.

They are available in all major profile shapes and for many special applications.

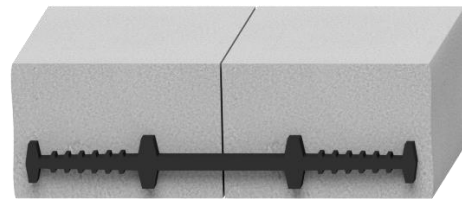
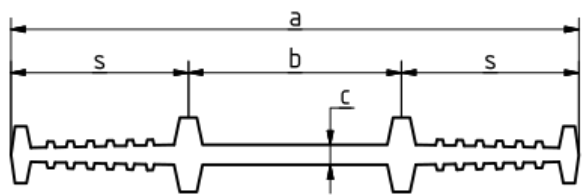
### Physical properties (excerpt from DIN 7865, part 2)

	Properties	Testing acc. to	Requirements
1	Tear strength	DIN 53504	≥ 10 MPa
2	Elongation at break	DIN 53504	≥ 380 %
3	Shore A hardness	DIN ISO 7619-1	62 ± 5
4	Tear propagation resistance	DIN ISO 34-1	≥ 8 kN/m
5	Low temperature performance	*	≤ 90 Shore - A
6	Deformation resistance at hot bitumen	7865	no design change
7	Metal adhesion	7865	1,5 kN

\*) Testing is carried out after 24 h storage at  $(-20 \pm 2)$  °C, Shore hardness acc. to DIN ISO 7619-1.

## Waterstops according to DIN 7865, part 1 and 2

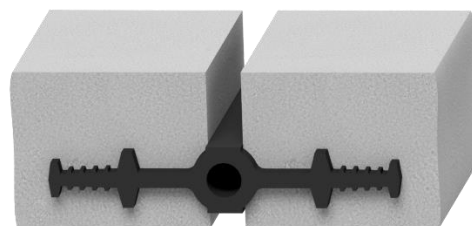
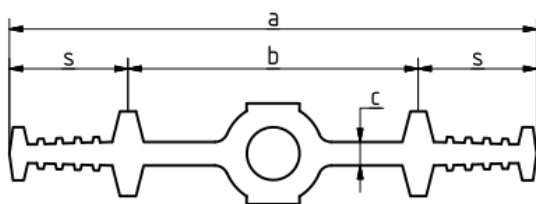
### internal construction waterstops series F



Type	Dim a [mm]	Dim b [mm]	Dim c [mm]	Dim s [mm]					Roll length [m]
F 200	200	75	7	62,5					25
F 250	250	80	8	85					25
F 300	300	100	8	100					25
F 350-2 *	350	125	7	112,5					25

\* waterstop acc. to DIN7865, part 2

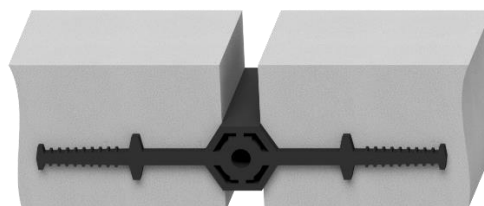
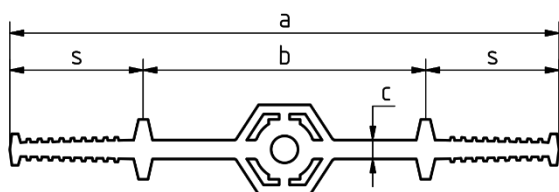
### internal construction waterstops series FM



Type	Dim a [mm]	Dim b [mm]	Dim c [mm]	Dim s [mm]					Roll length [m]
FM 200	200	110	9	45					25
FM 250	250	125	9	62,5					25
FM 300	300	175	10	62,5					25
FM 350	350	180	12	85					25
FM 400	400	230	12	85					25
FM 500	500	300	13	100					25

## Waterstops according to DIN 7865, part 1 and 2

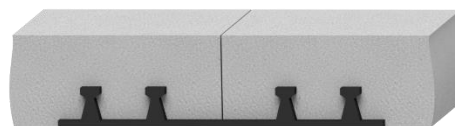
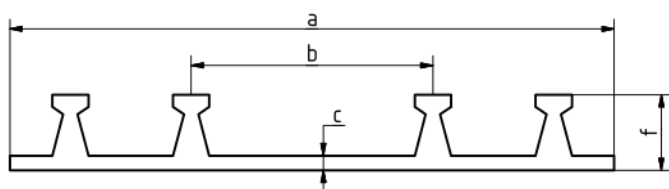
### internal expansion waterstops series FM MU



Dimensions in mm

Type	Dim a [mm]	Dim b [mm]	Dim c [mm]	Dim s [mm]					Roll length [m]
FM 350 MU	350	180	12	85					25

### external construction waterstops series A

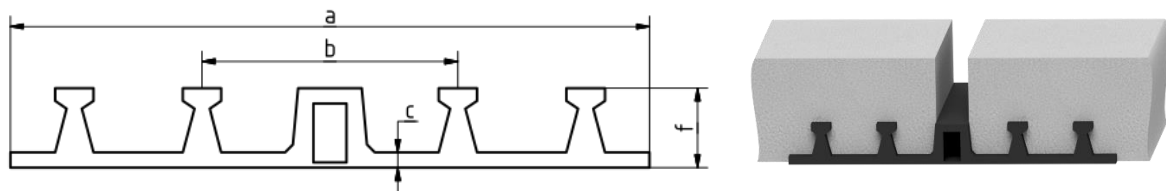


Type	Dim a [mm]	Dim b [mm]	Dim c [mm]	Dim f [mm]	Qty. anchor				Roll length [m]
A 250	250	100	6	31	4				25
A 350	350	100	6	31	6				25
A 500	500	150	6	31	8				25



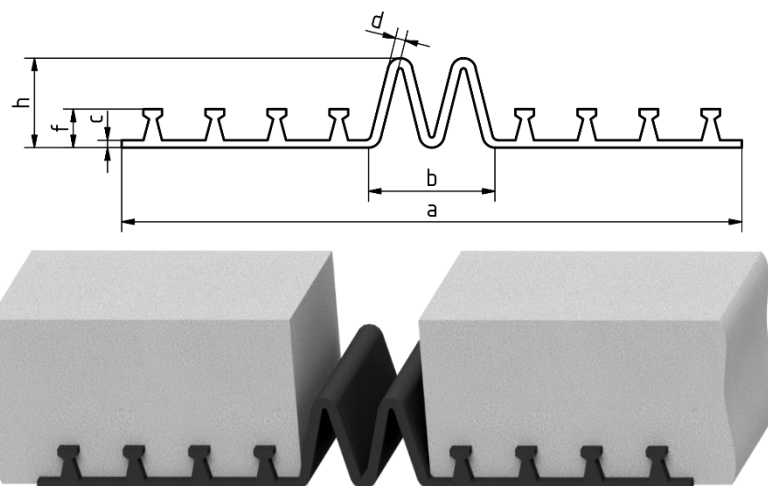
## Waterstops according to DIN 7865, part 1 and 2

### external expansion waterstops series AM



Type	Dim a [mm]	Dim b [mm]	Dim c [mm]	Dim f [mm]	Qty. anchor				Roll length [m]
AM 250	250	100	6	31	4				25
AM 350	350	100	6	31	6				25
AM 500	500	150	6	31	8				25

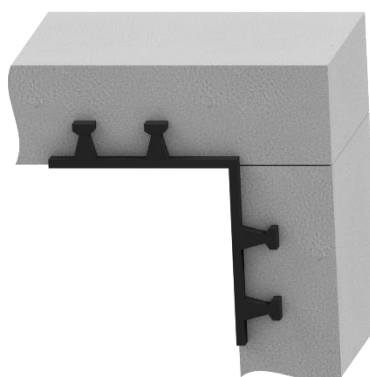
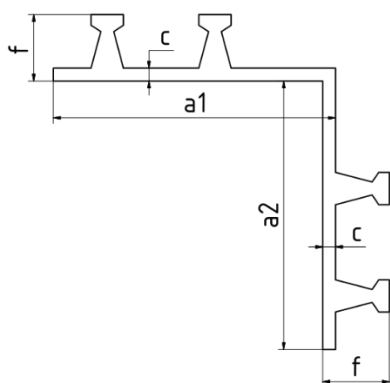
### external expansion waterstops series AM S



Type	Dim a [mm]	Dim b [mm]	Dim c [mm]	Dim d [mm]	Dim f [mm]	Dim h [mm]	Qty. anchor		Roll length [m]
AM 500 S	500	45-102	6	8	31	72	8		25

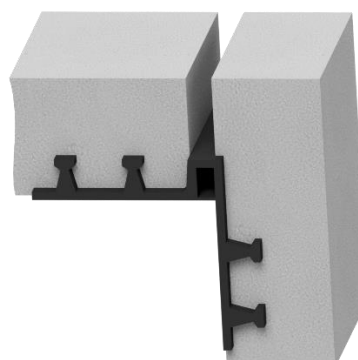
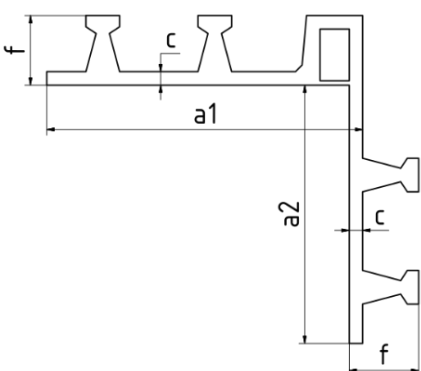
## Waterstops according to DIN 7865, part 1 and 2

### external construction waterstops series A corner A



Type	Dim a1 [mm]	Dim a2 [mm]	Dim c [mm]	Dim f [mm]	Qty. anchor				Roll length [m]
A 250 corner A	125	125	6	31	4				25
A 350 corner A	175	175	6	31	6				25

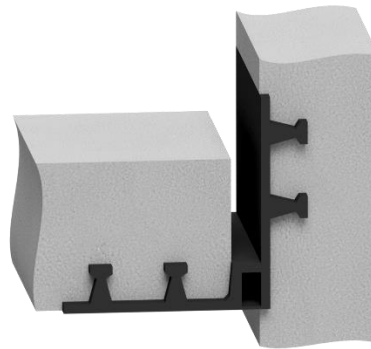
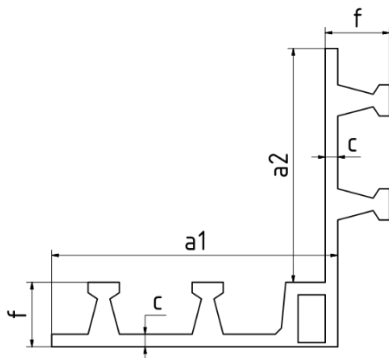
### external expansion waterstops series AM corner A



Type	Dim a1 [mm]	Dim a2 [mm]	Dim c [mm]	Dim f [mm]	Qty. anchor				Roll length [m]
AM 250 corner A	137,5	112,5	6	31	4				25
AM 350 corner A	187,5	162,5	6	31	6				25

## Waterstops according to DIN 7865, part 1 and 2

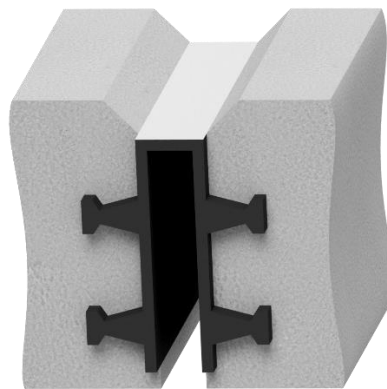
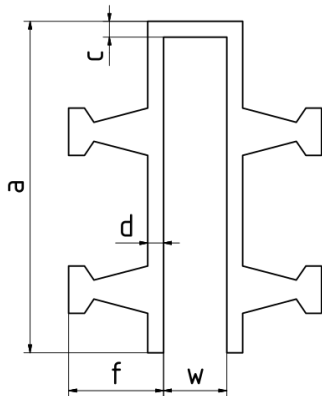
### external expansion waterstops series AM corner W



Type	Dim a1 [mm]	Dim a2 [mm]	Dim c [mm]	Dim f [mm]	Qty. anchor				Roll length [m]
AM 250 corner W	137,5	112,5	6	31	4				25
AM 350 corner W	187,5	162,5	6	31	6				25

## Waterstops according to DIN 7865, part 1 and 2

### Cap seal waterstops series FAE



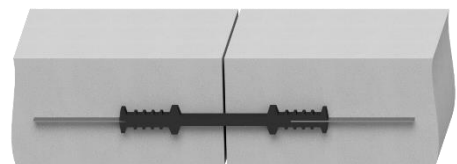
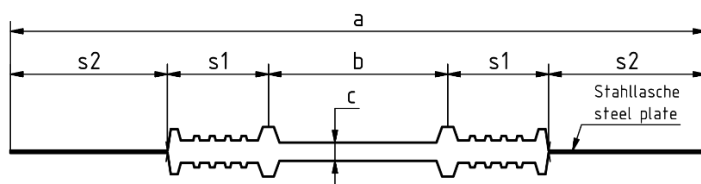
Type	Dim a [mm]	Dim w [mm]	Dim c/d [mm]	Dim f [mm]	Qty. anchor				Roll length [m]
FAE 50	55	20	5	30	2				25
FAE 50/2 *	55	10	5	30	2				25
FAE 70	70	20	5	30	2				25
FAE 7/4 *	70	30	5	30	2				25
FAE 7/5 *	70	40	5	30	2				25
FAE 100	105	20	5	30	4				25
FAE 150	155	20	5	30	6				25

\* waterstop acc. to DIN7865, part 2



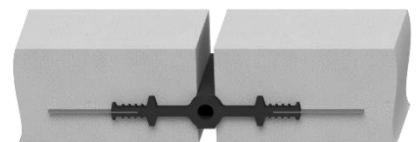
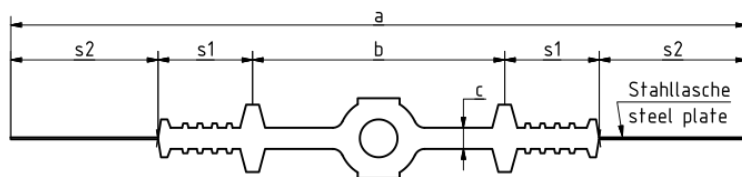
## Waterstops according to DIN 7865, part 1 and 2

### internal construction waterstops with steel plates series FS



Type	Dim a [mm]	Dim b [mm]	Dim c [mm]	Dim s1 [mm]	Dim s2 [mm]				Roll length [m]
FS 310	310	80	8	45	70				25

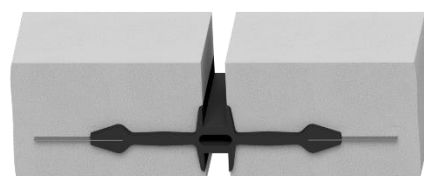
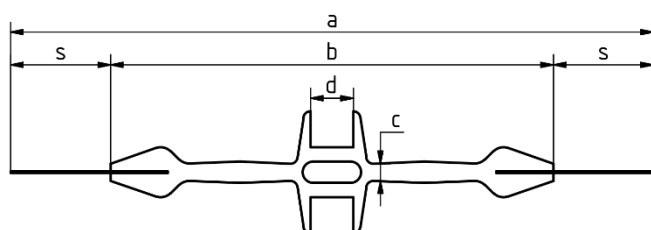
### internal expansion waterstops with steel plates series FMS



Type	Dim a [mm]	Dim b [mm]	Dim c [mm]	Dim s1 [mm]	Dim s2 [mm]				Roll length [m]
FMS 350	350	120	10	45	70				25
FMS 400	400	170	11	45	70				25
FMS 500	500	230	12	45	70				25

## Waterstops according to DIN 7865, part 1 and 2

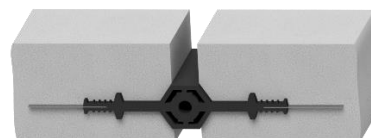
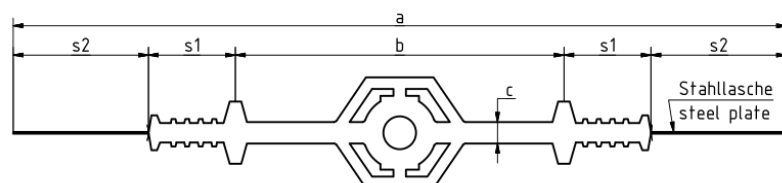
internal construction waterstops  
with steel plates  
series FMS RMD



Type	Dim a [mm]	Dim b [mm]	Dim c [mm]	Dim d [mm]	Dim s [mm]				Roll length [m]
FMS 450 RMD	450	310	12	30	70				25

## Sonderprofile gemäß DIN 7865, Teil 2

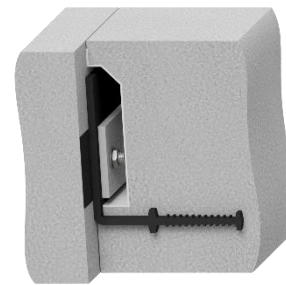
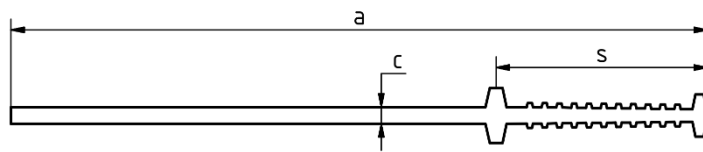
internal construction waterstops  
with steel plates  
series FMS MU



Type	Dim a [mm]	Dim b [mm]	Dim c [mm]	Dim s1 [mm]	Dim s2 [mm]				Roll length [m]
FMS 400 MU	400	170	11	45	70				25
FMS 500 MU	500	230	12	65	70				25

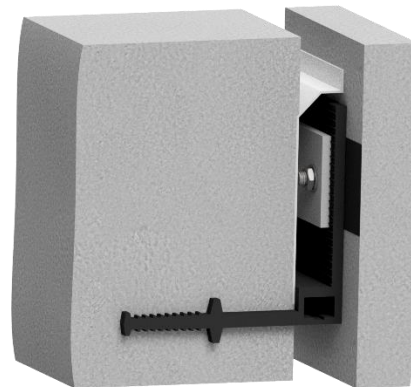
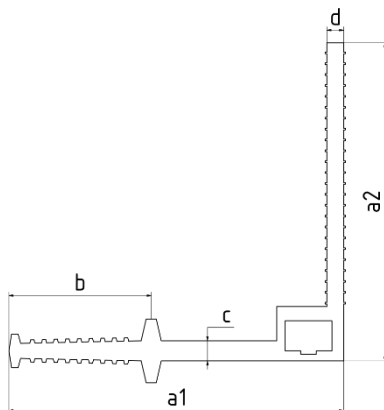
## Special profiles according to DIN 7865, part 2

### internal clamped waterstops, one-sided clampable series KFB



Type	Dim a [mm]	Dim c [mm]	Dim s [mm]						Roll length [m]
KFB 330	330	8	100						25

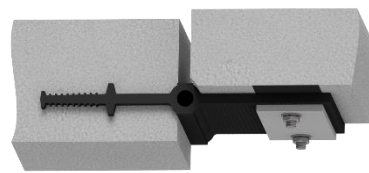
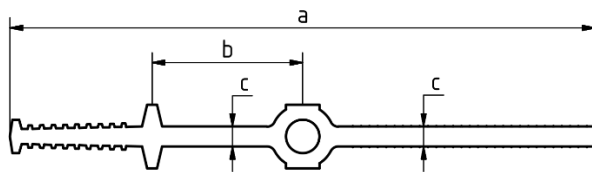
### internal clamped corner waterstops, one-sided clampable series FM K



Type	Dim a1 [mm]	Dim a2 [mm]	Dim b [mm]	Dim c [mm]	Dim d [mm]				Roll length [m]
FM 350 K	200	190	85	12	10				25
FM 500 K	272	255	100	13	13				25

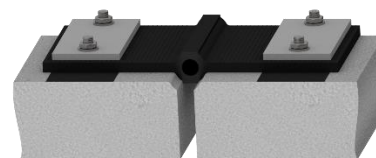
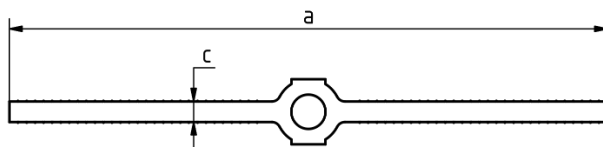
## Special profiles according to DIN 7865, part 2

### internal clamped waterstops, one-sided clampable series FM KF



Type	Dim a [mm]	Dim b [mm]	Dim c [mm]						Roll length [m]
FM 350 KF	350	90	12						25

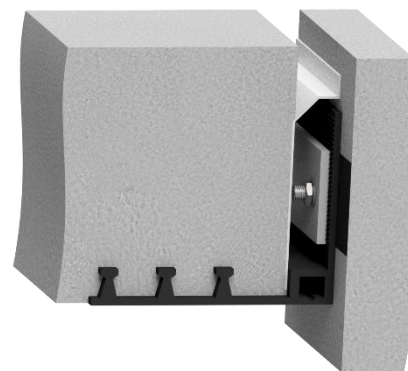
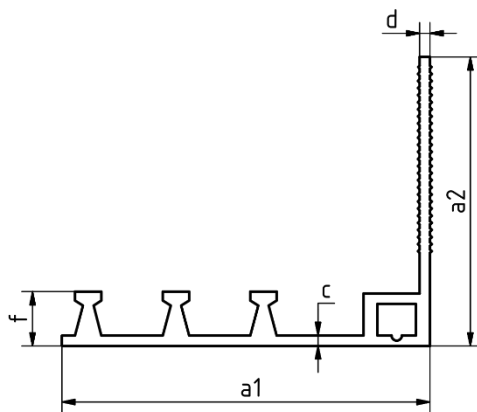
### internal clamped waterstops, two-sided clampable series FM KF2



Type	Dim a [mm]	Dim c [mm]							Roll length [m]
FM 350 KF2	350	12							25

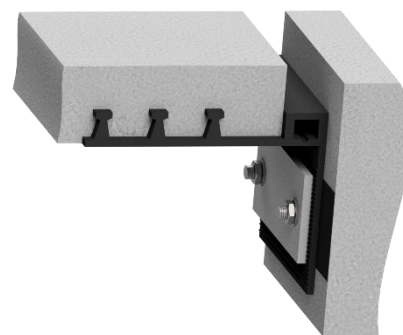
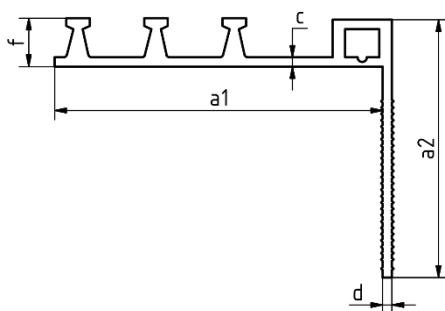
## Special profiles according to DIN 7865, part 2

### external clamped corner waterstops, one-sided clampable series AM KI



Type	Dim a1 [mm]	Dim a2 [mm]	Dim c [mm]	Dim d [mm]	Dim f [mm]				Roll length [m]
AM 350 KI	210	165	6	6	31				25

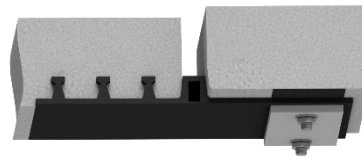
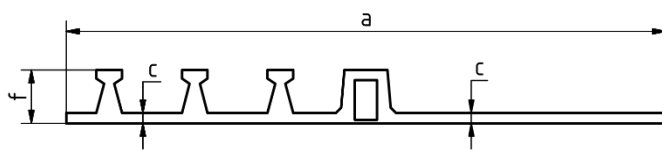
### external clamped corner waterstops, one-sided clampable series AM KA



Type	Dim a1 [mm]	Dim a2 [mm]	Dim c [mm]	Dim d [mm]	Dim f [mm]				Roll length [m]
AM 350 KA	210	165	6	6	31				25

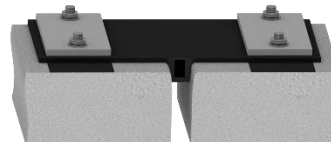
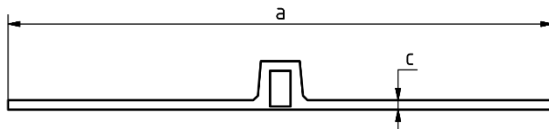
## Special profiles according to DIN 7865, part 2

### external clamped waterstops, one-sided clampable series AM KF



Type	Dim a [mm]	Dim c [mm]	Dim f [mm]						Roll length [m]
AM 350 KF	350	6	31						25

### external clamped waterstops, two-sided clampable series AM KF2

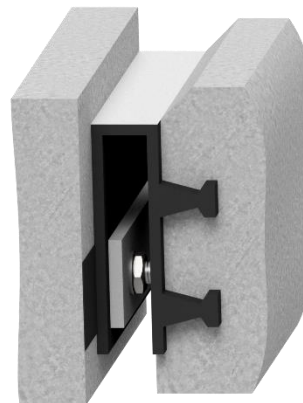
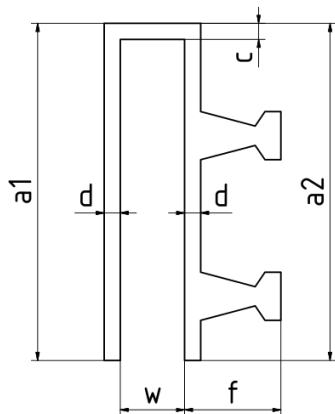


Type	Dim a [mm]	Dim c [mm]							Roll length [m]
AM 350 KF2	350	6							25



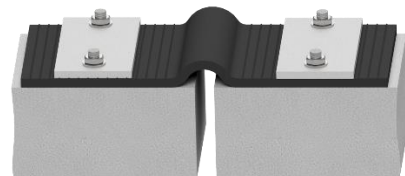
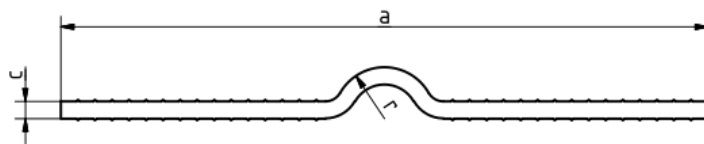
## Special profiles according to DIN 7865, part 2

### Cap seal waterstops, one-sided clampable series FAE mod



Type	Dim a1 [mm]	Dim a2 [mm]	Dim w [mm]	Dim c/d [mm]	Dim f [mm]	Qty. anchor			Roll length [m]
FAE 70 mod	83	70	20	5	30	1			25
FAE 100 mod	105	105	20	5	30	2			25
FAE 150 mod	155	155	20	5	30	3			25

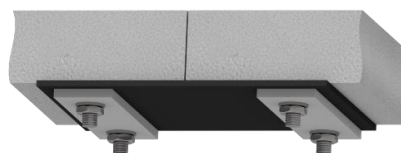
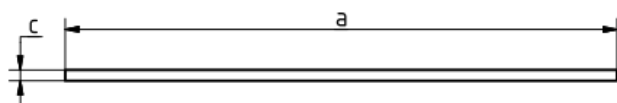
### clamped waterstops with Omega-loop, two-sided clampable series O



Type	Dim a [mm]	Dim c [mm]	Dim r [mm]						Roll length [m]
O 380-30	380	10	30						25
O 380-90	380	10	90						25

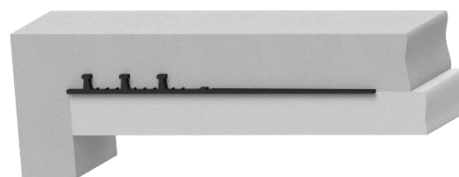
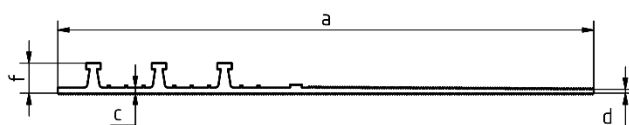
## Special profiles according to DIN 7865, part 2

flat clamped waterstops, two-sided clampable  
series FK



Type	Dim a [mm]	Dim c [mm]							Roll length [m]
FK 200	200	4							25
FK 250	250	4							25
FK 300	300	4							25
FK 350	350	4							25
FK 400	400	4							25
FK 500	500	4							25
FK 700	700	4							25
FK 1000	1000	4							25

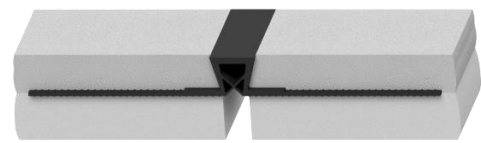
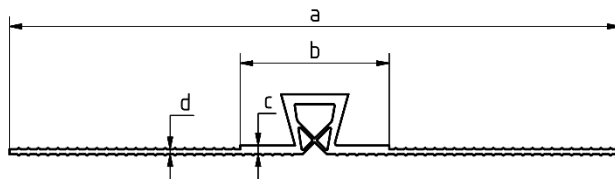
Moulding cap waterstops  
series GK



Type	Dim a [mm]	Dim c [mm]	Dim d [mm]	Dim f [mm]					Roll length [m]
GK 450	450	4,5	3	25					25

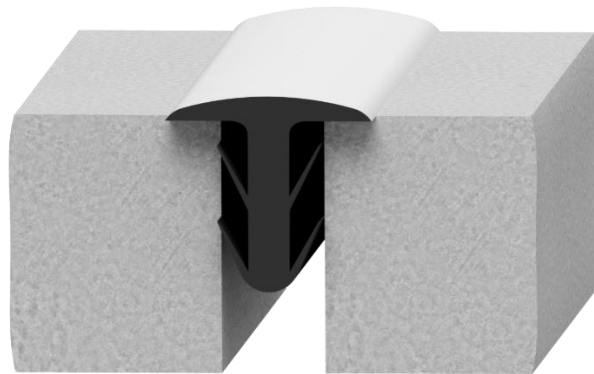
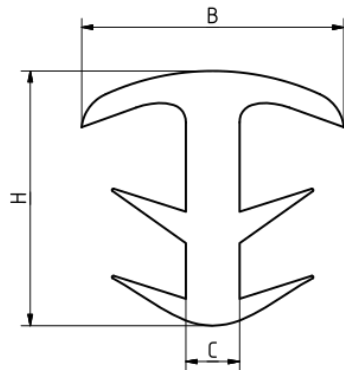
## Special profiles according to DIN 7865, part 2

### centre cap waterstops series D



Type	Dim a [mm]	Dim b [mm]	Dim c [mm]	Dim d [mm]					Roll length [m]
D 2511	500	122	7	4					25

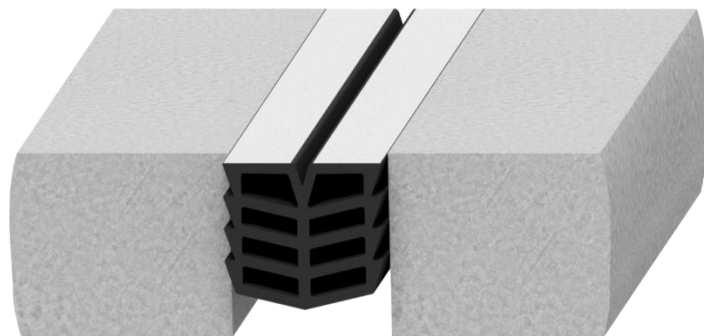
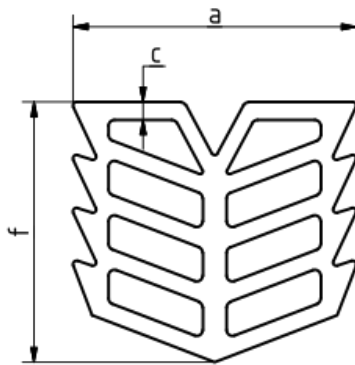
### joint insertion profiles series FN



Type	Dim B [mm]	Dim H [mm]	Dim C [mm]	joint width [mm]					Roll length [m]
FN 20	39	38	8	15-25					25
FN 30	55	40	16	25-35					25

## Special profiles according to DIN 7865, part 2

### joint insertion profiles series HK



Type	Dim a [mm]	Dim c [mm]	Dim f [mm]	joint width [mm]					Roll length [m]
HK 15	15	2	18	9-11					25
HK 18	18	2	20	12-14					25
HK 21	21	3	22	15-17					25
HK 24	24	3	22	18-21					25
HK 30	30	4	28	22-25					25
HK 40	40	4	30	26-30					25
HK 50	50	5	38	31-40					25
HK 60	60	5	48	41-50					25

## Waterstops according to DIN 18541, part 1 and 2

### PVC / NBR

This material has been specially developed for the high requirements of DIN 18541. The waterstops are made of high-quality base materials, have maximum elongation at break, are resistant to a wide range of chemical substances and to ageing, and have good long-term flexibility.

The large number of waterstops in accordance with DIN 18541 are suitable for any type of sealing with high requirements.

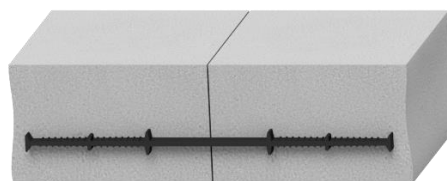
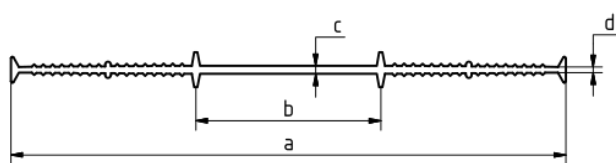
### Physical properties (excerpt from DIN 18541, part 2)

	<b>Properties</b>	<b>Testing acc. to</b>	<b>Requirements</b>
1	Tensile strength	DIN EN ISO 527-2	≥ 10 MPa
2	Elongation at break	DIN EN ISO 527-2	≥ 350 %
3	Shore A hardness	DIN EN ISO 868	67 ± 5
4	Tear propagation resistance	DIN ISO 34-1	≥ 12 kN/m
5	Low temperature performance: Elongation at break at -20 °C	*	≥ 200 %

\*) For testing the behaviour at low temperatures, the elongation at break according to DIN EN ISO 527-2 has to be tested. For this purpose, the test specimens should be stored for at least 2 h at (- 20 ± 2) °C and then tested at this temperature.

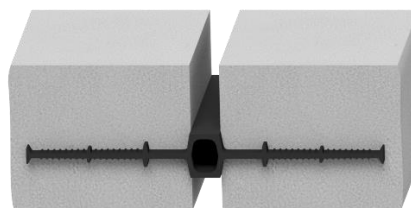
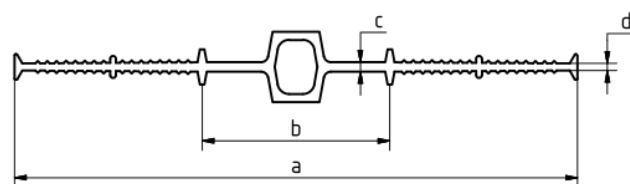
## Waterstops according to DIN 18541, part 1 and 2

### internal construction waterstops series A



Type	Dim a [mm]	Dim b [mm]	Dim c [mm]	Dim d [mm]					Roll length [m]
A 240 DIN	240	80	3,5	2,5					25
A 320 DIN	320	100	4,5	3					25
A 500 DIN	500	150	6	3,5					25

### internal expansion waterstops series D



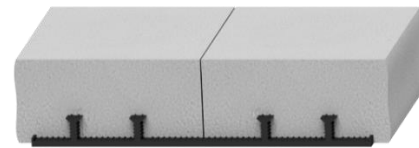
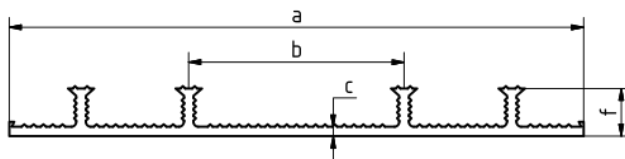
Type	Dim a [mm]	Dim b [mm]	Dim c [mm]	Dim d [mm]					Roll length [m]
D 240 DIN	240	80	4	3					25
D 320 DIN	320	100	5	3,5					25
D 500 DIN	500	150	6	4,5					25
D 240/6 DIN *	250	120	6	5					25
D 320/6 DIN *	320	170	6	5					25

\* waterstop acc. to DIN18541, part 2



## Waterstops according to DIN 18541, part 1 and 2

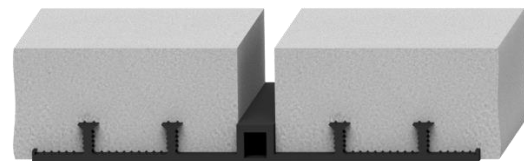
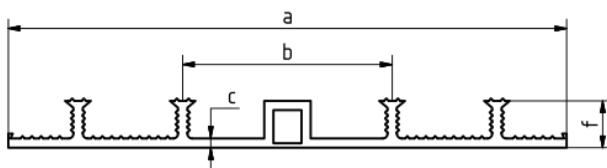
### external construction waterstops series AA



Type	Dim a [mm]	Dim b [mm]	Dim c [mm]	Dim f [mm]	Qty. anchor				Roll length [m]
AA 240 DIN	240	90	4	20	4				25
AA 320 DIN	320	100	4	25	6				25
AA 500 DIN	500	120	5	25	8				25
AA 240/20 DIN *	240	90	4	24	4				25
AA 240/30 DIN *	250	115	5	35	4				25
AA 320/30 DIN *	330	105	5	35	6				25
AA 500/30 DIN *	500	125	5	35	8				25

\* waterstop acc. to DIN18541, part 2

### external expansion waterstops series DA

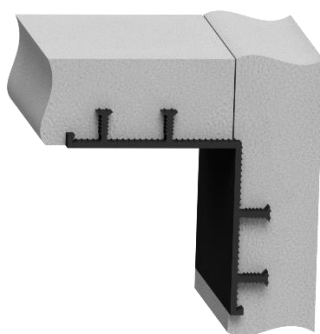
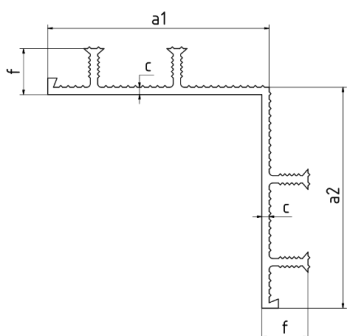


Type	Dim a [mm]	Dim b [mm]	Dim c [mm]	Dim f [mm]	Qty. anchor				Roll length [m]
DA 240 DIN	240	90	4	20	4				25
DA 320 DIN	320	100	4	25	6				25
DA 500 DIN	500	120	4	25	8				25
DA 240/20 DIN *	240	90	4	24	4				25
DA 240/30 DIN *	250	115	5	35	4				25
DA 320/30 DIN *	330	105	5	35	6				25
DA 500/30 DIN *	500	125	5	35	8				25

\* waterstop acc. to DIN18541, part 2

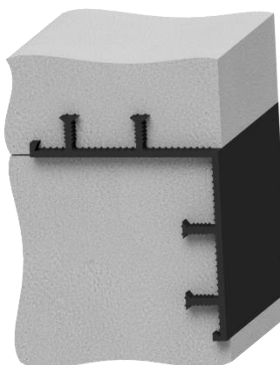
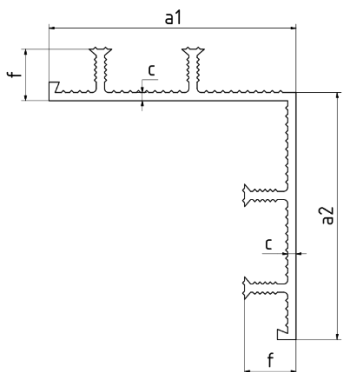
## Waterstops according to DIN 18541, part 1 and 2

### external construction waterstops series AA corner A



Type	Dim a1 [mm]	Dim a2 [mm]	Dim c [mm]	Dim f [mm]	Qty. anchor				Roll length [m]
AA 240 DIN corner A	120	120	4	25	4				25
AA 320 DIN corner A	165	165	4	25	6				25

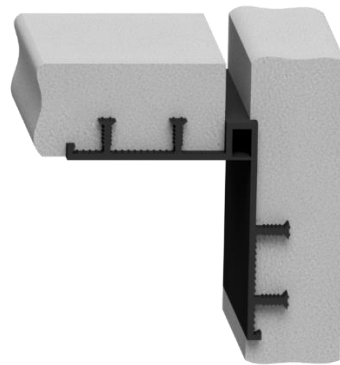
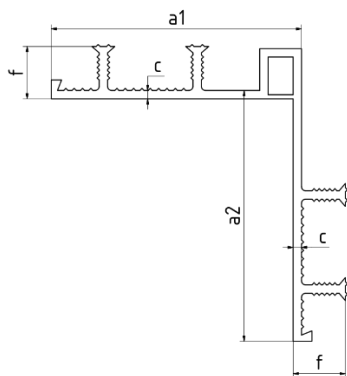
### external construction waterstops series AA corner W



Type	Dim a1 [mm]	Dim a2 [mm]	Dim c [mm]	Dim f [mm]	Qty. anchor				Roll length [m]
AA 240 DIN corner W	120	120	4	25	4				25
AA 320 DIN corner W	165	165	4	25	6				25

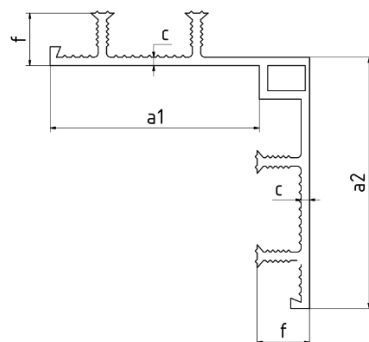
## Waterstops according to DIN 18541, part 1 and 2

### external expansion waterstops series DA corner A



Type	Dim a1 [mm]	Dim a2 [mm]	Dim c [mm]	Dim f [mm]	Qty. anchor				Roll length [m]
DA 240 DIN corner A	120	120	4	25	4				25
DA 320 DIN corner A	165	165	4	25	6				25
DA 500 DIN corner A	250	235	5	25	8				25

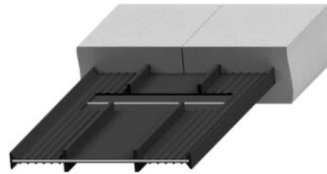
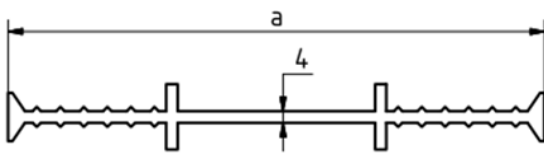
### external expansion waterstops series DA corner W



Type	Dim a1 [mm]	Dim a2 [mm]	Dim c [mm]	Dim f [mm]	Qty. anchor				Roll length [m]
DA 240 DIN corner W	100	120	4	25	4				25
DA 320 DIN corner W	145	165	4	25	6				25

## Waterstops according to DIN 18541, part 1 and 2

internal construction waterstops, “reinforced spring steel”  
series Flex

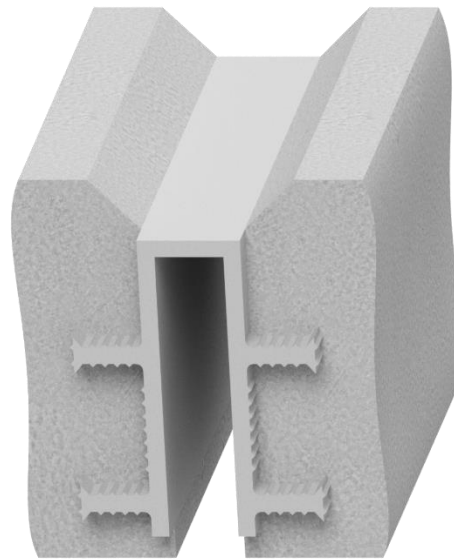
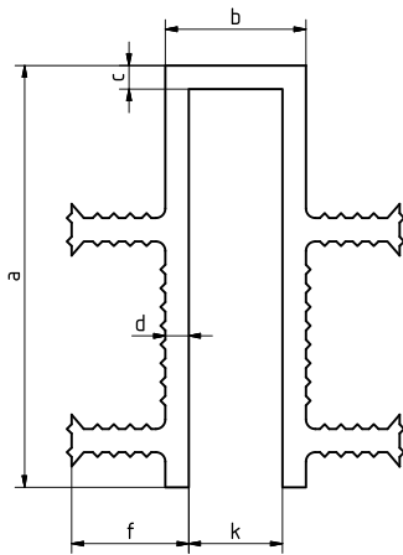


Type	Dim a [mm]								Roll length [m]
Flex 19 DIN *	190								25
Flex 24 DIN *	240								25

\* waterstop acc. to DIN18541, part 2

## Waterstops according to DIN 18541, part 1 and 2

### Cap seal waterstops series FA

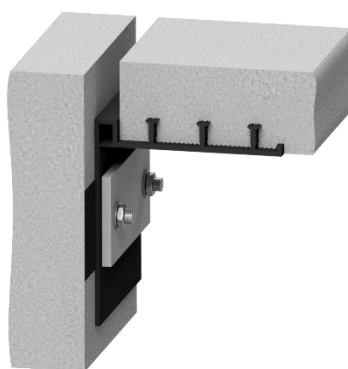
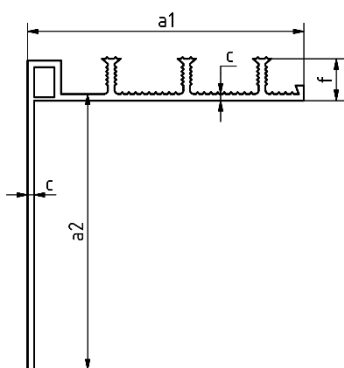


Type	Dim a [mm]	Dim k [mm]	Dim c [mm]	Dim d [mm]	Dim f [mm]	Qty. anchor			Roll length [m]
FA 50/30 DIN	50	20	5	5	25	2			25
FA 50/30/30 DIN *	50	20	5	5	35	2			25
FA 70/30/40 DIN *	70	20	6	5	45	2			25
FA 70/50/40 DIN *	70	40	6	5	45	2			25
FA 90/30 DIN	90	20	5	5	25	4			25
FA 90/30/30 DIN *	95	20	6	5	35	4			25
FA 130/30 DIN	140	20	5	5	25	6			25
FA 130/30/30 DIN *	140	20	6	5	35	6			25

\* waterstop acc. to DIN18541, part 2

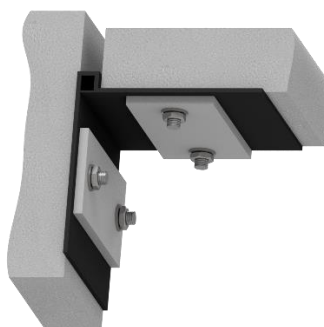
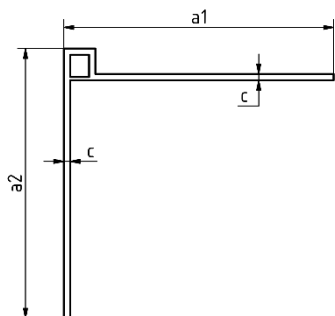
## Waterstops according to DIN 18541, part 1 and 2

### external clamped corner waterstops, one-sided clampable series DA KA



Type	Dim a1 [mm]	Dim a2 [mm]	Dim c [mm]	Dim f [mm]	Qty. anchor				Roll length [m]
DA 320 KA	165	165	4	25	3				25

### external clamped corner waterstops, two-sided clampable series DA corner, both sides smooth

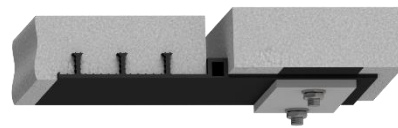
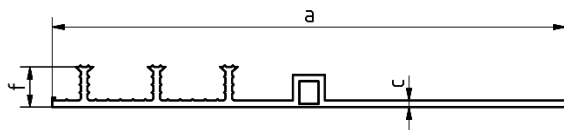


Type	Dim a1 [mm]	Dim a2 [mm]	Dim c [mm]						Roll length [m]
DA 320 corner DIN, both sides smooth	170	170	4						25



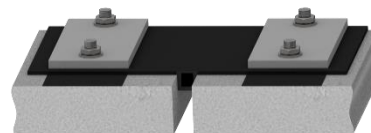
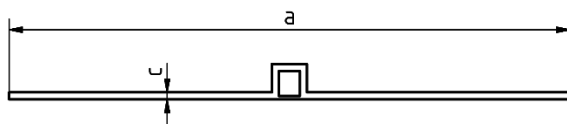
## Waterstops according to DIN 18541, part 1 and 2

### external clamped waterstops, one-sided clampable series DA KF



Type	Dim a [mm]	Dim c [mm]	Dim f [mm]						Roll length [m]
DA 320 KF	320	4	25						25

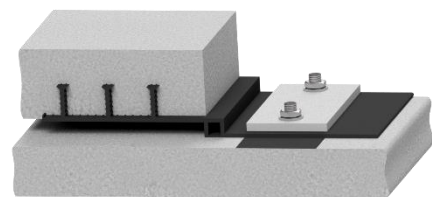
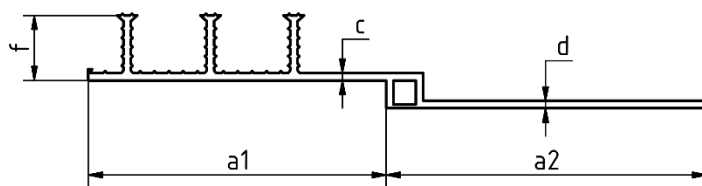
### external clamped waterstops, two-sided clampable series DA KF2



Type	Dim a [mm]	Dim c [mm]							Roll length [m]
DA 320 KF2	320	4							25

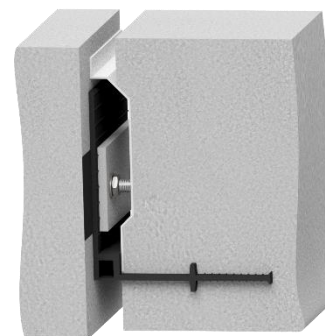
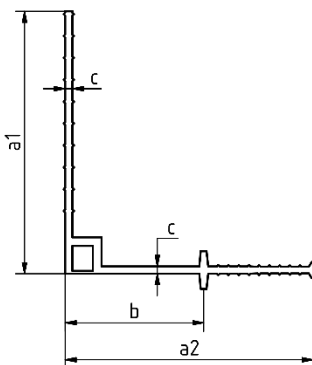
## Waterstops according to DIN 18541, part 1 and 2

### external clamped waterstops, one-sided clampable series DA KfV



Type	Dim a1 [mm]	Dim a2 [mm]	Dim c [mm]	Dim d [mm]	Dim f [mm]				Roll length [m]
DA 320 KfV	161	173	4	4	35				25

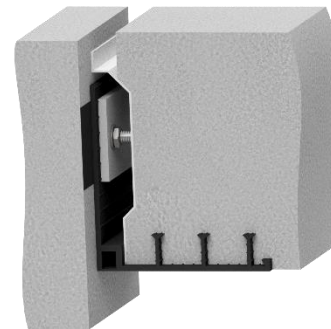
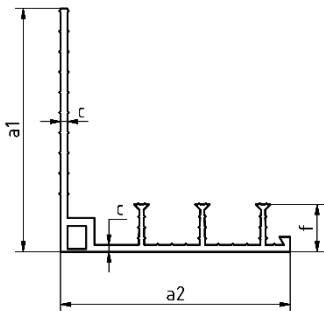
### internal clamped corner waterstops, one-sided clampable series D K



Type	Dim a1 [mm]	Dim a2 [mm]	Dim b [mm]	Dim c [mm]					Roll length [m]
D 320 K	180	170	95	5					25

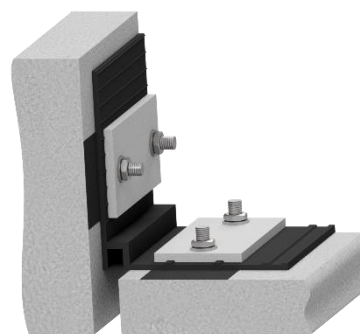
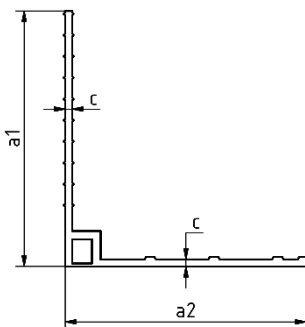
## Waterstops according to DIN 18541, part 1 and 2

### external clamped waterstops, one-sided clampable series DA KI



Type	Dim a1 [mm]	Dim a2 [mm]	Dim c [mm]	Dim f [mm]					Roll length [m]
DA 320/35 KI	180	170	5	35					25

### external clamped waterstops, two-sided clampable series DA KF2 corner



Type	Dim a1 [mm]	Dim a2 [mm]	Dim c [mm]						Roll length [m]
DA 320 KF2 corner	180	170	5						25

## Waterstops according to factory standards (WN)

### Soft-PVC

This material is impressive due to its numerous positive properties, especially its cost-effectiveness. This material has been in use for almost 100 years and has been continuously improved.

Soft PVC waterstops in accordance with the factory standard cover normal stress on buildings and are resistant to many naturally occurring media.

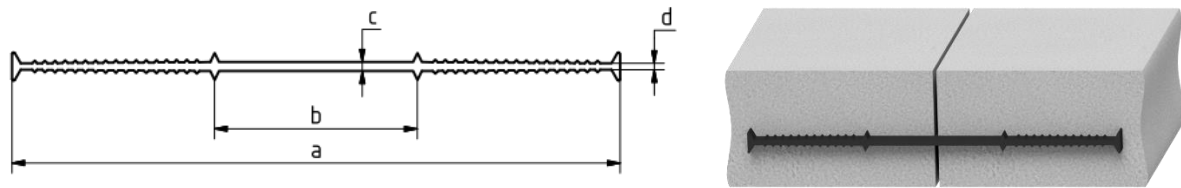
The physical properties of the waterstops according to the factory standard differ from type to type..

Therefore, this information can be found in the respective data sheets.

These data sheets can be requested from us. They are also available for download on the company homepage. → [www.skh2oprotec.de](http://www.skh2oprotec.de)

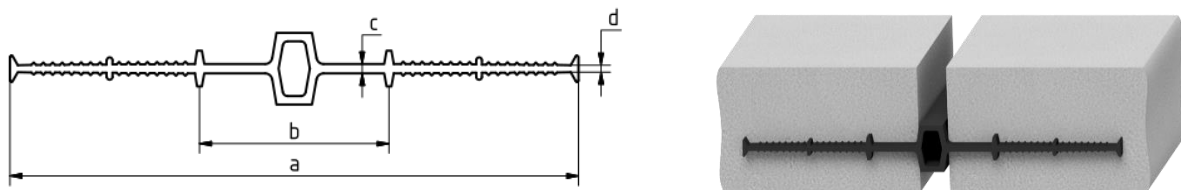
## Waterstops according to factory standards (WN)

### internal construction waterstops series A



Type	Dim a [mm]	Dim b [mm]	Dim c [mm]	Dim d [mm]					Roll length [m]
A 10	100	20	3	2,5					25
A 11	110	25	3	2,5					25
A 15	150	45	3	2,5					25
A 19	190	7	3	2,5					25
A 24	240	80	3,5	2,5					25
A 32	320	100	4,5	3					25
A 50	500	150	6	3,5					25

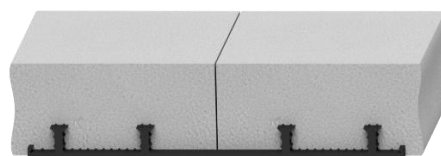
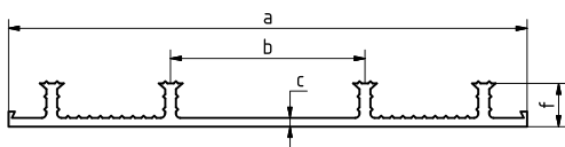
### internal expansion waterstops series D



Type	Dim a [mm]	Dim b [mm]	Dim c [mm]	Dim d [mm]					Roll length [m]
D 11	110	40	3,5	2,5					25
D 15	150	50	3,5	2,5					25
D 19	190	65	3,5	2,5					25
D 24	240	80	4	3					25
D 32	320	110	5	3,5					25
D 35	350	110	5	3,5					25
D 50	500	160	6	4					25

## Waterstops according to factory standards (WN)

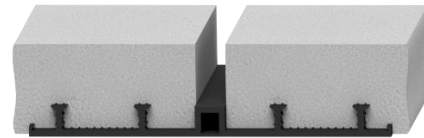
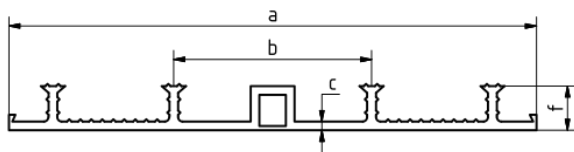
### external construction waterstops series AA



Type	Dim a [mm]	Dim b [mm]	Dim c [mm]	Dim f [mm]	Qty. anchor				Roll length [m]
AA 19	190	66	4	15	4				25
AA 24	240	90	4	20	4				25
AAS 24	240	90	4	24	4				25
AAS 24/3/4	250	115	5	35	4				25
AA 32	330	105	4	20	6				25
AAS 32	330	105	4	25	6				25
AA 32/3/6	330	105	5	35	6				25
AA 50/2/6	500	235	5	20	6				25
AA 50/2/8	500	125	5	20	8				25
AA 50/3/6	500	235	5	35	6				25
AA 50/3/8	500	125	5	35	8				25

## Waterstops according to factory standards (WN)

### external expansion waterstops series DA

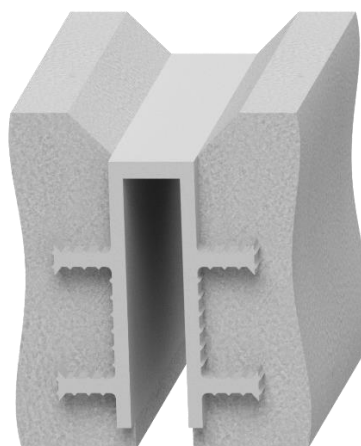
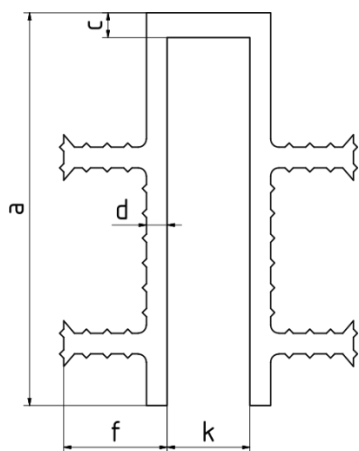


Type	Dim a [mm]	Dim b [mm]	Dim c [mm]	Dim f [mm]	Qty. anchor				Roll length [m]
DA 19	190	92	4	17	4				25
DA 24	240	90	4	20	4				25
DAS 24	240	90	4	24	4				25
DA 24/3/4	250	115	5	35	4				25
DA 32	330	105	4	20	6				25
DAS 32	330	105	4	25	6				25
DA 32/3/6	330	105	5	35	6				25
DA 50/2/6	500	235	5	20	6				25
DA 50/2/8	500	125	5	20	8				25
DA 50/3/6	500	235	5	35	6				25
DA 50/3/8	500	125	5	35	8				25



## Waterstops according to factory standards (WN)

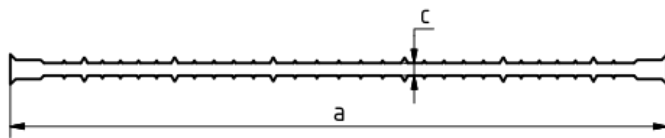
### Cap seal waterstops series FV



Type	Dim a [mm]	Dim k [mm]	Dim c [mm]	Dim d [mm]	Dim f [mm]	Qty. anchor			Roll length [m]
FV 50/20	50	10	6	5	25	2			25
FV 50/20/30	50	10	6	5	35	2			25
FV 50/30	50	20	6	5	25	2			25
FV 50/30/30	50	20	6	5	35	2			25
FV 70/30/40	70	20	6	5	45	2			25
FV 70/50/40	70	40	6	5	45	2			25
FV 100/30	95	20	6	5	25	4			25
FV 140/30	140	20	6	5	25	6			25
FV 140/30/30	140	20	6	5	35	6			25
FV 140/40	140	30	6	5	35	4			25
FV 140/60	140	50	6	5	35	4			25

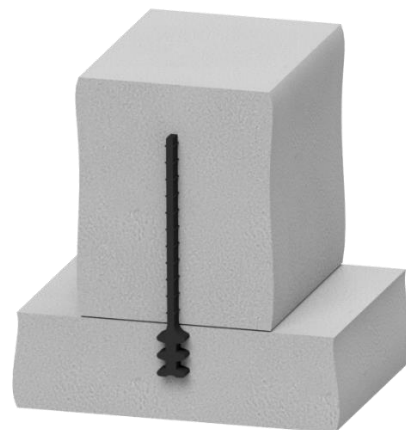
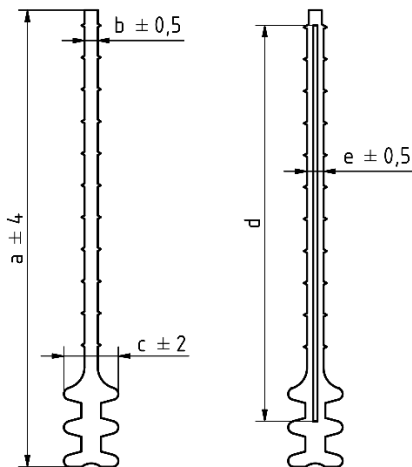
## Waterstops according to factory standards (WN)

### internal construction waterstops, “reinforced spring steel” series Flex



Type	Dim a [mm]	Dim c [mm]							Roll length [m]
Flex 10	100	4,5							25
Flex 15	150	4,5							25
Flex 19	190	4,5							25
Flex 24	240	4,5							25
Flex 32	320	5							25

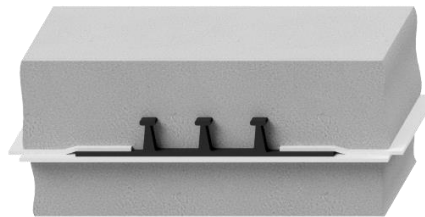
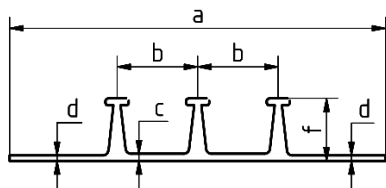
### internal construction waterstops, “reinforced spring steel” series A SM



Type	Dim a [mm]	Dim b [mm]	Dim c [mm]	Dim d [mm]	Dim e [mm]				Roll length [m]
A 15 SM	150	4,3	18	130	5,5				25

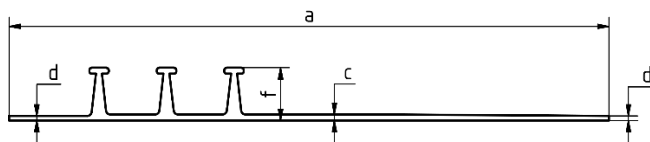
## Waterstops according to factory standards (WN)

### Weld-on wires for construction joints series SAA



Type	Dim a [mm]	Dim b [mm]	Dim c [mm]	Dim d [mm]	Dim f [mm]				Roll length [m]
SAA 210-3	210	45	4	3	35				25

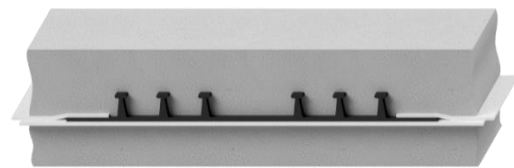
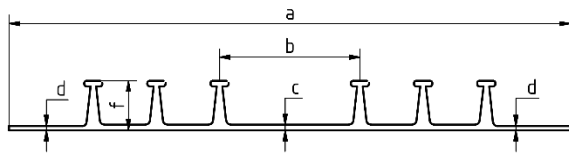
### Weld-on wires for construction joints series SAA



Type	Dim a [mm]	Dim c [mm]	Dim d [mm]	Dim f [mm]					Roll length [m]
SAA 400-3	400	4	3	35					25

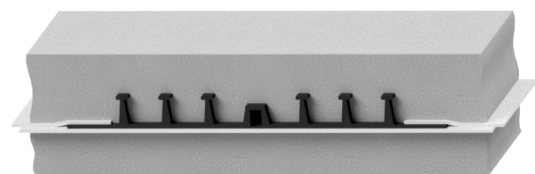
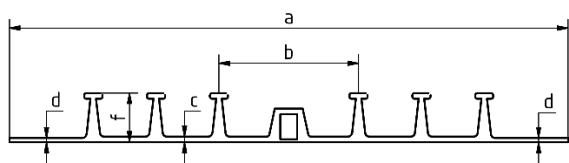
## Waterstops according to factory standards (WN)

### Weld-on wires for construction joints series SAA



Type	Dim a [mm]	Dim b [mm]	Dim c [mm]	Dim d [mm]	Dim f [mm]	Qty. anchor			Roll length [m]
SAA 400-6	400	100	4	3	35	6			25
SAA 500-6	500	180	4	3	35	6			25
SAA 600-6	600	280	4	3	35	6			25

### Weld-on wires for expansion joints series SDA



Type	Dim a [mm]	Dim b [mm]	Dim c [mm]	Dim d [mm]	Dim f [mm]	Qty. anchor			Roll length [m]
SDA 400-6	400	100	4	3	35	6			25
SDA 500-6	500	180	4	3	35	6			25
SDA 600-6	600	280	4	3	35	6			25

## List of waterstop accessories

### General

- waterstop clamps
- Injection clip for FMS waterstops
- Trapezoid strip TR 20/50
- Trapezoid strip TR 30/60
- Trapezoid strip TR 40/70
- Trapezoid strip TR 50/80

### PVC welding accessories

- Axe-shaped welding tool 200 W
- Axe-shaped welding tool 250 W
- Long welding blade 55", 400 W
- Welding band 30 x 1,5
- Welding cord Ø4 mm

### Vulcanisation equipment

- Vulcanising press
- Type-dependent vulcanisation mould
- Coating solution
- Crude rubber 50 x 1,5 mm
- Crude rubber 50 x 3,0 mm
- Crude rubber 80 x 3,0 mm
- Grinder
- Pressure roller
- Thermal gloves
- Cutting knife
- Chemosil coating 1\*
- Chemosil coating 2\*

\* for pre-treatment of the sheet metal during the vulcanisation of a FMS waterstops





## Resistance list

### Note to EPDM

EPDM is generally characterized by its superior resistance to heat, aging and chemicals, good low-temperature behaviour and good electrical insulation properties. These properties allow a long service life under static load. EPDM is widely used in the automotive industry and in washing machines and dishwashers, as EPDM achieved good results compared with suds and cleaning solutions at higher temperatures. The resistance to hot water and steam is particularly good, so it is also well suited for gaskets and hoses in heating and the fittings and household appliance industries. The temperature range for continuous use is from about  $-30^{\circ}\text{C}$  to  $+130^{\circ}\text{C}$ , for short-time use approx.  $-50^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$ .

### Note to SBR

Vulkanisates of SBR with reinforcing fillers get nearly to the same level according to mechanical properties like NR. The abrasion resistance as well as heat and ageing resistance are even better but with lower elasticity and low temperature flexibility. In addition to the main range of application tires there are also articles like e. g. seals, profiles and hoses made of SBR. The temperature range for continuous use is from about  $-30^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$ , for short-time use approx.  $-50^{\circ}\text{C}$  to  $+120^{\circ}\text{C}$ .

### Note to CR

The products made of CR are characterized by high flame retardancy, good weather, chemical, ozone and aging resistance, medium oil resistance with good mechanical properties and favorable elastic behavior, even at low temperatures. The fields of application are e.g. in the scope of hoses, seals, conveyor belts (e.g. underground construction). The temperature range for continuous use is from about  $-20^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$ .

The next page shows some examples of resistance to certain media or properties.

## Resistance list

Medium / property	EPDM	SBR	CR
Abrasion resistance	E	A-B	A-B
Aliphatic hydrocarbons	E	D-E	C
Aromatic hydrocarbons	E	E	E
chemical bases	B	A-C	C
Resistance against permanent deformation	B-C	C	B-C
Brake fluids (based on glycol)	A	A-B	B-C
Chlorinated hydrocarbons	E	E	E
Flame resistance	E	E	A-B
Gas permeability	B	B-C	D
Fuels	E	E	D
Solvents	C-E	D	B-C
Seawater	A	A	A
Mineral oil and grease	E	D-E	C
Ozone and ageing resistance	A	C	B
Acids	B	A-C	C-D
Saltwater	A	A	A
Water up to 100°C	A	B	B-D

- A = excellent  
 B = very good  
 C = good  
 D = moderate  
 E = insufficient

(at gas permeability: A = good permeability bis E = impermeable)



## Moulded parts

Waterstops and moulded parts are used to form closed waterstop systems for sealing and waterproofing of concrete structures. These waterstop systems can be extensive and can consist of complicated connections.

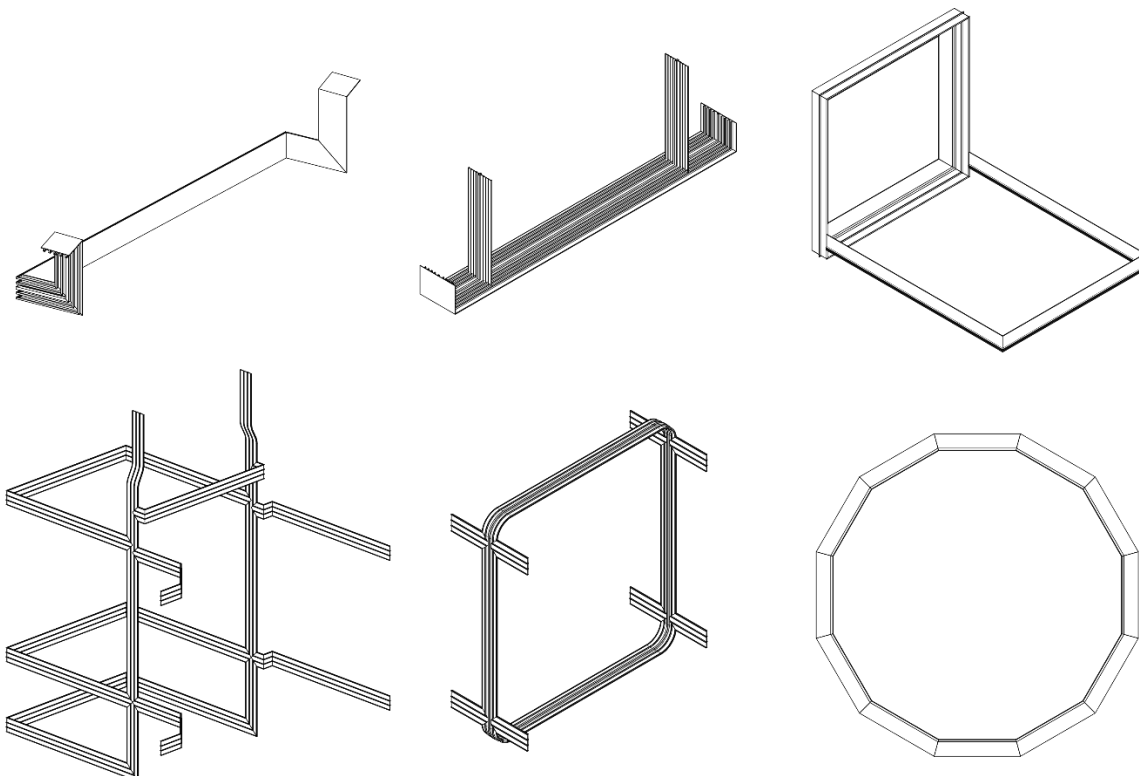
At the same time, they can also be composed of different types of waterstops. Prefabrication in the factory reduces the number of connections required on-site to a minimum.

In accordance with DIN 18197, only welding of butt joints is permitted on site. All other connections must be made at the factory.






We manufacture complete waterstop systems according to customer specifications and drawings.







In addition, we offer trainings to qualify site personnel for the professional creation of butt joints.

### Examples of waterstop systems





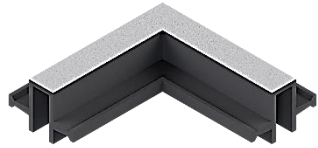


## Moulded parts






External waterstops, without central tube		
F1 - flat cruciform	F2 - flat T-piece	F3 - flat angle
		
F6a - vertical angle, stop anchors outside		F6i - vertical angle, stop anchors inside
		

Internal waterstops, without central tube		
F1 - flat cruciform	F2 - flat T-piece	F3 - flat angle
		
F4 - vertical cruciform	F5 - vertical T-piece	F6 - vertical angle
		






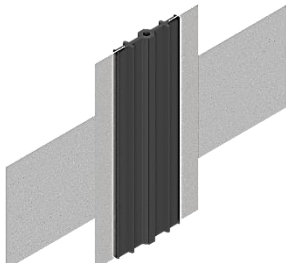


*These moulded parts also apply to external waterstops with a central tube.*

## Moulded parts

Capping joint waterstops		
F1 - flat angle, visible surface inside	F2 - flat angle, visible surface outside	F3 - vertical angle
		
F4 - vertical cruciform		F5 - vertical T-piece
		

Clamped waterstops		
vertical surface angle	flat surface angle	
		
vertical elbow	flat elbow	
		

## Moulded parts

Special connections	
external expansion waterstop, blend corner	external construction waterstop, blend corner
	
external expansion waterstop, blend corner	external construction waterstop, blend corner
	
external expansion waterstop & capping joint waterstop	internal expansion waterstop with welded joint plates
	
Waterstop locking mechanism	Waterstop fastener
	

## Planning procedure

### 1. Planning discussions on site

Intensive consultation and explanation on the topic of sealing systems. Discussion of the existing conditions and the resulting sealing options.

### 2. Development of sealing proposals

We develop sealing proposals using the most up-to-date methods, taking into account the existing specifications and planning documents, which are then discussed with you and your specialist planners.

### 3. Converting sealing proposals into production plans

After consultation with you and the planners, detailed waterstop plans are drawn up from the respective proposals, which then serve as the basis for production.

### 4. Manufacturing and checking

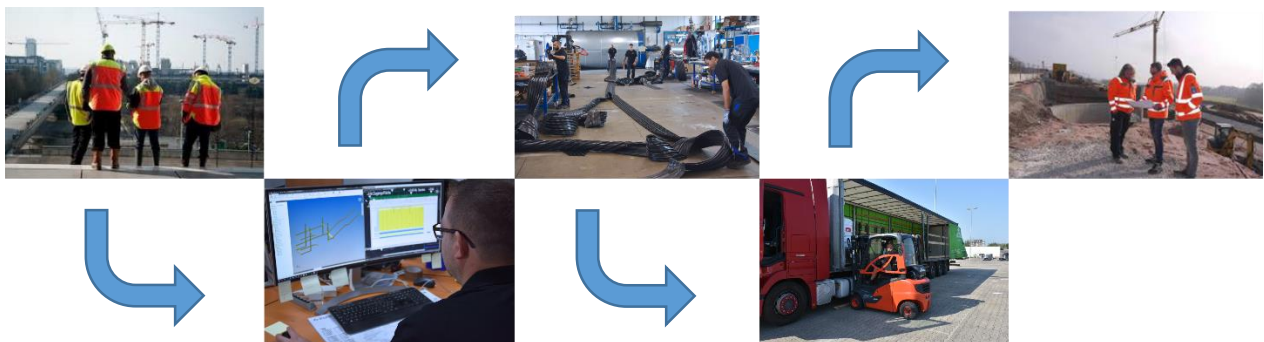
The systems are cut to size based on joint design plans (we generally prepare production drawings) and then joined together by trained personnel using the respective joining technology, checked for dimensional accuracy and made ready for dispatch.

### 5. Dispatch

The prepared systems are packed on pallets, wrapped, labelled and transported on trucks to the respective construction sites.

### 6. Individual follow-up support on the construction site

After delivery, we will continue to support you and provide training for your staff; we can also help with the installation of the systems if required.



## Training sessions

for joining of thermoplastic and elastomeric waterstops in accordance with ZTV-Ing [Supplementary Technical Terms & Conditions and Guidelines for Civil Engineering] and DIN 18197

### 1. Joining of thermoplastic waterstops

Morning: Theoretical part

- Overview of types of waterstops
- Fundamentals of sealing with thermoplastic waterstops
- Basic knowledge of thermoplastic materials
- Mode of action of waterstops
- Planning and dimensioning
- Necessary framework conditions
- Machining and joining
- Installation
- Approvals

Afternoon: Practical part

- Demonstration by an application engineer
- Practical application
- Welding of butt joints on various waterstop profiles
- Testing and evaluation of the prepared joints





## Training sessions

for joining of thermoplastic and elastomeric waterstops in accordance with ZTV-Ing [Supplementary Technical Terms & Conditions and Guidelines for Civil Engineering] and DIN 18197

### 2. Joining of elastomeric waterstops

Morning: Theoretical part

- Overview of types of waterstops
- Fundamentals of sealing with elastomeric waterstops
- Basic knowledge of thermoplastic materials
- Mode of action of waterstops
- Planning and dimensioning
- Necessary framework conditions
- Machining and joining
- Installation
- Approvals

Afternoon: Practical part

- Demonstration by an application engineer
- Practical application
- Vulcanisation of butt joints on various waterstop profiles
- Testing and evaluation of the prepared joints





# Product catalogue



## Service on-site

In order to be able to further optimize our construction site operations, we have founded the company WSS (waterstop solution).

Due to the growing demand for the production and installation of connections at construction sites, we decided to establish a special company in 2019 for sealing work on construction sites.

We can offer you any type of support in the field of waterstop installation, construction site connections, injections and installation of special sealing systems for joining new structures to existing ones.

Our experienced specialists will be glad to answer any questions you may have.



**Contact us. Phone: 02872-8070-0**

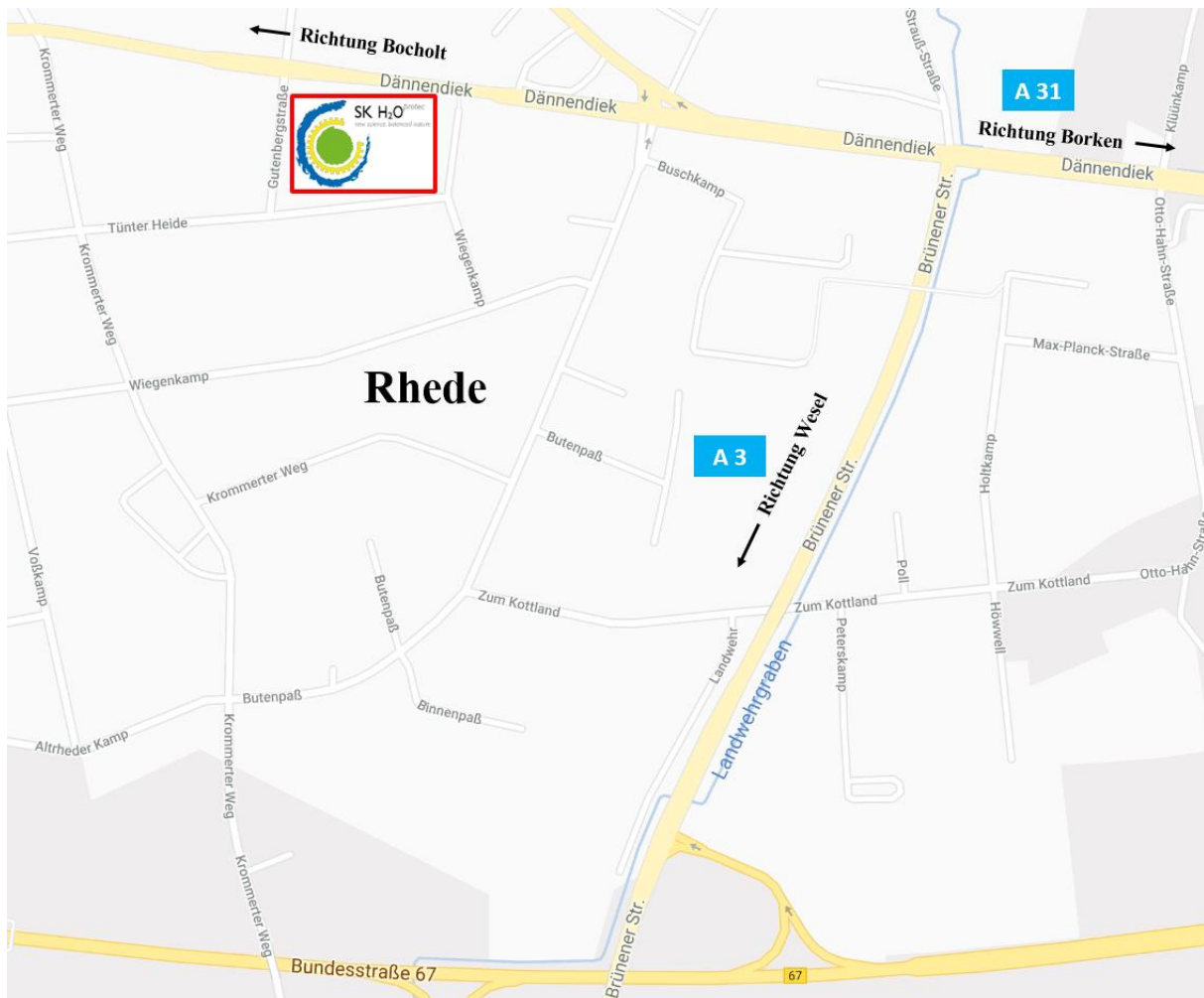
**[www.wss.de](http://www.wss.de)**



# Product catalogue



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