

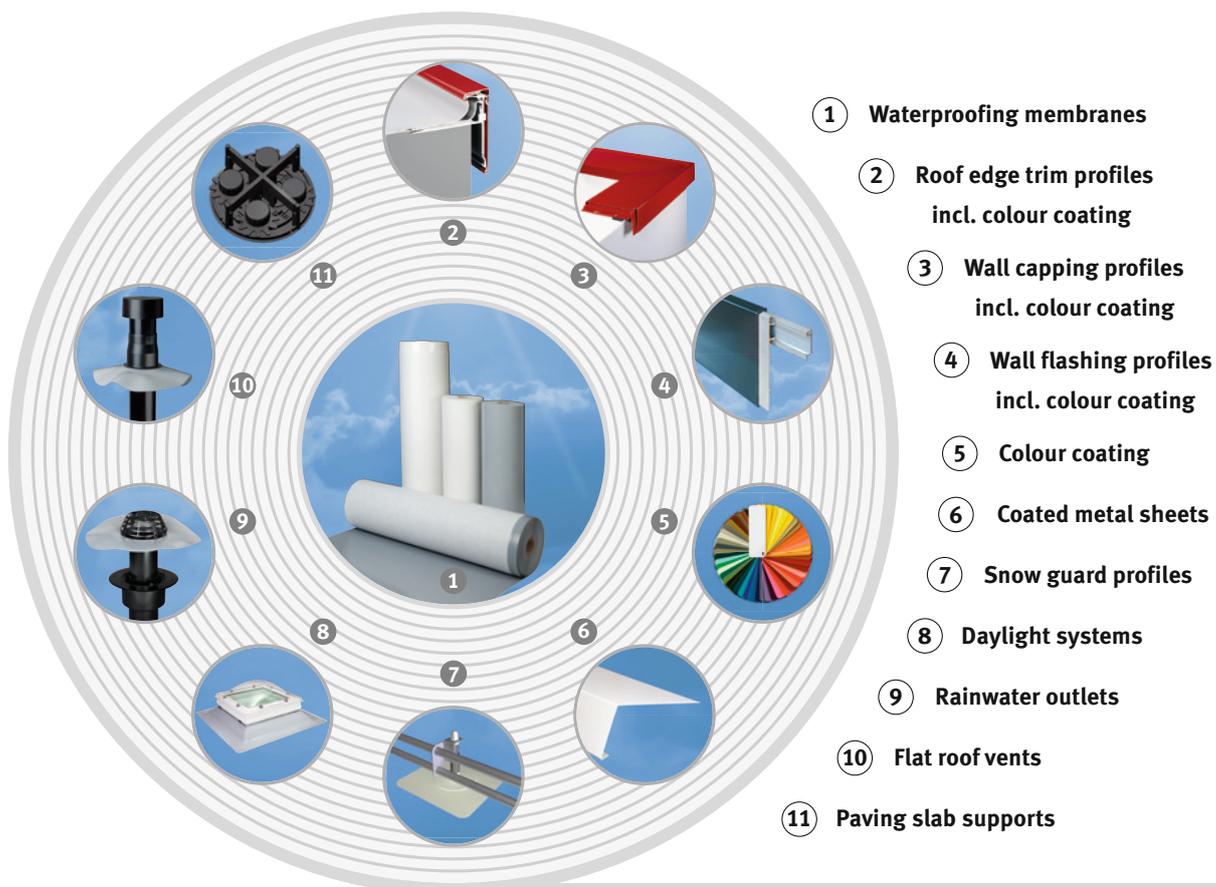
**Flat roof  
drainage**

Rainwater outlets  
Emergency outlets  
Water spouts



# alwitra waterproofing system

Flat roof drainage elements are part of the proven alwitra waterproofing system. This system comprises:



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# Dimensioning principles for roof drainage systems

## General notes

### (excerpts from relevant standards and guidelines):

#### Roof drainage:

- **Dimensioning** of roof drainage systems has to be done **by way of hydraulic calculation**. A medium rain event, the so called local design rainfall ( $r_{(5,5)}$ )\* is used as a dimensioning basis, taking into consideration cost effectiveness and self-cleaning capacity.
- At least one flat roof rainwater outlet must be installed at every low point, depending on slope, as well as on every separate roof area, depending on the roof geometry.
- Roof and emergency drainage systems, **in total**, must be capable of discharging a 5 minute centennial rainfall ( $r_{(5,100)}$ )\* to be expected at the location of the building.
- The distance between the individual rainwater outlets installed at practically the same height level should not exceed 20m.

#### Emergency drainage:

- **Each** individual roof area **must have** an emergency drainage system.
- Emergency drainage can be done by emergency overflows (e.g. water spouts) or emergency outlets.
- At least one flat roof rainwater outlet must be installed at every low point, depending on slope. From every flat roof rainwater outlet, unimpeded discharge to an emergency outlet with sufficient discharge capacity must be ensured on the roof waterproofing.
- **In any case**, the emergency drainage system must be capable of discharging **at least the difference volume** between centennial rainfall ( $r_{(5,100)}$ )\* and design rainfall ( $r_{(5,5)}$ )\*. The water has to be freely discharged to an area not prone to flooding. In order to avoid any damage, this water must not be discharged to

other roof areas, roof terraces or e.g. to areas near low-ground entrances to garages, basements etc.

- In the case of refurbishment, the discharge capacity of the existing drainage system needs to be verified. Furthermore, it must be controlled whether an emergency drainage is in place, whether it is adequately sized and properly arranged.
- At concrete constructed roofs with designed and statically proven rainwater retention, there is no need for an emergency drainage system.
- Gravel or green roof, usually, means less rainwater outlets, the number of emergency outlets or overflows, however, will increase compared to roof areas without ballast.

#### Calculation:

The required discharge rate  $Q_{(5,5)}$  [L/s] of the design rainfall ( $r_{(5,5)}$ ) at a projected roof area  $A$  [m<sup>2</sup>] and a drainage coefficient  $C$  for the roof drainage is calculated as follows:

$$Q_{(5,5)} = r_{(5,5)} \cdot C \cdot A \cdot 1 / 10,000$$

As regards emergency drainage, this leads to a minimum discharge rate  $Q_{\text{emerg.}}$  [L/s] of

$$Q_{\text{emerg.}} = (r_{(5,100)} - r_{(5,5)}) \cdot C \cdot A \cdot 1/10,000$$

\* Reference locations see Appendix 1 to DIN 1986-100 or KostraDWD of the German Weather Service (DWD)

## Ready for the next deluge – the alwitra roof drainage system



The alwitra roof drainage system

When planning and installing drainage systems on low slope roofs, the requirements of various standards and guidelines are generally binding. In particular, DIN EN 12056 and DIN 1986-100 include specific requirements for roof drainage and emergency drainage systems. The alwitra roof drainage system is the perfect solution for all drainage issues of low slope roofs.

The alwitra roof drainage system is

- **adapted** to the specific requirements for rainwater and emergency outlets of low slope roofs (DIN 1986-100, EnEV)
- **highly efficient:** Optimised inlet geometry providing both a high discharge rate and a low ponding height
- **extremely tough:** Made of highly impact resistant polypropylene (PP)
- **comprehensive:** A vast product range offering numerous combination possibilities with a small number of individual parts

- **flexible:** Along with the alwitra waterproofing membranes EVALON® and EVALASTIC®, almost any vapour control sheets can be professionally and securely flashed against
- **safe:** The entire system has been testified by TÜV Rheinland LGA Products GmbH according to DIN EN 1253



## alwitra rainwater and emergency outlets



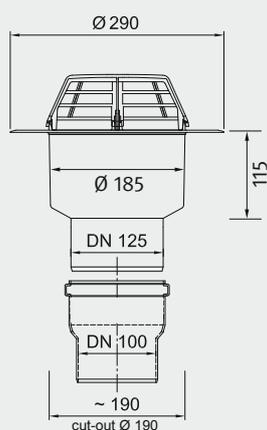
alwitra rainwater outlet S 125/110 with extension piece 200

## alwitra rainwater outlet vertical

(S 125/110 and SH 125/110 for DN 125 and DN 100)

The thermally insulated alwitra **rainwater outlet S** (vertical) ensures reliable connection between the waterproofing at cold or inverted roofs and the drainage pipes. On classic warm roofs, all standard vapour barriers can be flashed directly. The thermal insulation layer will be bridged by an optional extension piece. Corresponding extension pieces are available in various lengths, depending on the thermal insulation thickness (see chapter „alwitra extension pieces“, page 8). Flashing against the roof waterproofing is carried out with a special screw ring. In combination with the oval gasket underneath and a corresponding connecting flange, a long-term waterproof connection is easily established between the roof waterproofing / vapour barrier and the rainwater outlet.

Corresponding EVALON®/EVALASTIC® or bituminous connection flanges are readily available as optional system accessories. Drainage pipes with socket DN 125 (OD 125 mm) are directly flashed, for pipes DN 100 (OD 110 mm) the included eccentric reducer is used. For drainage pipes DN 70 (OD 75 mm) or DN 150 (OD 160 mm) eccentric reducers / adapters are optionally available. This means, only one single roof outlet is required for flashing against four predominantly used sizes of drainage pipes (DN 70, DN 100, DN 125 and DN 150) in gravity drainage. An electrically heatable version, 230 V AC, is also available (see chapter „Heatable alwitra rainwater outlets“, page 9). A combined leaf guard / gravel stop is included.



alwitra rainwater outlet vertical



alwitra rainwater outlet S 125/110

### Technical data of alwitra rainwater outlet S 125/110

**Class (leaf guard / gravel stop):** H 1.5

**Discharge:** vertical

**Material:** highly impact resistant PP  
**Colour:** black (optional connecting flange in the colour of the waterproofing membrane)

**Required roof opening:** Ø 200 mm (Ø 190 mm possible)

**Height:** approx. 190 mm (approx. 275 mm incl. installed reducer)

**Outer diameter flange:** 290 mm

**Number of screw holes in flange:** 4

**Ø of screw holes in flange:** 240 mm

**Flange width:** approx. 50 mm

**Connection diameter:** 125 mm (DN 125) and 110 mm (DN 100); 75 mm (DN 70) with optional reducer; 160 mm (DN 150) with optional adapter

**Outer diameter of optional connecting flange:** 480 mm

**Discharge rates:** see table page 26

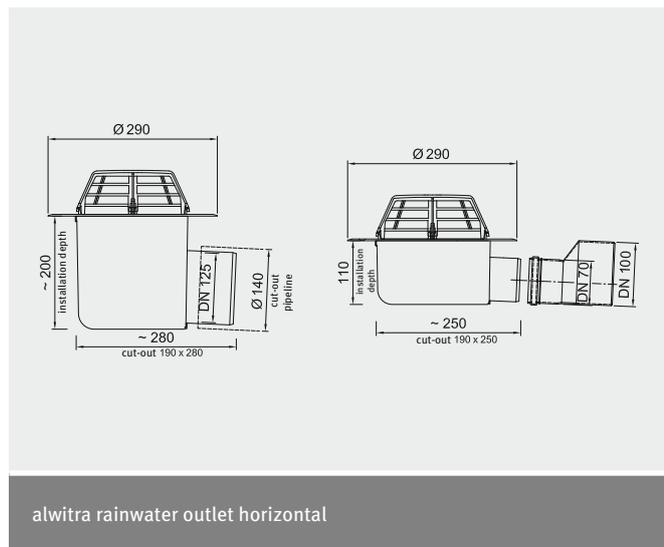
# alwitra rainwater outlet horizontal

(W 75/110 and WH 75/110 for DN 70 and DN 100 as well as W 125 and WH 125 for DN 125)

The thermally insulated alwitra **rainwater outlet W** (horizontal) ensures reliable connection between the waterproofing at cold or inverted roofs and horizontally installed drainage pipes. On classic warm roofs, all standard vapour barriers can be flashed directly. The thermal insulation layer will be bridged by an optional extension piece. Corresponding extension pieces are available in various lengths, depending on the thermal insulation thickness (see chapter „alwitra extension pieces“, page 8).

alwitra rainwater outlets W are available in two different sizes:

- W 125 for connecting to drainage pipes with socket DN 125 (OD 125 mm)



alwitra rainwater outlet horizontal

- W 75/110 with small overall height for connecting to drainage pipes with socket DN 70 (OD 75 mm) and - with included eccentric adapter 75/110 - to pipes DN 100 (OD 110 mm)

Flashing against the roof waterproofing is carried out with a special screw ring. In combination with the oval gasket underneath and a corresponding connecting flange, a long-term waterproof connection is easily established between the roof waterproofing / vapour barrier and the rainwater outlet. An electrically heatable version, 230 V AC, is also available (see chapter „Heatable alwitra rainwater outlets“, page 9).

A combined leaf guard / gravel stop is included.



alwitra rainwater outlet W 75/110

## Technical data of alwitra rainwater outlet W 75/110 and W 125

<b>Class (leaf guard / gravel stop):</b>	H 1.5	
<b>Discharge:</b>	horizontal	
<b>Material:</b>	highly impact resistant PP	
<b>Colour:</b>	black (optional connecting flange in the colour of the waterproofing membrane)	
<b>Required roof opening:</b>	W 125	190 x 280 mm
	W 75/110	190 x 250 mm
<b>Min. installation height:</b>	W 125	approx. 200 mm
	W 75/110	approx. 110 mm
<b>Outer diameter of flange:</b>	290 mm	

<b>Number of screw holes in flange:</b>	3	
<b>Ø of screw holes in flange:</b>	240 mm	
<b>Flange width:</b>	approx. 50 mm	
<b>Connection diameter:</b>	W 125	125 mm (DN 125)
	W 75/110	75 mm (DN 70) 110 mm (DN 100) with included adapter 75/110
<b>Outer diameter of optional connecting flange:</b>	480 mm	
<b>Discharge rates:</b>	see table page 26	

## alwitra extension pieces 200, 400, SL and UKD

The alwitra extension pieces are used for bridging thermal insulation layers of warm roofs and are available in three lengths, depending on the thermal insulation layer thickness:

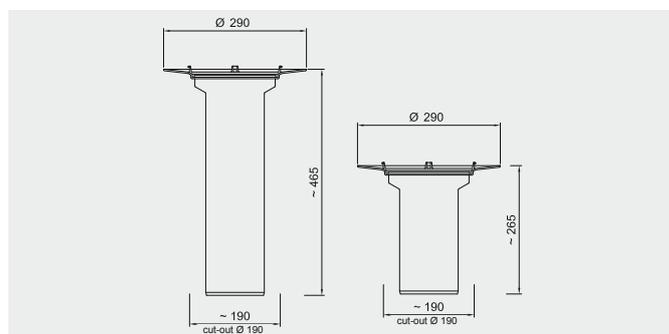
- extension piece 200  
for thermal insulation layer thicknesses from 50 - 200 mm
- extension piece 400  
for thermal insulation layer thicknesses from 200 - 400 mm
- extension piece SL  
individual length according to customer specification

As with alwitra rainwater outlets, flashing against the roof waterproofing is carried out with a special screw ring. In combination with the oval gasket underneath and a corresponding connecting flange, a long-term waterproof connection is easily established between the roof waterproofing and the extension piece. An EVALON® or EVALASTIC® connecting flange is included. As inverted roof drainage has specific requirements, we provide

the alwitra extension pieces UKD. The additional intakes at the lower end of the extension piece ensure professional drainage of „both“ drainage levels of an inverted roof. Corresponding to the inverted roof thermal insulation thickness, they are available in two lengths:

- extension piece UKD 200  
for thermal insulation layer thicknesses from 50 - 200 mm
- extension piece UKD 400  
for thermal insulation layer thicknesses from 200 - 400 mm

All alwitra extension pieces are compatible with the alwitra rainwater outlets S(H) 125/110, W(H) 75/110, W(H) 125 and the parapet outlet W75 and provide backflow-proof connection by simply inserting them into the rainwater outlet. When used in combination with alwitra rainwater outlet S(H) 125/110, the extension piece usually requires no cutting to length.



alwitra extension piece



alwitra extension piece 400

### Technical data of the alwitra extension piece

<b>Material:</b>	highly impact resistant PP	<b>Outer diameter of flange:</b>	290 mm
<b>Colour:</b>	black, connecting flange in the colour of the waterproofing membrane	<b>Flange width:</b>	approx. 50 mm
<b>Min. installation height:</b>	approx. 50 mm	<b>Connection diameter:</b>	approx. 120 mm (fitting all alwitra rainwater outlets)
<b>Max. installation height:</b>	200: approx. 200 mm thermal insulation thickness 400: approx. 400 mm thermal insulation thickness SL: according to customer specification	<b>Outer diameter of connecting flange:</b>	480 mm
		<b>Discharge rates:</b>	see table page 26, 27

## Heatable alwitra rainwater outlets

In order to ensure functioning at an ambient temperature below zero, alwitra rainwater outlets are optionally available with electrical heating (230 V AC). The letter „H“ in the name indicates the heating feature of the alwitra rainwater outlet.

The heating system is integrated into the rainwater outlet at the factory. The outlet is heated by an encapsulated heating mat. A built-in temperature switch provides protection against over-heating.

All roof outlets installed at the roof area are controlled with a single thermostat.

For controlling, an individually adjustable, energy-saving thermostat is used. The thermostat is activated at the critical temperature range just above the freezing point, thus, energy consumption is reduced to a minimum.



alwitra thermostat with outdoor sensor



Heatable alwitra rainwater outlet WH 75/110

### Technical data of the thermostat

<b>Mounting:</b>	rail mounting with external outdoor temperature sensor
<b>Operating voltage:</b>	230 V AC, $\pm 10\%$ , 50 - 60 Hz
<b>Power consumption:</b>	3 VA
<b>Temperature range „HIGH“:</b>	+10 °C / 0 °C
<b>Temperature range „LOW“:</b>	0 °C / -15 °C
<b>Output relay:</b>	16 A changeover contact 250 V AC (ohmic load)
<b>Safety class:</b>	II
<b>Protection class:</b>	IP20 IP54 outdoor temperature sensor

### Technical data of the heating

<b>Operating voltage:</b>	230 V AC, $\pm 10\%$ , 50 - 60 Hz
<b>Power:</b>	10 VA
<b>Safety class:</b>	II
<b>Protection class:</b>	IP 54
<b>Connecting cable:</b>	silicone, two core, length approx. 100 cm

## alwitra emergency outlet socket

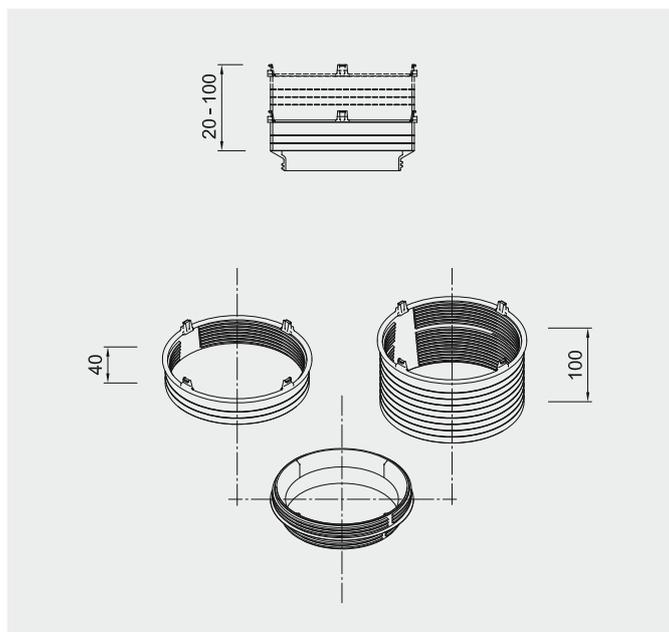
According to the requirements stipulated in relevant standards and guidelines, emergency drainage systems are mandatory for flat roofs with internal drainage. This applies also to refurbishment. alwitra rainwater outlets and extension pieces have been designed to meet this requirement. They can easily and at low costs be converted into emergency outlets with a high performance and a specified ponding height.

In the case of rainwater outlets or extension pieces, the optionally available two-part emergency outlet socket replaces the screw ring for flashing the waterproofing. It is available in different

versions varying only in ponding height:

- ponding height of 20 - 40 mm for emergency outlet socket 40
- ponding height of 20 - 100 mm for emergency outlet socket 100

The required ponding height can be achieved by cutting the extension piece to length on site. To this end, markings (grooves) are placed at intervals of 10 mm. For the SL version, pieces are delivered ready-to-install for a ponding height of 20 - 95 mm according to customer specification.



alwitra emergency outlet socket



alwitra emergency outlet socket 40, mounted to alwitra rainwater outlet S 125/110

### Technical data of the emergency outlet socket

<b>Application:</b>	for all alwitra rainwater outlets and extension pieces
<b>Material:</b>	highly impact resistant PP
<b>Colour:</b>	black
<b>Min. ponding height:</b>	approx. 20 mm
<b>Max. ponding height:</b>	40: approx. 40 mm 100: approx. 100 mm SL: according to customer specification pre-adjusted from 20 - 95 mm

<b>Outer diameter of optional connecting flange:</b>	480 mm
<b>Discharge rates:</b>	see table page 26

## alwitra terrace grate

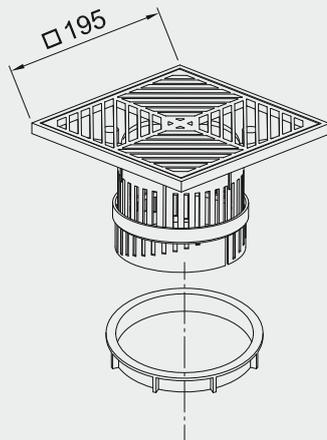
Combined with the height-adjustable alwitra terrace grate made of stainless aluminium, all alwitra rainwater outlets can be installed on used roof areas with waterproofing (e.g. roof terraces).

The grate is installed in place of the leaf guard / gravel stop, ensuring drainage at paving and waterproofing level.

By turning the lift ring, the installation height (overall height of the paving above the waterproofing) is adjustable from approx.

65 - 90 mm in steps of 3 mm. For installation heights > 90 mm, additional lift rings are optionally available, providing for additional height of approx. 36 mm per ring.

The alwitra terrace grate is the ideal complement for roof areas covered with paving slabs installed on the proven alwitra paving slab supports PA 20 plus.



alwitra terrace grate



alwitra terrace grate on alwitra rainwater outlet W 75/110

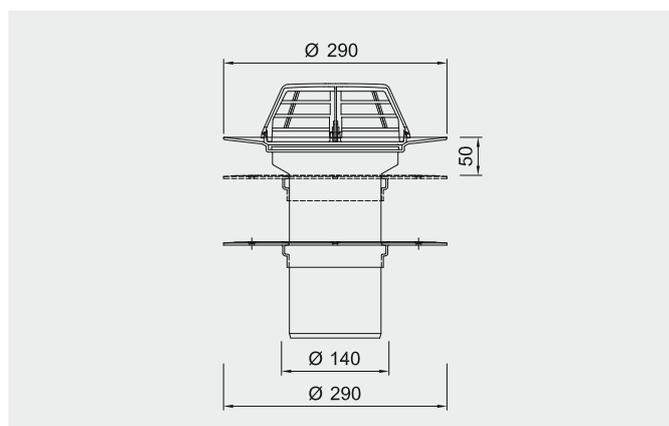
### Technical Data of the alwitra terrace grate

<b>Class:</b>	K 3
<b>Material:</b>	aluminium, with locating ring made of polypropylene (PP)
<b>Colour:</b>	aluminium
<b>Dimensions:</b>	approx. 195 x 195 mm (for an opening of 200 x 200 mm)

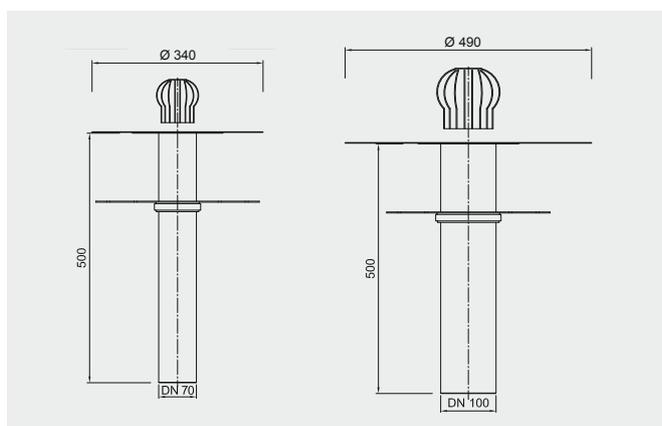
<b>Installation height:</b>	approx. 65 - 90 mm, adjustable in steps of 3 mm (without additional lift ring)
<b>Additional height per optional lift ring:</b>	approx. 36 mm
<b>Discharge rates:</b>	see table page 26

## alwitra refurbishment rainwater outlets

In the case of refurbishment, where it is not possible to replace existing outlets, alwitra refurbishment rainwater outlets are installed. The two-part systems consist of a custom-fit refurbishment plate, which is centrally arranged over the existing rainwater outlet and flashed against the existing waterproofing without backflow. The drainage element itself is then simply inserted into the refurbishment plate. Flashing against the new waterproofing is carried out either with connecting flange and screw ring (refurbishment rainwater outlet 125) or with factory-fitted connecting flange (refurbishment rainwater outlet 75, 110).



alwitra refurbishment rainwater outlet 125



alwitra refurbishment rainwater outlet 75 and 110

### Technical data for alwitra refurbishment rainwater outlet 125 (EVALON® / EVALASTIC®)

<b>For existing rainwater outlets:</b>	DN 125 - DN 150
<b>Material:</b>	highly impact resistant PP
<b>Min. thickness of additional insulation:</b>	approx. 50 mm
<b>Max. thickness of additional insulation:</b>	approx. 200 mm
<b>Outer diameter of flange:</b>	290 mm
<b>Flange width:</b>	approx. 50 mm
<b>Diameter of the drainage element:</b>	approx. 120 mm
<b>Outer diameter of connecting flange:</b>	480 mm
<b>Refurbishment plate:</b>	PP black
<b>Discharge rates:</b>	see table page 27

### Technical Data for alwitra refurbishment rainwater outlet 75 and 110 (EVALON®)

<b>Refurbishment outlet 110</b>	
<b>For existing rainwater outlets:</b>	~ DN 100
<b>Refurbishment outlet 75</b>	
<b>For existing rainwater outlets:</b>	DN 70 - DN 90
<b>Material:</b>	PVC
<b>Colour:</b>	grey
<b>Min. thickness of additional insulation</b>	approx. 10 mm
<b>Max. thickness of additional insulation:</b>	approx. 300 mm
<b>Connecting flange:</b>	factory-fitted, in the colour of the waterproofing membrane
	75: 180 x 180 mm
	110: 230 x 230 mm
<b>Refurbishment plate:</b>	aluminium
<b>Discharge rates:</b>	see table page 27

## Accessories for alwitra rainwater outlets

Numerous optional accessories are available to complement the drainage system of alwitra rainwater / emergency outlets.



### alwitra adapters

Socket DN 70 (OD 75 mm) to spigot DN 100 (OD 110 mm)  
Socket DN 125 (OD 125 mm) to spigot DN 150 (OD 160 mm)



### alwitra reducers

Socket DN 125 (OD 125 mm) to spigot DN 70 (OD 75 mm)  
Socket DN 125 (OD 125 mm) to spigot DN 100 (OD 110 mm)



### alwitra bellows

for flexible connection of rainwater outlets or vents DN 125 (OD 125 mm) to pipes DN 125 (OD 125 mm) or DN 100 (OD 110 mm) or DN 70 (OD 75 mm)



### alwitra base plate / refurbishment plate

as a lead-through or for flashing a DN pipe against e.g. a vapour barrier



### alwitra screwing aid

for secure installation of the screw ring

## Overview on alwitra rainwater and emergency outlets

Vertical discharge also available with heating 230 V AC		
DN 70 (OD 75)	DN 100 / DN 125 (OD 110 / OD 125)	DN 150 (OD 160)
S 110/125, SH 110/125	S 110/125, SH 110/125	S 110/125, SH 110/125
		
DN 125 (OD 125) + reducer 125/75	DN 125 (OD 125) incl. reducer to DN 100 (OD 110)	DN 125 (OD 125) + adapter 125/160

Warm roof extension pieces (fitting all alwitra rainwater outlets)		
Extension piece 200	Extension piece 400	Extension piece SL
		
For thermal insulation thicknesses from 50 - 200 mm	For thermal insulation thicknesses from 200 - 400 mm	For thermal insulation thicknesses according to customer specification

Connecting flange (fitting all alwitra rainwater outlets and extension pieces)		
Connecting flange EVALON® light grey	Connecting flange EVALON® white	Connecting flange EVALON® slate grey
		
Thickness 1.5 mm, Ø 480 mm	Thickness 1.5 mm, Ø 480 mm	Thickness 1.5 mm, Ø 480 mm

Accessories (fitting all alwitra rainwater outlets and extension pieces)		
Emergency outlet 40	Emergency outlet 100	Emergency outlet SL
		
For extending all alwitra rainwater outlets and extension pieces with a ponding height of 20 - 40 mm	For extending all alwitra rainwater outlets and extension pieces with a ponding height of 20 - 100 mm	For extending all alwitra rainwater outlets and extension pieces with a ponding height according to customer specification

### Horizontal discharge

also available with heating 230 V AC

**DN 70 / DN 100**  
(OD 75 / OD 110)

W 75/110, WH 75/110



DN 70 (OD 75) incl. adapter to  
DN 100 (OD 110)

**DN 125**  
(OD 125)

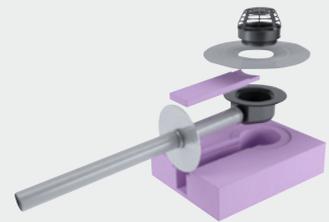
W 125, WH 125



DN 125 (OD 125)

**DN 70**  
(OD 75)

Parapet outlet W75



### Inverted roof extension pieces (fitting all alwitra rainwater outlets)

Extension piece UKD 200



For thermal insulation thicknesses at inverted roofs  
from 50 - 200 mm

Extension piece UKD 400



For thermal insulation thicknesses at inverted roofs  
from 200 - 400 mm

### Connecting flange (fitting all alwitra rainwater outlets and extension pieces)

Connecting flange EVALON® various colours  
(on request)



Thickness 1.5 mm, Ø 480 mm

Connecting flange EVALASTIC® grey



Thickness 1.5 mm, Ø 480 mm

Vapour barrier connecting flange (bitumen)



Thickness 4.0 mm, Ø 500 mm

### Accessories (fitting all alwitra rainwater outlets and extension pieces)

Terrace grate

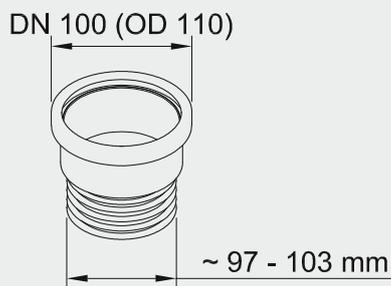


Made of aluminium, height-adjustable

## alwitra downpipe adapter

The alwitra downpipe adapter ensures reliable connection of pipes and rainwater outlets DN 100 (OD 110 mm) with pipes with an inner diameter of approx. 97 - 103 mm (e.g. downpipes, SML pipes, socketless HT, KG, PE pipes).

After removing the multiple lip seal at the spigot, the alwitra downpipe adapter will fit a DN 90 HT pipe with socket. Thus, e.g. the alwitra vent stack can also be used with downpipes DN 90.



alwitra downpipe adapter



alwitra downpipe adapter

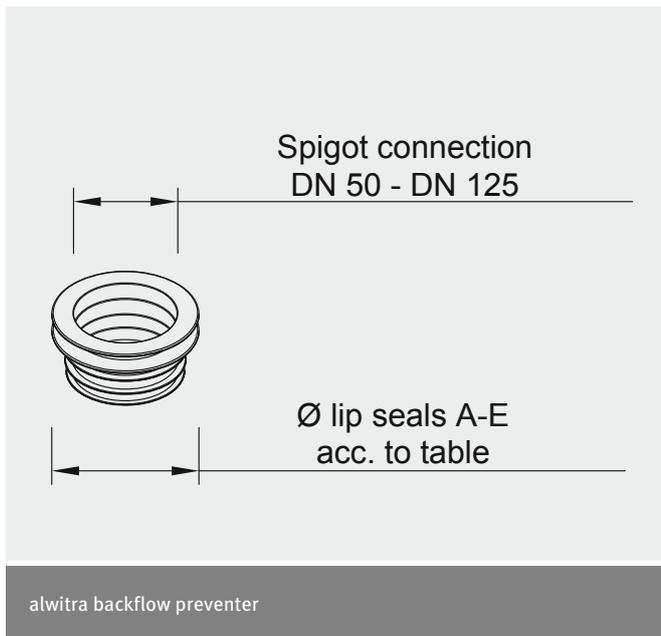
### Technical Data of the alwitra downpipe adapter

<b>Material:</b>	body: PP multiple lip seal: ethylene-propylene-terpolymer rubber (EPDM)	<b>Lower connection:</b>	with multiple lip seal: pipes with an inner diameter of approx. 97 - 103 mm, e.g. downpipes, SML pipes, socketless HT, KG, PE pipes
<b>Colour:</b>	grey, with black seal		without multiple lip seal: spigot DN 90 (OD 90 mm) for insertion into an HT pipe DN 90 with socket
<b>Number of sealing lips:</b>	5		
<b>Upper connection:</b>	socket with lip seal ring DN 100 for intake of HT, KG, PE pipes DN 100 (OD 110 mm)	<b>Installation orientation:</b>	vertical installation only

## alwitra backflow preventer

Flexible universal multi lip seal for backflow-proof connection of pipes or drainage elements (e.g. rainwater outlets) DN 50 - DN 125 to vertical pipes without socket.

Ideal also in combination with alwitra water spouts SF, as a universal system for refurbishment of existing vertical rainwater outlets.



### Technical Data of the alwitra backflow preventer

**Material:** ethylene-propylene-terpolymer rubber (EPDM)

**Colour:** black

**Number of sealing lips:** 5, slightly varying dimensions (see table)

**Installation orientation:** vertical installation only

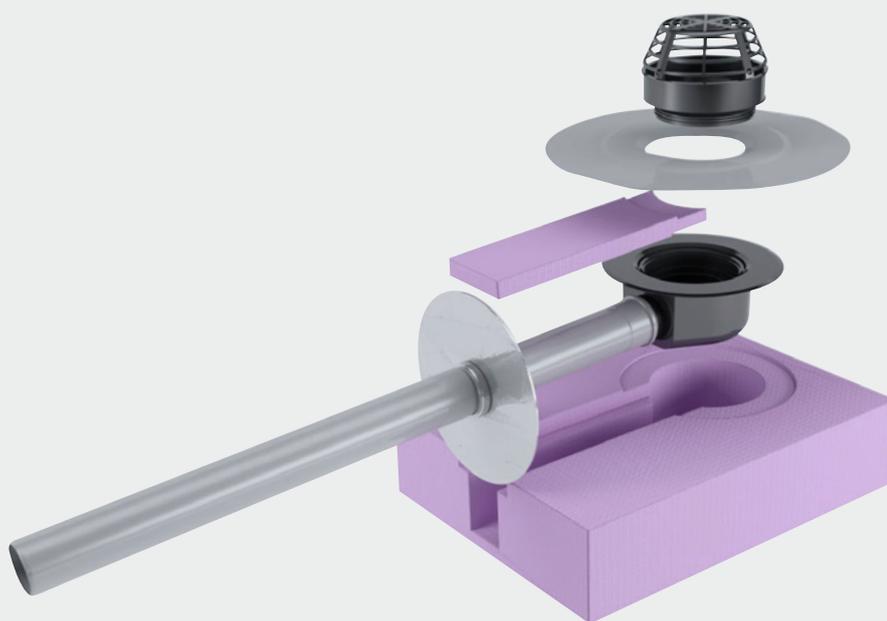
Spigot connection		Lip seal diameter				
DN	OD [mm]	A	B	C	D	E
50	50	77	74	66	64	61
70	75	108	108	91	89	87
90	90	111	110	108	106	105
100	110	135	133	124	122	120
125	125	160	160	154	154	152

## alwitra parapet outlet W75

The thermally insulated **alwitra parapet outlet W75** for gravity (emergency) drainage through the parapet is installed at thermal insulation level. A specially fitted XPS insulating body precisely accommodates the outlet including the connected stainless steel pipe. The pipe can still be adjusted horizontally at a range of 0° - 2°. Connecting the waterproofing to the straight outer edges of the insulating body is very simple. Flashing against the roof waterproofing is carried out with the two-part emergency outlet socket with a ponding height of 20 - 40 mm or with the screw ring, analogous to the alwitra rainwater outlets and extension pieces. The corresponding connecting flange made of EVALON® or EVALASTIC® is included in the scope of delivery as is the aluminium base plate for secure flashing against the vapour barrier.

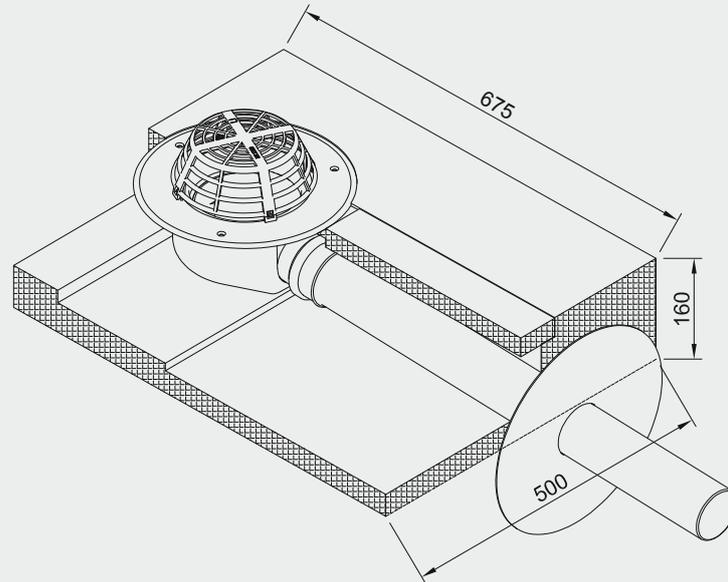
- **Precisely fitted XPS insulating body (WLG 035), 675 x 500 mm, thickness: 160 mm**
  - No need for time-consuming installation of the outlet body in the insulation

- Easy connecting of the waterproofing to the straight outer edges of the insulating body
- Variable pipe inclination: the gradient of the stainless steel pipe can be infinitely adjusted in the range of approx. 0° - 2°.
- Insulation thickness beneath the outlet body: approx. 47 (approx. 35) mm; jointless
- Inlet centre of the outlet section towards the parapet-side edge of the insulating element: 500 mm (counter slope plates with a length of 500 mm in slope direction)
- Easily adjustable on site
- **Stainless steel pipe DN 70 (OD 75 mm); length 1000 mm**
  - Connection to commercially available (HT or stainless steel) socket pipes or
  - Spouts with free discharge or into a water catch box
- **Aluminium base plate (Ø 325 mm, adjustable on site)**
  - For flashing against the vapour barrier



Parapet outlet W75

## alwitra parapet outlet W75



Parapet outlet W75

### Technical data of the alwitra parapet outlet W75

#### Outlet:

**Class (leaf guard / gravel stop):** H 1.5

**Discharge:** horizontal

**Material:** highly impact resistant PP

**Colour:** black (connecting flange in the colour of the waterproofing membrane)

**Connection diameter:** DN 70 (OD 75 mm)

**Ponding height:** 20 - 40 mm with emergency outlet socket  
0 mm without emergency outlet socket

**Discharge rate:** 7.00 L/s with emergency outlet socket  
6.47 L/s without emergency outlet socket,  
for further data see table page 27

#### Pipe:

**Material / colour:** stainless steel (1.403);  
matt silvery glossy

**Dimension:** DN 70 (OD 75 mm)

**Length:** 1000 mm

#### Insulating body:

**Material:** XPS WLG 035

**Dimension:** 675 x 500 mm

**Thickness:** 160 mm

**Minimum thickness of the outlet body:** approx. 47 (approx. 35) mm

**Inclination of the pipe:** approx. 0° - 2° infinitely variable

#### Base plate:

**Material / colour:** aluminium

**Dimension:** Ø 325 mm, adjustable on site

**Pipe lead-through:** Ø 75 mm with lip seal ring

## alwitra water spouts



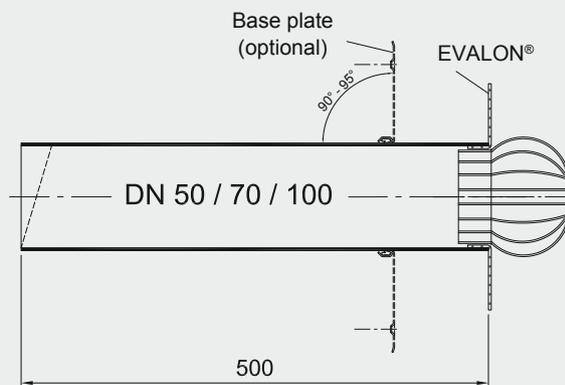
alwitra water spout SW rectangular 100/300

## alwitra water spout S

As emergency overflows, alwitra water spouts S are part of the roof and emergency drainage system for EVALON® roof waterproofing systems. The alwitra water spout S consists of a rigid PVC pipe with a factory-fitted EVALON® connecting flange. alwitra water spouts S are available in various standard DN diameters and are suitable for horizontal installation, e.g. through a parapet.

Thanks to the standard DN pipe dimensions, the connection to commercially available pipe systems with sliding socket is just as possible as the use as a water spout with free discharge.

Due to the flangeless design, they are particularly suitable for difficult and/or confined installation conditions.



alwitra water spout S



alwitra water spout S

### Technical Data for alwitra water spout S

<b>Material:</b>	rigid PVC, impact resistant, UV stabilised
<b>Pipe dimensions:</b>	DN 50 (OD 50 mm), DN 70 (OD 75 mm), DN 100 (OD 110 mm)
<b>Pipe length:</b>	500 mm, special lengths on request
<b>Connecting flange:</b>	EVALON® 1.5 mm, factory-fitted

<b>Colour:</b>	pipe: black; connecting flange: white, light grey, slate grey
<b>Installation orientation:</b>	for horizontal installation only
<b>Min. ponding height:</b>	approx. 10 mm
<b>Optional:</b>	aluminium base plate for flashing against the vapour barrier
<b>Discharge rates:</b>	see table page 27

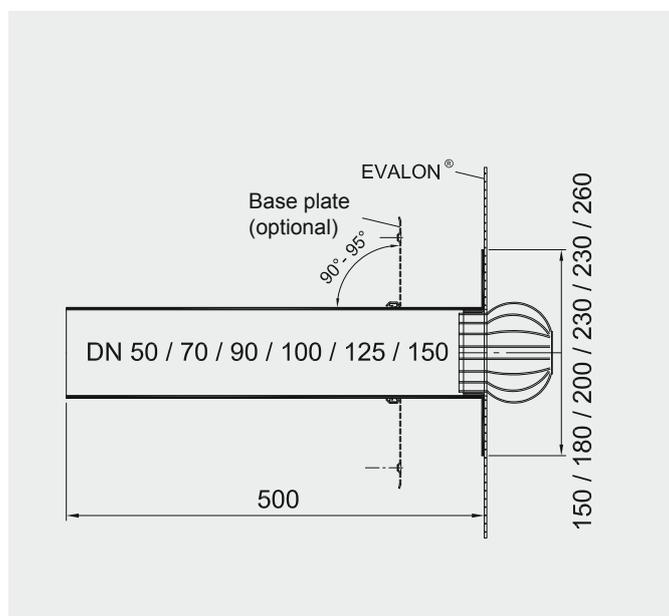
## alwitra water spout SF

As emergency overflows, alwitra water spouts SF are part of the roof and emergency drainage system for EVALON® roof waterproofing systems.

The alwitra water spout SF consists of a pipe and a rigid PVC flange with a factory-fitted EVALON® connecting flange. alwitra water spouts SF are available in various standard DN diameters and are suitable for horizontal installation, e.g. through a parapet.

In the case of refurbishment, it can be used as a vertical outlet, also in combination with the alwitra backflow preventers. Thanks to the standard DN pipe dimensions, the connection to commercially available pipe systems with sliding socket is just as possible as the use as a water spout with free discharge.

Please note that it is not possible to angle the vertical flange. If it is necessary to angle the flange, use the alwitra water spout SW with a factory-angled flange (see page 23).



alwitra water spout SF



alwitra water spout SF

### Technical Data for alwitra water spout SF

<b>Material:</b>	flange and pipe made of rigid PVC, impact-resistant, UV-stabilised
<b>Dimensions:</b>	pipe: flange: DN 50 (OD 50 mm) 150 x 150 mm DN 70 (OD 75 mm) 180 x 180 mm DN 90 (OD 90 mm) 200 x 200 mm DN 100 (OD 110 mm) 230 x 230 mm DN 125 (OD 125 mm) 230 x 230 mm DN 150 (OD 160 mm) 260 x 260 mm
<b>Pipe length:</b>	500 mm, special lengths on request
<b>Connecting flange:</b>	EVALON® 1.5 mm, factory-fitted

<b>Colour:</b>	pipe, flange: beige connecting flange: white, light grey, slate grey
<b>Installation orientation:</b>	horizontal: with horizontal discharge as water spout vertical: with vertical discharge (e.g. in combination with an alwitra backflow preventer)
<b>Optional:</b>	aluminium base plate for flashing against the vapour barrier
<b>Discharge rates:</b>	see table page 27

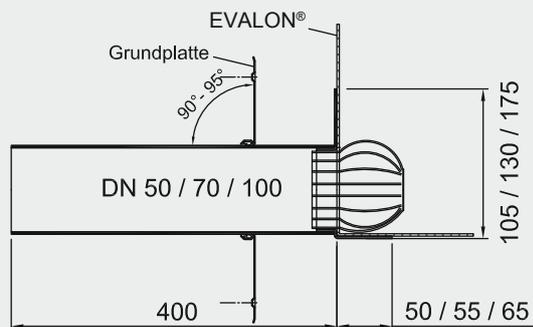
## alwitra water spout SW

As emergency overflows, alwitra water spouts SW are part of the roof and emergency drainage system for EVALON® roof waterproofing systems.

The alwitra water spout SW consists of a pipe and an angled rigid PVC flange with a factory-fitted EVALON® connecting flange. alwitra water spouts SF are available in various standard

DN diameters and are suitable for horizontal installation, e.g. through a parapet.

Thanks to the standard DN pipe dimensions, the connection to commercially available pipe systems with sliding socket is just as possible as the use as a water spout with free discharge.



alwitra water spout SW



alwitra water spout SW

### Technical Data for alwitra water spout SW

<b>Material:</b>	angled flange and pipe made of rigid PVC, impact-resistant, UV-stabilised	<b>Colour:</b>	pipe, flange: light grey connecting flange: white, light grey, slate grey
<b>Dimensions:</b>	pipe: DN 50 (OD 50 mm) DN 70 (OD 75 mm) DN 100 (OD 110 mm)	flange: 105 x 105 mm 120 x 130 mm 175 x 175 mm	<b>Installation orientation:</b> with horizontal discharge as water spout
<b>Pipe length:</b>	400 mm, special lengths on request	<b>Ponding height:</b> approx. 5 - 10 mm	<b>Optional:</b> aluminium base plate for flashing against the vapour barrier
<b>Connecting flange:</b>	EVALON® 1.5 mm, factory-fitted	<b>Discharge rates:</b> see table page 27	

## alwitra waterspout SF rectangular

As emergency overflows, alwitra rectangular water spouts SF are part of the roof and emergency drainage system for EVALON® roof waterproofing systems.

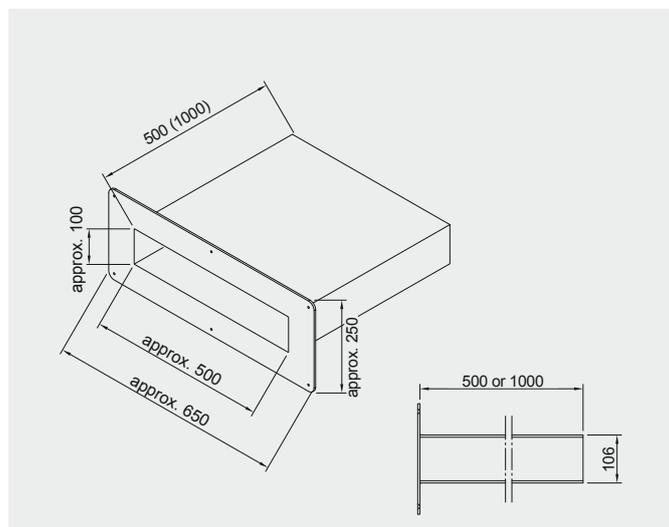
The alwitra rectangular water spout SF consists of a rectangular pipe and a vertical rigid PVC flange. It is suitable for horizontal installation, e.g. through a parapet, and is characterised by a relatively high discharge rate at a low ponding height.

Flashing against the EVALON® waterproofing can be carried out on site by welding cut-to-size unbacked EVALON® tapes directly

onto the flange. Flashing is simpler and faster with the optionally available corresponding EVALON® connecting flange.

Please note that it is not possible to angle the vertical flange. If it is necessary to angle the flange, use the alwitra rectangular water spout SW with factory-angled flange and factory-fitted connecting flange (see page 25).

An extension of the rectangular pipe on site is not possible. Pipe lengths up to 1000 mm are available ex works.



alwitra waterspout SF rectangular



alwitra waterspout SF rectangular

### Technical Data for alwitra water spout SF rectangular

<b>Material:</b>	flange and pipe made of rigid PVC, impact-resistant, UV-stabilised
<b>Dimensions:</b>	pipe: flange: 300 x 100 mm 250 x 500 mm 300 x 500 mm 250 x 650 mm
<b>Pipe length:</b>	500 mm (standard), up to 1000 mm
<b>Installation opening:</b>	approx. 110 x 310 approx. 110 x 510
<b>Connecting flange:</b>	EVALON® 1.5 mm, optional

<b>Colour:</b>	iron grey (~ RAL 7011)
<b>Installation orientation:</b>	with horizontal discharge as water spout
<b>Optional:</b>	EVALON® connecting flange
<b>Discharge rates:</b>	see table page 27

## alwitra waterspout SW rectangular

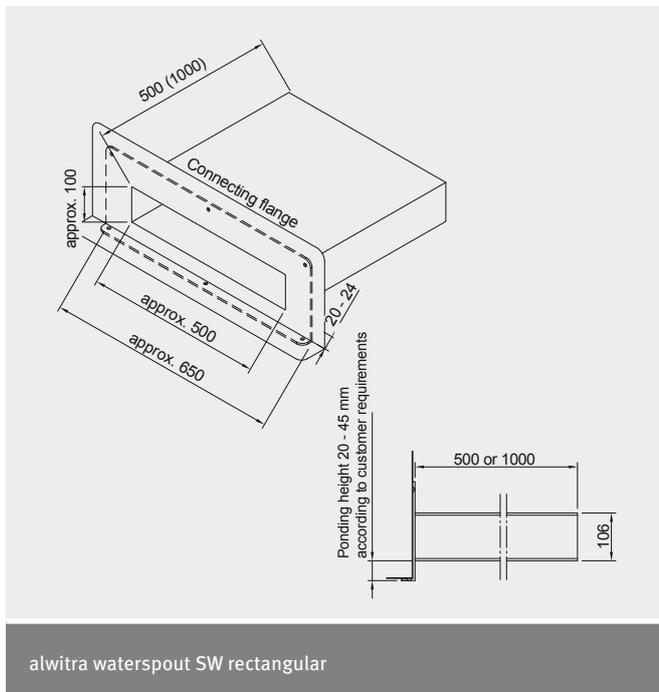
As emergency overflows with a defined ponding height, alwitra rectangular water spouts SW are part of the roof and emergency drainage system for EVALON® roof waterproofing systems.

The alwitra rectangular water spout SW consists of a rectangular pipe and an angled rigid PVC flange with a factory-fitted EVALON® connecting flange. The ponding height of the flange is adjusted at the factory according to customer specifications. The alwitra rectangular water spout SW is suitable for horizontal

installation, e.g. through a parapet, and is characterised by a relatively high discharge rate at a low ponding height.

Flashing against the EVALON® roofing membrane is carried out by directly welding the factory-fitted EVALON® connecting flange.

An extension of the rectangular pipe on site is not possible. Pipe lengths up to 1000 mm are available ex works.



alwitra waterspout SW rectangular



alwitra waterspout SW rectangular

### Technical Data for alwitra water spout SW rectangular

<b>Material:</b>	flange and pipe made of rigid PVC, impact-resistant, UV-stabilised
<b>Dimensions:</b>	pipe: flange: 300 x 100 mm 200 - 250 x 500 mm 300 x 500 mm 200 - 250 x 650 mm
<b>Pipe length:</b>	500 mm (standard), up to 1000 mm
<b>Installation opening:</b>	approx. 110 x 310 approx. 110 x 510
<b>Connecting flange:</b>	EVALON® 1.5 mm, approx. 770 x 450 mm

<b>Colour:</b>	iron grey (~ RAL 7011) connecting flange: white, light grey, slate grey
<b>Installation orientation:</b>	with horizontal discharge as water spout
<b>Ponding height:</b>	approx. 20 - 45 mm, factory-adjusted according to customer requirements
<b>Discharge rates:</b>	see table page 27

## Discharge rates rainwater outlets, emergency outlets

Ponding height [mm]						
5 mm	10 mm	15 mm	25 mm	35 mm	45 mm	
<b>Rainwater / emergency outlets with vertical discharge (S and SH)</b>						
<b>DN 70 (OD 75 mm)</b>						
0.70 L/s	1.50 L/s	2.30 L/s	4.10 L/s	<b>6.90 L/s</b>	9.20 L/s	vertical DN 70
0.70 L/s	1.60 L/s	2.50 L/s	4.50 L/s	<b>7.50 L/s</b>	10.20 L/s	vertical DN 70, with extension piece
0.50 L/s	1.20 L/s	2.30 L/s	4.10 L/s	<b>5.40 L/s</b>	-	vertical DN 70, with terrace grate
0.70 L/s	1.65 L/s	2.60 L/s	4.50 L/s	<b>7.00 L/s</b>	9.10 L/s	vertical DN 70, as emergency outlet
<b>DN 100 (OD 110 mm)</b>						
0.70 L/s	1.50 L/s	2.30 L/s	4.00 L/s	<b>6.90 L/s</b>	9.20 L/s	vertical DN 100
0.70 L/s	1.50 L/s	2.30 L/s	4.30 L/s	<b>7.20 L/s</b>	8.30 L/s	vertical DN 100, with extension piece
0.70 L/s	1.70 L/s	2.70 L/s	4.60 L/s	<b>7.50 L/s</b>	8.30 L/s	vertical DN 100, with terrace grate
0.70 L/s	1.65 L/s	2.60 L/s	4.40 L/s	<b>7.20 L/s</b>	9.60 L/s	vertical DN 100, as emergency outlet
<b>DN 125 (OD 125 mm)</b>						
0.70 L/s	1.45 L/s	2.20 L/s	3.90 L/s	6.90 L/s	<b>9.20 L/s</b>	vertical DN 125
0.70 L/s	1.45 L/s	2.20 L/s	3.90 L/s	7.00 L/s	<b>9.60 L/s</b>	vertical DN 125, with extension piece
0.70 L/s	1.70 L/s	2.70 L/s	4.60 L/s	7.00 L/s	<b>8.30 L/s</b>	vertical DN 125, with terrace grate
0.70 L/s	1.60 L/s	2.50 L/s	4.40 L/s	7.20 L/s	<b>9.60 L/s</b>	vertical DN 125, as emergency outlet
<b>DN 150 (OD 160 mm)</b>						
0.70 L/s	1.50 L/s	2.30 L/s	3.90 L/s	6.69 L/s	<b>9.30 L/s</b>	vertical DN 150
0.70 L/s	1.60 L/s	2.50 L/s	4.50 L/s	7.30 L/s	<b>10.00 L/s</b>	vertical DN 150, with extension piece
0.70 L/s	1.70 L/s	2.70 L/s	4.60 L/s	7.00 L/s	<b>8.30 L/s</b>	vertical DN 150, with terrace grate
0.70 L/s	1.65 L/s	2.60 L/s	4.80 L/s	7.30 L/s	<b>9.60 L/s</b>	vertical DN 150, as emergency outlet
<b>Rainwater / emergency outlets with horizontal discharge (W and WH)<sup>1</sup></b>						
<b>DN 70 (OD 75 mm)</b>						
0.60 L/s	1.45 L/s	2.30 L/s	3.10 L/s	<b>6.47 L/s</b>	8.82 L/s	horizontal DN 70
0.70 L/s	1.70 L/s	2.70 L/s	4.30 L/s	<b>7.40 L/s</b>	10.00 L/s	horizontal DN 70, with extension piece
0.46 L/s	1.15 L/s	2.30 L/s	4.10 L/s	<b>5.35 L/s</b>	5.68 L/s	horizontal DN 70, with terrace grate
0.60 L/s	1.60 L/s	2.60 L/s	4.50 L/s	<b>7.00 L/s</b>	9.10 L/s	horizontal DN 70, as emergency outlet
<b>DN 100 (OD 110 mm)</b>						
0.60 L/s	1.30 L/s	2.00 L/s	3.80 L/s	<b>5.20 L/s</b>	6.13 L/s	horizontal DN 100
0.50 L/s	1.40 L/s	2.30 L/s	4.10 L/s	<b>6.00 L/s</b>	6.20 L/s	horizontal DN 100, with extension piece
0.60 L/s	1.50 L/s	2.50 L/s	3.64 L/s	<b>4.79 L/s</b>	5.01 L/s	horizontal DN 100, with terrace grate
0.70 L/s	1.65 L/s	2.60 L/s	4.40 L/s	<b>7.20 L/s</b>	9.60 L/s	horizontal DN 100, as emergency outlet
<b>DN 125 (OD 125 mm)</b>						
0.50 L/s	1.40 L/s	2.30 L/s	4.20 L/s	6.80 L/s	<b>9.88 L/s</b>	horizontal DN 125
0.60 L/s	1.50 L/s	2.40 L/s	4.40 L/s	7.20 L/s	<b>9.60 L/s</b>	horizontal DN 125, with extension piece
0.60 L/s	1.50 L/s	2.50 L/s	3.94 L/s	4.81 L/s	<b>5.01 L/s</b>	horizontal DN 125, with terrace grate
0.50 L/s	1.45 L/s	2.40 L/s	4.40 L/s	7.20 L/s	<b>9.20 L/s</b>	horizontal DN 125, as emergency outlet

All discharge rates in litres / second [L/s] with leaf guard / gravel stop or wired domed leaf guard installed - no rate determined <sup>1</sup>to downpipe <sup>2</sup>free intake

**Bold = standard ponding height**

# Discharge rates

## Parapet outlet W75, refurbishment outlets, water spouts

Ponding height [mm]						
5 mm	10 mm	15 mm	25 mm	35 mm	45 mm	

Parapet outlet with horizontal discharge <sup>1</sup>						
Parapet outlet W75, DN 70 (OD 75 mm)						
0.60 L/s	1.45 L/s	2.30 L/s	3.10 L/s	<b>6.47 L/s</b>	8.82 L/s	without ponding element
0.60 L/s	1.60 L/s	2.60 L/s	4.50 L/s	<b>7.00 L/s</b>	9.10 L/s	with ponding element (emergency outlet socket)

Refurbishment outlets						
0.50 L/s	0.83 L/s	1.15 L/s	2.40 L/s	<b>4.25 L/s</b>	6.80 L/s	refurbishment vertical DN 70
0.30 L/s	1.00 L/s	1.70 L/s	3.50 L/s	<b>5.60 L/s</b>	7.90 L/s	refurbishment vertical DN 100
0.70 L/s	1.45 L/s	2.20 L/s	3.90 L/s	7.00 L/s	<b>9.60 L/s</b>	refurbishment vertical DN 125

Emergency overflows (water spouts)						
Water spout S						
0.03 L/s	0.06 L/s	0.09 L/s	0.23 L/s	<b>0.43 L/s</b>	0.63 L/s	water spout S DN 50
0.05 L/s	0.10 L/s	0.16 L/s	0.35 L/s	<b>0.62 L/s</b>	0.93 L/s	water spout S DN 70
0.06 L/s	0.13 L/s	0.21 L/s	0.65 L/s	<b>0.83 L/s</b>	1.26 L/s	water spout S DN 100

Water spout SF						
-	-	-	0.22 L/s	<b>0.37 L/s</b>	-	water spout SF 50
-	-	0.11 L/s	0.30 L/s	<b>0.55 L/s</b>	0.85 L/s	water spout SF 70
-	-	0.13 L/s	0.34 L/s	<b>0.63 L/s</b>	0.98 L/s	water spout SF 90
-	-	0.14 L/s	0.39 L/s	<b>0.74 L/s</b>	1.17 L/s	water spout SF 100
-	-	0.15 L/s	0.42 L/s	<b>0.79 L/s</b>	1.26 L/s	water spout SF 125
-	-	0.18 L/s	0.48 L/s	<b>0.93 L/s</b>	1.49 L/s	water spout SF 150

Water spout SW						
-	-	-	0.22 L/s	<b>0.37 L/s</b>	-	water spout SW 50
-	-	0.11 L/s	0.30 L/s	<b>0.55 L/s</b>	0.85 L/s	water spout SW 70
-	-	0.14 L/s	0.39 L/s	<b>0.74 L/s</b>	1.17 L/s	water spout SW 100

Water spout SF rectangular						
0.37 L/s	0.74 L/s	1.14 L/s	2.02 L/s	<b>3.13 L/s</b>	4.42 L/s	water spout SF rectangular 100/300 <sup>2</sup>
0.55 L/s	1.10 L/s	1.90 L/s	3.59 L/s	<b>5.43 L/s</b>	7.67 L/s	water spout SF rectangular 100/500 <sup>2</sup>

Water spout SW rectangular						
0.37 L/s	0.74 L/s	1.14 L/s	2.02 L/s	<b>3.13 L/s</b>	4.42 L/s	water spout SW rectangular 100/300 <sup>2</sup>
0.55 L/s	1.10 L/s	1.90 L/s	3.59 L/s	<b>5.43 L/s</b>	7.67 L/s	water spout SW rectangular 100/500 <sup>2</sup>

All discharge rates in litres / second [L/s] with leaf guard / gravel stop or wired domed leaf guard installed - no rate determined <sup>1</sup>to downpipe <sup>2</sup>free intake  
**Bold = standard ponding height**



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