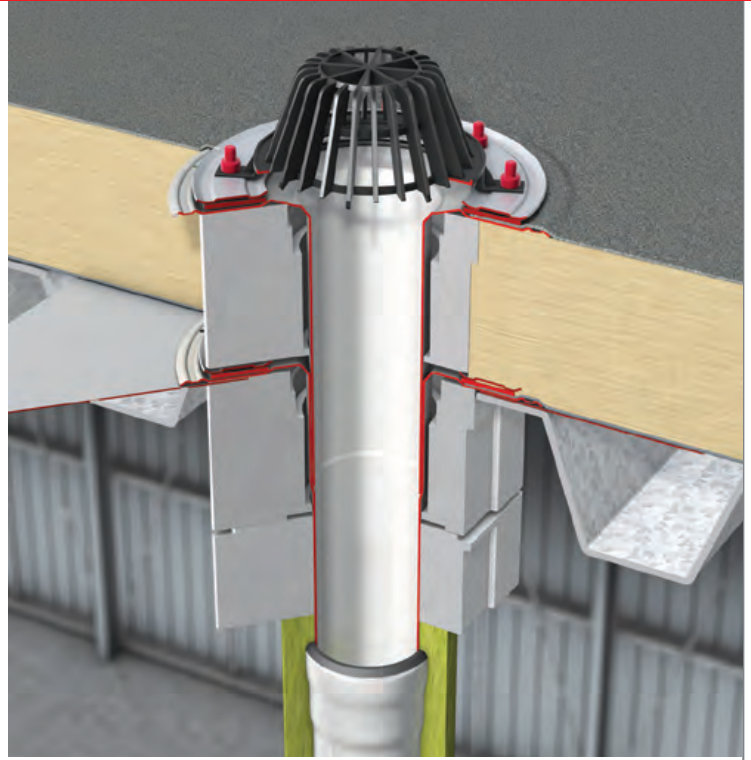
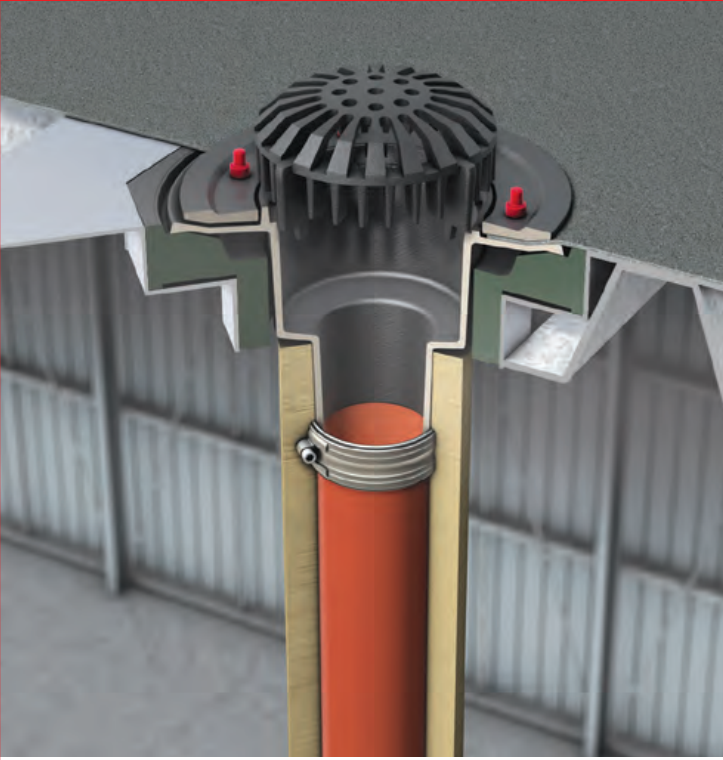


**System solutions for
Flat roofs - Gravity-drainage**



Gravity drainage



ACO Spin flat roof drains for gravity drainage

The roof forms the upper boundary of a building. The roof seals are very important because of the severe stress the roof is exposed to from precipitation, strongly fluctuating climatic influences, and a whole range of traffic loads and stresses.

Roof structures can therefore be divided up into two groups depending on the seal:

- Flat roof structures with one seal
- Flat roof structures with two seals

The Spin flat roof drains can be used in all types of roofs thanks to their modular system. In roofs with two seals, the drain body is integrated with the vapour seal, whilst the riser is incorporated in the roof sealing membrane. The drains are fitted with compression sealing flanges which allow them to be integrated within all standard sealing membranes. The drain bodies are installed in special



A stainless steel flat roof drain for two sealing membranes.

insulating bodies to prevent the formation of condensation water around the drain body – this is particularly important for thermally-insulated flat roofs, green roofs and parking decks.

- Planning must comply with EN 12056-3, as well as the flat roof regulations and, where applicable, the green roof regulations.



Flat roof with a gravel protection layer

Roof drainage

General

Drainage can be implemented using roof drains or roof gutters hung in front of the roofs with appropriate eaves. Internal drainage is recommended for roofs with gentle slopes (up to 5°).

Roof surfaces with internal drainage systems must have at least two drains or one drain and a safety overflow independent of the size of the roof.

Roof drains

The drains of internal roof drainage systems must be arranged at the lowest points of the roof and capable of being connected to the roof seal with a permanent and watertight join.

Roof drains must generally be positioned at least 30 cm away from other installations on the roof, joints or other ducts penetrating the roof sealing membrane. They must also be installed so that they create no thermal bridge in the construction of the roof.

Roof drains must be freely accessible for maintenance purposes.

Roof drains must be fastened within the substructure.

The flanges in roof drains should be incorporated within the substructure where possible. Two-piece roof drains should be used in thermally insulated roof structures with vapour seals.

Thermally insulated roof drains must be installed if heated spaces or used rooms are located directly below the ceiling.

Roof drains are integrated within the roof sealing membranes by fixed and loose flanges, adhesive flanges or integrated connecting membranes. The connecting membranes must be suitable for the specific roof sealing membrane used in each case.

Pre-fabricated roof drains must comply with EN 1253.

In the case of green roofs, there should be no planting in the area immediately around the roof drains.

Emergency drainage

Flat roof drainage systems must always be laid out in accordance with the reference rainfall figures. The reference rainfall can be exceeded during periods of heavy rainfall. This can cause water to pool on the surface of a flat roof.

An independent emergency drainage system for flat roof drains is therefore required in accordance with EN 12056-3. This emergency drainage system must enable rainwater to be drained safely onto empty surfaces. It is forbidden to connect the emergency drainage system to the regular drainage system.

Fire protection

Flat roof drains with fire protection are required on flat roofs in accordance with state building regulations if the separation between the roof drains and a rising wall in these areas is less than 5 metres (walls with openings or with no fire resistance capacity).

In this case, an appropriate fire protection roof drain without an odour seal must be installed. This prevents the spread of fire and smoke into neighbouring parts of the building.

Special attention should be given to the fire resistance class of the roof structure. The roof drain must have at least the same fire resistance class or a higher fire resistance class than the ceiling.

Calculating the number of flat roof drains and emergency roof drains required for gravity drainage systems

The following parameters are specified in DIN 1986-100 (version May 2008) Chapter 14.2.1, to calculate the number of drains required for a flat roof drainage system:

- The size of the effective roof in square metres (A)
- Type of roof – flow coefficient (C)
- Local reference rainfall in litres/second and hectare $l/(s \cdot ha)$ ($r_{(D,T)}$)

Effective roof area

In accordance with DIN 1986-100, Chapter 14.2.4.1, calculating the effective roof area must be based on the roof area projected onto the floor plan.

Flow coefficient

The flow coefficient (C) is determined by the type of roof to be drained. This is selected from Table 9 in DIN 1986-100.

The following is a short extract:

| Type of drained area | Flow coefficient (C) |
|--|----------------------|
| Membrane roof | 1.0 |
| Concrete roof | 1.0 |
| Gravel roof | 0.5 |
| Extensive greening under 10 cm layered structure | 0.5 |
| Intensive greening | 0.3 |

Reference rainfall

The variable reference rainfall $r_{(D,T)}$ consists of two parameters:

D = rainfall duration in minutes

T = annularity of the reference rainfall

The relevant reference rainfall for rainwater drainage in gravity drainage systems $r_{(5,5)}$ is taken from KOSTRA/DWD 2000/¹ in accordance with the specific location.

Abbreviations are explained as follows:

The reference rainfall for flat roof drainage systems is based on a rainfall period of 5 minutes and an annularity of five years.

Calculations therefore refer to a reference rainfall of $r_{(5,5)}$.

| Reference rainfall | Duration of the rainfall event | Annularity of the rainfall event | Application |
|--------------------|--------------------------------|----------------------------------|--|
| $r_{(5,5)}$ | 5 minutes | Every 5 years | Rainfall discharge for gravity drainage systems |
| $r_{(5,100)}$ | 5 minutes | Every 100 years | Rainwater discharge for emergency drainage systems |

Calculating the rainwater drainpipes

- Downpipes

DIN 1986-100, Section 14.2.7.2 specifies that the nominal widths of the downpipes must not be smaller than the connected nominal width of the associated flat roof drain or the collective connecting line. The rainwater downpipes can be calculated with a level of fill up to $f = 0.33$. Downpipes with inclines $\geq 10^\circ$ are ignored when calculating the drainage capacity.

In the case of inclined drainpipe sections with gradients of $< 10^\circ$, the dimensions of the rainwater downpipes must be calculated using the gradient of the inclined section and a level of fill of $h/d1 = 0.7$.

- Single and connective connecting lines

DIN 1986-100, Section 14.2.7.1 specifies that single connecting pipes must be dimensioned in the same way as collective connecting pipes. However, the nominal width of the pipes must not be smaller than the nominal width of the flat roof drain. In addition, collective connecting pipes must be dimensioned in the same way as connecting lines.

- Connecting lines and buried pipes
- DIN 1986-100, Section 14.2.7.3 specifies that the minimum diameter of buried pipes must be DN 100. The dimensioning

of buried pipes outside of buildings must take into account a minimum flow rate of $v = 0.7$ m/s and a maximum flow rate of $v = 2.5$ m/s. The minimum gradient must be 1:DN. The limit for the level of fill $h/d1$ is 0.7. Caution: collecting pipes and buried pipes within buildings must be dimensioned with a level of fill of $h/d1 = 0.7$ taking into consideration a minimum gradient of 0.5 cm/m.

¹KOordinierte STarkniederschlags-Regionalisierungs-Auswertungen des Deutschen Wetterdienstes, Bezug: CD-Rom über ITWH, Hannover. Im Anhang A von DIN 1986-100 befindet sich ein Auszug mit Regenspanden für wichtige deutsche Städte.

Calculation example

Flat roof drain for gravity drainage system

A gravity rainwater drainage system for a flat roof is planned for a large warehouse in Rosenheim/Germany. The roof will have an effective area of 1300 m² and is designed as an air-insulated roof with a gravel cover. Six buried pipeline connections are available to drain the roof.

The dimensioning figures for the rainwater drainage are selected in accordance with the parameters.

These are:

- Effective roof area (A) = 1.300 m²
- Flow coefficient (C) for gravel covered roof = 0.5 in Table 9 pursuant to DIN 1986-100
- Reference rainfall $r_{(5,5)}$ for Rosenheim pursuant to KOSTRA-DWD = 452 l/(s) * ha

These figures are input into the following formula to calculate the rainwater flow capacity:

| Reference rainfall $r_{(5,5)}$ | x | flow coefficient C | x | effective roof area A | / | 10.000 | = | rainwater flow capacity Q |
|-----------------------------------|---|-----------------------|---|--------------------------|---|--------|---|------------------------------|
| 452 | x | 0.5 | x | 1.300 | / | 10.000 | = | 29.38 l/s |

Preliminary considerations for selecting the flat roof drains

Because the downpipes can be connected directly to the flat roof drains, vertical downpipes will be used. Gravel baskets are required to optimally drain the rainwater from the gravel roof. Drain bodies only require one compression-sealing flange because the roof is air-insulated with only one sealing membrane. These considerations and calculations lead to the selection of the ACO Spin flat

roof drain DN 100 made of stainless steel with a stainless steel gravel basket. According to the specifications table (see page 15) the flat roof drain has an outflow capacity of 5.6 l/s.

The number of flat roof drains required is calculated from the rainwater outflow divided by the outflow capacity of the flat roof drain:

| Rainwater flow capacity Q | / | outflow capacity of the selected flat roof drain | = | number of flat roof drains required |
|------------------------------|---|--|---|-------------------------------------|
| 29.38 | / | 5.6 | = | 5.246 drains |

Discussion of the results

The calculated figure of 5.246 is rounded upwards. 6 flat roof drains are required for the proper drainage of the roof. Consideration also has to be given to the outflow capacity of the drainpipes (see Fig. 26 from DIN 1986-100 or Table 8 from DIN EN 12056-3).

The DN 100 downpipes can be assigned a degree of fill of $f = 0.33$ according to this table. This corresponds to an outflow capacity per pipe of 10.7 l/s.

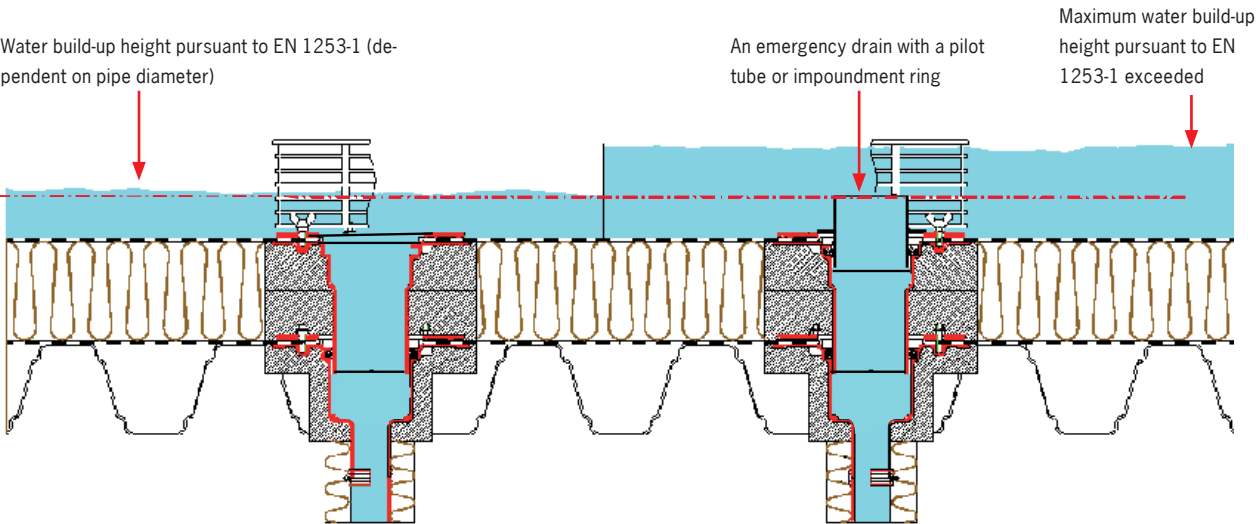
Emergency drainage

The water build-up heights required for flat roof drains for gravity drainage and the associated emergency drains are specified in EN 1253-1, Table 10. The water build-up heights for nominal widths of DN 70 – DN 150 are as follows:

| Nominal width | Maximum water build-up height |
|---------------|-------------------------------|
| DN 70 | 35 mm |
| DN 100 | 35 mm |
| DN 125 | 45 mm |
| DN 150 | 45 mm |

Water build-up height example

The maximum water build-up height for a DN 150 flat roof drain is 45 mm. The emergency drainage system is activated when this height of 45 mm is exceeded. The maximum water build-up height at the emergency drain is again 45 mm pursuant to Table 10 in EN 1253-1. This means that the maximum water build-up height for the emergency drain is reached when the water level rises to 90 mm.



The reference rainfall for the emergency drainage Q_{Not} is calculated using the following formula:

$$(r_{(5,100)} - r_{(5,5)} \times C) \times \frac{A}{10.000} = Q_{Not}$$

Caution: note that the reference rainfall $r_{(5,5)}$ first has to be multiplied by the flow coefficient C before deducting the result from the reference rainfall for the one hundred year rainfall event $r_{(5,100)}$.

The emergency drainage system on its own should be capable of draining the 100-year rainfall if a building requires an unusual degree of protection (cf. EN 12056-3: 2001-01, Table 2).

Calculation example

Emergency drainage for a gravity drainage system

A gravity rainwater drainage system for a flat roof is planned for a large warehouse in Rosenheim/Germany. The roof will have an effective area of 1300 m² and is designed as an air-insulated roof with a gravel cover.
The dimensioning figures for the rainwater drainage are selected in accordance with the parameters. These are:

- Effective roof area (A) = 1.300 m²
 - Flow coefficient (C) for gravel covered roof = 0.5 in Table 9 pursuant to DIN 1986-100
 - Reference rainfall for 100-year rain $r_{(5,100)}$ für Rosenheim pursuant to KOSTRA-DWD = 853 l/(s*ha)
- This value is incorporated in the following formula to calculate the rainwater flow capacity.

$$(853 - 452 \times 0.5) \times \frac{1.300}{1.0000} = 81.51 \text{ l/s}$$

The Spin DN 100 Attika roof drain made of stainless steel (Article No. 0174.78.24) is selected for the emergency drainage in this example. The outflow capacity of this drain is 6.0 l/s according to DIN.

The number of flat roof drains required is calculated by dividing the rainwater flow capacity for the emergency drainage Q_{Emer} by the outflow capacity of the selected parapet roof drain:

| Rainwater flow capacity for emergency drainage | / | Outflow capacity of a selected flat roof drain | = | Number of flat roof drains required |
|--|---|--|---|-------------------------------------|
| 81.51 | / | 6.0 | = | 13.58 drains |

Explanation of the results

The calculated figure of 13.58 is rounded upwards. This means that 14 emergency drains are required to properly drain the roof area. To ensure that the volumes of water which have to be drained during an emergency are transferred to the designated area, each parapet drain is drained by a separate pipe.

Outflow capacity

ACO Spin flat roof drains

The outflow capacities of the flat roof drains are dependent on the nominal width of the drain body, the type of grating used, the inclination of the pipes, and whether an upper part with a compression sealing flange is placed on top of the drain body. Make sure that the pipes used are properly dimensioned.

Cast Iron

| DN 70 | | | Ball grating | Flat grating | Top section | Cast iron top section |
|---------------|-------------|--------------------|---------------------------|---------------------------|---|---------------------------|
| Nominal width | Inclination | Model | Article No. 7000.09.00 | Article No. 7000.19.00 | Article No. 5141.81.00 5141.87.00 5141.89.00 | Article No. 5141.83.00 |
| DN 70 | 1.5° | without upper part | 6.0 l/s | 5.4 l/s | 5.2 l/s | 4.8 l/s |
| DN 70 | 1.5° | with upper part | 5.5 l/s | 4.4 l/s | 4.2 l/s | 3.8 l/s |
| DN 70 | 90° | without upper part | 7.0 l/s | 6.7 l/s | 6.2 l/s | 5.8 l/s |
| DN 70 | 90° | with upper part | 6.5 l/s | 5.7 l/s | 5.2 l/s | 4.8 l/s |

| DN 100 | | | Ball grating | Flat grating | Top section | Cast iron top section | Top frame with grating |
|---------------|-------------|--------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| Nominal width | Inclination | Model | Article No. 7000.10.00 | Article No. 7000.20.00 | Article No. 7000.40.00 | Article No. 7000.28.00 | Article No. 7000.41.00 7000.42.00 |
| DN 100 | 1.5° | without upper part | 9.0 l/s | 8.4 l/s | 10.7 l/s | 7.6 l/s | 12.1 l/s |
| DN 100 | 1.5° | with upper part | 9.0 l/s | 8.4 l/s | 10.7 l/s | 7.6 l/s | 12.1 l/s |
| DN 100 | 90° | without upper part | 8.0 l/s | 6.2 l/s | 10.7 l/s | 7.6 l/s | 15.2 l/s |
| DN 100 | 90° | with upper part | 8.0 l/s | 6.2 l/s | 10.7 l/s | 7.6 l/s | 15.2 l/s |

| DN 125 | | | Ball grating | Flat grating | Top section | Cast iron top section | Top frame with grating |
|---------------|-------------|--------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| Nominal width | Inclination | Model | Article No. 7000.10.00 | Article No. 7000.20.00 | Article No. 7000.40.00 | Article No. 7000.28.00 | Article No. 7000.41.00 7000.42.00 |
| DN 125 | 1.5° | without upper part | 12.0 l/s | 10.2 l/s | 12.6 l/s | 7.6 l/s | 16.4 l/s |
| DN 125 | 1.5° | with upper part | 12.0 l/s | 10.2 l/s | 12.6 l/s | 7.6 l/s | 16.4 l/s |
| DN 125 | 90° | without upper part | 12.0 l/s | 10.2 l/s | 12.6 l/s | 7.6 l/s | 16.4 l/s |
| DN 125 | 90° | with upper part | 12.0 l/s | 10.0 l/s | 12.6 l/s | 7.6 l/s | 16.4 l/s |

| DN 150 | | | Ball grating | Flat grating | Top section | Cast iron top section | Top frame with grating |
|---------------|-------------|--------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| Nominal width | Inclination | Model | Article No. 7000.10.00 | Article No. 7000.20.00 | Article No. 7000.40.00 | Article No. 7000.28.00 | Article No. 7000.41.00 7000.42.00 |
| DN 150 | 1.5° | without upper part | 14.5 l/s | 12.6 l/s | 15.0 l/s | 7.6 l/s | 21.2 l/s |
| DN 150 | 1.5° | with upper part | 14.5 l/s | 12.6 l/s | 15.0 l/s | 7.6 l/s | 21.2 l/s |
| DN 150 | 90° | without upper part | 13.5 l/s | 11.0 l/s | 15.0 l/s | 7.6 l/s | 18.5 l/s |
| DN 150 | 90° | with upper part | 13.5 l/s | 11.0 l/s | 15.0 l/s | 7.6 l/s | 18.5 l/s |

Cast iron with fire protection insert

| DN 100 | | | Ball grating | Flat grating | Top frame with grating | Top frame with grating | Top frame with grating |
|---------------|-------------|--------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| Nominal width | Inclination | Model | Article No. 7000.10.00 | Article No. 7000.20.00 | Article No. 7000.40.00 | Article No. 7000.28.00 | Article No. 7000.41.00 7000.42.00 |
| DN 100 | 90° | without upper part | 7.4 l/s | 7.3 l/s | 8.9 l/s | 6.8 l/s | 11.8 l/s |
| DN 100 | 90° | with upper part | 7.4 l/s | 7.0 l/s | 8.5 l/s | 6.5 l/s | 11.8 l/s |

Stainless Steel

| DN 70 | | | Plastic gravel basket | Stainless steel gravel basket |
|---------------|-------------|--------------------|---------------------------|---|
| Nominal width | Inclination | Model | Article No. 0174.46.66 | Article No. 0174.46.59 0174.46.62 |
| DN 70 | 1.5° | without lower part | 2.6 l/s | 2.7 l/s |
| DN 70 | 1.5° | with lower part | 2.8 l/s | 3.0 l/s |
| DN 70 | 90° | without lower part | 2.5 l/s | 2.6 l/s |
| DN 70 | 90° | with lower part | 2.7 l/s | 2.8 l/s |

| DN 100 | | | Plastic gravel basket | Stainless steel gravel basket |
|---------------|-------------|--------------------|---------------------------|---|
| Nominal width | Inclination | Model | Article No. 0174.46.66 | Article No. 0174.46.59 0174.46.62 |
| DN 100 | 1.5° | without lower part | 5.0 l/s | 5.9 l/s |
| DN 100 | 1.5° | with lower part | 4.7 l/s | 5.3 l/s |
| DN 100 | 90° | without lower part | 4.7 l/s | 5.6 l/s |
| DN 100 | 90° | with lower part | 5.1 l/s | 5.7 l/s |

| DN 125 | | | Plastic gravel basket | Stainless steel gravel basket |
|---------------|-------------|--------------------|---------------------------|---|
| Nominal width | Inclination | Model | Article No. 0174.46.66 | Article No. 0174.46.59 0174.46.62 |
| DN 125 | 1.5° | without lower part | 8.3 l/s | 9.9 l/s |
| DN 125 | 1.5° | with lower part | 8.7 l/s | 8.9 l/s |
| DN 125 | 90° | without lower part | 8.5 l/s | 8.4 l/s |
| DN 125 | 90° | with lower part | 8.5 l/s | 8.4 l/s |

Stainless steel with fire protection insert

| DN 100 | | | Stainless steel gravel basket |
|---------------|-------------|--------------------|---|
| Nominal width | Inclination | Model | Article No. 0174.46.59 0174.46.62 |
| DN 100 | 90° | without lower part | 4.7 l/s |
| DN 100 | 90° | with lower part | 4.7 l/s |

ACO Spin flat roof drains

For green roof drainage

The countryside is being increasingly paved over as built-up areas grow more extensive. The associated faster run-off of rainwater gives rise to high water levels and flooding and the associated serious damage. Greened roofs make it possible to retain at least 50 % of the yearly average rainwater depending on the type of roof.

Green roofs are a relatively easy way of compensating for areas which have been paved over, and to minimise peak rainwater flows.

There are two main types of green roof:

- **Extensive greening:**
Extensive greening can generally be achieved with a minimum amount of effort. These roofs are characterised by a natural looking vegetation cover with plants adapted to extreme habitats.
- **Intensive greening:**
Intensive greening involves the planting of perennials, shrubs, lawns as well as trees. This type of green roof requires intensive gardening and regular watering and the addition of fertilizer. The soil structure for this type of green roof requires proper drainage.

ACO developed a range of additional components to ensure the safe and regulated drainage of percolated rainwater. This range can be combined with the standard flat roof drainage products.



Extensive greening

Regulations and standards

Regulations and standards must be observed when planning and executing roof drainage systems. The following lists a number of extracts from the most important regulations:

Roof greening regulations
version 2008/DIN 1986-100

Roof drains in planted surfaces

Flat roof drains within planted surfaces have to be fitted with a control shaft to protect the drains from dirt and penetrating roots. This control shaft should not hinder drainage in any way. The drains can be protected by gravel or paved surrounds (Roof greening regulations, Chapter 6.5.3.1).

DIN 1986-100 (Chapter 5.8.3) also specifies in the same way as the Roof greening regulations that drains must be protected from the encroachment of plants. For instance, this standard recommends that the drains are surrounded by an at least 50 cm wide gravel protection zone.

Roof drains away from greened surfaces

Flat roof drains which do not lie within greened surfaces are usually installed in a gravel strip and are equipped with a gravel basket to prevent gravel from entering the drain (Roof greening regulations, Chapter 6.5.3.2).

Emergency drainage

Caution: Ensure that the layered structure of the green roof does not block the inflows to the emergency drains. Emergency drains must also be planned to ensure that they are kept free of encroaching vegetation.

In addition, the emergency drainage systems for greened flat roofs must comply with the same principles as for conventional flat roofs. It is therefore essential that the emergency drainage system is not connected to the normal drainage system: it must be connected to a dedicated outflow from which the water can drain safely onto floodable land without causing any damage.



Extensive greening



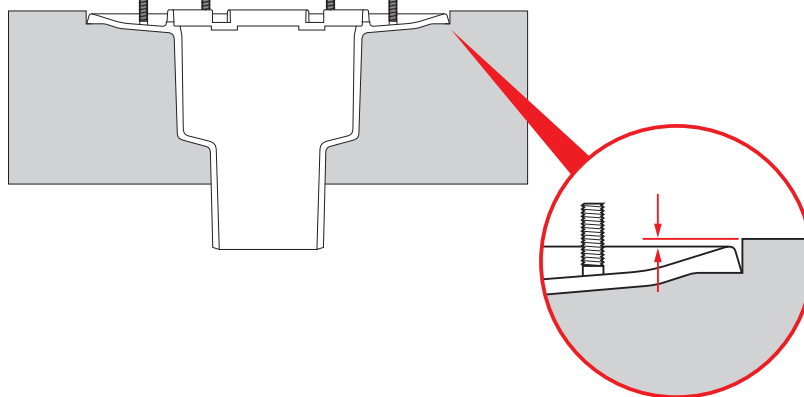
Intensive greening

Installation

ACO Spin flat roof drain made of cast iron

Concrete roof: Pouring in

Flat roof drains can be installed on site when the concrete is poured in. Caution: Ensure that the fixed flange is positioned slightly below the top surface of the concrete because a gradient towards the drain body must be created when the sealing membrane is installed.

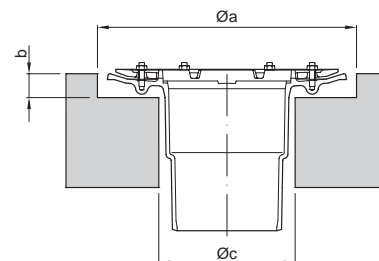


Concrete roof: Core boreholes

Core boreholes with two different diameters and two different heights have to be cut to install the flat roof drains.

- $\varnothing a \times b$: core borehole dimensions for the flange (flange support)
- $\varnothing c$: core borehole dimension for the drain body

The core hole for the flange support must be cut to enable the sealing membrane to be laid towards the drain body with a gradient as stipulated in DIN EN 18195. Each of the product pages contains the dimensions of the core boreholes required for the product.



Trapezoidal sheet metal roof

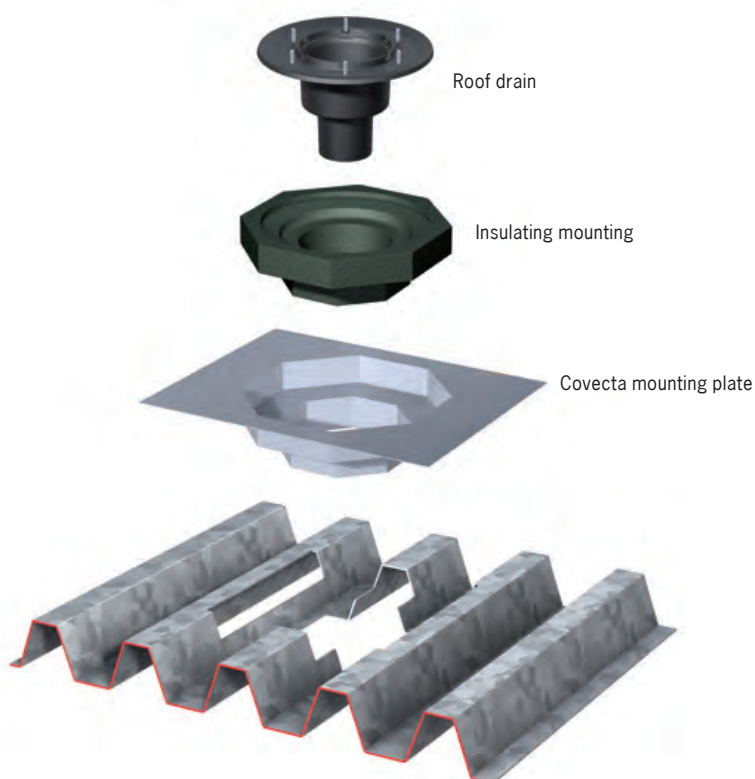
Cast iron drains cannot be installed directly onto a trapezoidal sheet metal roof. A mounting plate* is required.

The matching insulating mounting for the flat roof drain must also be installed in the mounting plate to ensure that the drain body is perfectly positioned on the mounting plate.

The mounting plate and the trapezoidal sheet roofing must be connected pursuant to DIN 18807. The mounting plate must be connected to the trapezoidal sheet roof as follows:

- Two connecting elements on the transverse side in the top beam
- One connecting element next to every covered gutter
- Connecting elements on the longitudinal edge, separation: 120 mm

Caution: Every hole cut in the trapezoidal roof reduces its load-bearing capacity. Verification of the load-bearing capacity of the combined mounting plate and trapezoidal sheet roof can only be issued by a structural engineer.



*Covecta, Deggingen, supplies mounting plates for all standard ACO flat roof drains.
Tel. +49 (0) 7334 8012, Fax +49 (0) 7334 4323

Heating

Flat roof drains can also be installed with auxiliary heating to prevent the drain from freezing. To reduce energy consumption to a minimum, it is recommended that the heated drains be controlled by an additional thermostat. Installation of an FI switch (30 mA) is recommended. When Spin two-piece cast iron flat roof drains are installed, the heating is always installed on the drain body (below the lower sealing level).



2-piece Spin flat roof drain with heating (Article No. 7000.85.00) and thermostat (not supplied)

Installing the sealing membrane

Bitumen membranes as well as high polymer sealing membranes can be connected to the Spin cast iron flat roof drains by the compression sealing flange. One spacer below and one spacer above the sealing membrane must be put into place when connecting thin high polymer sealing membranes to the compression sealing flange. These spacers ensure that any unevenness in the fixed and loose flanges on the drain are compensated for to ensure that a watertight seal is created when the flanges are tightened up. The spacers can also be made on site from spare material from the same sealing membrane.

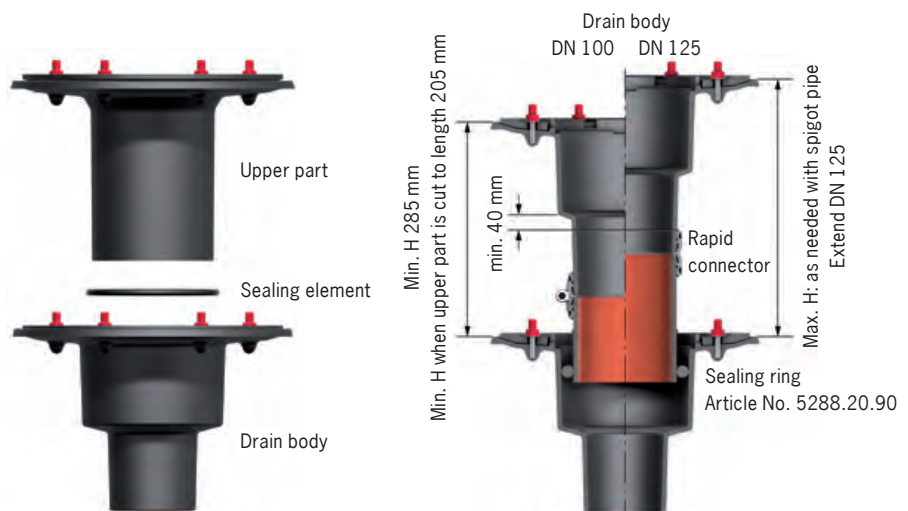
After placing the loose flange on top, the nuts must be tightened up one after the other with a torque.



Using the extension element (= top section)

DIN 1986-100, Chapter 5.7.3.1 stipulates that in the case of two-piece flat roof drains, there must be a tight seal between the drain body and the top section. This ensures that the thermal insulation is not damaged by rainwater in the event that wastewater backflows up the pipe.

The upper parts for cast iron flat roof drains are always supplied as standard with a sealing ring. This is installed between the drain body and the upper part.



Pipe connections

ACO Spin flat roof drains made of cast iron

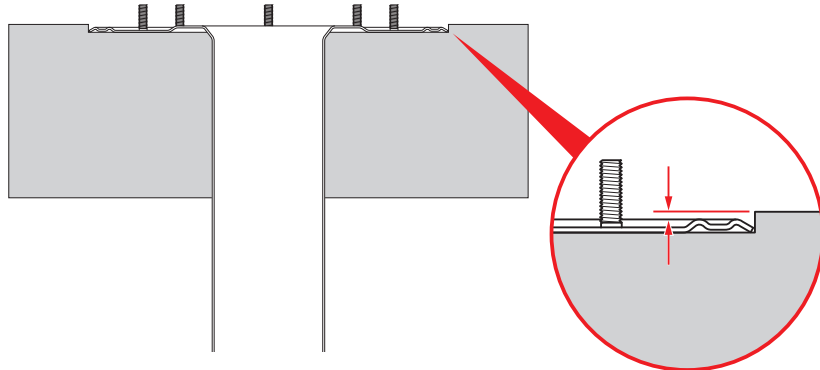
| Pipe type | With transition elements | Suitable for connection to |
|-------------------------------------|--|---|
| DN 70 | | |
| GM-X pipe with coupling socket | CV connector transition 0174.14.26 | Spin flat roof drain made of cast iron DN 70 |
| Spigot pipe with no coupling socket | CV connector DN 70 | |
| HT pipe with coupling socket | HT/spigot pipe connector DN70/DN70 | |
| DN 100 | | |
| GM-X pipe with coupling socket | CV connector DN 100 | Spin flat roof drain made of cast iron DN 100 |
| Spigot pipe with no coupling socket | Transition 0174.14.27 | |
| HT pipe with coupling socket | CV connector DN 100 | |
| DN 125 | | |
| GM-X pipe with coupling socket | Direct connection | Spin flat roof drain made of cast iron DN 125 |
| Spigot pipe with no coupling socket | CV connector DN 125 | |
| HT pipe with coupling socket | HT-spigot pipe connector DN 125/DN 125 | |
| DN 150 | | |
| GM-X pipe with coupling socket | Direct connection | Spin flat roof drain made of cast iron DN 150 |
| Spigot pipe with no coupling socket | CV connector DN 150 | |
| HT pipe with coupling socket | HT-spigot pipe connector DN 150/DN 150 | |

Installation

ACO Spin flat roof drain made of stainless steel

Concrete roof: Pouring in

Flat roof drains can be installed on site when the concrete is poured in. Caution: Ensure that the fixed flange is positioned slightly below the top surface of the concrete because a gradient towards the drain body must be created when the sealing membrane is installed.

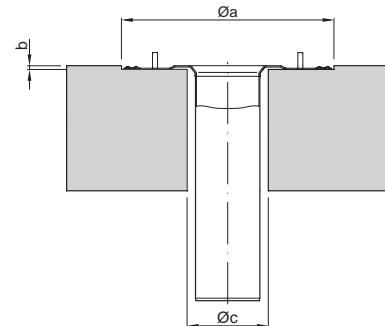


Concrete roof: Core boreholes

Core boreholes with two different diameters and two different heights have to be cut to install the flat roof drains.

- $\varnothing a \times b$: core borehole dimensions for the flange (flange support)
- $\varnothing c$: core borehole dimension for the drain body

The core hole for the flange support must be cut to enable the sealing membrane to be laid towards the drain body with a gradient as stipulated in DIN EN 18195.



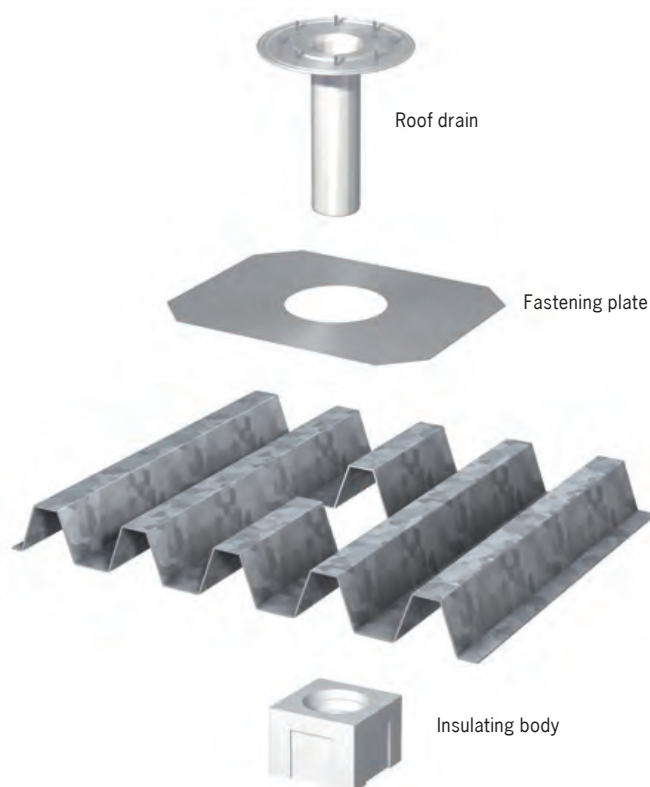
Trapezoidal sheet metal roof

Stainless steel drains cannot be installed directly onto a trapezoidal sheet metal roof. A fastening plate is required.

The fastening plate and the trapezoidal sheet roofing must be connected pursuant to DIN 18807. The fastening plate must be connected to the trapezoidal sheet roof as follows:

- Two connecting elements on the transverse side in the top beam
- One connecting element next to every covered gutter

Caution: Every hole cut in the trapezoidal roof reduces its load-bearing capacity. Verification of the load-bearing capacity of the combined mounting plate and trapezoidal sheet roof can only be issued by a structural engineer.



Heating

Flat roof drains can also be installed with auxiliary heating to prevent the drain from freezing. To reduce energy consumption to a minimum, it is recommended that the heated drains be controlled by an additional thermostat. Installation of an FI switch (30 mA) is recommended. When Spin two-piece stainless steel flat roof drains are installed, the heating is always installed on the drain body (below the lower sealing level).



2-piece Spin flat roof drain with heating (Article No. 0174.84.32) and thermostat (not supplied)

Installing the sealing membrane

Bitumen membranes as well as high polymer sealing membranes can be connected to the Spin stainless steel flat roof drains by the compression sealing flange. One spacer below and one spacer above the sealing membrane must be put into place when connecting thin high polymer sealing membranes to the compression sealing flange. These spacers ensure that any unevenness in the fixed and loose flanges on the drain are compensated for to ensure that a watertight seal is created when the flanges are tightened up. The spacers can also be made on site from spare material from the same sealing membrane.

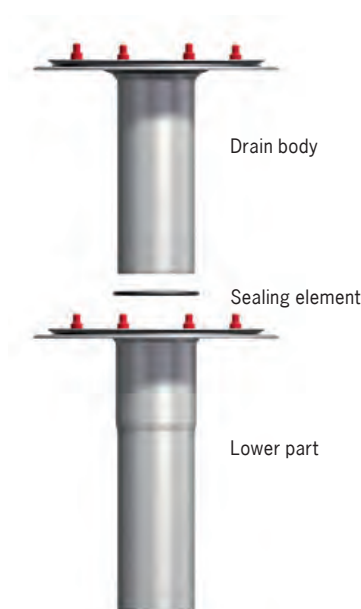


After placing the loose flange on top, the nuts must be tightened up one after the other with a torque.

Two-piece drains, consisting of a drain body and a lower part

DIN 1986-100 stipulates that in the case of two-piece flat roof drains, there must be a tight seal between the drain body and the lower part. This ensures that the thermal insulation is not damaged by rainwater if the pipes become blocked.

The drain bodies for stainless steel flat roof drains are always supplied as standard with a sealing ring. This is installed between the drain body and the lower part.

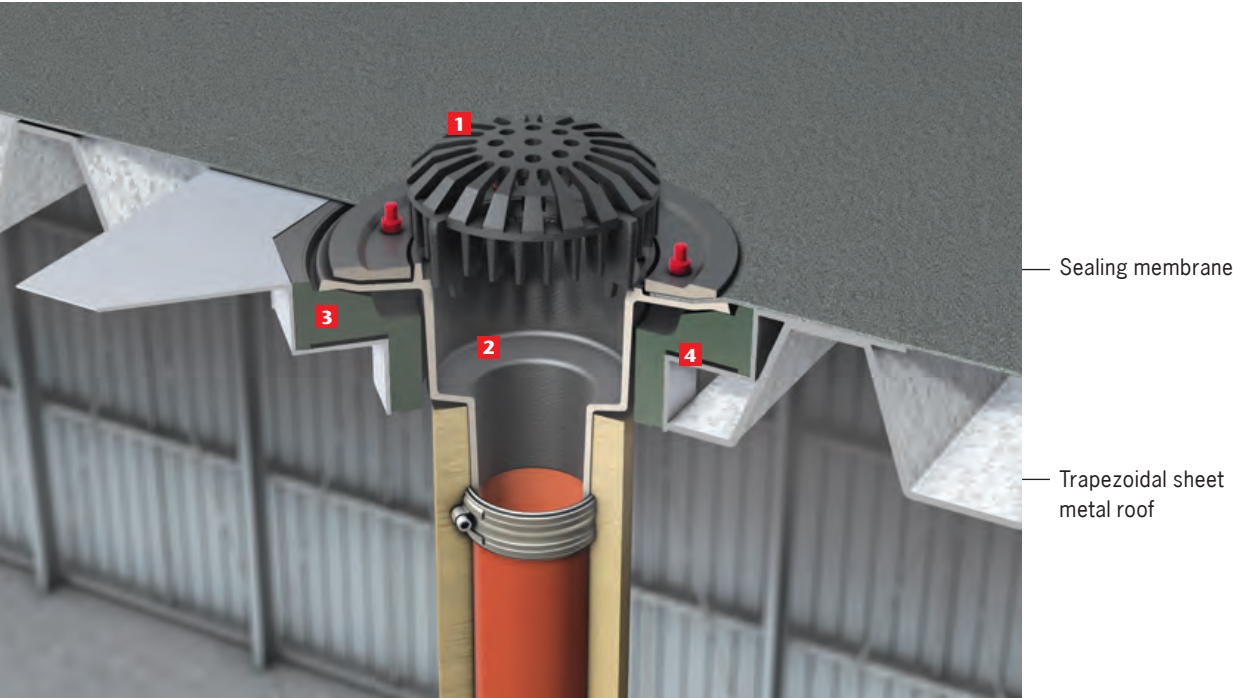


Pipe connections

ACO Spin flat roof drains made of stainless steel

| Pipe type | With transition elements | Suitable for connection to |
|-------------------------------------|--|---|
| DN 70 | | |
| GM-X pipe with coupling socket | Direct connection | Spin flat roof drain made of stainless steel DN 70 |
| Spigot pipe with no coupling socket | Connector fitting Article No. 0174.12.82 | |
| HT pipe with coupling socket | Connector fitting Article No. 0174.12.95 | |
| DN 100 | | |
| GM-X pipe with coupling socket | Direct connection | Spin flat roof drain made of stainless steel DN 100 |
| Spigot pipe with no coupling socket | Connector fitting Article No. 0174.12.86 | |
| HT pipe with coupling socket | Connector fitting Article No. 0174.12.98 | |
| DN 125 | | |
| GM-X pipe with coupling socket | Direct connection | Spin flat roof drain made of stainless steel DN 125 |
| Spigot pipe with no coupling socket | Direct connection | |
| HT pipe with coupling socket | Connector fitting Article No. 0174.13.00 | |

Installation example trapezoidal sheet metal roof
Gravity drainage with ACO Spin flat roof drain made of cast iron



- 1** Ball grating
Article No. 7000.10.00
- 2** Cast iron flat roof drain
DN 100, 90 °
Article No. 7034.10.10

- 3** Insulating mounting
Article No. 7040.21.00

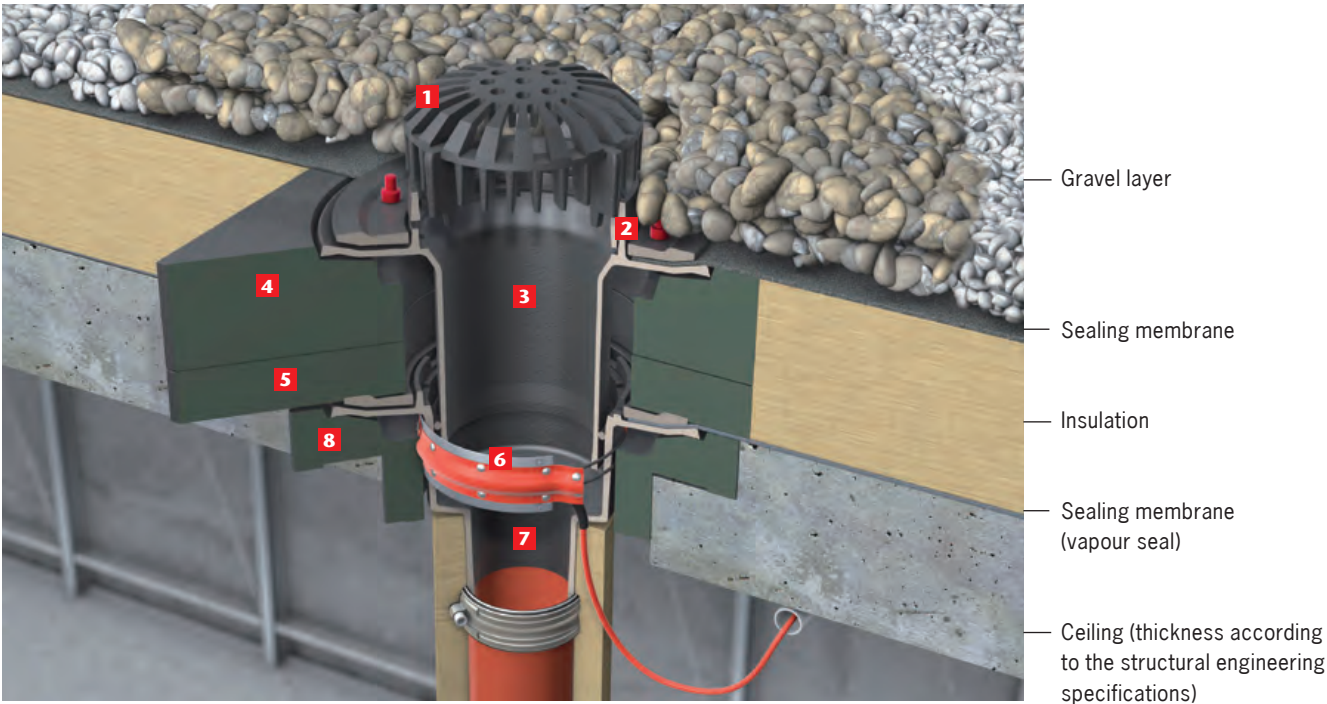
- 4** Mounting sheet
Delivery details:
Covecta Vertrieb
Burgsteige 35
73326 Deggingen
Germany
Tel. +49 (0) 7334 8012

| DN 70 | DN 100–DN 150 |
|---|---|
| | |
| The outlet socket of the drain body can be shortened on site by max. 44 mm. | The outlet socket of the drain body can be shortened on site by max. 35 mm. |

Extension heights in mm

Installation example in a warm roof

Gravity drainage with ACO Spin flat roof drain made of cast iron



1 Ball grating
Article No. 7000.10.00

2 Top ring
Article No. 7000.35.00

3 Upper part
Article No. 7044.10.25

4 Insulating ring
Article No. 7040.11.00

5 Levelling element
Article No. 7040.01.00

6 Heating
Article No. 7000.85.00

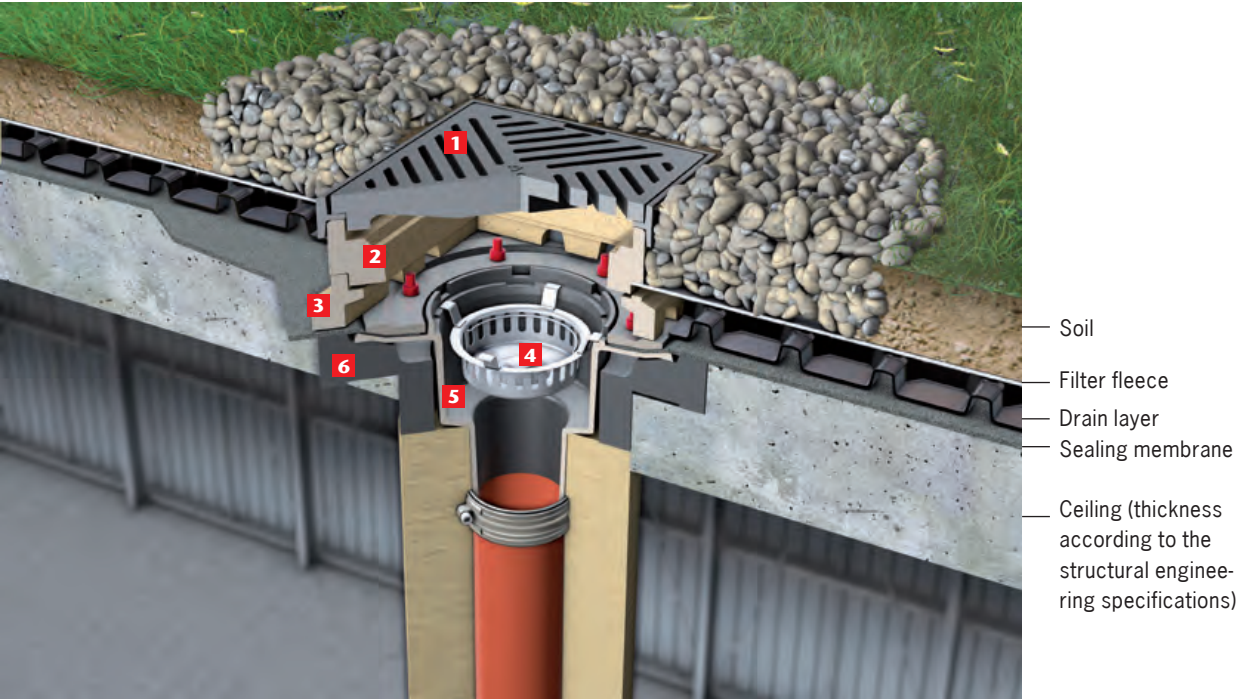
7 Cast iron flat roof drain
DN 100, 90°
Article No. 7034.10.10

8 Insulating mounting
Article No. 7040.21.00

| DN 70 | DN 100-DN 150 |
|---|---|
| | |
| The outlet socket of the drain body can be shortened on site by max. 44 mm. | The outlet socket of the drain body can be shortened on site by max. 35 mm. |

Extension heights in mm

Installation example green roof (extensive greening)
Gravity drainage with ACO Spin flat roof drain made of cast iron

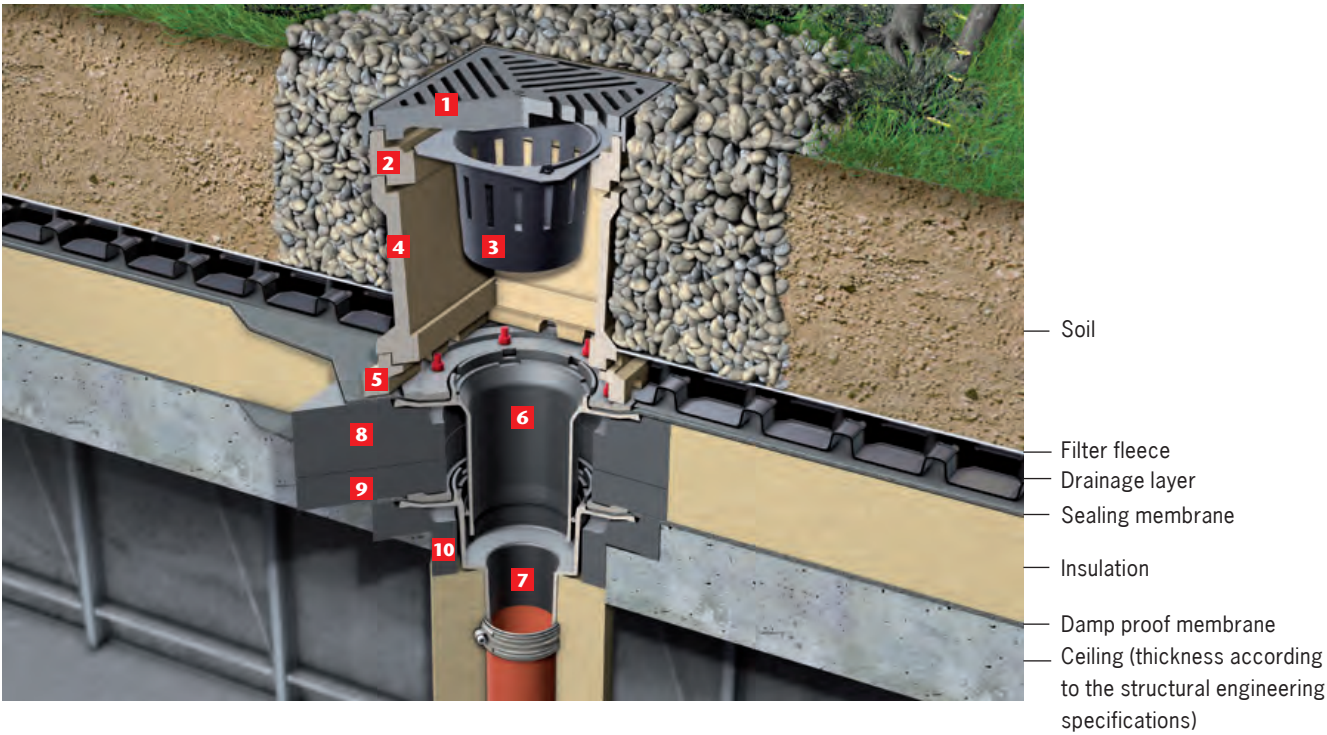


- | | | |
|---|---|--|
| 1 Frame with cast iron grating Article No. 7000.51.00 | 3 Transition frame Article No. 7000.55.00 | 5 Cast iron flat roof drain DN 100, 90 ° Article No. 7034.10.10 |
| 2 Spacer Article No. 7000.52.00 | 4 Stainless steel bucket Article No. 7000.13.00 | 6 Insulating mounting Article No. 7040.21.00 |

| DN 70 | DN 100–DN 150 |
|---|---|
| | |
| The outlet socket of the drain body can be shortened on site by max. 44 mm. | The outlet socket of the drain body can be shortened on site by max. 35 mm. |

Extension heights in mm

Installation example green roof (intensive greening)
Gravity drainage with ACO Spin flat roof drain made of cast iron



- 1** Frame with cast iron grating
Article No. 7000.51.00

2 Article No. 7000.52.00

4 Article No. 7000.54.00

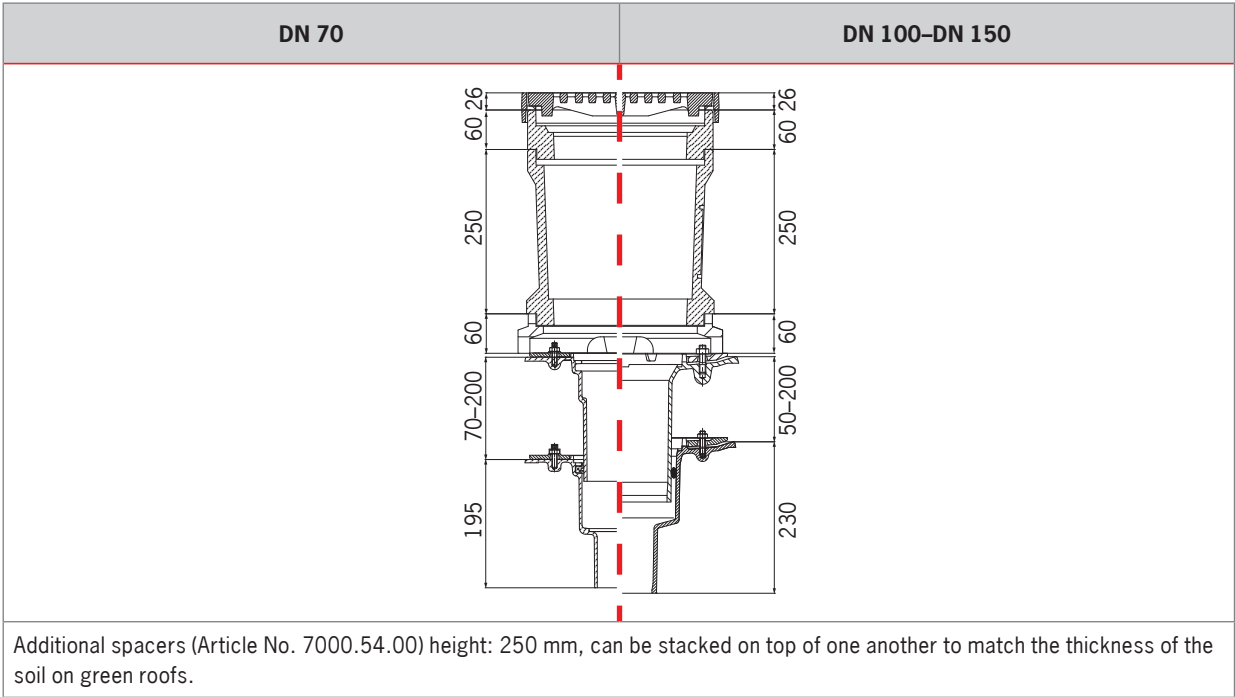
3 Bucket
Article No. 7000.53.00
- 5** Adapter frame
Article No. 7000.55.00

6 Upper part
Article No. 7044.10.25

7 Cast iron flat roof drain
DN 100, 90°
Article No. 7034.10.10
- 8** Insulating ring
Article No. 7040.11.00

9 Levelling element
Article No. 7040.01.00

10 Insulating mounting
Article No. 7040.21.00

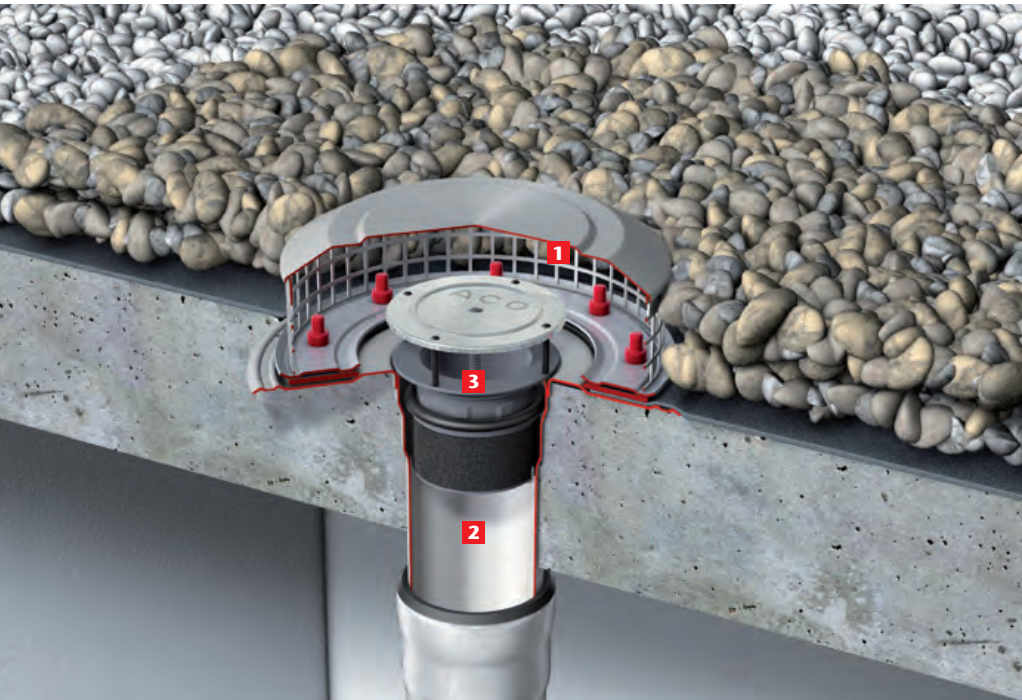


Extension heights in mm

| |
|------------------------------|
| Contents |
| Gravity drainage |
| Syphonic drainage |
| Parking deck drainage |
| Balcony and terrace drainage |
| Facade drainage |
| Pipe systems |

Installation example concrete ceiling with fire protection

Gravity drainage with ACO Spin flat roof drain made of stainless steel



Sealing membrane

Ceiling (thickness according to the structural engineering specifications)

Complete drain Article No. 1119.10.60 consisting of:

- 1 Stainless steel gravel basket Article No. 0174.46.59
- 2 Stainless steel flat roof drain DN 100, 90° Article No. 0174.47.16

Accessories:

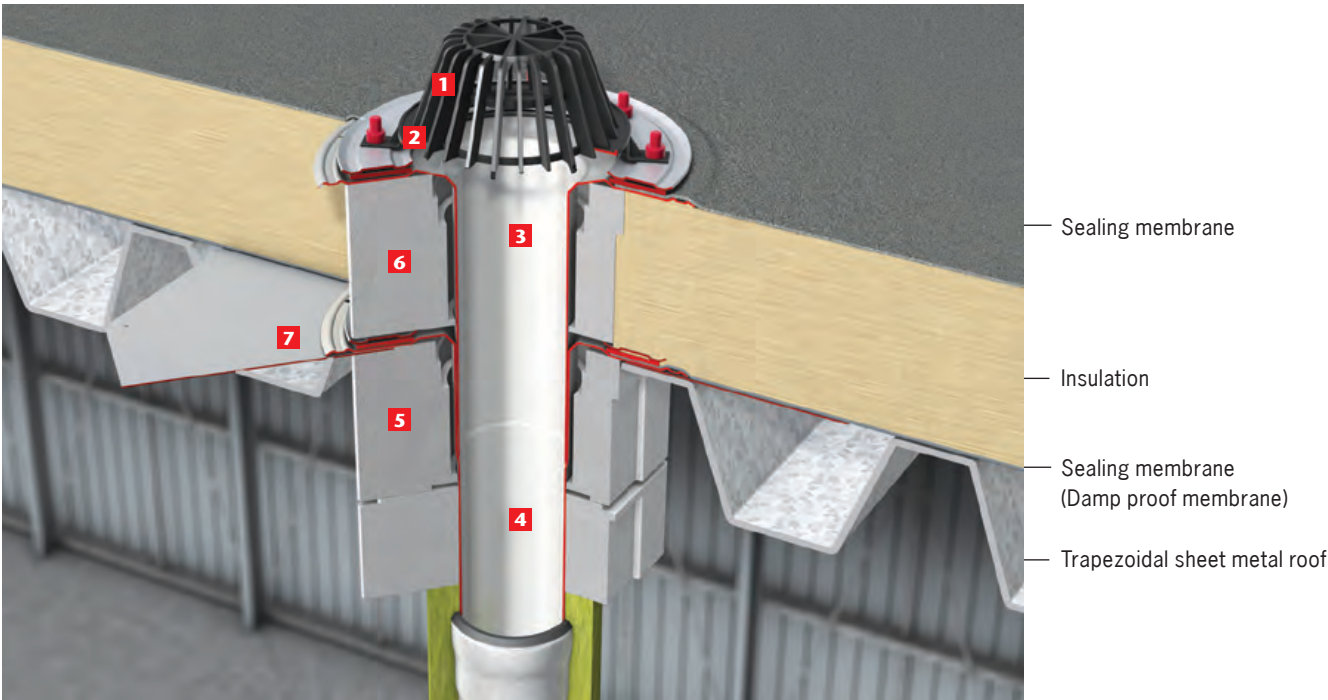
- 3 Fire protection insert Article No. 7034.20.15

Warning: Only use a stainless steel gravel basket when installing a fire protection insert!

| DN 70–DN 125 | |
|--|-------------------------------|
| Plastic gravel basket | Stainless steel gravel basket |
| | |
| The extension height of 110 mm is the same for the stainless steel gravel basket (shown on the right of the diagram) and the plastic gravel basket (shown on the left of the diagram). Attention! The fire protection insert is only available for the vertical Spin flat roof drain DN 100. | |

Extension heights in mm

Installation example trapezoidal sheet metal roof with insulation
Gravity drainage with ACO Spin flat roof drain made of stainless steel



Complete drain Article No. 1119.25.10 consisting of:

1 Plastic gravel basket
Article No. 0174.46.66

2 Fastening frame for gravel basket
Article No. 0174.46.67

3 Upper part DN 100
Article No. 0174.47.31

4 Lower part for flat roof drain
DN 100, 90°
Article No. 0174.47.16

5 Polystyrene insulation DN 100
Article No. 0174.47.19

Accessories:
6 Polystyrene insulation DN 100
Article No. 0174.47.19

7 Mounting sheet
Article No. 0174.46.61

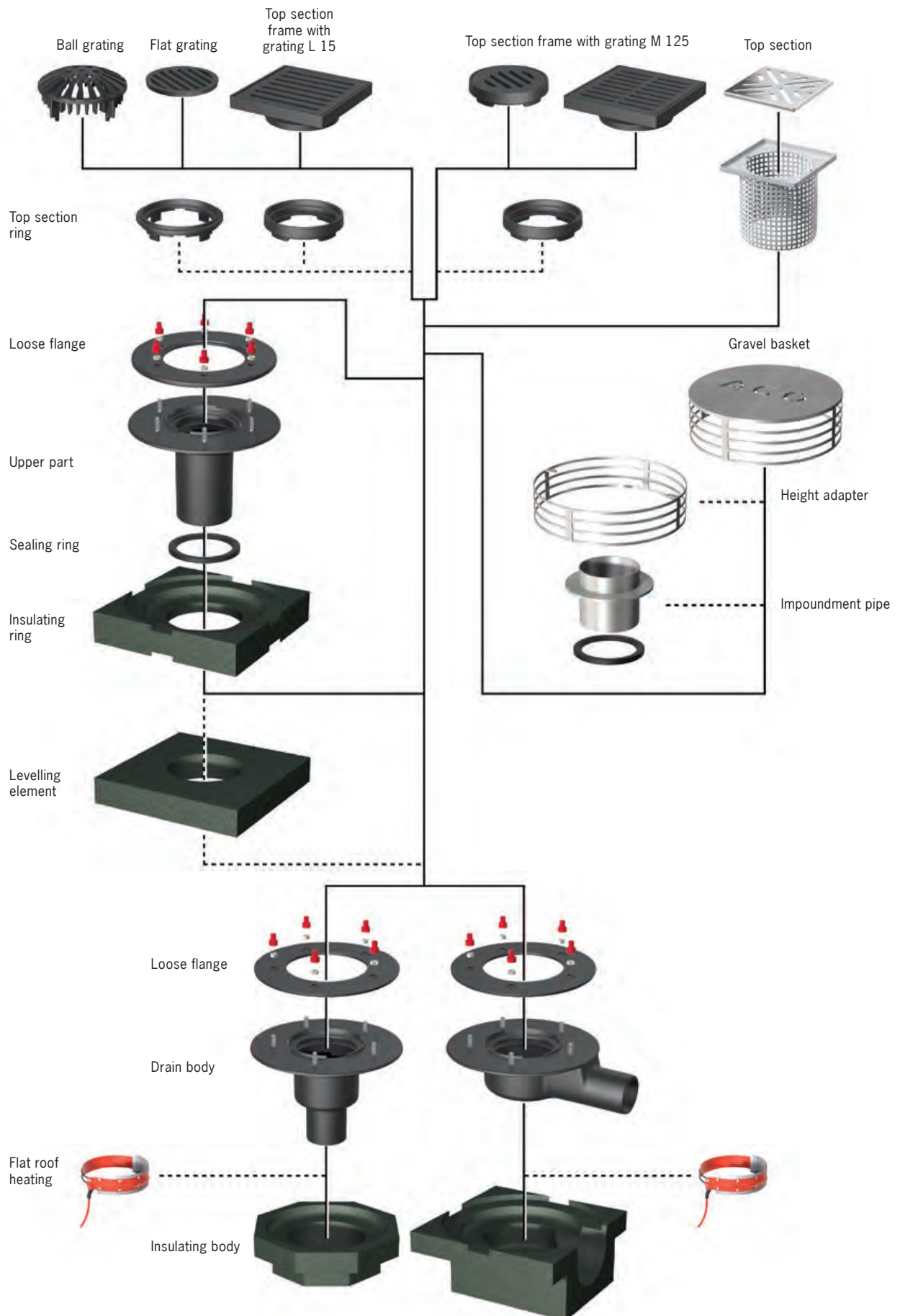
| DN 70 | DN 125 – DN 150 |
|-----------------------|-------------------------------|
| Plastic gravel basket | Stainless steel gravel basket |
| | |

The extension height of 110 mm is the same for the stainless steel gravel basket (shown on the right of the diagram) and the plastic gravel basket (shown on the left of the diagram).

Extension heights in mm

Modular system

ACO Spin flat roof drain DN 70 made of cast iron for gravity drainage

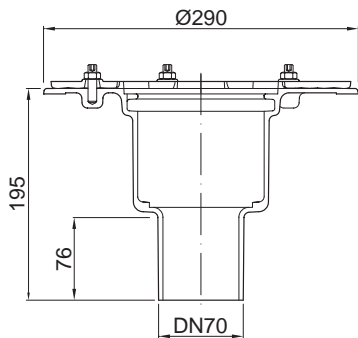


ACO Spin flat roof drain made of cast iron

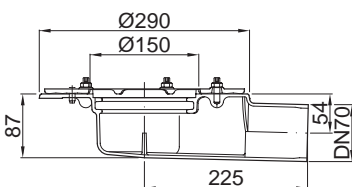
DN 70/DN 80



- Drain body DN 70 – DN 80 pursuant to DIN EN 1253
- Cast iron, construction material class A1, coated
- With compression sealing flange and seepage openings
- Can be connected to spigot pipe pursuant to DIN 19522 / DIN EN 877
- Weight approx. 7.5 kg



Model with vertical outlet socket

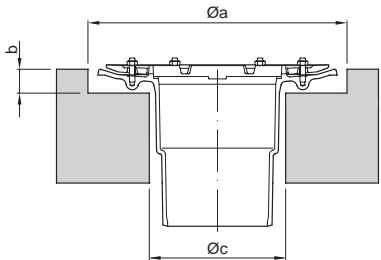


Model with horizontal outlet socket

| Model | Weight | Article No. |
|-------------------------------|--------|-------------|
| With vertical outlet socket | 7,4 | 5169.20.00 |
| With horizontal outlet socket | 7,7 | 5169.40.00 |

Core borehole dimensions

| Nominal width | Ø a | Ø c | b [mm] | Article No. |
|--|-----|-----|--------|-------------|
| For drain body without insulating body | | | | |
| DN 70 | 300 | 150 | 30 | 5169.20.00 |
| For drain body with insulating body | | | | |
| DN 70 | 315 | 220 | 45 | 5169.20.00 |



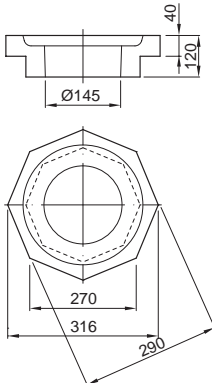

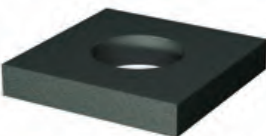



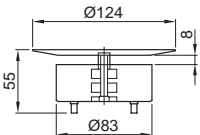

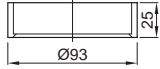


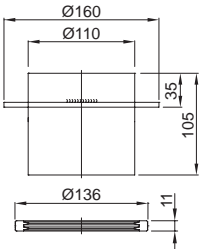
Recess dimensions

| Nominal width | Type | Outlet inclination | Article No. | Recess dimensions Drain body without insulating body | Recess dimensions Drain body with insulating body |
|---------------|------|--------------------|-------------|---|--|
| DN 70 | Spin | 1,5° | 5169.40.00 | 230 x 530 mm | 320 x 530 mm |
| DN 70 | Spin | 90° | 5169.20.00 | 230 x 320 mm | 320 x 320 mm |

Extension components

ACO Spin flat roof drain DN 70/DN 80 made of cast iron

| | Scale drawing | Product description | Model | Article No. |
|---|---|--|--------|-------------|
|  |  | Upper part Cast iron, DN 70 for sealing with two sealing membranes, with compression sealing flange, seepage openings and sealing ring | Coated | 7047.10.25 |
|  |  | Insulating body For flat roof drain with vertical outlet socket, made of foam glass | | 7040.22.00 |
|  |  | Insulating body For flat roof drain with lateral outlet socket, made of foam glass | | 7040.34.00 |
|  |  | Insulating ring For upper part of flat roof drain DN 70, made of foam glass | | 7040.12.00 |
|  |  | Levelling element For upper part of flat roof drain, DN 70, made of foam glass | | 7040.02.00 |

| | Scale drawing | Product description | Model | Article No. |
|---|---|--|-------|-------------|
|  |  | Bucket Stainless steel, material 1.4301, fits cast iron flat roof drain DN 70 | | 7000.03.00 |
|  |  | Hose element DN 70/80 For connecting DN 70 floor drains to spigot pipe DN 80 | | 5170.70.80 |
|  | | Flat roof heating Suitable for all flat roof drains DN 50 – DN 150, Electrical supply: 220-240 V AC, Nominal power: 25 W, Protection class: I, Protection type: IP 67, Connecting cable: SIHF 3 x 1 mm ² , 1.5 m G 1.5 | | 7000.85.00 |
|  |  | Impoundment pipe 35 mm high, for one-piece and two-piece drains | | 7033.10.50 |

Top sections, gratings and top frames

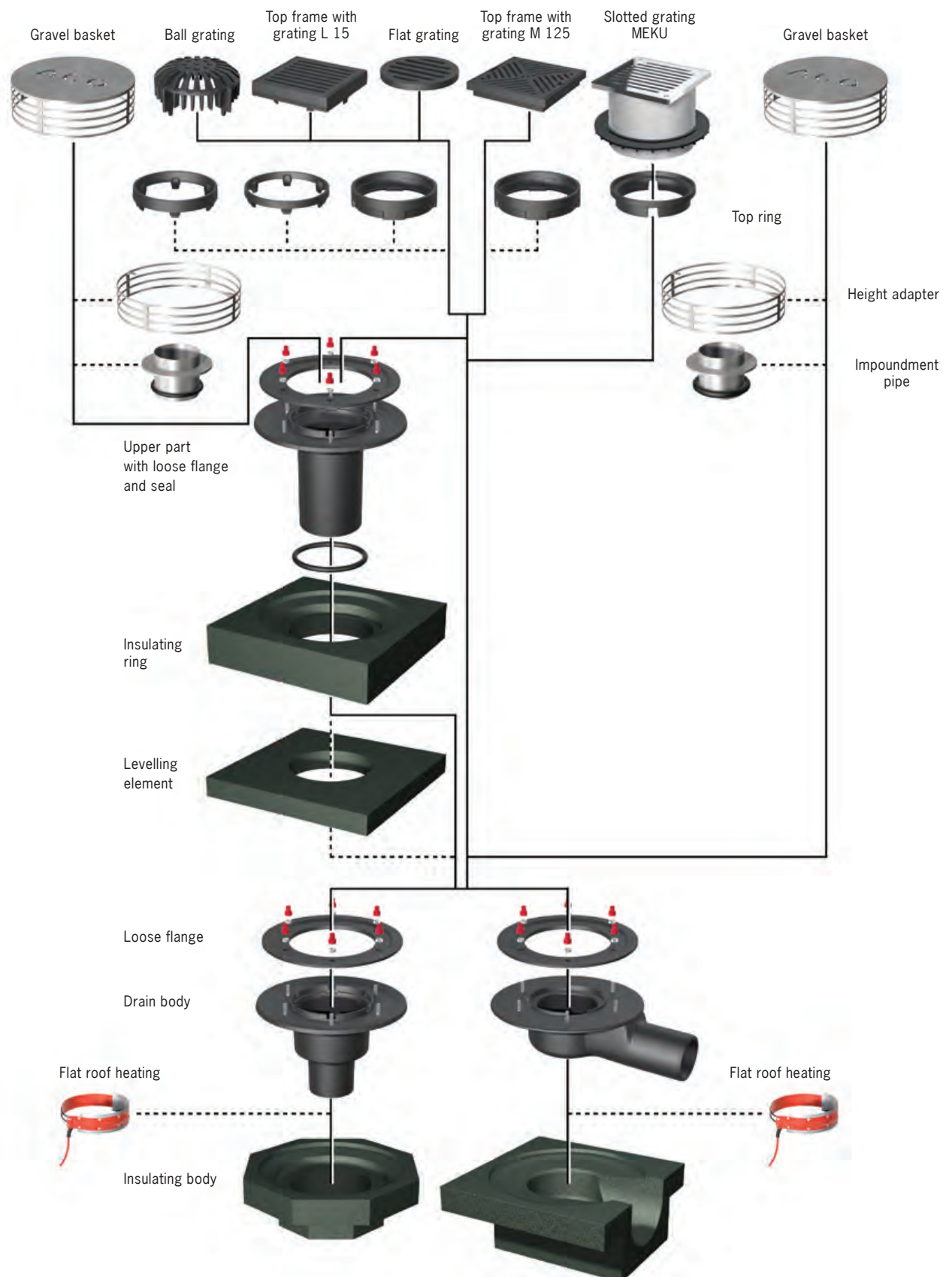
ACO Spin flat roof drain DN 70/DN 80 made of cast iron

| | Scale drawing | Product description | Model | Article No. |
|---|---|---|-------------------------|--------------------------|
|  |  | Ball grating cast iron, fits all Spin flat roof drains DN 70, external dimensions: Ø 170 mm | Class H1,5 | 7000.09.00 |
|  |  | Flat grating cast iron, fits all Spin flat roof drains DN 70, External dimensions: Ø 138 mm | Class L15 | 7000.19.00 |
|  |  | Grating cast iron, fits all Spin flat roof drains DN 70, external dimensions: Ø 152 mm | Class M125 | 7000.08.00 |
|  |  | Top ring Cast iron, fits gratings with Article Nos. 7000.09.00 7000.19.00 7000.43.00 | Class L15 | 7000.06.00 |
|  |  | Top ring Cast iron, fits grating with Article No. 7000.08.00 7000.44.00 | Class M125 | 7000.05.00 |
|  |  | Top frame with grating cast iron | Class L15 Class M125 | 7000.43.00 7000.44.00 |

| | Scale drawing | Product description | Model | Article No. |
|---|---|--|---|--|
|  |  | Top section cast iron, frame dimensions: □ 197 mm, top section and frame, cast iron, slotted cast iron grating | Class M125 | 5141.83.00 |
|  |  | Top frame cast iron, fits top section Article No. 5141.83.00 | Class M125 | 5095.80.00 |
|  |  | Top section stainless steel , with slotted frame stainless steel, threaded, class K3, frame dimensions: □ 148 mm | With anti-slip surface Without anti-slip surface | 5141.89.00 5141.89.11 |
|  |  | Top section with sieve holes frame dimensions: □ 148 mm stainless steel top section and slotted lid | Height adjusta- bility: 35–130 mm 35–225 mm | 0154.55.78 0154.83.39 |

Modular system

ACO Spin flat roof drain DN 100 – DN 150 made of cast iron for gravity drainage

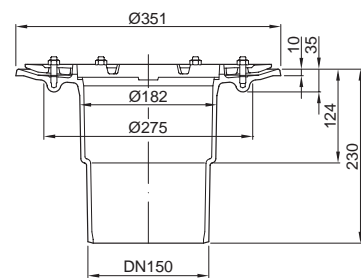
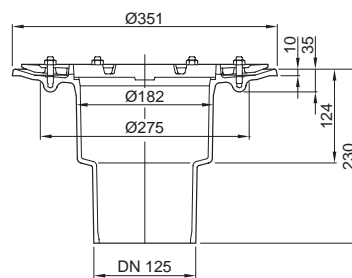
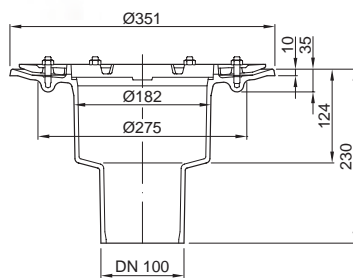


ACO Spin flat roof drain made of cast iron

DN 100 – DN 150

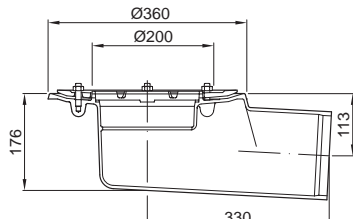
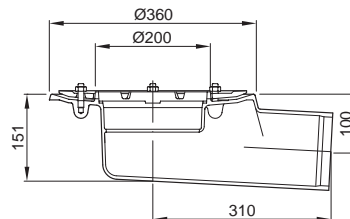
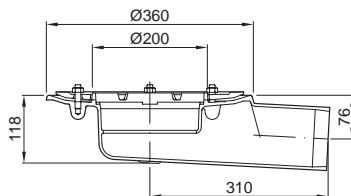


- Drain body DN 100 – DN 150 pursuant to DIN EN 1253
- Cast iron, construction material class A1, coated
- With compression sealing flange and seepage openings
- Can be connected to spigot pipe pursuant to DIN 19522 / DIN EN 877



With vertical outlet socket

| Nominal width | DN 100 | DN 125 | DN 150 |
|---------------|-------------------|-------------------|-------------------|
| Weight | 13.1 kg | 13.6 kg | 14.4 kg |
| Article No. | 7034.10.10 | 7035.10.10 | 7036.10.10 |

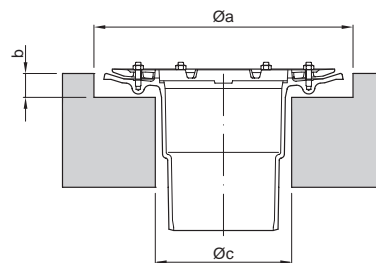


With horizontal outlet socket

| Nominal width | DN 100 | DN 125 | DN 150 |
|---------------|-------------------|-------------------|-------------------|
| Weight | 15.2 kg | 15.7 kg | 18.2 kg |
| Article No. | 7054.11.10 | 7055.11.10 | 7056.11.10 |

Core borehole dimensions

| Nominal width | Ø a | Ø c | b [mm] | Article No. |
|---|-----|-----|--------|-------------------|
| For drain body without insulating body | | | | |
| DN 100 | 380 | 200 | 35 | 7034.10.10 |
| DN 125 | 380 | 200 | 35 | 7035.10.10 |
| DN 150 | 380 | 200 | 35 | 7036.10.10 |
| For drain body with insulating body | | | | |
| DN 100 | 430 | 270 | 65 | 7034.10.10 |
| DN 125 | 430 | 270 | 65 | 7035.10.10 |
| DN 150 | 430 | 270 | 65 | 7036.10.10 |



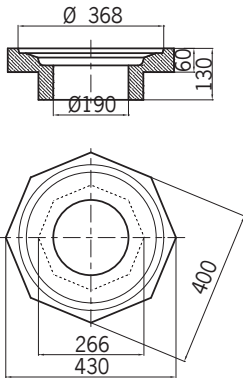
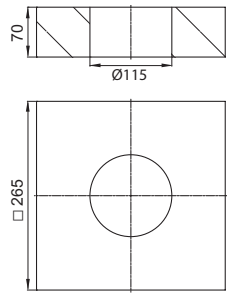
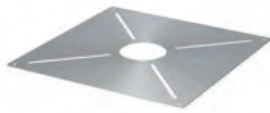
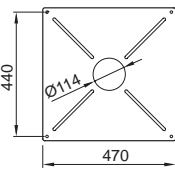
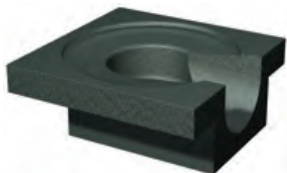
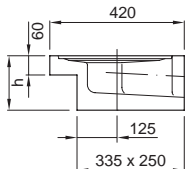


Recess dimensions

| Nominal width | Type | Outlet inclination | Article No. | Recess dimensions Drain body without insulating body | Recess dimensions Drain body with insulating body |
|---------------|------|--------------------|-------------------|---|--|
| DN 100 | Spin | 1.5° | 7054.11.10 | 290 x 670 mm | 500 x 670 mm |
| DN 125 | Spin | 1.5° | 7055.11.10 | 290 x 700 mm | 500 x 700 mm |
| DN 150 | Spin | 1.5° | 7056.11.10 | 290 x 750 mm | 500 x 750 mm |
| DN 100 | Spin | 90° | 7034.10.10 | 290 x 410 mm | 450 x 450 mm |
| DN 125 | Spin | 90° | 7035.10.10 | 290 x 410 mm | 450 x 450 mm |
| DN 150 | Spin | 90° | 7036.10.10 | 290 x 410 mm | 450 x 450 mm |

Additional components

ACO Spin flat roof drain DN 100 – DN 150 made of cast iron


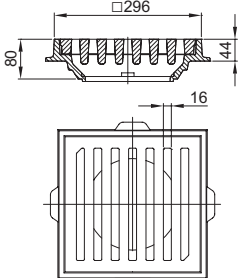

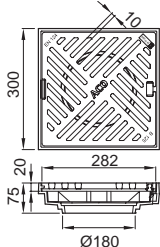

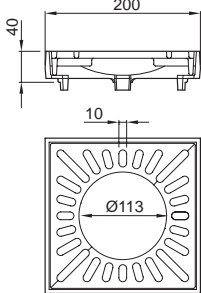

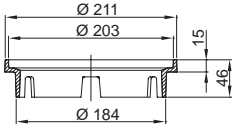

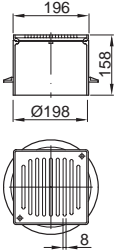

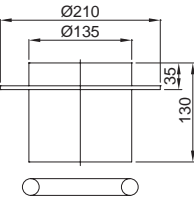
| | Scale drawing | Product description | Model | Article No. |
|---|---|---|---|---|
|  |  | Upper part cast iron, DN 100-DN 150 for sealing with two sealing membranes, with compression sealing flange, seepage openings and sealing ring | Coated | 7044.10.25 |
|  |  | Insulating body for flat roof drain with vertical outlet socket, foam glass | | 7040.21.00 |
|  |  | Isolating plate foam glass 265 x 265 mm for Spin flat roof drain DN 100 – DN 150 made of cast iron with insulation and fire protection | | 7040.23.00 |
|  |  | Heat shield with impact dowels M 8 x 16 for Spin flat roof drain DN 100 made of cast iron or stainless steel with insulation and fire protection | | 7034.20.17 |
|  |  | Insulating body for flat roof drain with horizontal outlet socket, foam glass | DN 100, height: 170 mm DN 125, height: 215 mm DN 150, Höhe: 240 mm height | 7040.31.00 7040.32.00 7040.33.00 |

| | Scale drawing | Product description | Model | Article No. |
|---|---|--|-------|-------------|
|  |  | Insulating ring for flat roof drain upper part DN 100 – DN 150, foam glass | | 7040.11.00 |
|  |  | levelling element for flat roof upper part DN 100 – DN 150, foam glass | | 7040.01.00 |
|  |  | Bucket stainless steel, material 1.4301, fits flat roof drain DN 100 – DN 150 made of cast iron | | 7000.13.00 |
|  | | Flat roof heating Suitable for all flat roof drains DN 50 – DN 150, Electrical supply: 220-240 V AC, Nominal power: 25 W, Protection class: I, Protection type: IP 67, Connecting cable: SIHF 3 x 1 mm ² , 1.5 m G 1.5 | | 7000.85.00 |
|  |  | Fire protection insert fits Spin flat roof drain DN 100 with 90° outlet inclination. Warning! Outflow perfor- mance reduced by the insert! | | 7034.20.15 |

Top sections, gratings and top frames


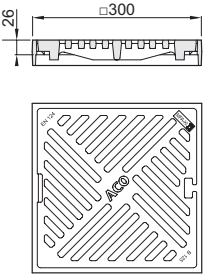
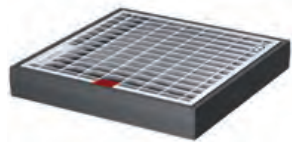
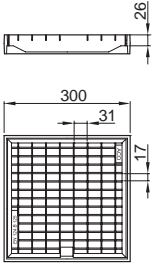

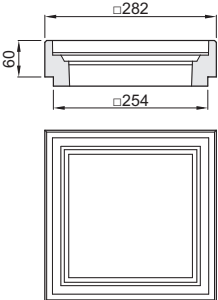

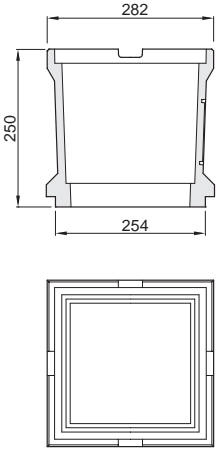
ACO Spin flat roof drains DN 100 – DN 150 made of cast iron

| | Scale drawing | Product description | Model | Article No. |
|---|---|---|--------------------------------|--|
|  |  | Ball grating cast iron, fits all Spin flat roof drains DN 100 – DN 150, external dimensions: Ø 225 mm | Class H1,5 | 7000.10.00 |
|  |  | Stacking frame with grating from cast iron, suitable for all flat roof drains Spin DN 100 – DN 150 without insulation, outer diameter: Ø 200 mm | Class M125 | 7000.28.00 |
|  |  | Top ring cast iron, fits Article No. 7000.46.00, 7000.28.00, 7000.41.00, 7000.42.00 | Class M125 | 7000.45.00 |
|  |  | Flat grating cast iron, fits all Spin flat roof drains DN 100 – DN 150, external dimensions: Ø 185 mm | Class L15 | 7000.20.00 |
|  |  | Top ring cast iron, fits Article Nos. 7000.10.00, 7000.20.00, 7000.39.00 and 7000.40.00 | Height: 25 mm Height: 35 mm | 7000.25.00 7000.35.00 |
|  |  | Top frame cast iron, with slotted grating Frame dimensions: □ 200x200 mm | Class L15 | 7000.40.00 |

| | Scale drawing | Product description | Model | Article No. |
|---|---|--|--------------------------------------|-------------------|
|  |  | Top frame cast iron, with slotted grating Frame dimensions: □ 296 mm | Class M125, unbolted | 7000.41.00 |
| | | | bolted | 7000.42.00 |
|  |  | Top frame with boltless locking, cast iron, with slotted grating Frame dimensions: □ 300x300 mm | Class M125, locked | 7000.46.00 |
|  |  | Top frame cast iron, with slotted grating, Frame dimensions: □ 200 x 200 mm | Class L15 | 7000.39.00 |
|  |  | Transition ring cast iron, fits top section Article No. 5084.81.00 Build height: 24 mm | Class K3 | 7000.31.00 |
|  |  | MEKU top section frame dimensions: □ 196 mm, plastic top section, frame and slotted grating made of stainless steel Transition ring required (previous Article No.) | Class K3, bolted | 5084.81.00 |
|  |  | Impoundment pipe made of CrNi, material 1.4301, with a sealing ring for Spin flat roof drains made of cast iron | 35 mm, DN 100, one-piece | 7034.10.50 |
| | | | 35 mm, DN 100, two-piece | 7044.10.50 |
| | | | 45 mm, DN 125/DN150, one-piece | 7035.10.50 |
| | | | 45 mm, DN 125/150, two-piece | 7045.10.50 |

Green roof / Parking deck top sections

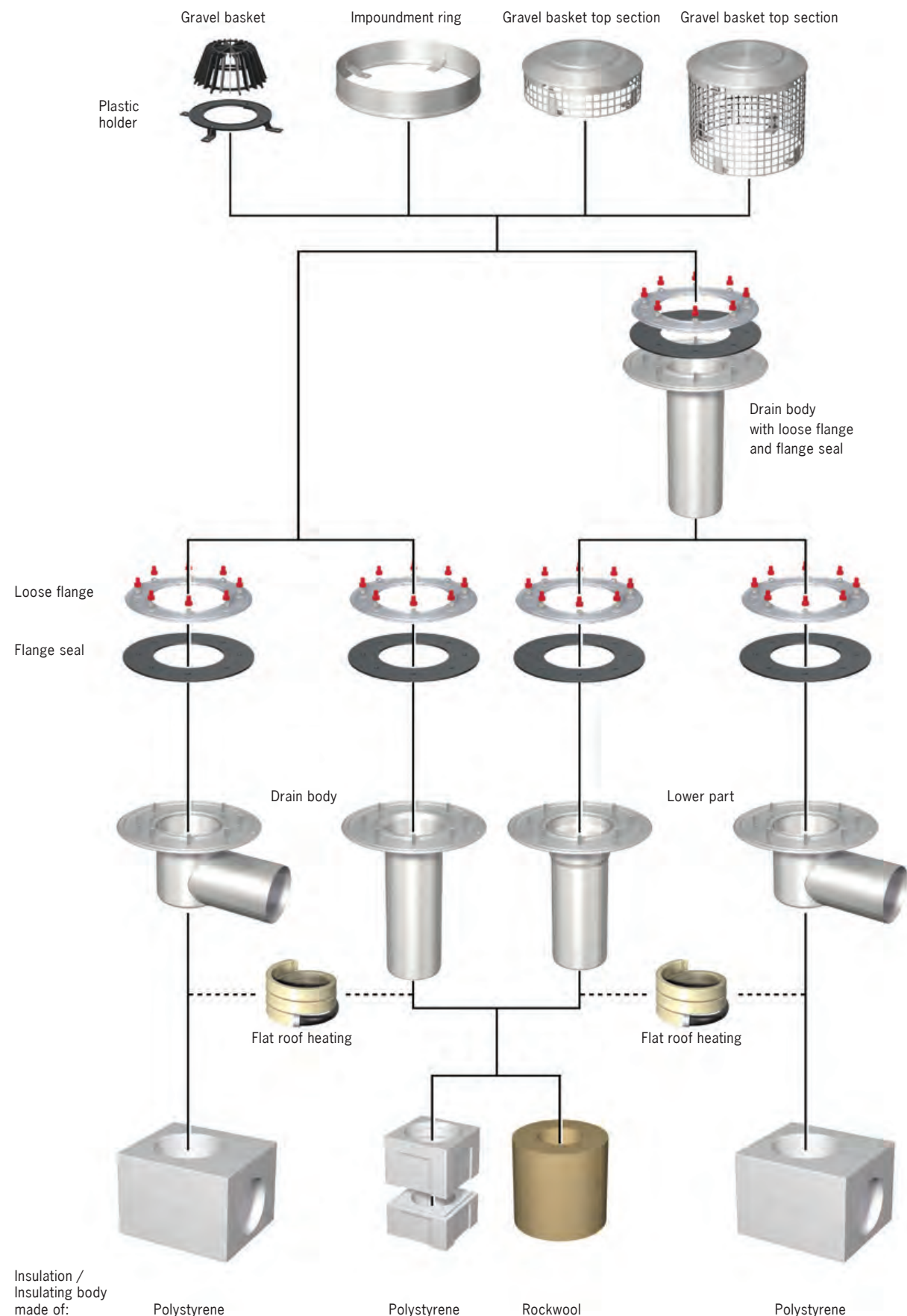
ACO Spin flat roof drain DN 70 – DN 150 made of cast iron

| | Scale drawing | Product description | Model | Article No. |
|---|---|--|-------------------|-------------------|
|  |  | Frame with slotted grating with boltless locking, cast iron, coated, frame dimensions: □ 300 mm | Class L15/M125 | 7000.51.00 |
|  |  | Frame with slotted grating with adjustment, steel, galvanised, lattice dimensions 31 x 17 mm, frame dimensions: □ 300 mm | Class L15/M125 | 7000.50.00 |
|  |  | Intermediate sections polymer concrete, height: 60 mm | Class L15/M125 | 7000.52.00 |
|  |  | Intermediate section polymer concrete, height: 250 mm | Class L15/M125 | 7000.54.00 |

| | Scale drawing | Product description | Model | Article No. |
|---|---|---|------------|-------------|
|  |  | Adapter frame polymer concrete height: 60 mm | Class L15 | 7000.55.00 |
|  |  | Adapter frame polymer concrete height: 100 mm | Class M125 | 7000.56.00 |
|  |  | Bucket polypropylene for top sections min 180 mm in combination with Article No. 7000.50.00 and 7000.51.00 | | 7000.53.00 |
|  |  | Bucket Stainless steel for top sections up to 180 mm, for flat roof drains DN 70 | | 7000.03.00 |
|  |  | Bucket stainless steel, for top sections up to 180 mm, for flat roof drains DN 100 – DN 150 | | 7000.13.00 |

Modular system

ACO Spin flat roof drains made of stainless steel for gravity drainage



Insulation /
Insulating body
made of:

Polystyrene

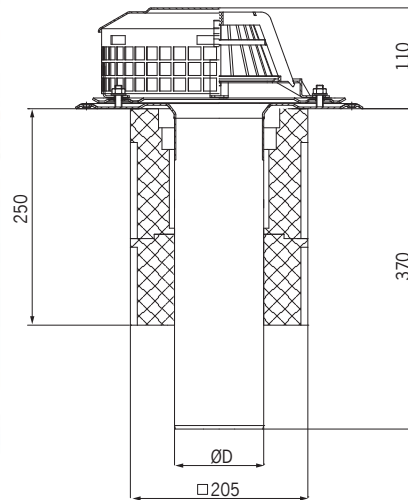
Polystyrene

Rockwool

Polystyrene

ACO Spin flat roof drains made of stainless steel with vertical outlet socket

DN 70 – DN 125

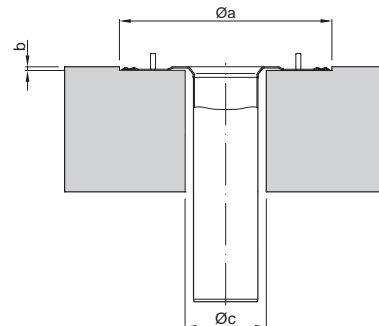


- Flat roof drain DN 70 – DN 125 with vertical outlet socket pursuant to DIN EN 1253
- Stainless steel, material 1.4301
- With compression sealing flange for sealing one sealing membrane
Warning! It is NOT possible to install a second sealing membrane after the vertical drain has been installed!
- Sarnafil TG 66-15
 - for loose placement
 - for greened, gravelled roofs with foot and vehicle traffic
 - for roofs with additional loads
- Sikaplan 15 G
 - for loose placement with mechanical fixing
 - up to a roof gradient of maximum 20%
 - for roofs without additional loads

| Nominal Width | Model | D [mm] | Weight [kg] | Stainless steel gravel basket | | | Weight [kg] | Plastic gravel basket | | |
|---------------|---------------------|--------|-------------|--------------------------------------|-------------------------------|---------------------------|-------------|--------------------------------------|-------------------------------|---------------------------|
| | | | | without ceiling membrane Article No. | Sarnafil TG 66-15 Article No. | Sikaplan 15 G Article No. | | without ceiling membrane Article No. | Sarnafil TG 66-15 Article No. | Sikaplan 15 G Article No. |
| DN 70 | uninsulated | 73 | 4.5 | 1179.10.60 | 1179.10.62 | 1179.10.67 | 3.7 | 1179.10.10 | 1179.10.12 | 1179.10.17 |
| | polystyrene | 73 | 4.7 | 1179.15.60 | 1179.15.62 | 1179.15.67 | 3.9 | 1179.15.10 | 1179.15.12 | 1179.15.17 |
| | rock wool | 73 | 4.7 | 1179.17.60 | 1179.17.62 | 1179.17.67 | 3.9 | 1179.17.10 | 1179.17.12 | 1179.17.17 |
| | polystyrene, heated | 73 | 4.9 | 1179.15.90 | 1179.15.92 | 1179.15.97 | 4.1 | 1179.15.40 | 1179.15.42 | 1179.15.47 |
| | rock wool, heated | 73 | 4.9 | 1179.17.90 | 1179.17.92 | 1179.17.97 | 4.1 | 1179.17.40 | 1179.17.42 | 1179.17.47 |
| DN 100 | uninsulated | 103 | 4.9 | 1119.10.60 | 1119.10.62 | 1119.10.67 | 4.1 | 1119.10.10 | 1119.10.12 | 1119.10.17 |
| | polystyrene | 103 | 5.0 | 1119.15.60 | 1119.15.62 | 1119.15.67 | 4.2 | 1119.15.10 | 1119.15.12 | 1119.15.17 |
| | rock wool | 103 | 5.0 | 1119.17.60 | 1119.17.62 | 1119.17.67 | 4.2 | 1119.17.10 | 1119.17.12 | 1119.17.17 |
| | polystyrene, heated | 103 | 5.2 | 1119.15.90 | 1119.15.92 | 1119.15.97 | 4.4 | 1119.15.40 | 1119.15.42 | 1119.15.47 |
| | rock wool, heated | 103 | 5.2 | 1119.17.90 | 1119.17.92 | 1119.17.97 | 4.4 | 1119.17.40 | 1119.17.42 | 1119.17.47 |
| DN 125 | uninsulated | 133 | 5.9 | 1129.10.60 | 1129.10.62 | 1129.10.67 | 5.1 | 1129.10.10 | 1129.10.12 | 1129.10.17 |
| | polystyrene | 133 | 6.0 | 1129.15.60 | 1129.15.62 | 1129.15.67 | 5.2 | 1129.15.10 | 1129.15.12 | 1129.15.17 |
| | rock wool | 133 | 6.0 | 1129.17.60 | 1129.17.62 | 1129.17.67 | 5.2 | 1129.17.10 | 1129.17.12 | 1129.17.17 |
| | polystyrene, heated | 133 | 6.2 | 1129.15.90 | 1129.15.92 | 1129.15.97 | 5.4 | 1129.15.40 | 1129.15.42 | 1129.15.47 |
| | rock wool, heated | 133 | 6.2 | 1129.17.90 | 1129.17.92 | 1129.17.97 | 5.4 | 1129.17.40 | 1129.17.42 | 1129.17.47 |

Core borehole dimensions

| Nominal width | Ø a | Ø c | b [mm] |
|---|-----|-----|--------|
| For drain bodies without insulating bodies | | | |
| DN 70 | 340 | 90 | 10 |
| DN 100 | 340 | 130 | 10 |
| DN 125 | 340 | 160 | 10 |
| For drain bodies with insulating bodies | | | |
| DN 70 | 340 | 290 | 10 |
| DN 100 | 340 | 290 | 10 |
| DN 125 | 340 | 290 | 10 |

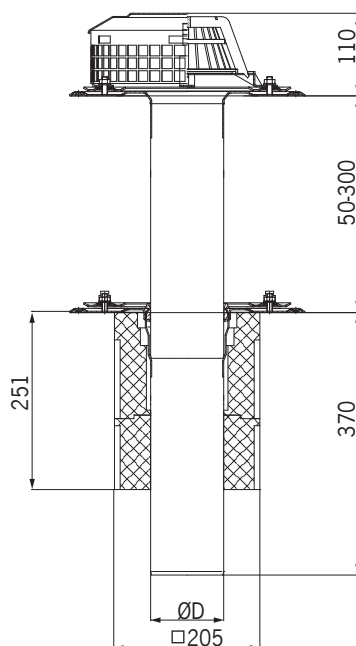


Recess dimensions

| Nominal width | Type | Inclination | Recess dimensions drain body without insulating body | Recess dimensions drain body with insulating body |
|---------------|------|-------------|--|---|
| DN 70 | Spin | 90° | 120 x 260 mm | 230 x 360 mm |
| DN 100 | Spin | 90° | 150 x 290 mm | 230 x 360 mm |
| DN 125 | Spin | 90° | 190 x 300 mm | 230 x 360 mm |

ACO Spin flat roof drains made of stainless steel with vertical outlet socket

DN 70 – DN 125

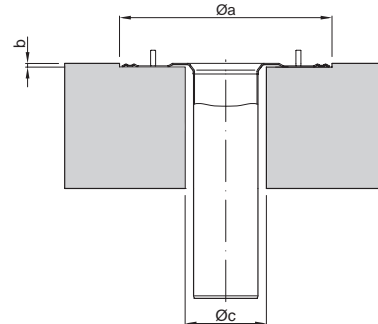


- Flat roof drain DN 70 – DN 125 with vertical outlet socket pursuant to DIN EN 1253
- Stainless steel, material 1.4301
- With two compression sealing flanges for sealing with two sealing membranes
- Sarnafil TG 66-15
 - for loose placement
 - for greened, gravelled roofs with foot and vehicle traffic
 - for roofs with additional loads
- Sikaplan 15 G
 - for loose placement with mechanical fixing
 - up to a roof gradient of maximum 20%
 - for roofs without additional loads

| Nominal Width | Model | D [mm] | Weight [kg] | Stainless steel gravel basket | | | Weight [kg] | Plastic gravel basket | | |
|---------------|---------------------|--------|-------------|---|----------------------------------|------------------------------|-------------|---|----------------------------------|------------------------------|
| | | | | without ceiling membrane Article No. | Sarnafil TG 66-15 Article No. | Sikaplan 15 G Article No. | | without ceiling membrane Article No. | Sarnafil TG 66-15 Article No. | Sikaplan 15 G Article No. |
| DN 70 | uninsulated | 73 | 7.3 | 1179.20.60 | 1179.20.65 | 1179.20.69 | 6.4 | 1179.20.10 | 1179.20.15 | 1179.20.19 |
| | polystyrene | 73 | 8.4 | 1179.25.60 | 1179.25.65 | 1179.25.69 | 6.5 | 1179.25.10 | 1179.25.15 | 1179.25.19 |
| | rock wool | 73 | 8.4 | 1179.27.60 | 1179.27.65 | 1179.27.69 | 6.5 | 1179.27.10 | 1179.27.15 | 1179.27.19 |
| | polystyrene, heated | 73 | 8.6 | 1179.25.90 | 1179.25.95 | 1179.25.99 | 6.7 | 1179.25.40 | 1179.25.45 | 1179.25.49 |
| | rock wool, heated | 73 | 8.6 | 1179.27.90 | 1179.27.95 | 1179.27.99 | 6.7 | 1179.27.40 | 1179.27.45 | 1179.27.49 |
| DN 100 | uninsulated | 103 | 7.9 | 1119.20.60 | 1119.20.65 | 1119.12.69 | 7.0 | 1119.20.10 | 1119.20.15 | 1119.20.19 |
| | polystyrene | 103 | 8.2 | 1119.25.60 | 1119.25.65 | 1119.25.69 | 7.1 | 1119.25.10 | 1119.25.15 | 1119.25.19 |
| | rock wool | 103 | 8.2 | 1119.27.60 | 1119.27.65 | 1119.27.69 | 7.1 | 1119.27.10 | 1119.27.15 | 1119.27.19 |
| | polystyrene, heated | 103 | 8.4 | 1119.25.90 | 1119.25.95 | 1119.25.99 | 7.3 | 1119.25.40 | 1119.25.45 | 1119.25.49 |
| | rock wool, heated | 103 | 8.4 | 1119.27.90 | 1119.27.95 | 1119.27.99 | 7.3 | 1119.27.40 | 1119.27.45 | 1119.27.49 |
| DN 125 | uninsulated | 133 | 9.5 | 1129.20.60 | 1129.20.65 | 1129.20.69 | 8.6 | 1129.20.10 | 1129.20.15 | 1129.20.19 |
| | polystyrene | 133 | 9.6 | 1129.25.60 | 1129.25.65 | 1129.25.69 | 8.8 | 1129.25.10 | 1129.25.15 | 1129.25.19 |
| | rock wool | 133 | 9.6 | 1129.27.60 | 1129.27.65 | 1129.27.69 | 8.8 | 1129.27.10 | 1129.27.15 | 1129.27.19 |
| | polystyrene, heated | 133 | 9.8 | 1129.25.90 | 1129.25.95 | 1129.25.99 | 9.0 | 1129.25.40 | 1129.25.45 | 1129.25.49 |
| | rock wool, heated | 133 | 9.8 | 1129.27.90 | 1129.27.95 | 1129.27.99 | 9.0 | 1129.27.40 | 1129.27.45 | 1129.27.49 |

Core borehole dimensions

| Nominal width | Ø a | Ø c | b [mm] |
|--|-----|-----|--------|
| For drain bodies without insulating bodies | | | |
| DN 70 | 340 | 90 | 10 |
| DN 100 | 340 | 130 | 10 |
| DN 125 | 340 | 160 | 10 |
| For drain bodies with insulating bodies | | | |
| DN 70 | 340 | 290 | 10 |
| DN 100 | 340 | 290 | 10 |
| DN 125 | 340 | 290 | 10 |



Recess dimensions

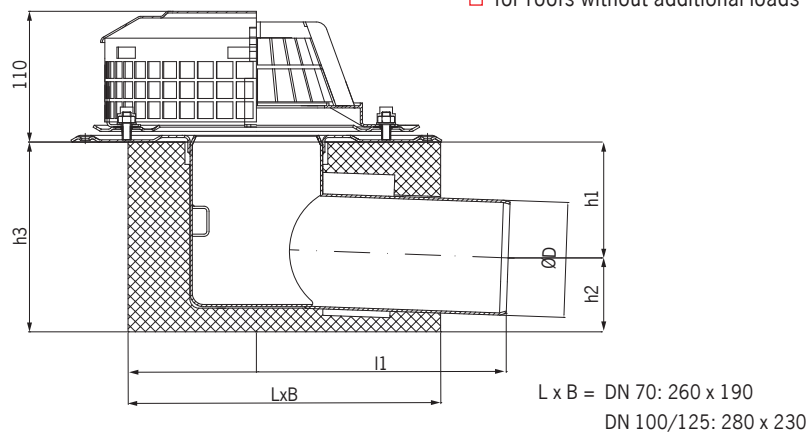
| Nominal width | Type | Inclination | Recess dimensions drain body without insulating body | Recess dimensions drain body with insulating body |
|---------------|------|-------------|--|---|
| DN 70 | Spin | 90° | 120 x 260 mm | 230 x 360 mm |
| DN 100 | Spin | 90° | 150 x 290 mm | 230 x 360 mm |
| DN 125 | Spin | 90° | 190 x 300 mm | 230 x 360 mm |

ACO Spin flat roof drains made of stainless steel with lateral outlet socket

DN 70 – DN 125



- Flat roof drain DN 70 – DN 125 with lateral outlet socket pursuant to DIN EN 1253
- Stainless steel, material 1.4301
- With compression sealing flange for sealing one sealing membrane
- Optionally available with a gravel basket made of plastic or stainless steel
- Sarnafil TG 66-15
 - for loose placement
 - for greened, gravelled roofs with foot and vehicle traffic
 - for roofs with additional loads
- Sikaplan 15 G
 - for loose placement with mechanical fixing
 - up to a roof gradient of maximum 20%
 - for roofs without additional loads

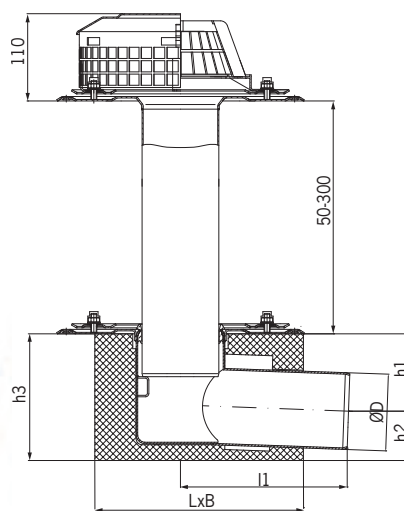


| Nominal Width | 76 | | | | | | Stainless steel gravel basket | | | | Plastic gravel basket | | | |
|---------------|---------------------|--------|-----|----|-----|-----|-------------------------------|--------------------------------------|-------------------------------|---------------------------|-----------------------|--------------------------------------|-------------------------------|---------------------------|
| | Model | D [mm] | h1 | h2 | h3 | l1 | Weight [kg] | without ceiling membrane Article No. | Sarnafil TG 66-15 Article No. | Sikaplan 15 G Article No. | Weight [kg] | without ceiling membrane Article No. | Sarnafil TG 66-15 Article No. | Sikaplan 15 G Article No. |
| DN 70 | uninsulated | 73 | 95 | 45 | 140 | 213 | 4.4 | 1175.10.60 | 1175.10.62 | 1175.10.67 | 3.7 | 1175.10.10 | 1175.10.12 | 1175.10.17 |
| | polystyrene | 73 | 95 | 45 | 140 | 213 | 4.6 | 1175.15.60 | 1175.15.62 | 1175.15.67 | 3.9 | 1175.15.10 | 1175.15.12 | 1175.15.17 |
| | rock wool | 73 | 95 | 45 | 140 | 213 | 4.6 | 1175.17.60 | 1175.17.62 | 1175.17.67 | 3.9 | 1175.17.10 | 1175.17.12 | 1175.17.17 |
| | polystyrene, heated | 73 | 95 | 45 | 140 | 213 | 4.8 | 1175.15.90 | 1175.15.92 | 1175.15.97 | 4.1 | 1175.15.40 | 1175.15.42 | 1175.15.47 |
| | rock wool, heated | 73 | 95 | 45 | 140 | 213 | 4.8 | 1175.17.90 | 1175.17.92 | 1175.17.97 | 4.1 | 1175.17.40 | 1175.17.42 | 1175.17.47 |
| DN 100 | uninsulated | 103 | 104 | 66 | 170 | 226 | 4.9 | 1115.10.60 | 1115.10.62 | 1115.10.67 | 4.1 | 1115.10.10 | 1115.10.12 | 1115.10.17 |
| | polystyrene | 103 | 104 | 66 | 170 | 226 | 5.1 | 1115.15.60 | 1115.15.62 | 1115.15.67 | 4.2 | 1115.15.10 | 1115.15.12 | 1115.15.17 |
| | rock wool | 103 | 104 | 66 | 170 | 226 | 5.1 | 1115.17.60 | 1115.17.62 | 1115.17.67 | 4.2 | 1115.17.10 | 1115.17.12 | 1115.17.17 |
| | polystyrene, heated | 103 | 104 | 66 | 170 | 226 | 5.3 | 1115.15.90 | 1115.15.92 | 1115.15.97 | 4.4 | 1115.15.40 | 1115.15.42 | 1115.15.47 |
| | rock wool, heated | 103 | 104 | 66 | 170 | 226 | 5.3 | 1115.17.90 | 1115.17.92 | 1115.17.97 | 4.4 | 1115.17.40 | 1115.17.42 | 1115.17.47 |
| DN 125 | uninsulated | 133 | 124 | 76 | 200 | 230 | 5.6 | 1125.10.60 | 1125.10.62 | 1125.10.67 | 5.1 | 1125.10.10 | 1125.10.12 | 1125.10.17 |
| | polystyrene | 133 | 124 | 76 | 200 | 230 | 5.8 | 1125.15.60 | 1125.15.62 | 1125.15.67 | 5.2 | 1125.15.10 | 1125.15.12 | 1125.15.17 |
| | rock wool | 133 | 124 | 76 | 200 | 230 | 5.8 | 1125.17.60 | 1125.17.62 | 1125.17.67 | 5.2 | 1125.17.10 | 1125.17.12 | 1125.17.17 |
| | polystyrene, heated | 133 | 124 | 76 | 200 | 230 | 6.0 | 1125.15.90 | 1125.15.92 | 1125.15.97 | 5.4 | 1125.15.40 | 1125.15.42 | 1125.15.47 |
| | rock wool, heated | 133 | 124 | 76 | 200 | 230 | 6.0 | 1125.17.90 | 1125.17.92 | 1125.17.97 | 5.4 | 1125.17.40 | 1125.17.42 | 1125.17.47 |

Recess dimensions

| Nominal width | Type | Inclination | Recess dimensions drain body without insulating body | Recess dimensions drain body with insulating body |
|---------------|------|-------------|--|---|
| DN 70 | Spin | 1.5° | 120 x 360 mm | 220 x 360 mm |
| DN 100 | Spin | 1.5° | 150 x 400 mm | 260 x 430 mm |
| DN 125 | Spin | 1.5° | 190 x 400 mm | 260 x 430 mm |

ACO Spin flat roof drains made of stainless steel with lateral outlet socket DN 70 – DN 125



L x B = DN 70: 260 x 190
DN 100/125: 280 x 230

- Flat roof drain DN 70 – DN 125 with lateral outlet socket pursuant to DIN EN 1253
- Stainless steel, material 1.4301
- With two compression sealing flanges for sealing with two sealing membranes
- Sarnafil TG 66-15
 - for loose placement
 - for greened, gravelled roofs with foot and vehicle traffic
 - for roofs with additional loads
- Sikaplan 15 G
 - for loose placement with mechanical fixing
 - up to a roof gradient of maximum 20%
 - for roofs without additional loads


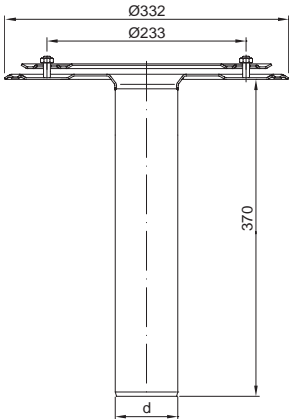

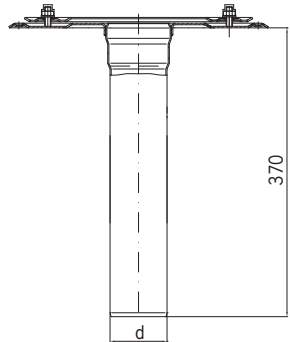

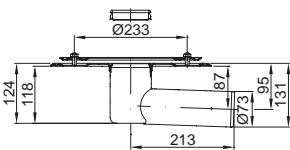
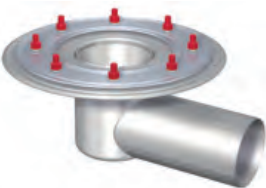
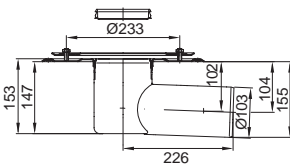

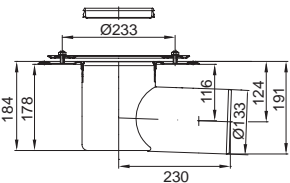
| Nominal width | Model | D [mm] | h1 | h2 | h3 | l1 | Weight [kg] | Stainless steel gravel basket | | | Weight [kg] | Plastic gravel basket | | |
|---------------|---------------------|--------|-----|-----|-----|-----|-------------|--------------------------------------|-------------------------------|---------------------------|-------------|--------------------------------------|-------------------------------|---------------------------|
| | | | | | | | | without ceiling membrane Article No. | Sarnafil TG 66-15 Article No. | Sikaplan 15 G Article No. | | without ceiling membrane Article No. | Sarnafil TG 66-15 Article No. | Sikaplan 15 G Article No. |
| DN 70 | uninsulated | 73 | 95 | 118 | 140 | 213 | 7.1 | 1175.20.60 | 1175.20.65 | 1175.20.69 | 6.4 | 1175.20.10 | 1175.20.15 | 1175.20.19 |
| | polystyrene | 73 | 95 | 118 | 140 | 213 | 7.3 | 1175.25.60 | 1175.25.65 | 1175.25.69 | 6.6 | 1175.25.10 | 1175.25.15 | 1175.25.19 |
| | rock wool | 73 | 95 | 118 | 140 | 213 | 7.5 | 1175.27.60 | 1175.27.65 | 1175.27.69 | 6.8 | 1175.27.10 | 1175.27.15 | 1175.27.19 |
| | polystyrene, heated | 73 | 95 | 118 | 140 | 213 | 7.3 | 1175.25.90 | 1175.25.95 | 1175.25.99 | 6.6 | 1175.25.40 | 1175.25.45 | 1175.25.49 |
| | rock wool, heated | 73 | 95 | 118 | 140 | 213 | 7.5 | 1175.27.90 | 1175.27.95 | 1175.27.99 | 6.8 | 1175.27.40 | 1175.27.45 | 1175.27.49 |
| DN 100 | uninsulated | 103 | 104 | 148 | 170 | 226 | 7.6 | 1115.20.60 | 1115.20.65 | 1115.20.69 | 6.8 | 1115.20.10 | 1115.20.15 | 1115.20.19 |
| | polystyrene | 103 | 104 | 148 | 170 | 226 | 7.8 | 1115.25.60 | 1115.25.65 | 1115.25.69 | 6.9 | 1115.25.10 | 1115.25.15 | 1115.25.19 |
| | rock wool | 103 | 104 | 148 | 170 | 226 | 8.0 | 1115.27.60 | 1115.27.65 | 1115.27.69 | 7.1 | 1115.27.10 | 1115.27.15 | 1115.27.19 |
| | polystyrene, heated | 103 | 104 | 148 | 170 | 226 | 7.8 | 1115.25.90 | 1115.25.95 | 1115.25.99 | 6.9 | 1115.25.40 | 1115.25.45 | 1115.25.49 |
| | rock wool, heated | 103 | 104 | 148 | 170 | 226 | 8.0 | 1115.27.90 | 1115.27.95 | 1115.27.99 | 7.1 | 1115.27.40 | 1115.27.45 | 1115.27.49 |
| DN 125 | uninsulated | 133 | 124 | 178 | 200 | 230 | 8.3 | 1125.20.60 | 1125.20.65 | 1125.20.69 | 7.8 | 1125.20.10 | 1125.20.15 | 1125.20.19 |
| | polystyrene | 133 | 124 | 178 | 200 | 230 | 8.5 | 1125.25.60 | 1125.25.65 | 1125.25.69 | 7.9 | 1125.25.10 | 1125.25.15 | 1125.25.19 |
| | rock wool | 133 | 124 | 178 | 200 | 230 | 8.7 | 1125.27.60 | 1125.27.65 | 1125.27.69 | 8.1 | 1125.27.10 | 1125.27.15 | 1125.27.19 |
| | polystyrene, heated | 133 | 124 | 178 | 200 | 230 | 8.5 | 1125.25.90 | 1125.25.95 | 1125.25.99 | 7.9 | 1125.25.40 | 1125.25.45 | 1125.25.49 |
| | rock wool, heated | 133 | 124 | 178 | 200 | 230 | 8.7 | 1125.27.90 | 1125.27.95 | 1125.27.99 | 8.1 | 1125.27.40 | 1125.27.45 | 1125.27.49 |

Recess dimensions

| Nominal width | Type | Inclination | Recess dimensions drain body without insulating body | Recess dimensions drain body with insulating body |
|---------------|------|-------------|--|---|
| DN 70 | Spin | 90° | 120 x 360 mm | 220 x 360 mm |
| DN 100 | Spin | 90° | 150 x 400 mm | 260 x 430 mm |
| DN 125 | Spin | 90° | 190 x 400 mm | 260 x 430 mm |

Additional components

ACO Spin flat roof drains DN 70 – DN 125 made of stainless steel

| | Scale drawing | Product description | Model | Article No. |
|---|---|---|---|---|
|  |  | Drain body for a one-piece or two-piece flat roof drain with vertical or horizontal outlet socket stainless steel, material 1.4301, with compression sealing flange. Warning! No extension piece for a second sealing membrane level can be installed after installation! | DN 70 (d= 73 mm) DN 100 (d= 103 mm) DN 125 (d= 133 mm) | 0174.47.30 0174.47.31 0174.47.32 |
|  |  | Lower part for two-piece flat roof drain stainless steel, material 1.4301 with compression sealing flange | DN 70 (d= 73 mm) DN 100 (d= 103 mm) DN 125 (d= 133 mm) | 0174.47.15 0174.47.16 0174.47.17 |
|  |  | Drain body/lower part for one-piece or two-piece flat roof drain with lateral outlet socket stainless steel, material 1.4301, with compression sealing flange | DN 70 (d= 73 mm) | 0174.48.03 |
|  |  | Drain body/lower part for one-piece or two-piece flat roof drain with lateral outlet socket stainless steel, material 1.4301, with compression sealing flange | DN 100 (d= 103 mm) | 0174.48.04 |
|  |  | Drain body/lower part for one-piece or two-piece flat roof drain with lateral outlet socket stainless steel, material 1.4301, with compression sealing flange | DN 125 (d= 133 mm) | 0174.48.11 |

| | Scale drawing | Product description | Model | Article No. |
|------------------------------|---|---|---|--|
| Contents |  |  | Positioning flange with compression sealing flange, stainless steel, material 1.4301, for lower parts DN 70 in the Spin product line | For unheated model 0174.46.54 |
| Gravity drainage |  |  | Flange seal EPDM, thickness: 4 mm EPDM, thickness: 5 mm PVC-soft, thickness: 4 mm NBR/SBR, thickness: 4 mm | 0174.42.87 0174.42.95 0174.42.92 0174.42.97 |
| Syphonic drainage |  |  | Gravel basket stainless steel, fits all Spin flat roof drains made of stainless steel | Height: 75 mm 0174.46.63 Height: 225 mm 0174.46.64 |
| Parking deck drainage |  |  | Gravel basket for reversed roof stainless steel, material 1.4301, load class H 1.5 | 0153.60.01 |
| Balcony and terrace drainage |  |  | Control shaft stainless steel, material 1.4301, dimensions: 400 x 400 mm, height: 120 mm, load class H 1.5 | 0153.73.05 |
| Facade drainage |  |  | Gravel basket made of plastic fits all Spin flat roof drains made of stainless steel | 0174.87.36 |

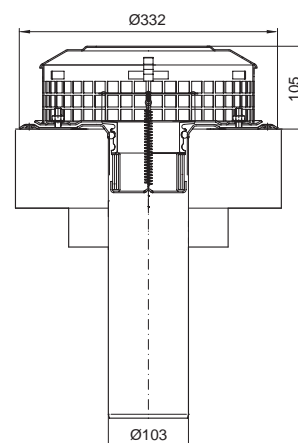
| | Scale drawing | Product description | Model | Article No. |
|---|---|---|---|---|
|  |  | Impoundment ring stainless steel, material 1.4301 | DN 70/DN100, Height: 35 mm DN 125, Height: 45 mm | 0174.46.76 0174.46.77 |
|  |  | Profile top section steel, galvanised, dimensions: 400 x 400 mm height adjustable from 78–108 mm | | 38801 |
|  |  | Extension for Profile top section for frame dimensions 400 x 400 mm | Height: 30 mm Height: 60 mm Height: 120 mm | 38685 38687 38689 |
|  | | Flat roof heating fits all flat roof drains DN 70 – DN 150, Electrical supply: 220-240 V, AC, Nominal power: 25 W, Protection class: I, Protection type: IP 67, Cables: SIHF 3 x 1 mm ² , 1.5 m G 1.5 | | 0174.84.32 |
|  |  | Rock wool insulation, construction material class A1 for all vertical drain bodies Spin and lower parts | DN 70 DN 100 DN 125 | 0174.46.57 0174.47.21 0174.47.22 |
|  |  | Polystyrene insulation, PS 30 for vertical drain bodies Spin and lower parts | DN 70 DN 100 DN 125 | 0174.47.18 0174.47.19 0174.47.20 |
|  |  | Polystyrene insulation, PS 30 for lateral lower parts Spin | DN 70, 260x190x140 DN 100, 280x230x170 DN 125, 280x230x200 | 0174.48.06 0174.48.07 0174.48.08 |
|  |  | Mounting sheet for trapezoidal sheet roofs steel, galvanised | | 0174.46.61 |

ACO fire protection drains Spin – for gravity drainage

Complete drain 1-part/inclination: 90 °



- Fire resistance class R30 – R120 tested as per Gen. Build. Sup. Z-19.17-1888
- With factory inserted sealing membrane
- Flat roof gully unit tested for leaks as per DIN EN 1253
- Made from stainless steel, material grade 304
- Airlock with fire protection insert
- With clamping flange for sealing with 1 sealing membrane
- Usable for 1 sealing plane
- Socket inclination: 90°
- Insulation: uninsulated with/ out heating
- Insulation
 - uninsulated with/without heating
- Sarnafil TG 66-15
 - for loose placement
 - for greened, gravelled roofs with foot and vehicle traffic
 - for roofs with additional loads
- Sikaplan 15 G
 - for loose placement with mechanical fixing
 - up to a roof gradient of maximum 20%
 - for roofs without additional loads

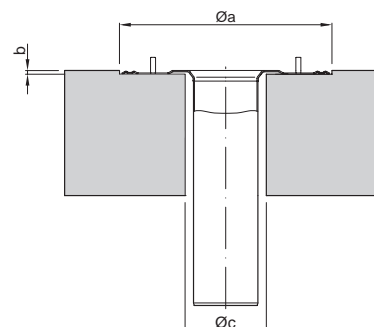


Nominal width: DN 100/Diameter: 103 mm

| gravel basket | Insulation | Recess [mm] | Weight [kg] | without ceiling membrane | Article No. Sarnafil TG 66-15 | Sikaplan 15 G |
|-----------------|--------------------|----------------|----------------|--------------------------|----------------------------------|---------------|
| stainless steel | uninsulated | 150 x 290 | 5.1 | 1311.10.60 | 1311.10.62 | 1311.10.67 |
| | insulated, heated | 150 x 290 | 5.3 | 1311.10.90 | 1311.10.92 | 1311.10.97 |
| | foam glass | 230 x 360 | 6.0 | 1311.18.60 | 1311.18.62 | 1311.18.67 |
| | foam glass, heated | 230 x 360 | 3.2 | 1311.18.90 | 1311.18.92 | 1311.18.97 |


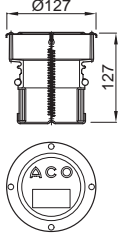
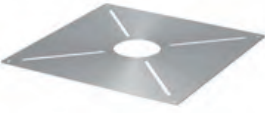
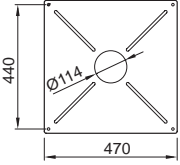
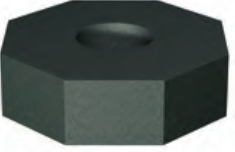
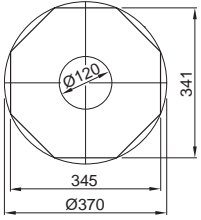

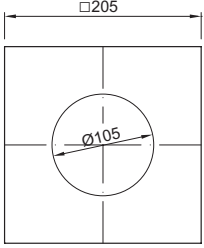
Core borehole dimensions

| Nominal width | Ø a | Ø c | b [mm] |
|---|-----|-----|--------|
| For drain bodies without insulating bodies | | | |
| DN 100 | 340 | 130 | 10 |
| For drain bodies with insulating bodies | | | |
| DN 100 | 340 | 290 | 10 |



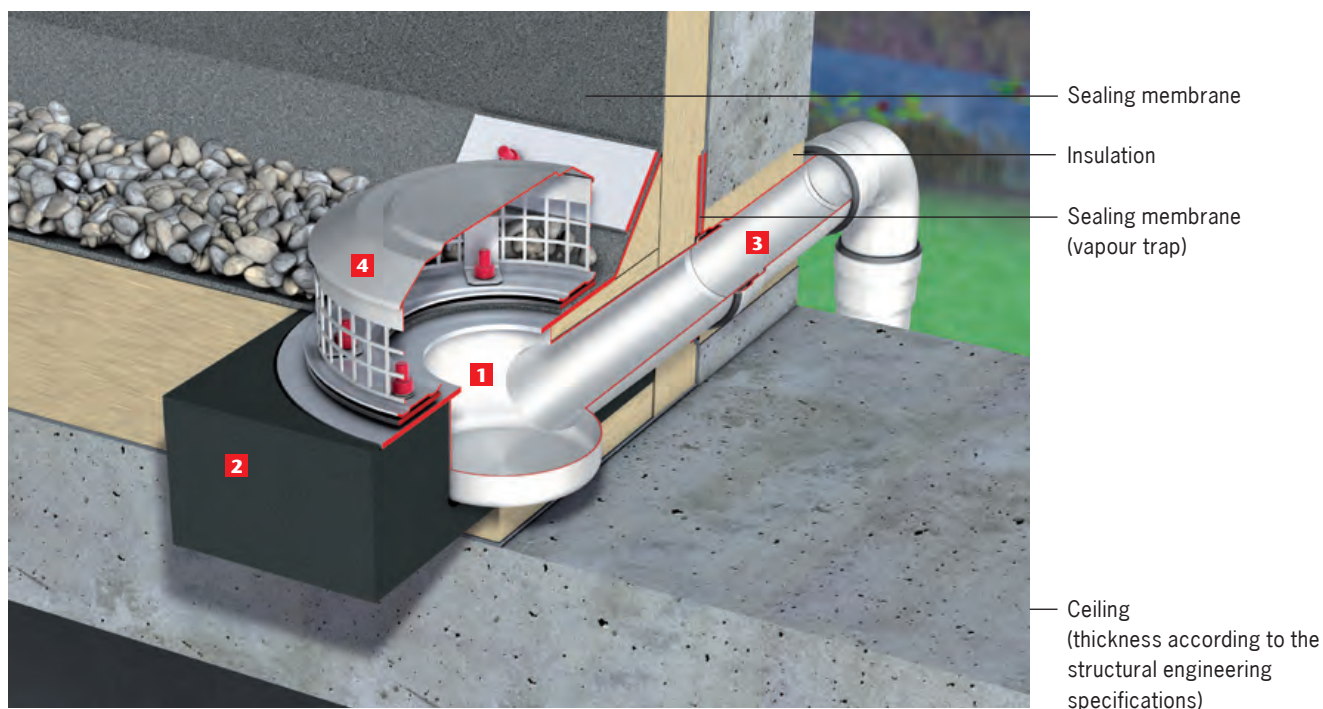
Fire protection accessories

ACO Spin flat roof drains DN 100 made of stainless steel

| | Scale drawing | Product description | Model | Article No. |
|---|---|---|-------|-------------------|
|  |  | Fire protection insert fits Spin flat roof drains DN 100 with 90° outlet socket inclination. <i>Warning! The outflow capacity is reduced when this insert is installed (refer to page 15).</i> | | 7034.20.15 |
|  |  | Heat shield stainless steel, for Spin flat roof drain DN 100, with impact dowels M8 x 16 | | 7034.20.17 |
|  |  | Insulating body foam glass, for Spin vertical drain bodies and lower parts | | 0174.77.96 |
|  |  | Insulating sleeve foam glass, for Spin vertical drain bodies and lower parts for length adaptation (height: 150 mm) | | 0174.77.94 |

Installation recommendation

Gravity drainage with Attika flat roof gully and duct made of stainless steel



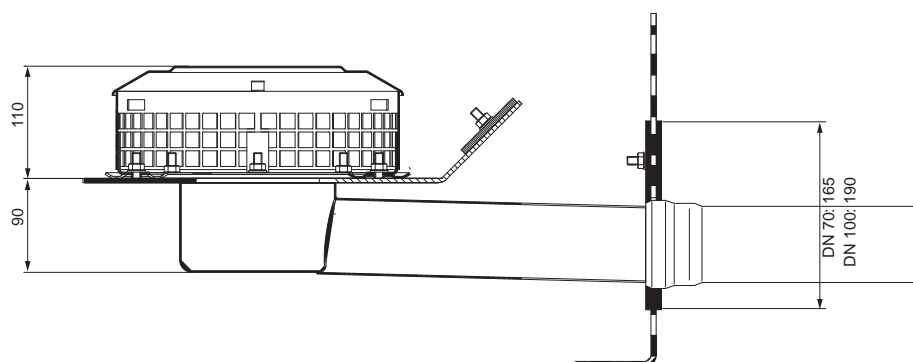
1 Attika flat roof gully made of stainless steel DN 70, 1.5° socket outlet inclination for sealing with bitumen
Article No. 0174.78.22

2 Isolating body
Article No. 0154.02.94

3 Attika duct DN 70
Article No. 0174.48.66

4 Gravel bucket of stainless steel
Article No. 0174.46.59

DN 70 – DN 100



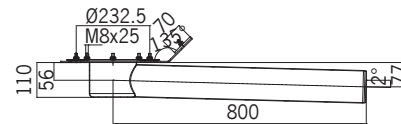
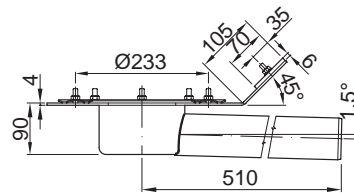
Extension heights in mm

Attika flat roof drains made of stainless steel

DN 70–DN 100

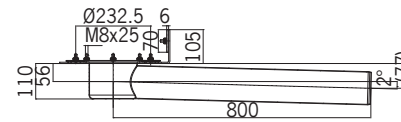
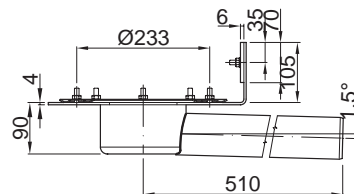


- Drain body DN 70 or DN 100
- Stainless steel, material 1.4301
- With compression sealing flange
- Direct connection to ACO GM-X pipe system, connection to other types of pipe requires transition fittings



For bitumen sealing membranes

| Nominal width | DN 70 | DN 100 |
|---------------|-------------------|-------------------|
| Article No. | 0174.78.22 | 0174.78.24 |



For plastic sealing membranes

| Nominal width | DN 70 | DN 100 |
|---------------|-------------------|-------------------|
| Article No. | 0174.78.23 | 0174.78.25 |

Outflow capacities

| Nominal width | required value according to DIN with water built up 35 mm | actual value according to DIN with water built up 35 mm | actual value for water-spout 35 mm with water build up 35 mm |
|---------------|---|---|--|
| DN 70 | 1.7 l/s | 5.4 l/s | 3.1 l/s |
| DN 100 | 4.5 l/s | 6.0 l/s | 5.0 l/s |

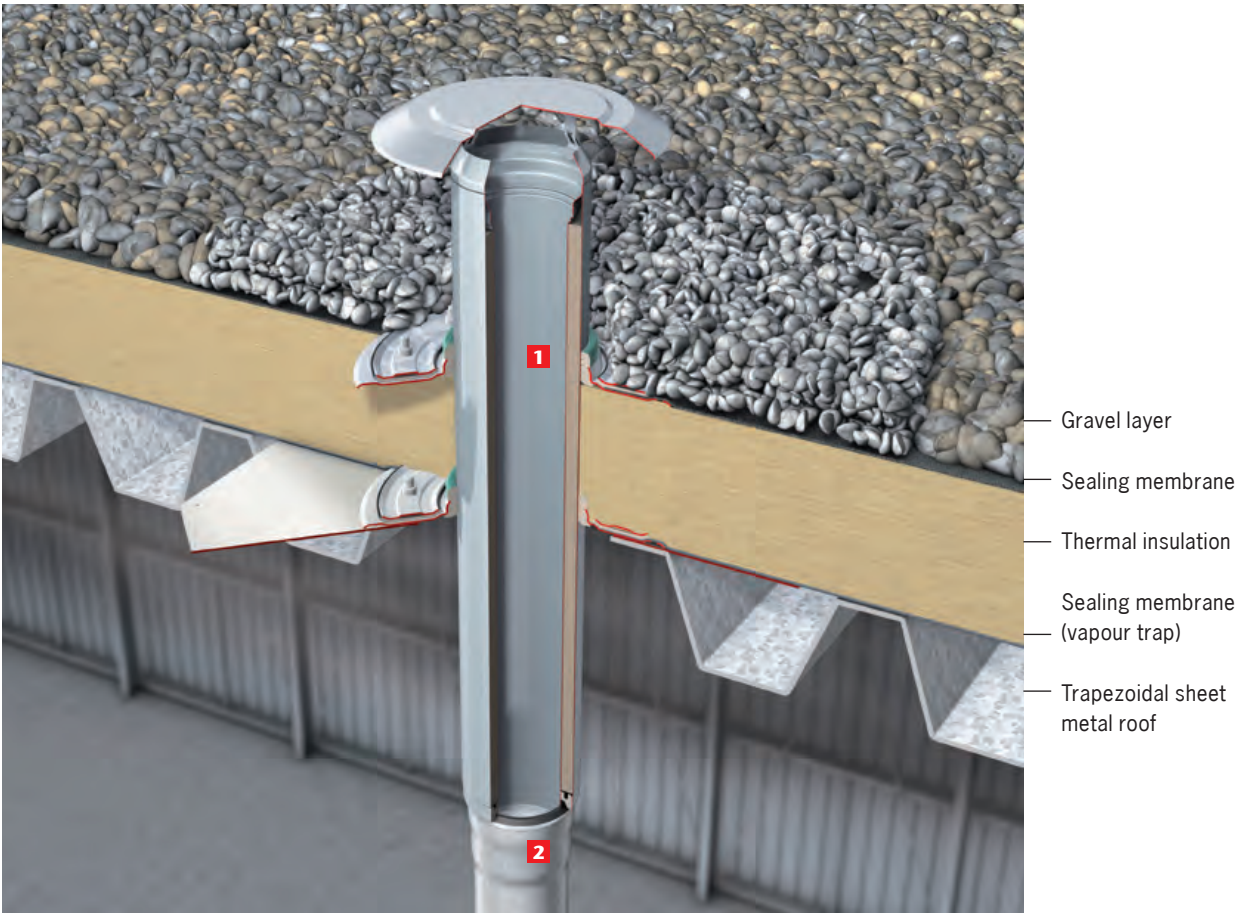
Additional components

Attika flat roof drains DN 70 – DN 100 made of stainless steel

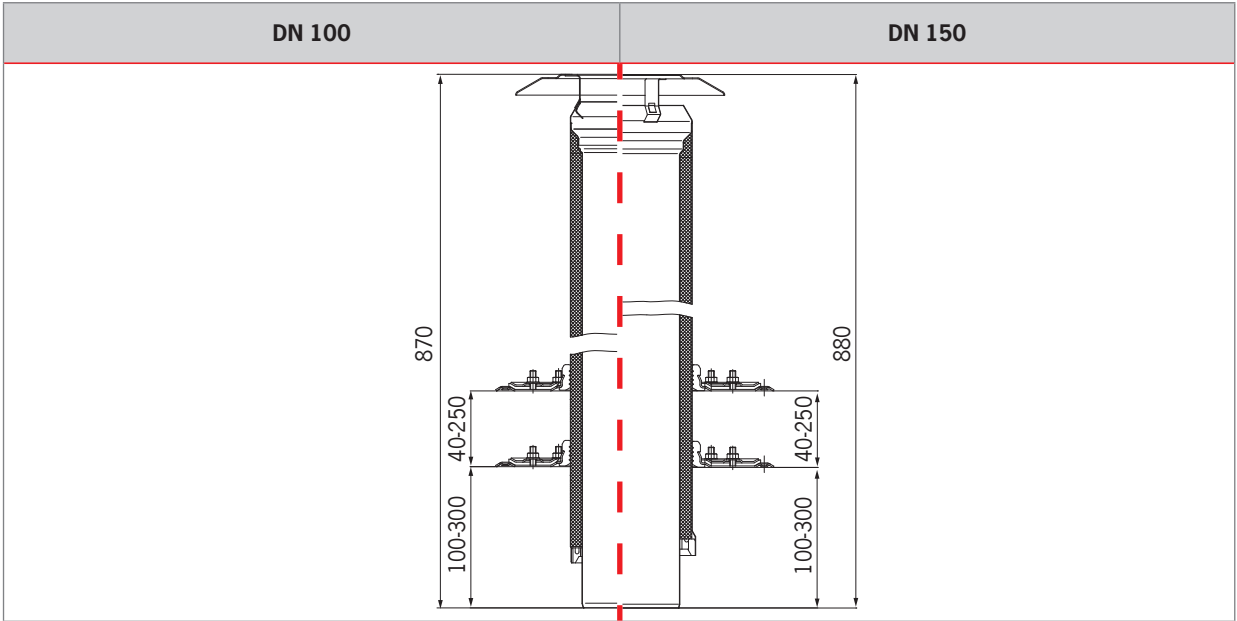
| | Scale drawing | Product description | Model | Article No. |
|---|---|---|---------------------------------|---|
|  |  | Stainless steel gravel basket Fits all Spin flat roof drains made of stainless steel | Height: 75 mm Height: 225 mm | 0174.46.63 0174.46.64 |
|  |  | Plastic gravel basket fits all Spin flat roof drains made of stainless steel | | 0174.87.36 |
|  |  | Flange seal diameter: 303 mm Thickness: 4 mm | EPDM PVC-soft NBR/SBR | 0174.42.87 0174.42.92 0174.42.97 |
|  |  | Impoundment ring for emergency drains, stainless steel, 1.4301, diameter: 324 mm, height: 35 mm | | 0174.46.76 |
|  |  | Insulating body foam glass | DN 70 DN 100 | 0154.02.95 0154.02.94 |
|  |  | Attika duct DN 100 with pre-installed clamped-in bitumen connecting sleeve | DN 70 DN 100 | 0174.48.66 0174.48.67 |

Installation recommendation

Multiflex flat roof duct made of stainless steel



- 1** Multiflex flat roof duct DN 100
With rain cap and two flanges
Article No. 0174.43.05
- 2** GM-X pipe



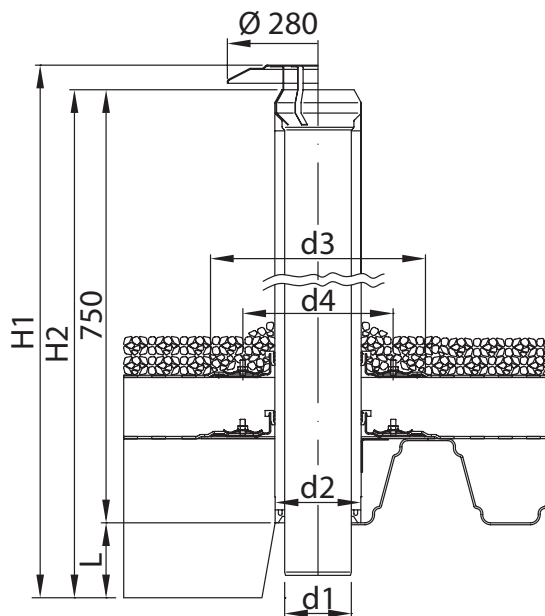
Extension heights in mm

| |
|------------------------------|
| Contents |
| Gravity drainage |
| Syphonic drainage |
| Parking deck drainage |
| Balcony and terrace drainage |
| Facade drainage |
| Pipe systems |

Multiflex flat roof duct made of stainless steel
DN 100 or DN 150



- Flat roof duct DN 100 or DN 150
- Stainless steel, material 1.4301
- Thermally insulated model
- Optional with one or two height adjustable compression sealing flanges
- Optional with or without rain cap
- Direct connection to ACO GM-X pipe system, connecting to other types of pipe requires transition fittings



d_3 = external flange diameter
 d_4 = bolt circle diameter, z minus number of bolts
 d_2 = outer sleeve minus diameter
 d_1 = pointed end minus diameter

| Nominal width | Number of flanges | Model | d_1 | d_2 | d_3 | d_4 | L | z | H_1 | H_2 | Weight | Article No. |
|--------------------|-------------------|---------------|-------|-------|-------|-------|----|---------|-------|-------|--------|-------------|
| DN 100 or DN 70* | 1 | with rain cap | 102 | 133 | 332 | 233 | 80 | 8 x M8 | 870 | 830 | 6 | 0174.43.01 |
| | 2 | with rain cap | | | | | | | | | 8 | 0174.43.05 |
| | 1 | | | | | | | | | | 5 | 0174.43.09 |
| | 2 | | | | | | | | | | 7 | 0174.43.13 |
| DN 150 or DN 100** | 1 | with rain cap | 159 | 192 | 410 | 300 | 90 | 10 x M8 | 880 | 840 | 8 | 0174.43.03 |
| | 2 | with rain cap | | | | | | | | | 11 | 0174.43.07 |
| | 1 | | | | | | | | | | 7 | 0174.43.11 |
| | 2 | | | | | | | | | | 10 | 0174.43.15 |

*The following components must be ordered for a DN 70 duct:
Duct DN 100 according to the previous table plus GM-X adapter piece
art. no. 0174.12.73 plus GM-X sealing ring art. no. 0174.14.71

**The following components must be ordered for a DN 125 duct:
Duct DN 150 according to the previous table plus GM-X adapter piece
art. no. 0174.12.76 plus GM-X sealing ring art. no. 0174.14.74

| Pipe systems | Facade drainage | Balcony and terrace drainage | Parking deck drainage | Syphonic drainage | Gravity drainage | Contents |
|--------------|-----------------|------------------------------|-----------------------|-------------------|------------------|----------|
|--------------|-----------------|------------------------------|-----------------------|-------------------|------------------|----------|