Balcony drains
Terrace drains

*The perfect solution for every application*

**Single and direct drains made of galvanised steel**

## Single and direct drains from ACO Building Services – the complete range

The planning and execution of balcony and terrace drainage systems in houses demands a very high degree of customisation from architects and builders.

The building-specific situation and criteria specified by the customers have to be taken into consideration in each and every case, whatever the technical sealing method used on the terrace, or the construction of the flooring, the connected downpipes from the balconies, and the aesthetic aspects.

Fortunately, assistance is at hand in the form of the complete range of balcony and terrace drainage systems supplied by ACO: this spectrum always has the matching drain solution for each problem, and guarantees the resolution of all details, as well as incorporating all of the technical and visual aspects – to ensure that the balcony and terrace drainage system blends harmoniously into the overall appearance of the building.



**Materials**
All balcony and terrace drains are made of sheet steel.
The extremely low thermal expansion of this material makes the usual expansion compensation materials unnecessary – even when concreting in or bricking in the drains.

**Products**
ACO Building Services product line includes separate drains suitable for individual terraces/balconies, as well as direct drains which can be used to connect up several balcony drains.
Both drain types can be supplied with a supporting flange for installation without a sealing membrane or a compression sealing flange for installation with sealing membranes.

**Standards**
The single and direct drains shown from page 6 onwards are all manufactured in compliance with DIN EN 1253.

**Installation recommendations**
In addition to the installation situations shown in this brochure, other installation recommendations are found at **www.haustechnik.de** in DWG, DFX and EPS format.

**Modular construction**
Different solutions are required when planning modern balcony and terrace drainage systems – depending on the installation situation.
ACO Building Services balcony and terrace drain product line is therefore deliberately designed around a modular system. Everything starts with the drain bodies. Depending on the model, drains with vertical or horizontal outlet sockets can be supplied.
And depending on the model, the drain body can be combined with intermediate sections and a range of top section systems. This allows the right drainage solution to be created for each application and floor structure.

**Thermal insulation**
If thermally-insulated drain models are supplied, the thermal insulation involves CFC-free polyurethane hard foam with the following specifications:

- Raw density 50 – 55 kg/m$^3$
- Thermal conductivity: 0.032 W/(mk)
- Foam structure: 85 – 95 % closed cells
- Water vapour resistance factor: 30 – 80
- Water absorption: 2 – 5 mol-%

**System solutions with ACO GM-X pipe**
The outlet sockets of ACO Building Services balcony and terrace drains have the following external pipe diameters:
DN 50:53 mm
DN 70:73 mm
DN 100:102 mm
ACO GM-X pipes and GM-X compound pipes are optimised for drainage applications featuring ACO balcony and terrace drains. In addition, the downpipe ducts in the available gratings have been selected to fit standard pipe diameters.

**Other ACO products for terrace and flat roof drainage**

The channel system works at two levels. It drains the surface, as well as draining water out of the underlying drainage layer. Water flowing down the façade is also safely drained away.

To safely drain away the rain water percolating through green roofs, ACO supplies top sections with additional components matching the current flat-roof drain product line.

## Application-oriented complete solutions

The diversity and combination possibilities opened up by ACO balcony and terrace drains are ideal for use in every conceivable application. From simple terrace drains without sealing membranes, to the drainage of several balcony units – ACO Building Services has a perfect solution for every installation problem.

The diagram on the left shows how balcony drains with compression sealing flanges for membrane sealing systems can be connected up to one another using the compatible piping systems and downpipe ducts. The diagram on the right shows a combined drain system connecting up several balcony drains without sealing membranes.

The following pages describe most common applications and the associated products. Explanatory notes on the functions of the drains and product descriptions are located on the pages referenced in the text.

## Applications and product solutions

| Application | Floor covering / Drainage | Page |
|---|---|---|
| **Balcony slab without moisture barrier** | With cement screed covering or mastic asphalt | 6/7 |
| | Balcony slab made of prefabricated concrete components or poured in place with exposed concrete surfaces | 6/7 |
| **Balcony slab with moisture barrier** | Balcony slab with paving stones on paving supports or bedding gravel (drainage at the level below the paving stones) | 8/9 |
| | Balcony slab with paving stones on paving supports or bedding gravel (drainage at one or two levels) | 8/9 |
| | Balcony slab with paving stones on paving supports or bedding gravel (drainage at two levels) | 8/9 |
| | Tiled surface with a motar bed (Drainage at one or two levels) For downpipe ducts/upper balconies | 10/11 |
| | Balcony slab with paving stones on paving supports or bedding gravel (Drainage at two levels) For downpipe ducts/upper balconies | 10/11 |
| **Balcony slab or terrace slab with moisture barrier** | Paving stones on paving supports or bedding gravel (drainage at the lower level below the paving stones) | 12/13 |
| | Tiled surface on a mortar bed or with paving stones on bedding gravel or paving supports (drainage at one or two levels) | 12/13 |
| | Paving stones on paving supports or bedding gravel (drainage at two levels) | 12/13 |
| | Tiled surface on a mortar bed (drainage at one level) Or paving stones on bedding gravel or paving supports (drainage at one or two levels) | 14/15 |
| | Paving stones on bedding gravel or paving supports (drainage at two levels) | 14/15 |

## Application example: balcony slabs without moisture barrier

### With cement screed covering or mastic asphalt

A single drain made of galvanised steel with a supporting flange set in the balcony slab.
The cement screed covering or the mastic asphalt is laid flush with the round, height-adjustable polymer grating.

The direct drain made of galvanised steel with a supporting flange is set in the balcony slab.
The direct drain can be supplied with either a round stainless steel grating or a ring sieve. This can be used to connect up downpipes from balconies on overlying floors. Care must be taken to properly position the balcony drains above one another to ensure that they can be connected up with downpipes.

The ACO Speed balcony direct drain has an excellent reputation in the building remediation sector.
They are ideal for installation in stacked balconies. They can be either installed in already assembled drains (as long as the diameter is large enough) or installed in poured holes. The balcony slabs are then covered with thin bed surfacing.

### Balcony slabs are made of prefabricated concrete components or poured concrete with exposed concrete surfaces

The direct drain made of galvanised steel with a bell is usually set in the balcony slab when prefabricated at the concrete works.
The direct drain can be supplied with either a round stainless steel grating or a ring sieve. This can be used to connect up downpipes from balconies on overlying floors. Care must be taken to properly position the balcony drains above one another to ensure that they can be connected up with downpipes.

**Product solutions**

Single drains with supporting flange, made of galvanised steel, with straight or angled drain pipe, with polymer sieve 85 mm, for drain heights 15 – 40 mm
Socket inclination either 1.5° or 90°.

| DN | socket inclination | Article No. |
|---|---|---|
| 50 | 90° | 0174.43.37 |
| 70 | 90° | 0174.43.38 |
| 50 | 1,5° | 0174.43.41 |
| 70 | 1,5° | 0174.43.42 |

Direct drain made of galvanised steel, with supporting flange, for ring sieve/sieve lid, sieve installation position 20 mm above the flange, sieves not height-adjustable.

| DN | length, mm | Article No. |
|---|---|---|
| 50 | 300 | 0174.42.79 |
| 50 | 3000 | 0174.42.82 |
| 70 | 300 | 0174.42.80 |
| 70 | 3000 | 0174.42.83 |
| 100 | 300 | 0174.42.81 |
| 100 | 3000 | 0174.42.84 |

Speed direct balcony drain made of galvanised steel or stainless steel, with supporting flange, installation length 300 mm.

| DN | model | Article No. |
|---|---|---|
| 50 | steel (galvanized) | 0174.42.69 |
| 70 | steel (galvanized) | 0174.42.71 |
| 50 | stainless steel | 0174.42.77 |
| 70 | stainless steel | 0174.42.78 |

Direct drain made of galvanised steel, with bell, for ring sieves/sieve lid, sieves not height-adjustable.

| DN | height | Article No. |
|---|---|---|
| 50 | 120 | 0174.52.63 |
| 50 | 140 | 0174.52.66 |
| 50 | 160 | 0174.52.69 |
| 50 | 180 | 0174.52.75 |
| 50 | 200 | 0174.52.78 |
| 70 | 120 | 0174.52.64 |
| 70 | 140 | 0174.52.67 |
| 70 | 160 | 0174.52.70 |
| 70 | 180 | 0174.52.76 |
| 70 | 200 | 0174.52.79 |
| 100 | 120 | 0174.52.65 |
| 100 | 140 | 0174.52.68 |
| 100 | 160 | 0174.52.71 |
| 100 | 180 | 0174.52.77 |
| 100 | 200 | 0174.52.80 |

## Application examples: balcony slabs with moisture barriers

### Balcony slab with paving stones on paving supports or bedding gravel (drainage at the level beneath the paving stones)

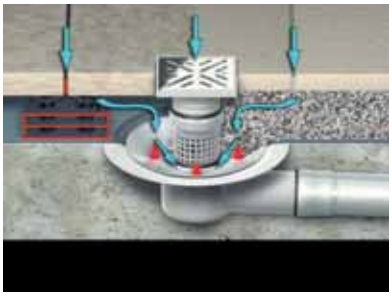
The single drain made of galvanised steel with a compression sealing flange is set in the balcony slab. Note that the matching grating is located beneath the paving slabs.
The surface water collects above the sealing level beneath the paving and drains into the covered grating.

### Balcony slab with paving stones on paving supports or bedding gravel (drainage at one or two levels)

This single drain made of galvanised steel with a compression sealing flange is set in the balcony slab, and the rotatable top section is set flush with the surface covering.
Any surface water which manages to penetrate the floor covering collects below the floor covering above the sealing membrane from where it drains into the drain body through the seepage ducts in the flange.



### Balcony slab with paving stones on paving supports or bedding gravel (drainage at two levels)



The single drain made of galvanised steel with a compression sealing flange is set in the balcony slab. The rotatable top section including the intermediate section with the sieve holes is set flush with the floor covering.
Any surface water penetrating the floor covering collects beneath the paving surface above the sealing membrane from where it drains into the drain body via the sieve holes in the intermediate section.

**Product solutions**

Single drain made of galvanised steel, with a compression sealing flange and top section and polymer grating ø 85 mm for installation heights 15 – 40 mm.

| DN | Outlet inclination | Model | Article No. |
|---|---|---|---|
| 50 | 90° | Polymer grating | 0174.43.80 |
| 70 | 90° | Polymer grating | 0174.43.81 |
| 50 | 1,5° | Polymer grating | 0174.82.01 |
| 70 | 1,5° | Polymer grating | 0174.82.02 |

Single drain made of galvanised steel, pursuant to DIN EN 1253, with a compression sealing flange, with a polymer top section (frame dimensions □ 125 mm) and stainless steel gratings □ 117.5 mm for installation height 10 – 90 mm.

| DN | Outlet inclination | Model | Article No. |
|---|---|---|---|
| 50 | 90° | Uninsulated | 0174.43.82 |
| 70 | 90° | Uninsulated | 0174.43.83 |
| 50 | 90° | Thermally insulated | 0174.43.88 |
| 70 | 90° | Thermally insulated | 0174.43.89 |
| 50 | 1,5° | Uninsulated | 0174.44.11 |
| 70 | 1,5° | Uninsulated | 0174.44.12 |
| 50 | 1,5° | Thermally insulated | 0174.44.17 |
| 70 | 1,5° | Thermally insulated | 0174.44.18 |

Single drain made of galvanised steel, pursuant to DIN EN 1253, with a compression sealing flange, with sieve holes for percolating water, with a polymer top section (frame dimensions □ 125 mm) and stainless steel gratings □ 117.5 mm for installation heights 45 – 180 mm.

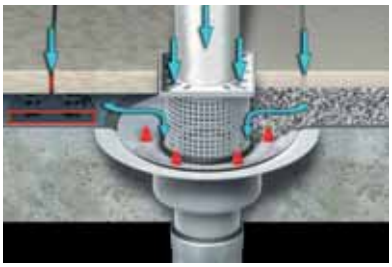
| DN | Outlet inclination | Model | Article No. |
|---|---|---|---|
| 50 | 90° | Uninsulated | 0174.43.84 |
| 70 | 90° | Uninsulated | 0174.43.85 |
| 50 | 90° | Thermally insulated | 0174.43.90 |
| 70 | 90° | Thermally insulated | 0174.43.91 |
| 50 | 1,5° | Uninsulated | 0174.44.13 |
| 70 | 1,5° | Uninsulated | 0174.44.14 |
| 50 | 1,5° | Thermally insulated | 0174.44.19 |
| 70 | 1,5° | Thermally insulated | 0174.44.20 |

## Application example: balcony slab with moisture barrier

**With a tiled surface on a mortar bed (drainage at one or two levels)**
**For downpipe ducts / overlying balconies**

The direct drain made of galvanised steel with a compression sealing flange is set in the balcony floor. The rotatable top section is set flush with the floor covering.
The direct drain can be supplied with either a stainless steel grating or a stainless steel grating with a downpipe duct. This can be used to connect up downpipes from balconies on overlying floors. Care must be taken to properly position the balcony drains above one another to ensure that they can be connected up with downpipes.
Any surface water which manages to penetrate the floor covering collects below the floor covering above the sealing membrane from where it drains into the drain body through the flange.

**Balcony slab with paving stones on paving supports or bedding gravel (drainage at two levels)**
**For downpipe ducts /overlying balconies**



The direct drain made of galvanised steel with a compression sealing flange is set in the balcony floor. The rotatable top section with sieve holes is set flush with the floor covering.
The direct drain can be supplied with either a stainless steel grating or a stainless steel grating with a downpipe duct. This can be used to connect up downpipes from balconies on overlying floors. Care must be taken to properly position the balcony drains above one another to ensure that they can be connected up with downpipes.
Any surface water which manages to penetrate the floor covering collects below the floor covering above the sealing membrane from where it drains into the drain body via the intermediate section with the sieve holes.

**Product solutions**

Direct drain made of galvanised steel, pursuant to DIN EN 1253, with compression sealing flange, with a polymer top section, no grating
Frame dimensions □ 125 mm (DN 70), frame dimensions □ 150 mm (DN 100)
Installation height 0 – 90 mm (DN 70), installation height 10 – 100 mm (DN 100)

| DN | Outlet inclination | Model | Article No. |
|---|---|---|---|
| 70 | 90° | Uninsulated | 0174.44.42 |
| 100 | 90° | Uninsulated | 0174.44.43 |
| 70 | 90° | Thermally insulated | 0174.44.46 |
| 100 | 90° | Thermally insulated | 0174.44.47 |
| 70 | 1,5° | Uninsulated | 0174.44.62 |
| 100 | 1,5° | Uninsulated | 0174.44.63 |
| 70 | 1,5° | Thermally insulated | 0174.44.66 |
| 100 | 1,5° | Thermally insulated | 0174.44.67 |

Direct drain made of galvanised steel, pursuant to DIN EN 1253, with a compression sealing flange, with sieve holes for seepage water, with a steel top section, no grating,
Frame dimensions □ 125 mm (DN 70), frame dimensions □ 150 mm (DN 100)
Installation height 0 – 90 mm (DN 70), installation height 10 – 100 mm (DN 100)

| DN | Outlet inclination | Model | Article No. |
|---|---|---|---|
| 70 | 90° | Uninsulated | 0174.44.44 |
| 100 | 90° | Uninsulated | 0174.44.45 |
| 70 | 90° | Thermally insulated | 0174.44.48 |
| 100 | 90° | Thermally insulated | 0174.44.49 |
| 70 | 1,5° | Uninsulated | 0174.44.64 |
| 100 | 1,5° | Uninsulated | 0174.44.65 |
| 70 | 1,5° | Thermally insulated | 0174.44.68 |
| 100 | 1,5° | Thermally insulated | 0174.44.69 |

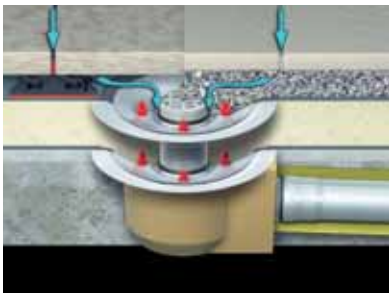
**Accessories**

| DN | Model | Article No. |
|---|---|---|
| 70 | stainless steel grating, □ 125 mm | 0174.52.58 |
| 100 | stainless steel grating, □ 150 mm | 0174.52.59 |
| 70 | grating for downpipe duct, □ 125 mm | 0174.52.60 |
| 100 | grating for downpipe duct, □ 150 mm | 0174.52.61 |

**Caution! Gratings for direct drains must always be ordered separately!**

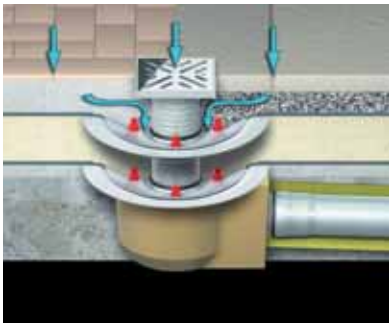
## Application example: balcony slabs or terrace floors with moisture barriers

### Paving slabs on paving supports or bedding gravel (drainage at one level below the paving slabs)



This single drain consists of a drain body and an intermediate section; both components have a compression sealing flange. The matching grating is located below the paving slabs.
The surface water collects beneath the paving slabs on top of the upper sealing level from where it drains away through the covered grating.

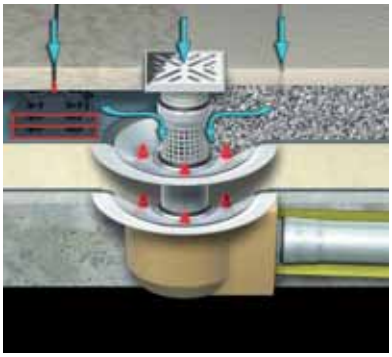
### Tiled surface on a mortar bed or with paving stones on bedding gravel or paving supports (drainage at one or two levels)



This two-piece single drain made of galvanised steel consists of a drain body and an upper part, both of which are combined with compression sealing flanges. The rotatable top section is set flush with the floor covering. Any surface water penetrating the floor covering collects above the upper sealing level beneath the floor covering from where it drains into the drain body via the flange plate.



### Paving stones on paving supports or bedding gravel (drainage at two levels)



This two-piece single drain made of galvanised steel consists of a drain body and an upper part each combined with a compression sealing flange. The rotatable top section including the intermediate section with the sieve holes is set flush with the floor covering. Any surface water penetrating the floor covering collects beneath the floor covering above the upper sealing level from where it drains into the drain body via the sieve holes in the intermediate section.

**Product solutions**

Single drain made of galvanised steel, pursuant to DIN EN 1253
With two compression sealing flanges, with a polymer top section and polymer grating Ø 85 mm, for installation height 15 – 40 mm.

| DN | Outlet inclination | Model | Article No. |
|---|---|---|---|
| 50 | 90° | Uninsulated | 0174.43.93 |
| 70 | 90° | Uninsulated | 0174.43.94 |
| 50 | 90° | Thermally insulated | 0174.43.99 |
| 70 | 90° | Thermally insulated | 0174.44.00 |
| 50 | 1,5° | Uninsulated | 0174.44.21 |
| 70 | 1,5° | Uninsulated | 0174.44.22 |
| 50 | 1,5° | Thermally insulated | 0174.44.29 |
| 70 | 1,5° | Thermally insulated | 0174.44.30 |

Single drain made of galvanised steel, pursuant to DIN EN 1253,
with two compression sealing flanges, with a polymer top section and a stainless steel grating □ 117.5 mm, for installation height 10 - 90 mm.

| DN | Outlet inclination | Model | Article No. |
|---|---|---|---|
| 50 | 90° | Uninsulated | 0174.43.95 |
| 70 | 90° | Uninsulated | 0174.43.96 |
| 50 | 90° | Thermally insulated | 0174.44.01 |
| 70 | 90° | Thermally insulated | 0174.44.02 |
| 50 | 1,5° | Uninsulated | 0174.44.23 |
| 70 | 1,5° | Uninsulated | 0174.44.24 |
| 50 | 1,5° | Thermally insulated | 0174.44.31 |
| 70 | 1,5° | Thermally insulated | 0174.44.32 |

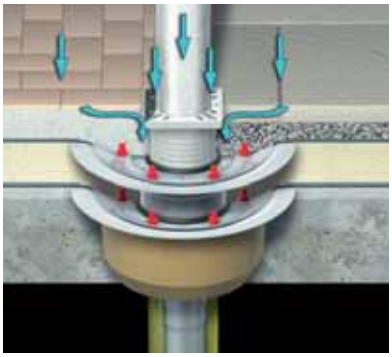


Single drain made of galvanised steel, pursuant to DIN EN 1253
with two compression sealing flanges, with sieve holes for seepage water, with a polymer top section and stainless steel grating □ 117.5 mm, for installation height 45 - 180 mm.

| DN | Outlet inclination | Model | Article No. |
|---|---|---|---|
| 50 | 90° | Uninsulated | 0174.43.97 |
| 70 | 90° | Uninsulated | 0174.43.98 |
| 50 | 90° | Thermally insulated | 0174.44.03 |
| 70 | 90° | Thermally insulated | 0174.44.04 |
| 50 | 1,5° | Uninsulated | 0174.44.25 |
| 70 | 1,5° | Uninsulated | 0174.44.26 |
| 50 | 1,5° | Thermally insulated | 0174.44.33 |
| 70 | 1,5° | Thermally insulated | 0174.44.34 |

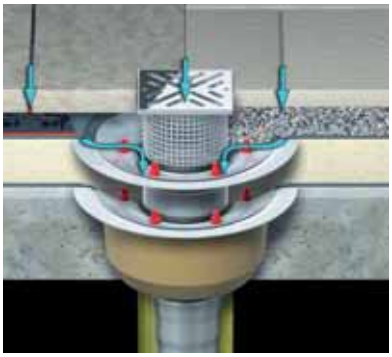
## Application example: balcony paving or terrace floor with moisture barrier

### Tiling on a mortar bed (drainage at one level)
### Or paving stones on bedding gravel or paving supports (drainage at one or two levels



The direct drain made of galvanised steel with a compression sealing flange is set in the balcony floor. The upper part with the compression sealing flange is aligned with the floor structure and then set flush with the floor covering using the rotatable top section.
The direct drain can be supplied with either a stainless steel grating or a stainless steel grating with  a downpipe duct. This can be used to connect up downpipes from balconies on overlying floors. Care must be taken to properly position the balcony drains above one another to ensure that they can be connected up with downpipes.
Any surface water which manages to penetrate the floor covering collects above the sealing membrane below the floor covering from where it drains into the drain body through the flange.

### Paving stones on bedding gravel or paving supports (drainage at two levels)



The direct drain made of galvanised steel with a compression sealing flange is set in the balcony floor. The upper part with the compression sealing flange is aligned with the floor structure and then set flush with the floor covering using the rotatable top section with sieve holes.
The direct drain can be supplied with either a stainless steel grating or a stainless steel grating with  a downpipe duct. This can be used to connect up downpipes from balconies on overlying floors. Care must be taken to properly position the balcony drains above one another to ensure that they can be connected up with downpipes.
Any surface water which manages to penetrate the floor covering collects above the sealing membrane below the floor covering from where it drains into the drain body via the intermediate section with the sieve holes.

**Product solutions**

Direct drain made of galvanised steel, pursuant to DIN EN 1253, with two compression sealing flanges, with a polymer top section, no grating, frame dimensions □ 125 mm (DN 70), frame dimensions □ 150 mm (DN 100)
Installation height 0 – 90 mm (DN 70), installation height 10 – 100 mm (DN 100)

| DN | Outlet inclination | Model | Article No. |
|---|---|---|---|
| 70 | 90° | Uninsulated | 0174.44.50 |
| 100 | 90° | Uninsulated | 0174.44.51 |
| 70 | 90° | Thermally insulated | 0174.44.54 |
| 100 | 90° | Thermally insulated | 0174.44.55 |
| 70 | 1,5° | Uninsulated | 0174.44.70 |
| 100 | 1,5° | Uninsulated | 0174.44.71 |
| 70 | 1,5° | Thermally insulated | 0174.44.74 |
| 100 | 1,5° | Thermally insulated | 0174.44.75 |

Direct drain made of galvanised steel, pursuant to DIN EN 1253, with two compression sealing flanges, with sieve holes for seepage water, with a steel top section, no grating, frame dimensions □ 125 mm (DN 70), frame dimensions □ 150 mm (DN 100)
Installation height 0 – 90 mm (DN 70), installation height 10 – 100 mm (DN 100)

| DN | Outlet inclination | Model | Article No. |
|---|---|---|---|
| 70 | 90° | Uninsulated | 0174.44.52 |
| 100 | 90° | Uninsulated | 0174.44.53 |
| 70 | 90° | Thermally insulated | 0174.44.56 |
| 100 | 90° | Thermally insulated | 0174.44.57 |
| 70 | 1,5° | Uninsulated | 0174.44.72 |
| 100 | 1,5° | Uninsulated | 0174.44.73 |
| 70 | 1,5° | Thermally insulated | 0174.44.75 |
| 100 | 1,5° | Thermally insulated | 0174.44.77 |

**Accessories**

| DN | Model | Article No. |
|---|---|---|
| 70 | stainless steel grating, □ 125 mm | 0174.52.58 |
| 100 | stainless steel grating, □ 150 mm | 0174.52.59 |
| 70 | grating for downpipe duct, □ 125 mm | 0174.52.60 |
| 100 | grating for downpipe duct, □ 150 mm | 0174.52.61 |

**Caution! Gratings for direct drains must always be ordered separately!**

## ACO Building Services product range

**Drainage**

- Flat roof, balcony and terrace drains
- Floor drains and channels
- Bathroom systems
- Pipe systems
- Backflow stops
- Manhole covers

**Separating**

- Grease separators
- Starch separators
- Process engineering

**Pumps**

- Wastewater lifting plants
- Submersible pumps
- Prefabricated pumping stations


**ACO Passavant GmbH**

**Drainage stainless steel / polymer Pipe systems**
**Separating technology**
**Pumps / Lifting plant**

Im Gewerbepark 11c
36457 Stadtlengsfeld
Tel. 036965 819-0
Fax 036965 819-361

**Drainage cast iron**

Postfach 1158
65322 Aarbergen
Tel. 06120 28-7000
Fax 06120 28-7610

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