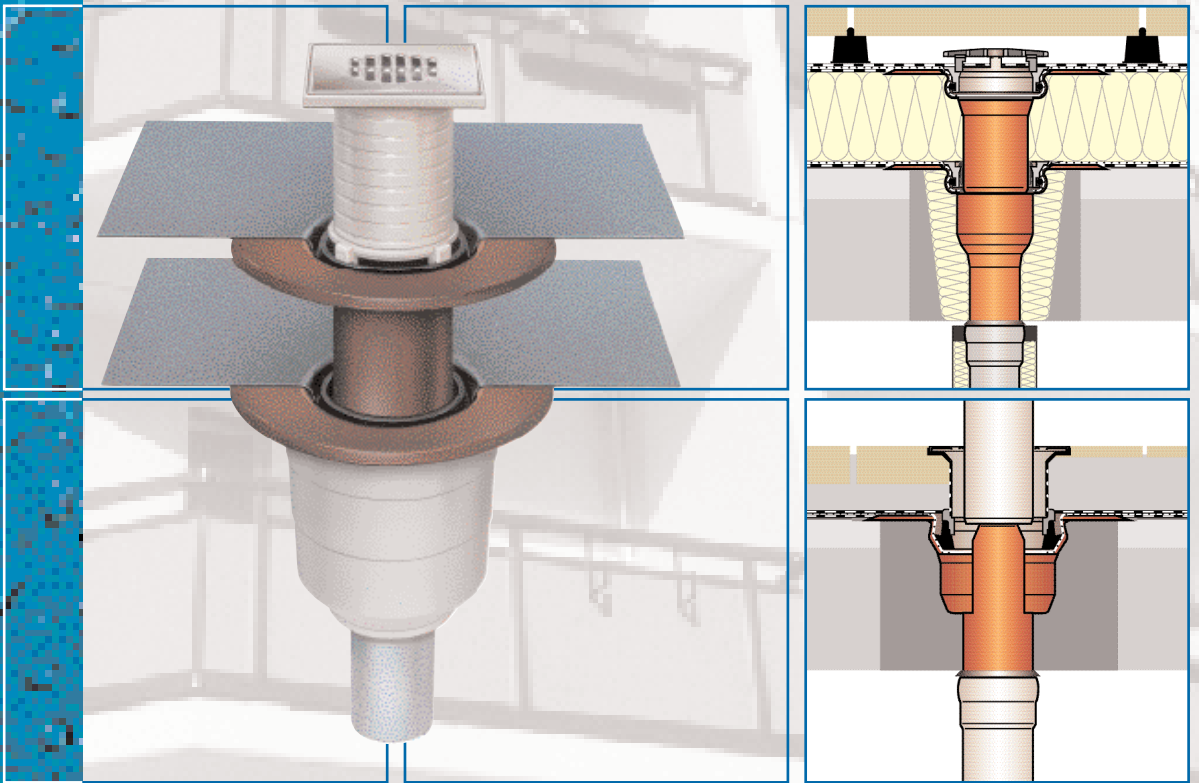


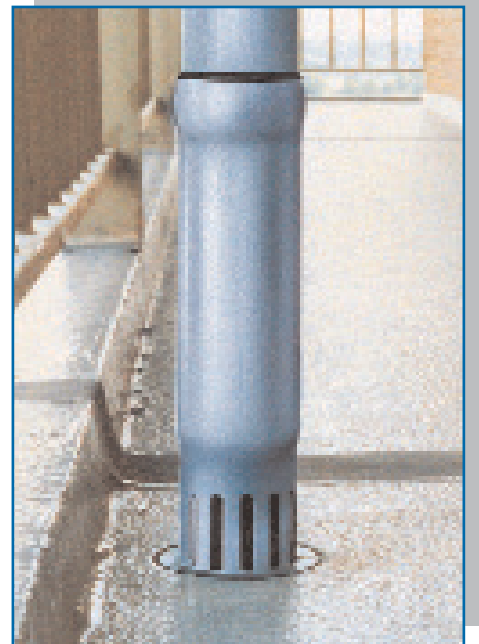
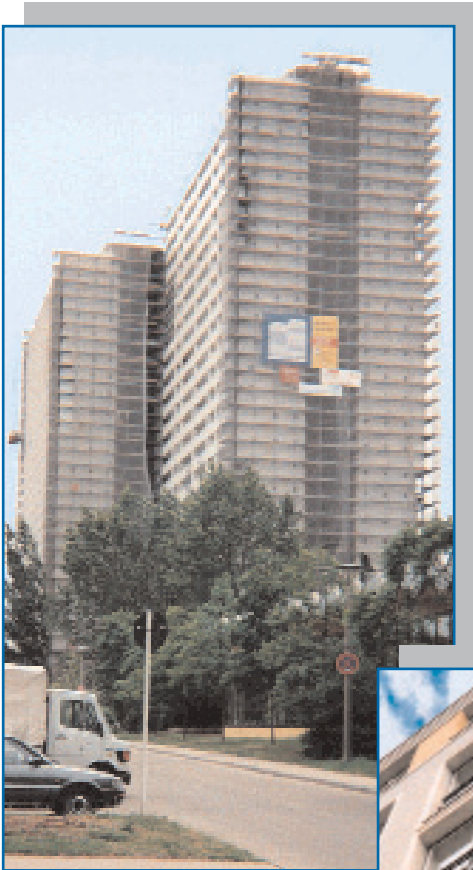
**LORO-Drainage  
Systems for  
Balconies and Terraces**



## LORO Drainage Systems for Balconies and Terraces

Our versatile range of Drains provides a solution to almost all types of drainage problems experienced on balcony and terraced areas. Standard balcony drains are manufactured in hot-dip galvanised steel with additional coating and are available in sizes DN 50 - DN 100. LORO balcony drains can also be supplied in copper to suit special requirements. Balcony drains come with connecting collar or clamp-down flange, with or without thermal insulation.





## Technical Data

### Materials

#### Balcony drains made of steel :

Materials:	Quality precision steel pipe in accordance with DIN 2394 and DIN EN 10139
Tensile strength :	$R_m$ 310 - 410 N/mm <sup>2</sup>
Elongation:	$A_5$ mind. 28 %
Thermal conductivity:	bei +20 °C = 55 W/m °C
Length expansion coefficient between -20 °C bis +80 °C:	0,012 mm/m °C

#### Balcony drains made of copper

Material:	Copper pipe SF - Cu according to DIN 1754 / 1786
Tensile strength:	$R_m$ 290 N/mm <sup>2</sup>
Elongation:	$A_5$ mind. 4 %
Thermal conductivity:	bei +20 °C = 305 W/m °C
Length expansion coefficient between -20 °C bis +80 °C:	0,017 mm/m °C

### Surface finish / Corrosion protection

#### Balcony drains made of steel

Internal and external hot-dip galvanising in accordance with DIN EN 11123/DIN EN ISO 1461 with additional internal coating Colour: Aubrun.  
Cutting faces of pipes which have been cut to length do not corrode. The zinc boundary layers interact to produce the well-known cathodic protection effect.

#### Balcony drains made of copper :

No additional corrosion protection necessary

### Connecting Collars

Standard:	
Bituminous / EPDM connecting collar	
Alternatively :	PVC connecting collar
Other materials upon request	

### Thermal insulation

Material : Poly-urethane foam with 90% closed cells  
Coefficient of thermal conductivity  $\lambda = 0,030$  kcal/m x h x Grd.

**Fire Resistance :**

LORO Balcony Drains must be allocated to construction material class A1 – incombustible – in accordance with DIN 4102 and are classified as incombustible in accordance with DIN 1986, part 4.

**Tightness Values**

The tightness values of the LORO-X slip-in socket joint for all nominal bores exceed the requirements of DIN 1986 Part 1 (internal and external gauge pressure 0 - 0.5bar).

For higher pressures, the socket joint can be anchored against axial force using the LORO-X anchor clip, No. 806X (DN 40 - DN 125). When installing with the LORO-X anchor clip or anchor hoop and adhesive sealing element, the following values are attained:

DN 40, DN 50	= 15 bar gauge pressure
DN 70, DN 80, DN 100	= 5 bar gauge pressure
DN 125	= 4 bar gauge pressure
DN 150	= 1.5 bar gauge pressure
DN 200	= 1.5 bar gauge pressure

For additional axial anchorage for pipe and fittings DN 150 and DN 200, LORO anchor hoop, No. 808X are available.

Cleaning pipes and closing plugs can be specially manufactured for pressures above 0.5 bar.

**Supervision**

Manufacturing supervision for pipes and fittings is carried out by the Material Testing Office in Würzburg, part of the Bavarian Trade Institute.

Supervision for sealing elements is carried out by the Federal Material Testing Office of North Rhine-Westphalia in Dortmund (external supervision).



# Single Drains with connecting collar, made of steel or copper DN 50 and DN 70 Series E and F

**Range of application : Balconies/Terraces with sealing sheet, concrete slabs or cladding**

## Description:

### Serie E

LORO balcony drains with connecting collar (according to DIN EN 1253), made of hot-dip galvanised steel, with additional coating.

Alternatively : made of copper

With vertical / horizontal socket

With / without thermal insulation

### Single-part unit, consisting of :

Base unit, connecting collar, clamping ring, drain ring, plastic strainer, round, not adjustable in height DN 50 and DN 70

### Two-part unit, consisting of :

Base unit, connecting collar, clamping ring, sealing element, extension cartridge (build-up height 40...120mm), connecting collar, clamping ring, drain ring, plastic strainer, round, not adjustable in height DN 50 and DN 70

### Serie F

LORO balcony drains with connecting collar (according to DIN EN 1253), made of hot-dip galvanised steel, with additional coating.

Alternatively : made of copper

With vertical / horizontal socket

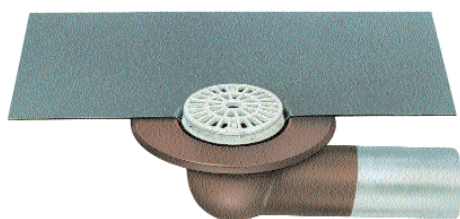
With / without thermal insulation

### Single-part unit, consisting of :

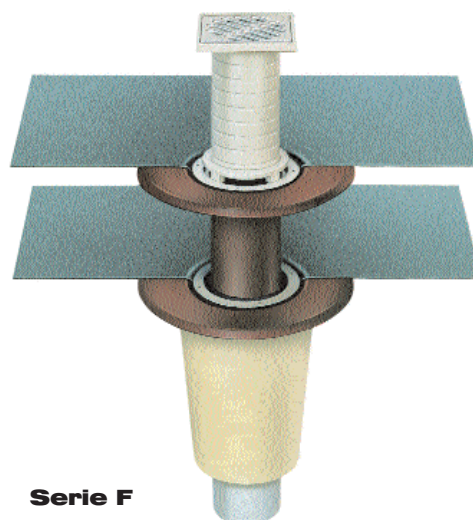
Base unit, connecting collar, clamping ring, drain ring, square-shaped retainer (100 x 100mm for build-up height 35 – 140mm), stainless steel strainer (94 x 94mm), DN 50 and DN 70

### Two-part unit, consisting of :

Base unit, connecting collar, clamping ring, sealing element, extension cartridge (build-up height 40...120mm), connecting collar, clamping ring, drain ring, square-shaped retainer (100 x 100mm for build-up height 35 – 140mm), stainless steel strainer (94 x 94mm), DN 50 and DN 70

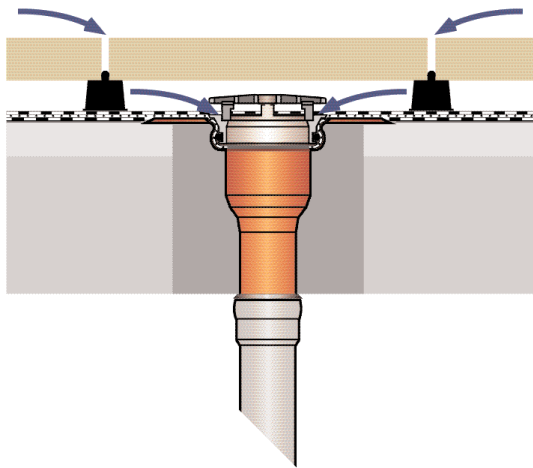


**Serie E**

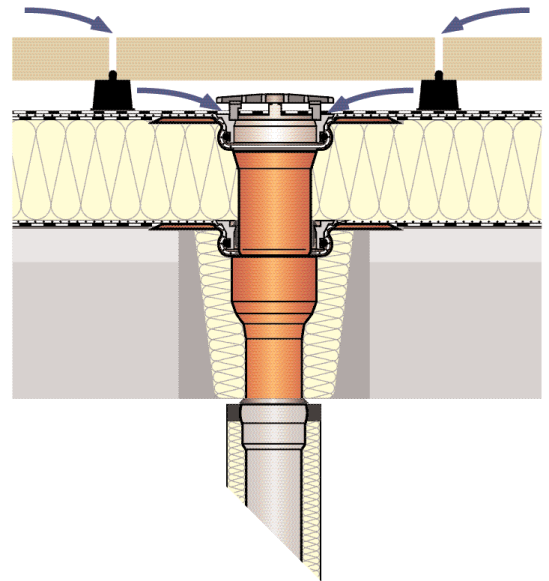


**Serie F**

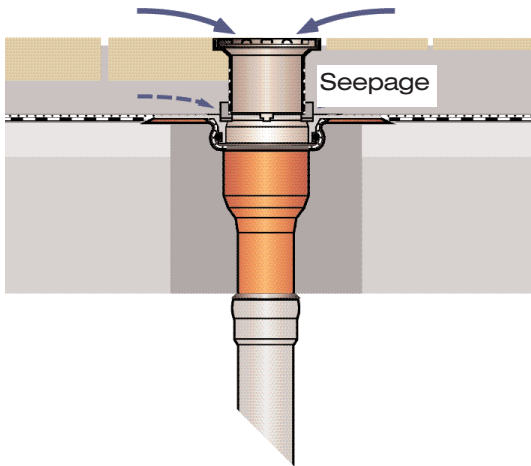
### Application examples for Series E



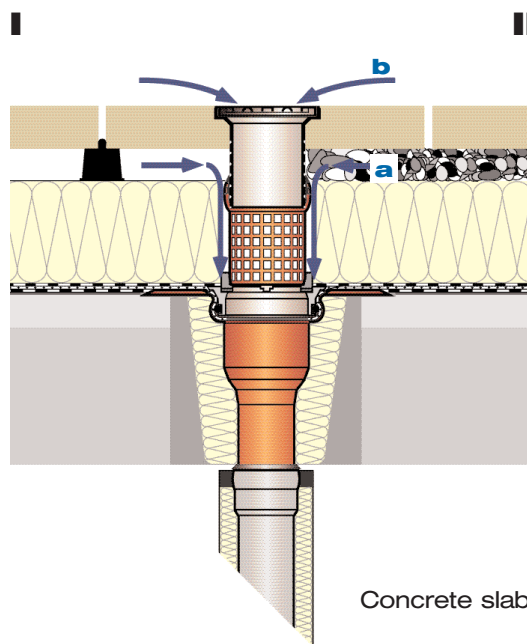
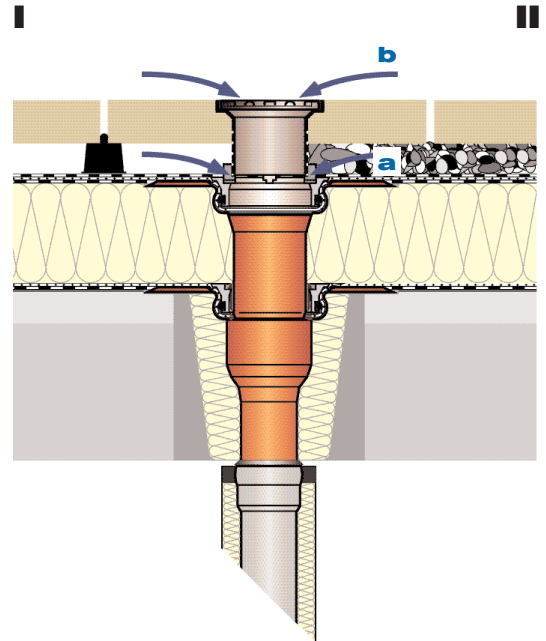
Concrete slab with supported tiling



#### Application examples – Series F



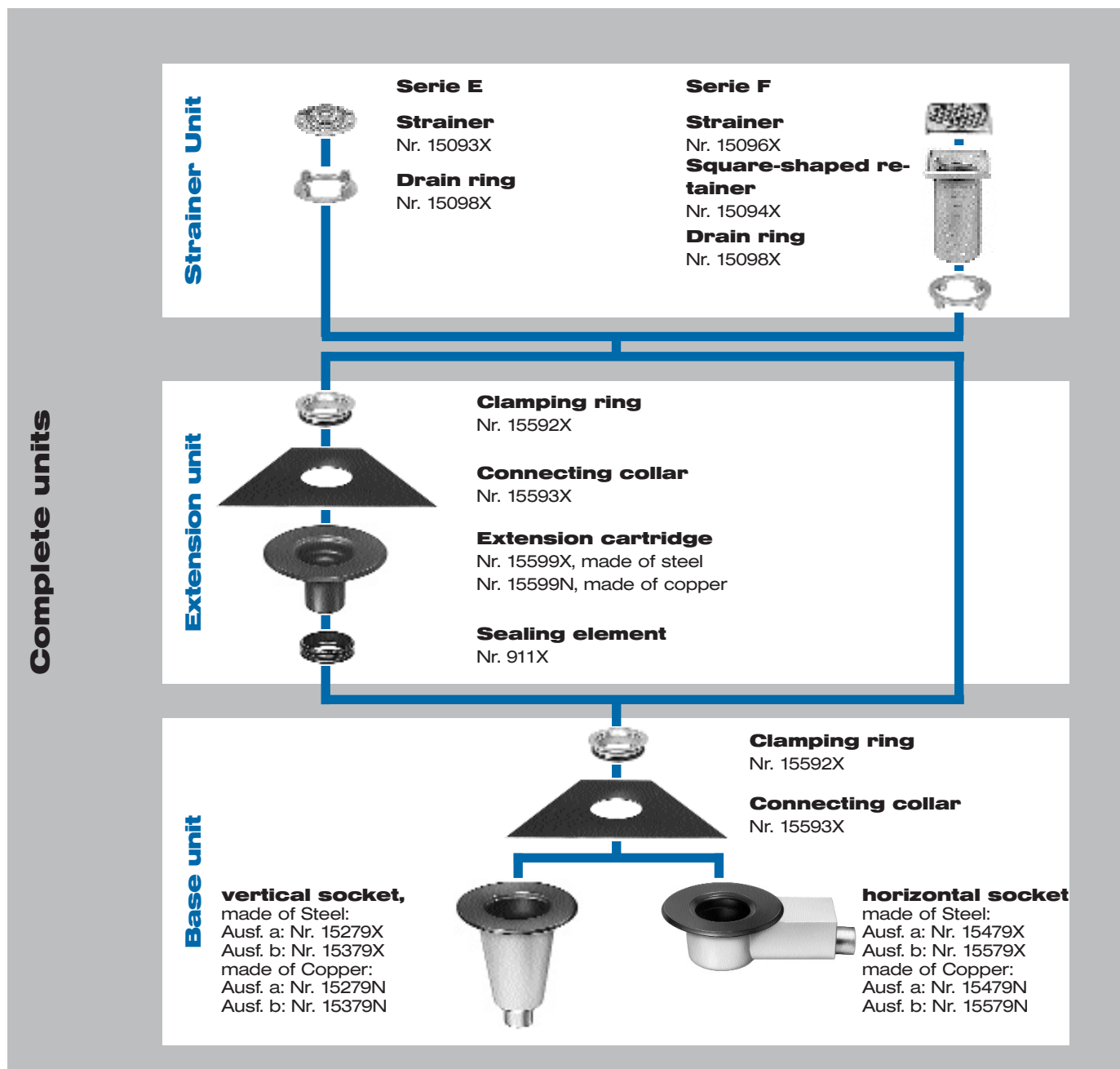
Concrete slab with tiling



Concrete slab with supported tiling



### System components



Ausf. a = without thermal insulation    Ausf. b = with thermal insulation

**LORO Balcony Drainage systems come as complete solutions, but the parts can also be ordered individually to model the right solution for your constructive problem.**

### Complete single-part units

#### Balcony drains, vertical socket, Series E

**Type a** (without thermal insulation)

DN 50: [Art-No. 15271.050X](#)

DN 70: [Art-No. 15271.070X](#)

**Type b** (with thermal insulation)

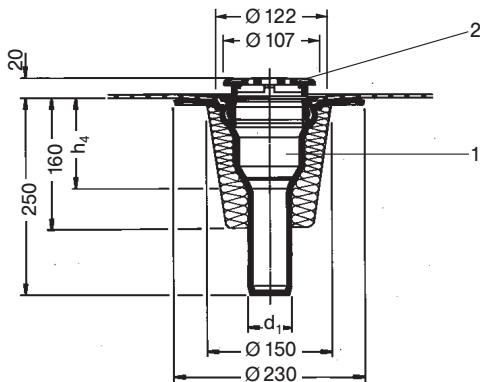
DN 50: [Art-Nr. 15371.050X](#)

DN 70: [Art-Nr. 15371.070X](#)

consisting of:

**1 base unit**

**2 strainer unit**



#### Balcony drains, horizontal socket, Series E

**Type a** (without thermal insulation)

DN 50: [Art-No. 15471.050X](#)

DN 70: [Art-No. 15471.070X](#)

**Type b** (with thermal insulation)

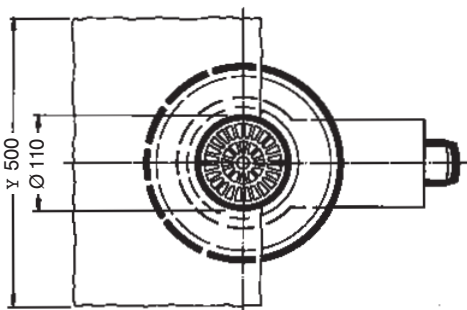
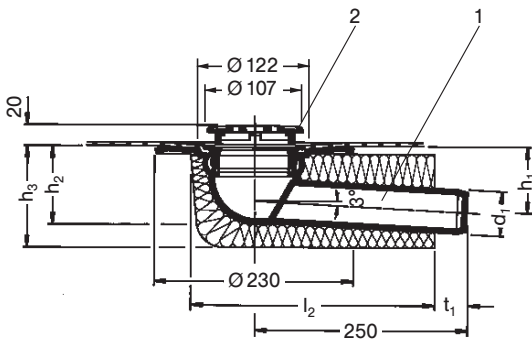
DN 50: [Art-No. 15571.050X](#)

DN 70: [Art-No. 15571.070X](#)

consisting of:

**1 base unit**

**2 strainer unit**



DN	d <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	l <sub>2</sub>	t <sub>1</sub>
50	53	72	90	110	107	285	38
70	73	80	106	132	150	270	55

### Complete two-part units

#### Balcony drains, vertical socket, Series E

**Type a** (without thermal insulation)

DN 50: [Art.-No. 15281.050X](#)

DN 70: [Art.-No. 15281.070X](#)

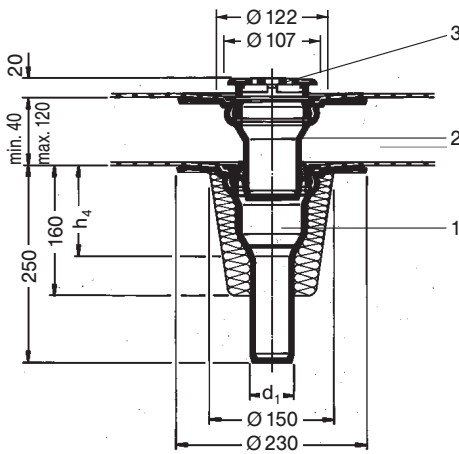
**Type b** (with thermal insulation)

DN 50: [Art.-No. 15381.050X](#)

DN 70: [Art.-No. 15381.070X](#)

consisting of:

- 1 base unit**
- 2 extension unit**
- 3 strainer unit**



#### Balcony drains, horizontal socket, Series E

**Type a** (without thermal insulation)

DN 50: [Art.-No. 15481.050X](#)

DN 70: [Art.-No. 15481.070X](#)

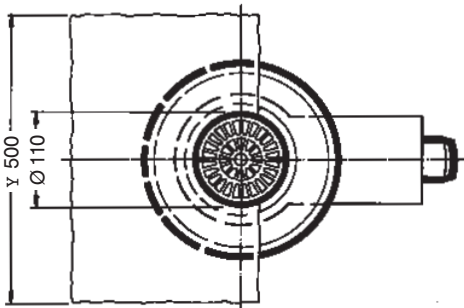
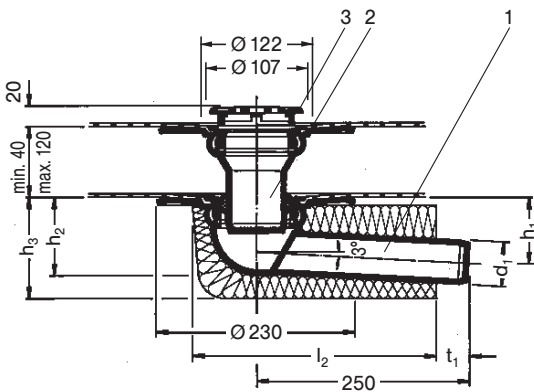
**Type b** (with thermal insulation)

DN 50: [Art.-Nr. 15581.050X](#)

DN 70: [Art.-Nr. 15581.070X](#)

consisting of:

- 1 base unit**
- 2 extension unit**
- 3 strainer unit**



DN	d <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	l <sub>2</sub>	t <sub>1</sub>
50	53	72	90	110	107	285	38
70	73	80	106	132	150	270	55

### Complete single-part units

#### Balcony drains, vertical socket, Series F

**Type a** (without thermal insulation)

DN 50: [Art.-No. 15272.050X](#)

DN 70: [Art.-No. 15272.070X](#)

**Type b** (with thermal insulation)

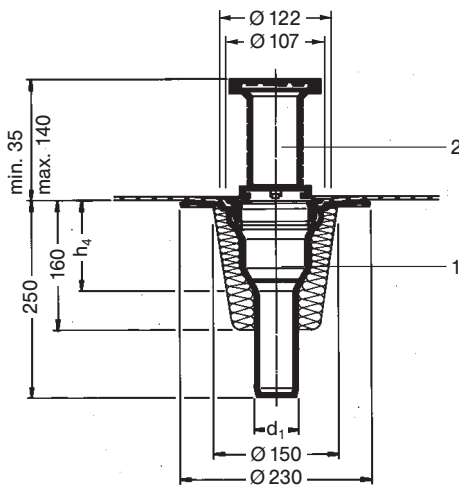
DN 50: [Art.-No. 15372.050X](#)

DN 70: [Art.-No. 15372.070X](#)

consisting of:

**1 base unit**

**2 strainer unit**



#### Balcony drains, horizontal socket, Series F

**Type a** (without thermal insulation)

DN 50: [Art.-Nr. 15472.050X](#)

DN 70: [Art.-Nr. 15472.070X](#)

**Type b** (with thermal insulation)

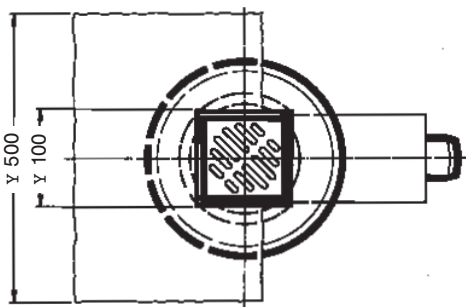
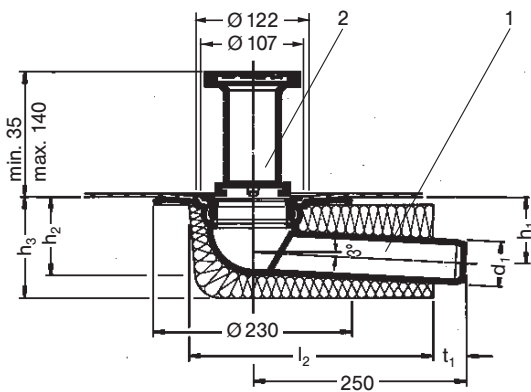
DN 50: [Art.-Nr. 15572.050X](#)

DN 70: [Art.-Nr. 15572.070X](#)

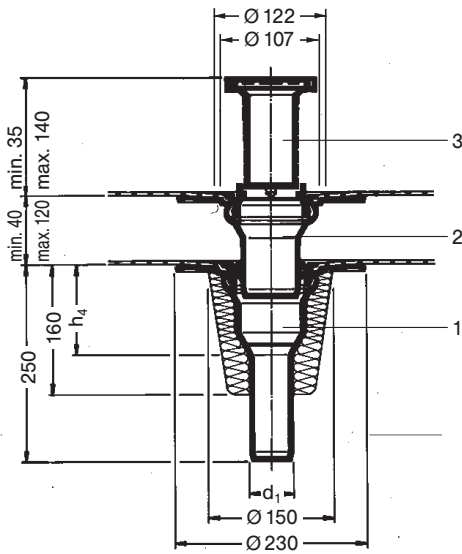
consisting of:

**1 base unit**

**2 strainer unit**



DN	d <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	l <sub>2</sub>	t <sub>1</sub>
50	53	72	90	110	107	285	38
70	73	80	106	132	150	270	55



### Complete two-part units

#### Balcony drains, vertical socket, Series F

**Type a** (without thermal insulation)

DN 50: [Art.-No. 15282.050X](#)

DN 70: [Art.-No. 15282.070X](#)

**Type b** (with thermal insulation)

DN 50: [Art.-No. 15382.050X](#)

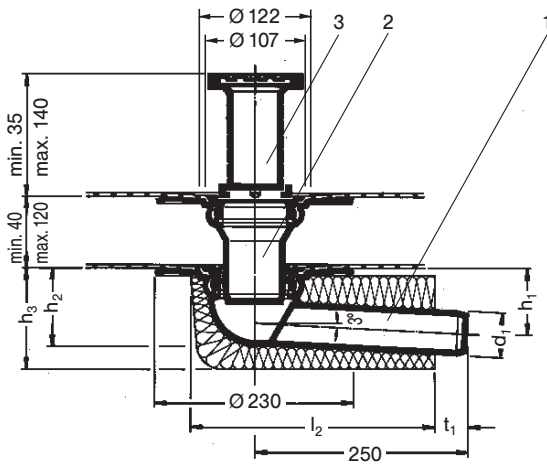
DN 70: [Art.-No. 15382.070X](#)

consisting of:

**1 base unit**

**2 extension unit**

**3 strainer unit**



#### Balcony drains, horizontal socket, Series F

**Type a** (without thermal insulation)

DN 50: [Art.-No. 15482.050X](#)

DN 70: [Art.-No. 15482.070X](#)

**Type b** (with thermal insulation)

DN 50: [Art.-No. 15582.050X](#)

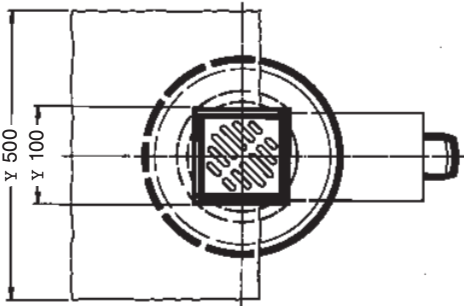
DN 70: [Art.-No. 15582.070X](#)

consisting of:

**1 base unit**

**2 extension unit**

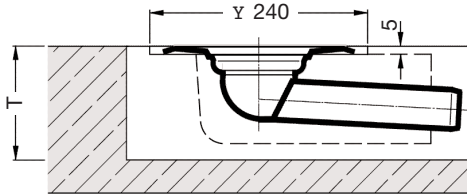
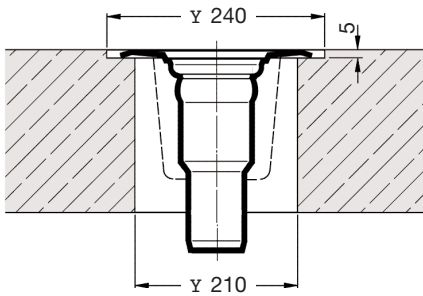
**3 strainer unit**



DN	d <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	l <sub>2</sub>	t <sub>1</sub>
50	53	72	90	110	107	285	38
70	73	80	106	132	150	270	55

#### Recess Dimensions

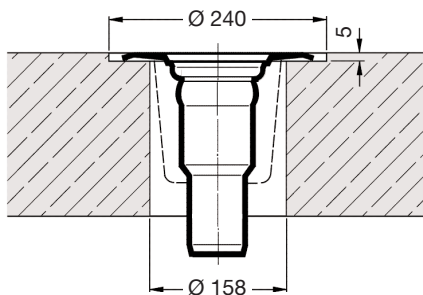
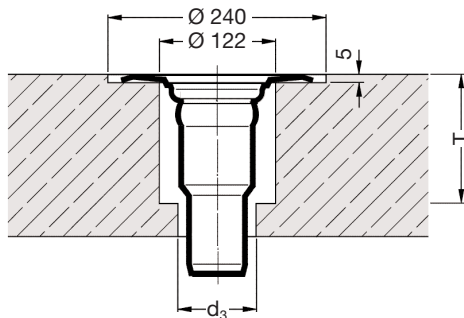
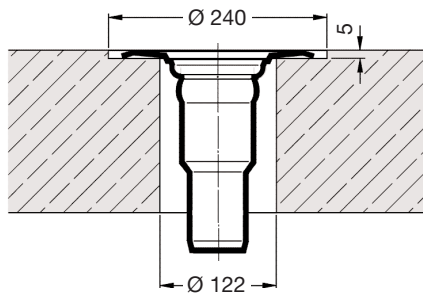
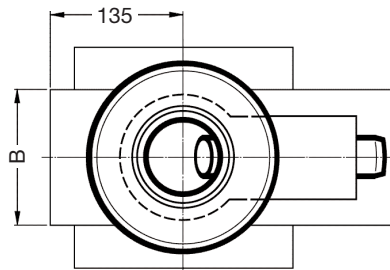
**ceiling penetrations**  
**Balcony drains, vertical socket**



**ceiling cut-out**  
**Balcony drains, horizontal socket**

DN	Aussparungstiefe T		Aussparungsbreite B	
	a	b	a	b
50	110	120	130	160
70	130	140	130	160

a = without thermal insulation  
 b = with thermal insulation



# Direct-Drains with connecting collar, made of steel or copper DN 70 and DN 100, Series H

**Range of application : Balconies/Terraces with sealing sheet, concrete slabs or cladding**

## Description:

### Series H, single-part unit

LORO balcony direct-drains with connecting collar (according to DIN EN 1253), made of hot-dip galvanised steel, with additional coating.

Alternatively : made of copper

With vertical / horizontal socket

With / without thermal insulation

Single-part unit, consisting of :

Base unit, connecting collar, clamping ring, drain ring, square-shaped retainer (150 x 150mm for build-up height 35 – 155mm), stainless steel strainer (143 x 143mm), DN 70 and DN 100

### Series H, two-part unit

LORO balcony drains with connecting collar (according to DIN EN 1253), made of hot-dip galvanised steel, with additional coating.

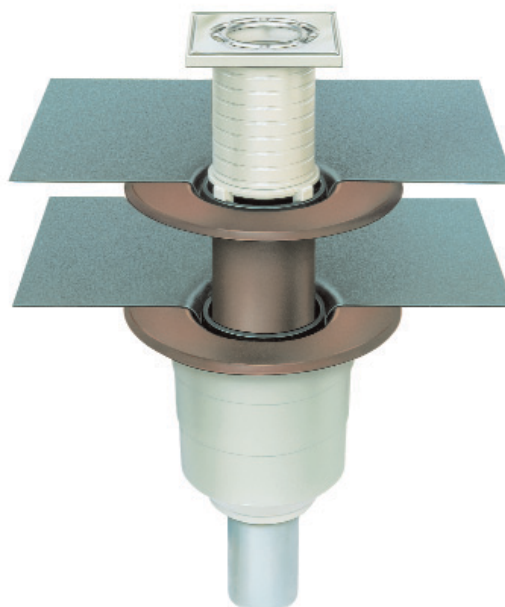
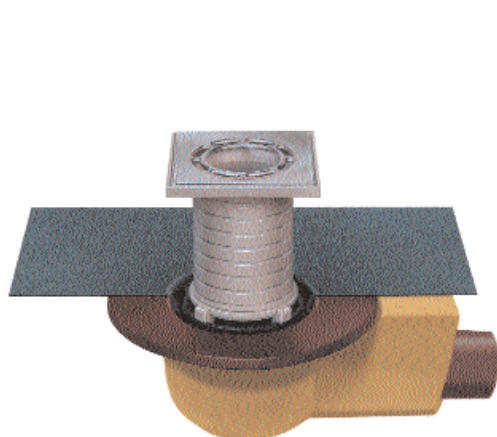
Alternatively : made of copper

With vertical / horizontal socket

With / without thermal insulation

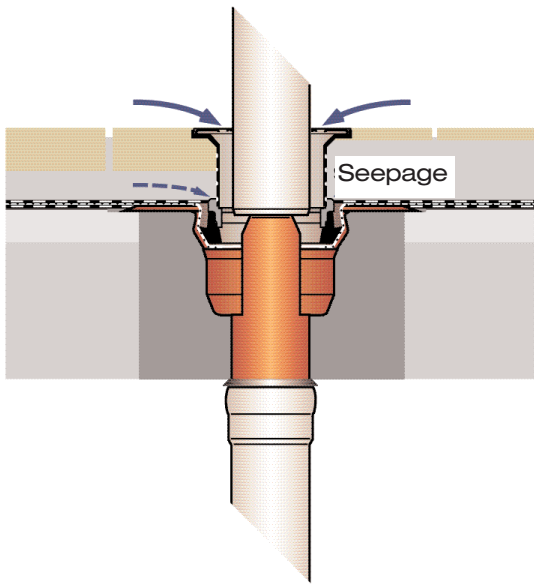
consisting of :

Base unit, connecting collar, clamping ring, sealing element, extension cartridge (build-up height 60...120mm), two part unit, connecting collar, clamping ring, drain ring, square-shaped retainer (150 x 150mm for build-up height 35 – 155mm), stainless steel strainer (143 x 143mm), DN 70 and DN 100

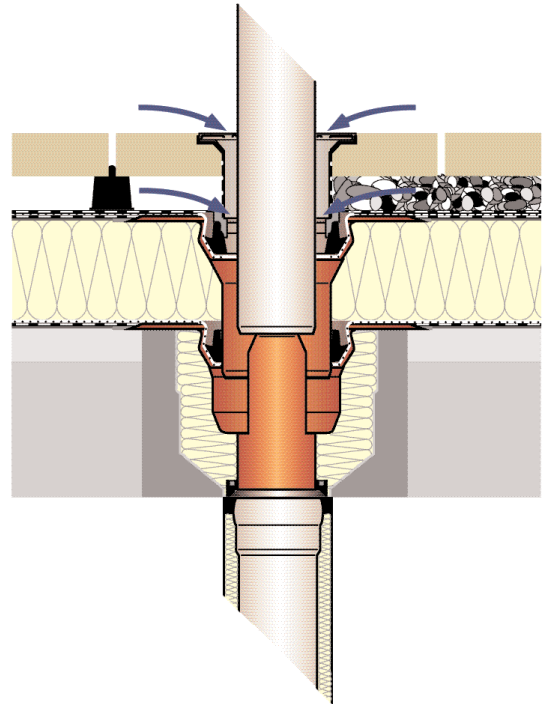


**Series H**

### Application examples - Series H

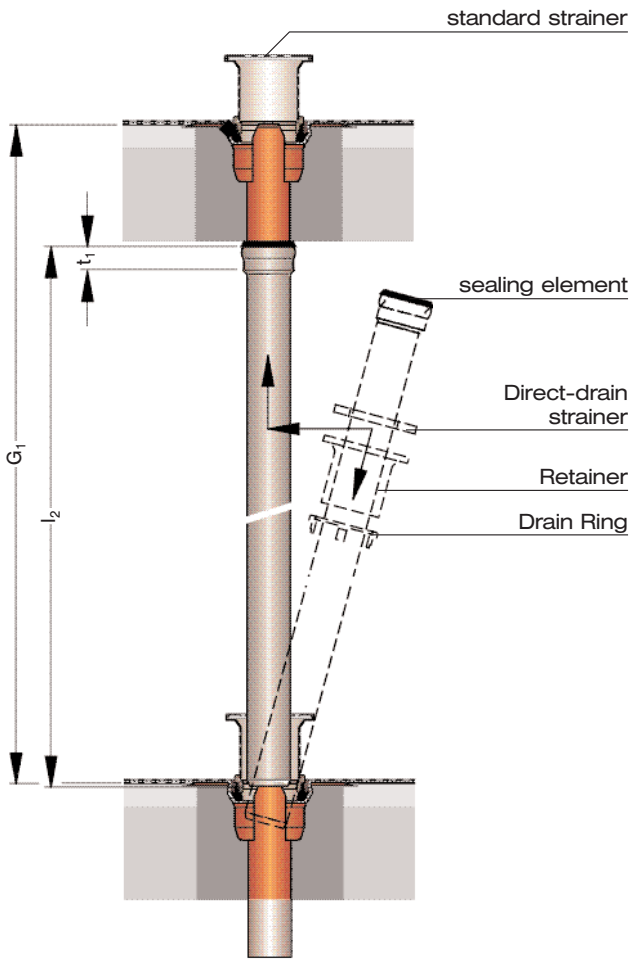


Concrete slab with tiling



Concrete slab with supported tiling

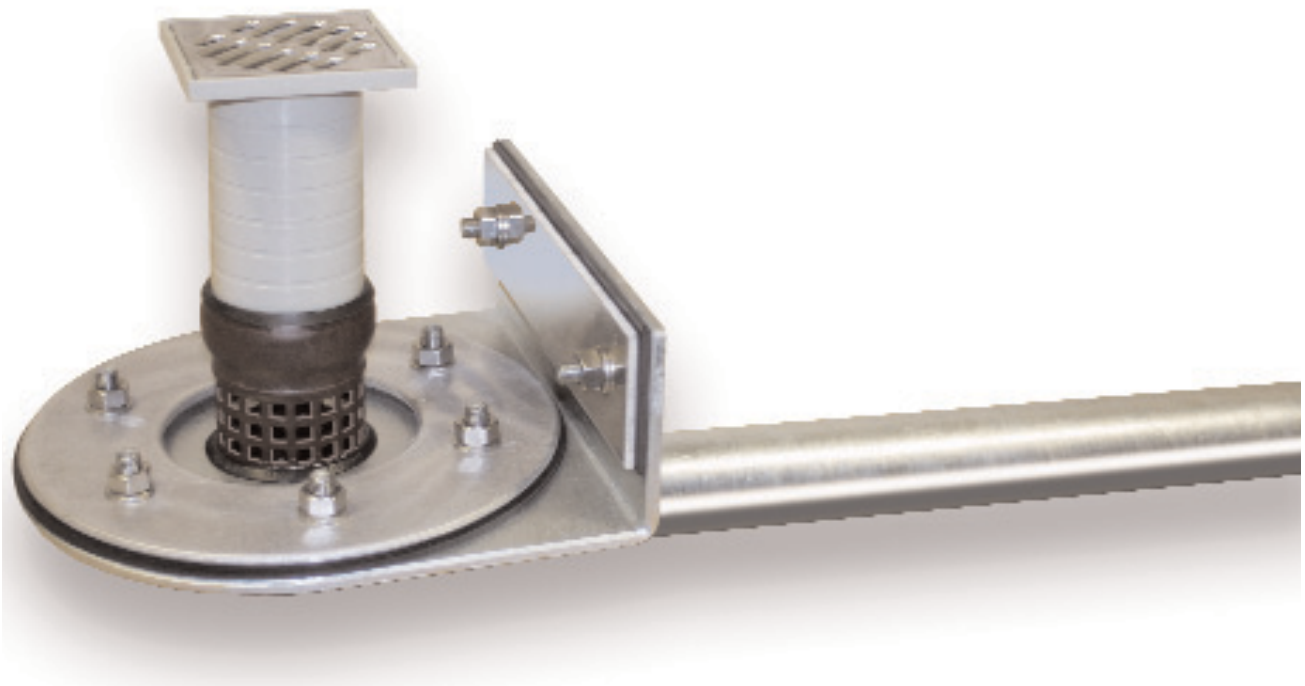




To calculate downpipe segment length: length of drain: 250mm  
 construction height of storey: 2800mm, standard pipe: push-in  
 distance of socket: DN 70 = 55mm, DN 100 = 70 mm.  
 => downpipe segment length = 2800 - 250 + 55 = 2605mm  
 for DN 70 2800 - 250 + 70 = 2620 mm for DN 100

## **LORO-Attica-Balcony drains DN 50, for roofs with upward roof edge lip**

- **With clamping flange, for bituminous and plastic roofing sheets, hot-dip galvanised steel**
- **Drainage capacity : 1,5 l/s (according to DIN EN 1253 with 35mm of water head)**

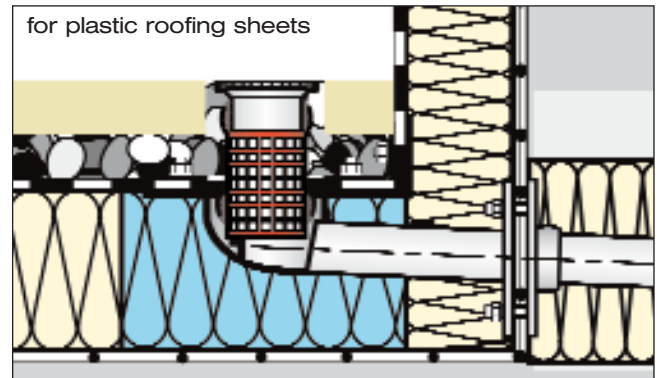
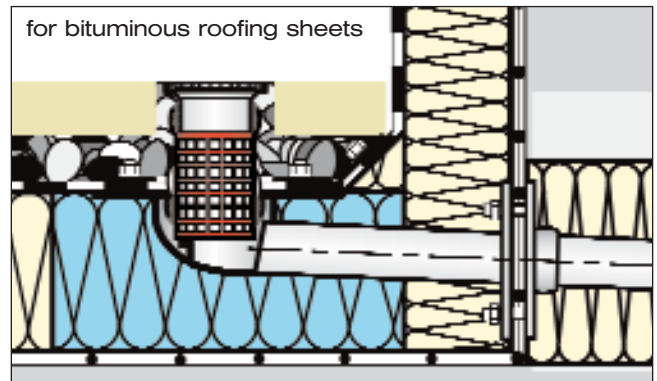
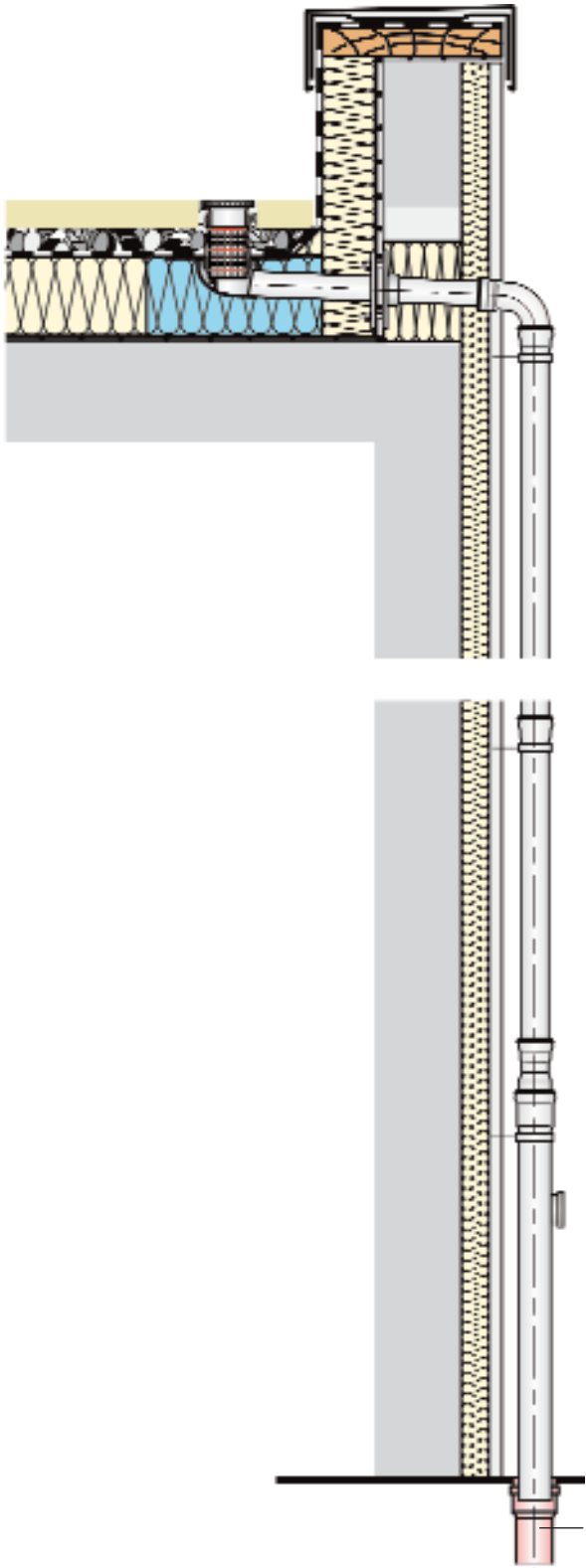


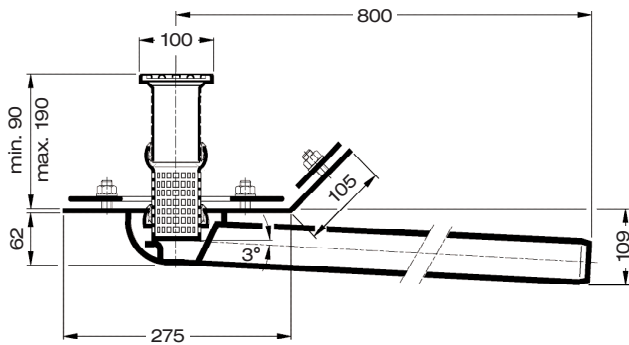
### Application examples

**LORO-Attica Balcony drains DN 50, with clamping flange according to DIN EN 1253 and DIN 18195**

**Capacity DN 50: 1,5 l/s\***

**for bituminous and plastic roofing sheets**



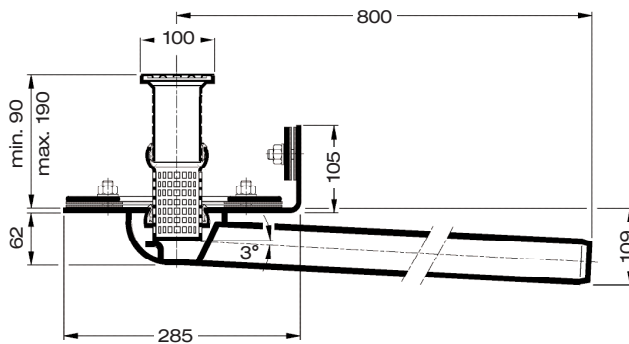
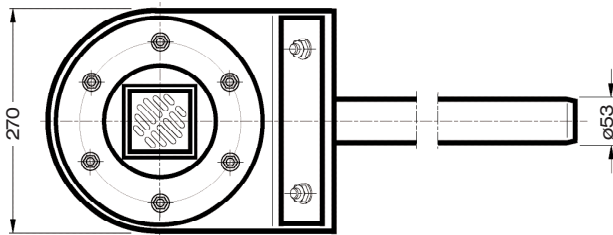


### LORO-Attica drains, DN 50 , with clamping flange, for bituminous roofing sheets

made of steel, hot-dip galvanized and with additional coating  
consisting of:  
strainer, square-shaped retainer, strainer pipe, loose flange, gully

**Capacity:** DN 50 = 1,5 l/s\*

DN 50: [Art.-No. 01370.050X](#)



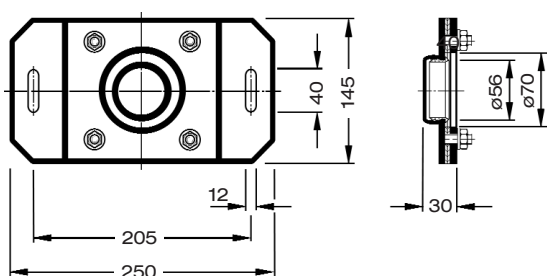
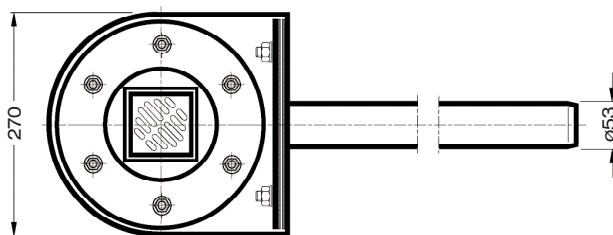
### LORO-Attica drains, DN 50, with clamping flange, for plastic roofing sheets

made of steel, hot-dip galvanized and with additional coating

consisting of:  
Strainer, Square-shaped retainer, strainer pipe, loose flange, gully

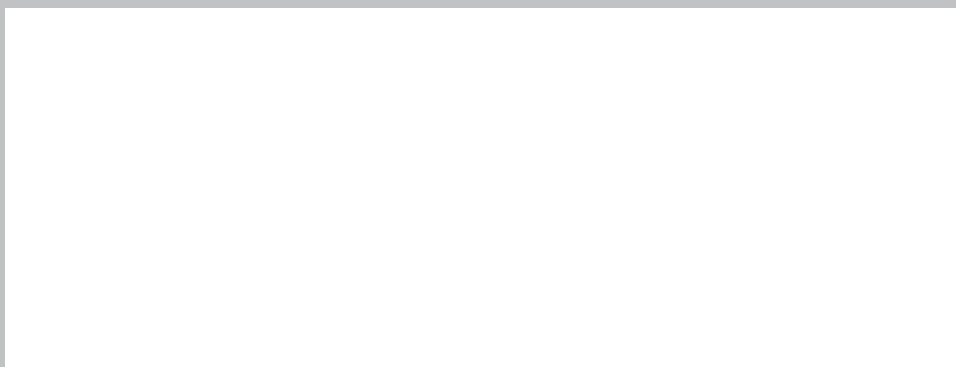
**Capacity:** DN 50 = 1,5 l/s\*

DN 50: [Art.-No. 01372.050X](#)



### LORO-Adjustable flange, DN 50 with clamping flange, to integrate the vapour barrier

made of stainless steel  
[Art.-No. 13232.050X](#)



**LOROWERK K.H. Vahlbrauk GmbH & Co. KG**

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Internet: [www.loro.de](http://www.loro.de) • e-mail: [infocenter@lorowerk.de](mailto:infocenter@lorowerk.de)