Installation instructions

LORO direct balcony drains
with connecting sleeve, H series
EN 1253-compliant,
Steel, hot-dip galvanised, additionally coated, DN 70 and DN 100

System overview

	one-piece				two-piece			
	for balcony storeys		for upper balconies		for balcony storeys		for upper balconies	
								
	DN 70	DN 100	DN 70	DN 100	DN 70	DN 100	DN 70	DN 100
Vers. a	16277.070X	16277.100X	16278.070X	16278.100X	16287.070X	16287.100X	16288.070X	16288.100X
Vers. b	16390.070X	16390.100X	16391.070X	16391.100X	16397.070X	16397.100X	16398.070X	16398.100X

Vers. a = no thermal insulation, Vers. b = with thermal insulation

	Partial unit Side drain
	
	DN 70
Vers. a	16220.070X
Vers. b	16320.070X

Vers. a = no thermal insulation, Vers. b = with thermal insulation

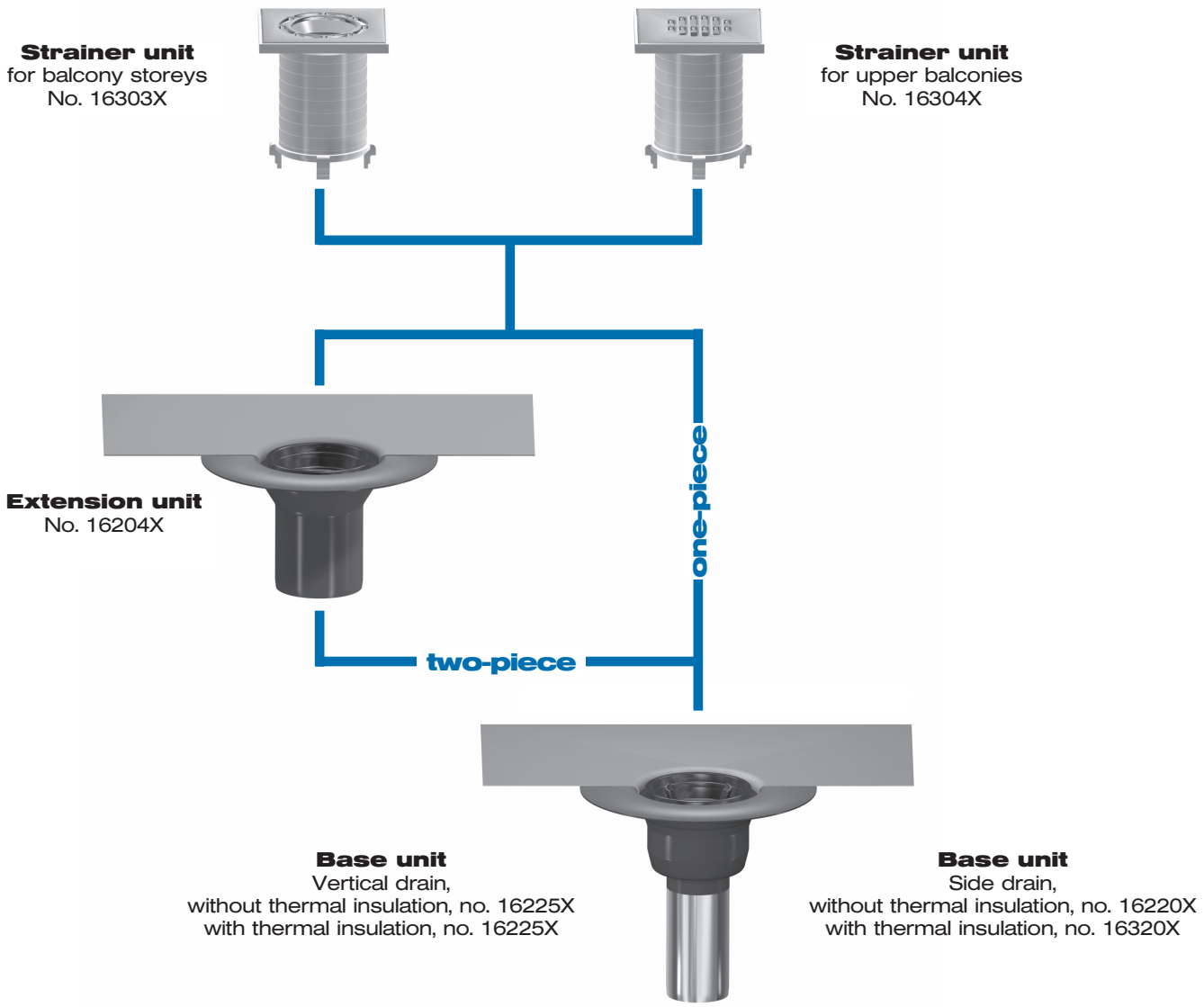
Trace heating
After checking the roof drains and pipes in areas endangered by frost, we recommend that customers install trace heating if necessary.

Connecting sleeves for flat roof drainage systems available in:

No. 16000X	Resitrix	Bitumen/EPDM compound - **Standard**	Nr. 16008X	Novotan	EPDM
No. 16001X	Rhenofol	PVC	Nr. 16009X	Hertalan	EPDM
No. 16003X	Extrubit	ECB	Nr. 16011X	Trocal	PVC
No. 16005X	Evalon	EVA	Nr. 16012X	Alkorplan	PVC
No. 16006X	Wolfin IB	PVC-BV	Nr. 16013X	Rhepanol	PIB
No. 16007X	Resistit	EPDM			

Unless otherwise specified by the ordering party, a connecting sleeve of bitumen/EPDM compound will be supplied. If sealing sheet already present on-site (without woven or non-woven fabric inlay) is to be clamped, please discuss the application options beforehand with LOROWERK.

Construction diagram



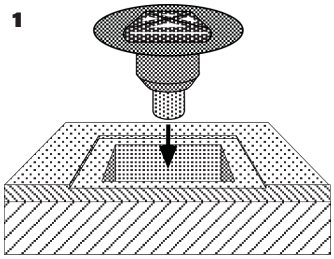
1.) Connection of LORO connecting sleeve with balcony sealing sheets

The connecting sleeve of LORO balcony drainages, H series, is made of bitumen/EPDM compound PVC or ECB.
Please ask at the LOROWERK factory if you require connecting sleeves for sealing sheets other than those described below.

a) Combination connecting sleeve made of polymer-bitumen/EPDM compound for joining to two-layer bituminous sealing sheets.

The combination connecting sleeve ☐ 500 x 3.0 mm is a sealing sheet based on EPDM (synthetic rubber).
It incorporates a polymer-modified bituminous top layer and an adhesive bottom layer.
It also contains glass fibre fabric. Manufacturer: Phoenix, type Resitrix.
The combination connecting sleeve is joined to the sealing sheet using hot bitumen
(in the hot bitumen gluing or the hot bitumen welding process).

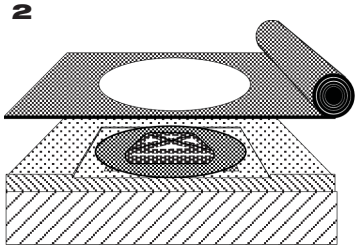
1



One-piece version:

1 Insert the drain pot in the slab cut-out and cast-in firmly in concrete. The flange should be mounted into the substrate flush with the surface and as neatly as possible. Seal slab cut-out. Cut-out measurements, see page 6.

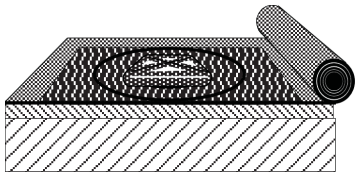
2



2 Make holes in the **lower** sealing sheet and roll it out over the drain.
Hole measurements: DN 70 = approx. ø 275 mm, DN 100 = approx. ø 330 mm.
Note: the flange must remain clear!

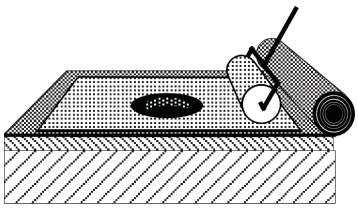
Thoroughly clean all the contact surfaces (they must be free from grease and dust), and if there is a protective foil on the LORO connecting sleeve, remove it.

3



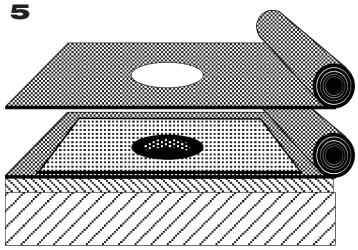
3 Apply bituminous adhesive (hot bitumen) to the sealing sheet in the area of the contact surface, or liquefy the bituminous material on the lower sealing sheet by heating it. Make sure when using hot-bitumen gluing, that extreme heating (e.g. use a torch to dry the substrate) is not applied to the lower side of the connecting sleeve.

4



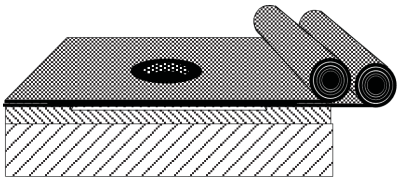
4 Spread the connecting sleeve in the liquid hot bitumen (in the hot bitumen gluing process) or in the liquid bituminous material of the bitumen welding sheet (welding process), and then evenly push or roll the connecting sleeve down.

5



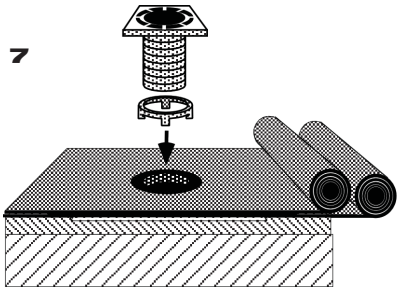
5 Unroll the **top** sealing sheet over the drain. Cut a circular hole in the sealing sheet in the region of the drain - hole diameter approx. 150 mm.
Note: the connecting sleeve must not be damaged!
Roll back the sealing sheet.

6



6 Apply hot bitumen to the top side of the connecting sleeve (hot bitumen gluing process), or liquefy the bituminous material of the connecting sleeve by heating it (welding process). Unroll the sealing sheet again over the drain in the hot liquid bitumen, and then press or roll it down evenly.

7

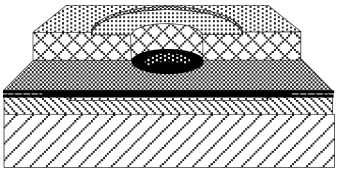


7 Clamp the clamping ring into the drain pot and then insert stainless steel strainer with the strainer receptacle and drainage ring.

Fitting down pipe - see page 7.

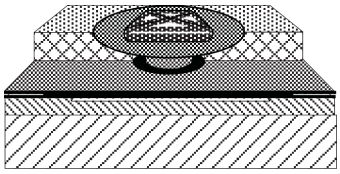
Two-piece version:

8



8 Cut out the thermal insulation according to the dimensions of the extension cartridge.
Important: cut out a space for the flange as well, as it should be flush-mounted into the substrate as far as possible.

9



9 Coat the whole of the inside of inserted clamping ring and the outside of the insert pipe of the extension cartridge with the LORO lubricant.
Then insert the extension cartridge into the drain pot in a backflow-safe manner.
For installation heights/thermal insulation thickness see **2.)** Page 5

10 Connection of the connecting sleeve to the sealing sheet and installation of the strainer and the strainer receptacle are as described under 1) - 7).

Clamping of the combination connecting sleeve by the customer

Normally the combination connecting sleeve is clamped in place at the factory. If on-site clamping is necessary, proceed as follows:

1.) Only use a combination connecting sleeve that has been pre-shaped at the factory.
2.) Place the combination connecting sleeve centrally over the fitted drain. The bituminous layer faces upwards.
3.) Heat the bituminous layer of the combination connecting sleeve in the area of the holes (clamping area) with an open flame or hot-air device. The surface must be shiny (but there must be no flame).
4.) Place the clamping ring centrally over the holes, and push it evenly, firmly and deeply into the pre-shaped, heated holes of the combination connecting sleeve. It may be necessary to push the clamping ring with a vertical wooden board in order to make sure that the pressing force is even.
5.) Allow the combination connecting sleeve to cool down somewhat before further processing.
6.) Connect the combination connecting sleeve to the sealing sheet (see above for the procedure).

b) PVC connecting sleeve for connecting to PVC sealing sheets made from plasticized polyvinyl chloride in accordance with DIN 16730 - e.g.: PVC-P-NB

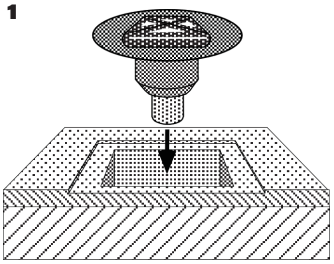
The PVC connecting sleeve □ 500 x 1.5 mm is a sealing sheet in accordance with DIN 16730 based on polyvinyl chloride (PVC-P-NB), manufacturer Braas, type Rhenofol C.

The PVC connecting sleeve is connected to the existing PVC sealing sheet by means of solvent welding or hot gas welding.

Hot-gas welding is preferable at low ambient temperatures - associated with high air humidity.

Observe the manufacturer's instructions for jointing to sealing sheets.

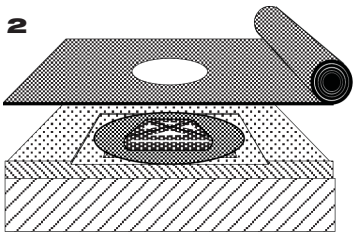
1



One-piece version:

1 Insert the drain pot in the slab cut-out and cast-in firmly in concrete. The flange should be mounted into the substrate flush with the surface and as neatly as possible. Seal slab cut-out. Cut-out measurements, see page 6.

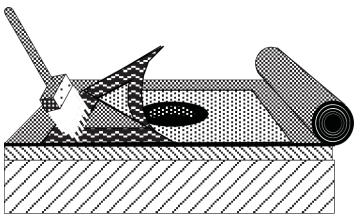
2



2 Unroll the sealing sheet over the drain. Cut a circular hole in the sealing sheet in the region of the drain - hole diameter approx. 150 mm.
Note: the connecting sleeve must not be damaged.

Thoroughly clean all the contact surfaces (they must be free from grease, free from dust and dry).
First remove the protective foil from the LORO connecting sleeve. If the temperature is less than +5 °C, pre-heat the area of the seam using the hot gas hand-welding unit.

3



3 Apply solvent welding agent every 50 mm to both sides of the seam region, and press down by hand. Then load the seams (e.g. with a sandbag). When using hot gas welding, close the seam with the hot gas hand-welding unit and pressure roller or with a welding machine.

4 Check the seams and rework them if necessary.

Two-piece version: see **8 - 10**

2.) Extension cartridge

Extension cartridge, no. 16298X, in two parts (use with thermal insulation for balcony slab), seal in a backflow-safe manner inside the clamping ring of the drain pot.

Adjustment ranges:

Adjustment ranges	Instructions for laying
60 - 120 mm	continuously adjustable
120 - 230 mm	with ext. pipe, no. 16587X, can be trimmed to length

3.) Drainage ring

The drainage ring no. 16097X, is designed to drain off percolating and rainwater when draining over two storeys. It must be used in any case.

4.) Strainer receptacle

Cut the strainer receptacle, no.16290X, to length in situ and place in the drainage ring. If extension is required, use extension pipe no.16587X, with sealing element no. 911X, DN 100 and/or DN 125.

Adjustment ranges:

Adjustment ranges	Instructions for laying
35 - 155 mm	cut to length
155 - 265 mm	with ext. pipe, no. 16587X, can be trimmed to length

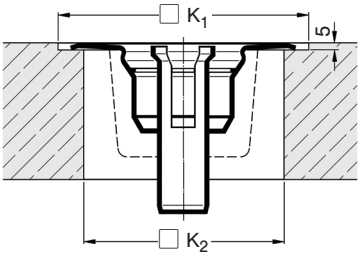
5.) Strainer

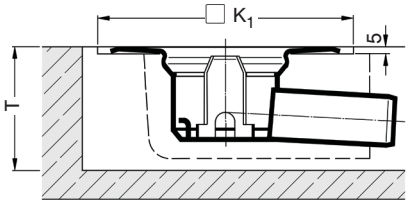
The following strainers are available for LORO direct balcony drains, series H:

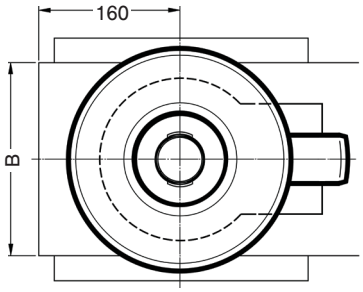
1.) Strainer no. 16196X, with pipe penetration

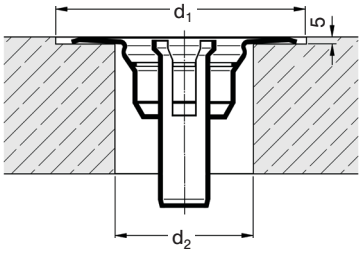
2.) Strainer no. 16197X, for upper balcony (end strainer)

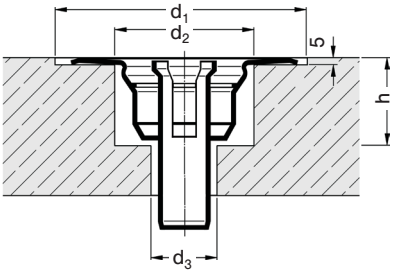
6.) Cut-out dimensions

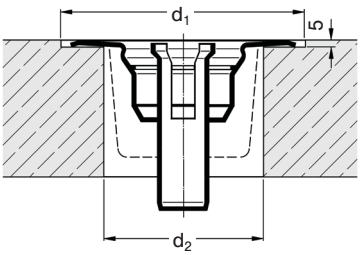












Slab piercings

DN	cut-out □ K_1 a	cut-out □ K_1 b	cut-out □ K_2 a	cut-out □ K_2 b
70	300	300	250	250
100	360	360	300	300

a = without thermal insulation
b = with thermal insulation

Slab cut-outs
Direct drain, side drain

DN	cut-out depth T a	cut-out depth T b	cut-out width B a	cut-out width B b
70	150	160	160	200

a = without thermal insulation
b = with thermal insulation

Core hole, single stage for drains without thermal insulation

DN	d_1	d_2
70	300	162
100	360	192

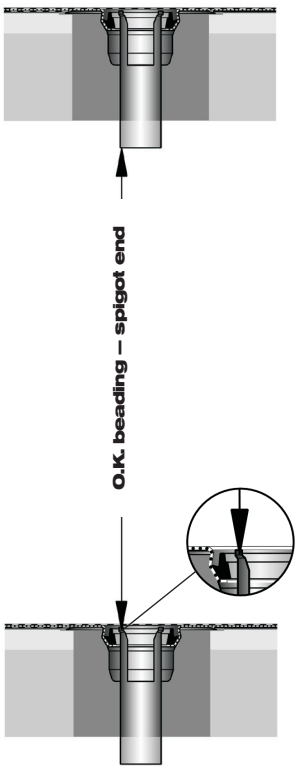
Core hole, two-stage for drains without thermal insulation

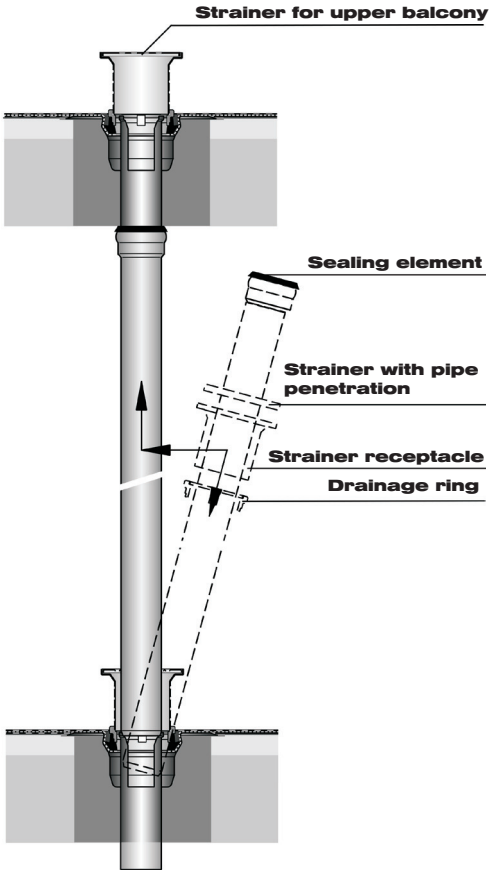
DN	d_1	d_2	d_3	h
70	300	162	92	120
100	360	192	122	140

Core hole, single stage for drains with thermal insulation

DN	d_1	d_2
70	300	202
100	360	225

7.) Dimensioning and installation of down pipes





Installation instructions:

1) Check cast-in LORO direct drains.
   Remove any excess concrete and clean tappets.

2) Find out the measurement from the upper edge of the down pipe receptacle of the lower direct drain to the spigot end of the upper direct drain. Add another 25 mm (for all nominal widths). The pipe length is then determined.

3) Cut down pipe to required length, insert sealing element and coat with lubricant. Slide strainer with pipe penetration, strainer receptacle and drainage ring onto the down pipe.

4) Slide down pipe diagonally into the lower direct balcony drain over one of the two receptacles, adjust to vertical and slide socket onto the insert end of the upper direct drain.
   Ensure the sealing element is seated correctly.

5) Place down pipe on the two receptacles of the lower balcony direct drain. Place drainage ring onto clamping ring. Cut strainer receptacle in situ to required length and place in the drainage ring. Press strainer with pipe penetration into the strainer receptacle. The down pipe is then fixed in place.

6) On the first balcony, place the drainage ring onto the clamping ring. Cut strainer receptacle in situ to required length and place in the drainage ring. Push the strainer into the strainer receptacle.

7) In the case of the two-part down pipe, also slide through the extension cartridge into the direct balcony drain. Then carry out steps stated in 4) and 5).

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