Installation instructions

LORO-RAINSTAR® scupper drains

with clamping flange

of stainless steel, for roof sealing sheets of bitumen or plastic,
in accordance with EN 1253

LORO-RAINSTAR® scupper drains consist of the drain body and the strainer (for gravity flow) or the cover (for pressure flow).

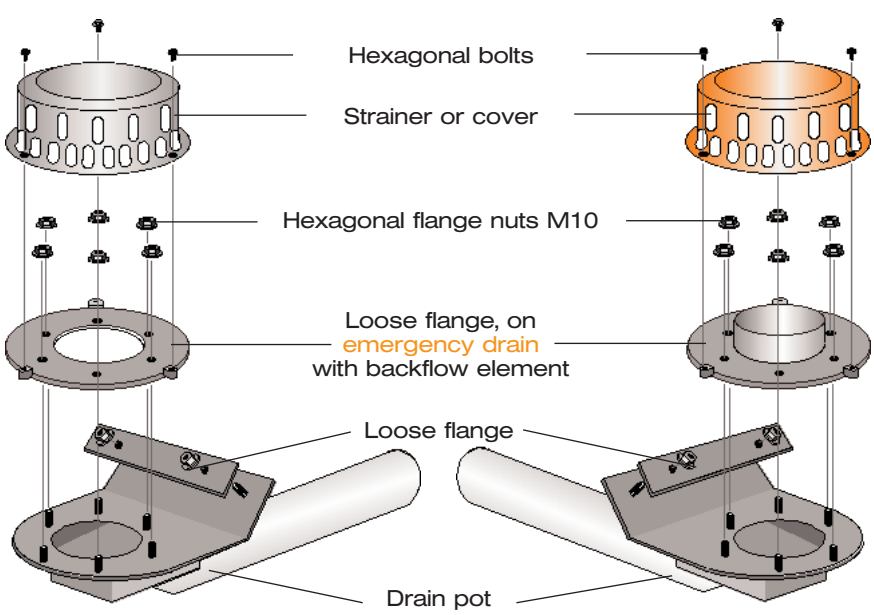
System overview

LORO-RAINSTAR® scupper rain water drainage

	Gravity flow		Pressure flow	
	RA series	**RB series** Emergency drain	**RC series**	**RD series** Emergency drain
with clamping flange for bituminous sealing sheets				
DN 50	01370.050X	01371.050X	01380.050X	01381.050X
DN 70	01370.070X	01371.070X	01380.070X	01381.070X
DN 100	01370.100X	01371.100X	01380.100X	01381.100X
with clamping flange for plastic sealing sheets				
DN 50	01372.050X	01373.050X	01382.050X	01383.050X
DN 70	01372.070X	01373.070X	01382.070X	01383.070X
DN 100	01372.100X	01373.100X	01382.100X	01383.100X

Construction diagram

Main drainage system | **Emergency drainage system**



LORO sliding flange
for bonding the vapour barrier
of bitumen or plastic

13232.050X*
* incl. compression seals and sealing element

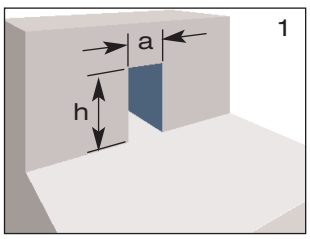
LORO sliding flange
for bonding the vapour barrier

of bitumen	**of plastic**
	
13235.070X*	13236.070X*
13235.100X	13236.100X

* DN 70, including sealing element

Trace heating

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

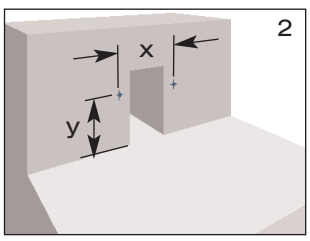


1.) Specifying the parapet opening, specifying the fitting height, bonding the sliding flange in the vapour barrier

1.1 Make the parapet opening according to Table 1 (Figure 1).
Make the hole as far as the bare slab so that the roof space can be drained during the construction phase. According to flat roof regulations, the lateral space between the outer edge of the outlet flange from the upstand of the building, components and openings must be at least 300 mm.

Table 1	DN 50	DN 70	DN 100
a	110	130	160
h	w*	w*	w*

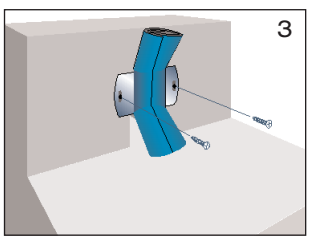
*w = thickness of the thermal insulation in mm

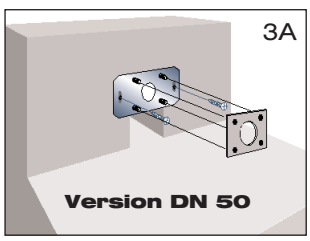


1.2 Make 10 mm diameter holes for the sliding flange with the connecting sleeve or the sliding flange with compression seals for connecting the vapour barrier according to the details specified in Table 2 (Fig. 2).

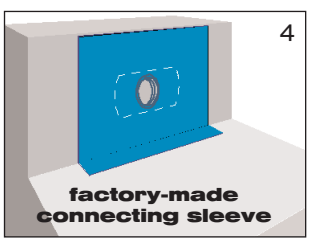
Table 2	DN 50	DN 70	DN 100
x	205	196	238
y (bitumen)	w*-75	w*-75	w*-75
y (plastic)	w*-70	w*-70	w*-70

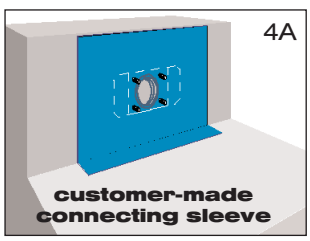
Thermal insulation of 100 mm on the roof side on the parapet is assumed
*w = thickness of the thermal insulation in mm



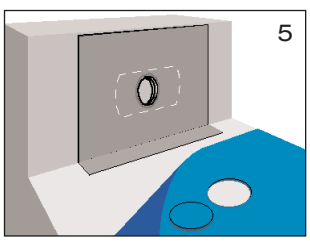


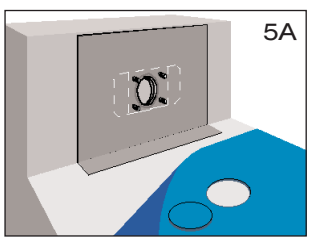
1.3 Fasten the sliding flange (DN 70 and DN 100 versions, with connecting sleeve rolled together) or sliding flange (DN 50 version with compression seals) using a screwdriver for slotted screws (Fig. 3 or 3A).
Note: The dimensions given under y in Table 2 must be maintained.



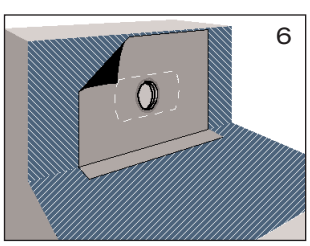


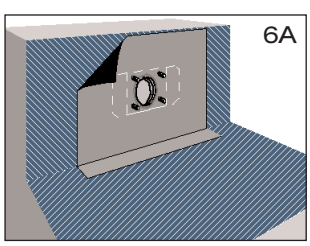
1.4 Spread the connecting sleeve ready-mounted at the factory (DN 70 and DN 100 versions) or the connecting sleeve made by the customer (DN 50 version) consisting of **bitumen/EPDM compound** or of **plastic**, and attach it to the substrate (Fig. 4 or 4A). Do not allow creases to form. On the DM 50 version make 14 mm holes in the connecting sleeve with a hole punch for the threaded bolts to pass through. The loose flange can be used as a template.
Note: The connecting sleeve must not be damaged.



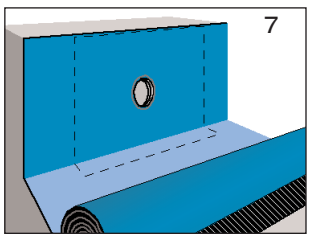


1.5 Unroll the **bituminous** or **plastic** vapour barrier sheet. Make a circular cut (Fig. 5 or 5A) in the vapour barrier sheet in the region of the sliding flange.
- Hole diameter 150 mm. Roll back the vapour barrier sheet.

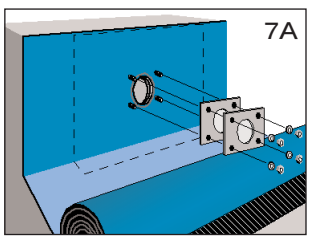




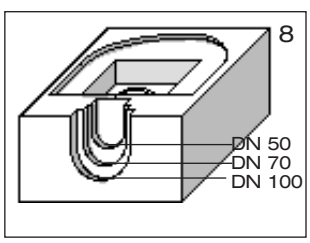
1.6 A bitumen primer must be applied to the slab and wall when bituminous vapour barrier sheets are used (Fig. 6 or 6A).
High-polymer vapour barrier sheets must be attached to the substrate in accordance with the foil manufacturer's laying specifications.



1.7 **Bituminous vapour barrier sheet:**
Liquefy the upper side of the connecting sleeve by heating it (welding procedure). Unroll the vapour barrier sheet accurately over the sliding flange with connecting sleeve in the hot liquid bitumen, then evenly press or roll in (Fig. 7 or 7A).
Plastic vapour barrier sheet:
Clean the contact surfaces and make the connection between the connecting sleeve and the vapour barrier sheet using solvent welding or hot gas welding.
Seam overlap at least 50 mm. Observe the laying specifications of the roof sealing sheet manufacturer.

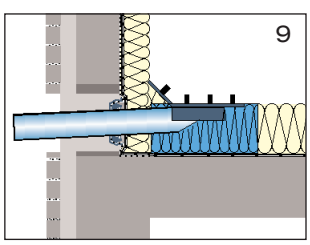


1.8 With the DN 50 version, place a compression seal over the vapour barrier sheet, and clamp with loose flange and included screws (Fig. 7A). Tighten the enclosed screws using an SW 17 open-ended or ring spanner, working criss-cross.
Tightening torque: 20 Nm (bituminous vapour barrier sheet) or 30 Nm (plastic vapour barrier sheet).
Insert sealing element into the socket of the sliding flange.

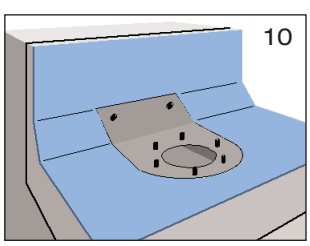


2.) Fitting the scupper drain with clamping flange when using bituminous roof sealing sheets

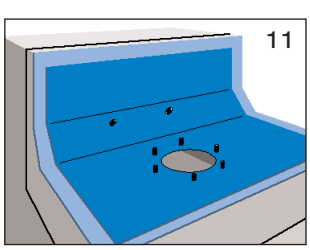
2.1 Cut a hole in the thermal insulation block according to the nominal diameter.
External contour: DN 100,
Central contour: DN 70, top contour: DN 50 (Fig. 8).
Minimum thermal insulation thickness for DN 50: 80 mm,
Minimum thermal insulation thickness for DN 70: 55 mm,
Minimum thermal insulation thickness for DN 100: 40 mm.



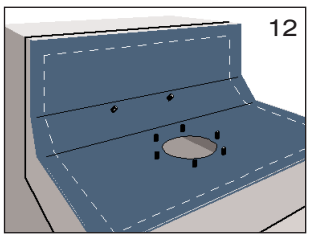
2.2 Adjust the length of the discharge pipe from the drain on site. Apply LORO-X lubricant to the gasket of the sliding flange and the discharge pipe of the drain. Insert the drain body into the contour of the thermal insulation block. Push the discharge pipe into the gasket of the sliding flange. Fasten both the drain and the thermal insulation block (Fig. 9). Close up any holes that have been made in the thermal insulation using suitable materials. Apply adequate quantities of thermal insulation to the discharge pipe in the area of the wall. Lay thermal insulation panels.



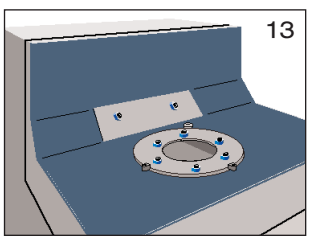
2.3 Unroll the first layer of the **roof sealing sheet** over the scupper drain, and make a cut-out in the region of the fixed flange (Fig. 10).



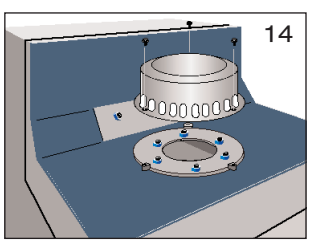
2.4 Cut the **connecting sheet** of the existing roof sealing sheet, with a size of 700 mm x 1000 mm to length on site (Fig. 11).
Use a hole punch to make 14 mm diameter holes in the connecting sheet for the threaded bolts to pass through. The loose flange can be used as a template.
Join the connecting sheet by welding to the first layer of the roof sealing sheet that has already been laid.



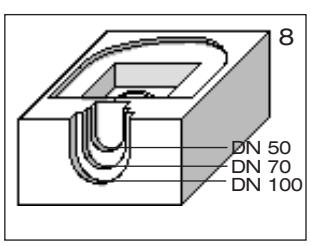
2.5 Unroll the second layer of the **roof sealing sheet** over the drain. Use a hole punch to make 14 mm diameter holes in the roof sealing sheet for the threaded bolts to pass through. The loose flange can be used as a template (Fig. 12).
Roll back the second layer of the roof sealing sheet, weld the connecting sheet and the second layer of the roof sealing sheet in accordance with the laying instructions from the manufacturer of the roof sealing sheet.



2.6 Clamp the roof sealing sheet with loose flange and the included hexagonal flange nuts (Fig. 13).
Tighten the enclosed hexagonal flange nuts with an open-ended or ring spanner SW 15, starting at the flange side under 45°. Then tighten the remaining hexagonal flange nuts, working criss-cross. Tightening torque: 20 Nm.

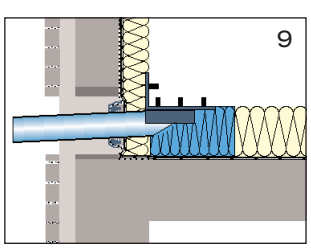


2.7 Screw the strainer (with gravity flow) or cover (with pressure flow) using the enclosed fastening screws to the loose flange (Fig. 14).
Tighten the enclosed screws using an SW 10 open-ended or ring spanner.

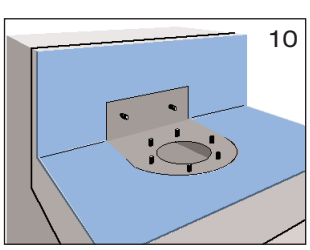


3.) Fitting the scupper drain with clamping flange when using plastic roof sealing sheets

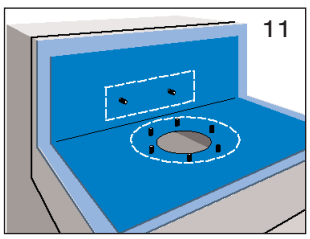
3.1 Cut a hole in the thermal insulation block according to the nominal diameter.
External contour: DN 100,
Central contour: DN 70, top contour: DN 50 (Fig. 8).
Minimum thermal insulation thickness for DN 50: 80 mm,
Minimum thermal insulation thickness for DN 70: 55 mm,
Minimum thermal insulation thickness for DN 100: 40 mm.



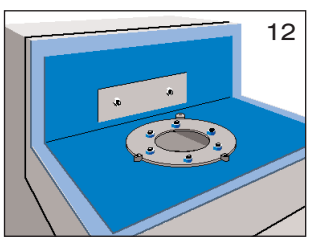
3.2 Adjust the length of the discharge pipe from the drain on site. Apply LORO-X lubricant to the gasket of the sliding flange and the discharge pipe of the drain.
Insert the drain body into the contour of the thermal insulation block. Push the discharge pipe into the gasket of the sliding flange. Fasten both the drain and the thermal insulation block (Fig. 9).
Close up any holes that have been made in the thermal insulation using suitable materials. Apply adequate quantities of thermal insulation to the discharge pipe in the area of the wall. Lay thermal insulation panels.



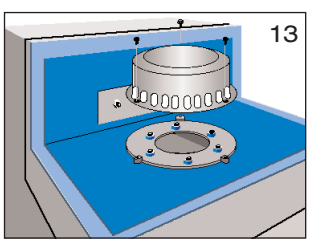
3.3 Unroll the **roof sealing sheet** over the scupper drain, and make a cut-out in the region of the fixed flange (Fig. 10).



3.4 Cut the **connecting sheet** of the existing plastic roof sealing sheet, with a size of 700 mm x 1000 mm to length on site (Fig. 9). Use a hole punch to make 14 mm diameter holes in the connecting sheet for the threaded bolts to pass through. The loose flange can be used as a template.
Insert the enclosed compression seals (drawn dotted) **under** the connecting sheet on the fixed flange, and spread the perforated connecting sheet over the drain with fixed flange.
Join the connecting sheet by welding with the layer of roof sealing sheet that has already been laid in accordance with the **the processing instructions from the manufacturer of the roof sealing sheet.**
If a second compression seal is needed under the loose flange, this can be made by the customer from the same material as the roof sealing sheet. The loose flange can be used as a template here again. Alternatively it is possible to request to compression seals, item no. 21810.100X (round) and item no. 21811.000X (rectangular) from the LOROWERK factory.



3.5 Clamp the connecting sheet with loose flange and the included screws (Fig. 12). Tighten the enclosed hexagonal flange nuts with an open-ended or ring spanner SW 15, starting at the flange side under 90°. Then tighten the remaining hexagonal flange nuts, working criss-cross.
Tightening torque: 30 Nm.



3.6 Screw the strainer (with gravity flow) or cover (with pressure flow) using the enclosed fastening screws to the loose flange (Fig. 13).
Tighten the enclosed screws using an SW 10 open-ended or ring spanner.

LORO-RAINSTAR® scupper drains are to be serviced at 1/2 yearly intervals in accordance with DIN 1986, Part 30.
Please also give these laying instructions to the plumber!

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Subject to technical changes.