

LORO-X Roof Drainage Systems

New in the LORO product range 2021:

<p>LORO-X Height-adjustable strainer unit for inverted roof</p> 	<p>LORO-X Elevated gratings with and without pipe penetration</p> 	<p>LORO-X Waterproof concrete insulated pipe penetration</p> 
<p>LORO-X Balcony drainage Series V-AK variable</p>  <p>Strainer unit stainless steel Series I, IK, G, GF and GS</p> 	<p>LORO-X Retention rotary slide</p> 	<p>LORO-X DRAINLET®/ DRAINJET® Mini DN 70, for box gutters</p> 
<p>LORO-X Sliding flanges for vapor barrier height-adjustable bendable</p> 	<p>LORO-X Series 43, parapet-direct, with bonding flange 90° for liquid plastic</p> 	<p>LORO-X Fittings for parapet and cascade drainage</p> 

...optimal drainage

with maximum safety!

NEW in the LORO
product range 2021
LORO-X
Roof drainage systems

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LORO-X Height-adjustable strainer unit for inverted roof

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LORO-X Elevated gratings with and without pipe penetration

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LORO-X Waterproof concrete insulated pipe penetration with locking flange for waterproof concrete

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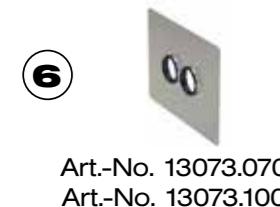
LORO-X Retention rotary slide

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LORO-X DRAINLET®/DRAINJET® Mini DN 70, for box gutters

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LORO-X Sliding flanges for vapor barrier height-adjustable bendable

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LORO-X Strainer unit for balcony drains Series I, IK, G, GF and GS



LORO-X Fittings for parapet and cascade drainage

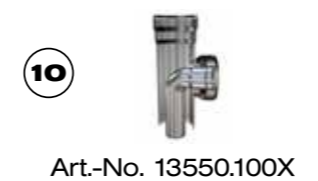
LORO-X Slip in socket

for length compensation and installation between 2 fixed points

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LORO-X Deflection fitting emergency drain on the right side



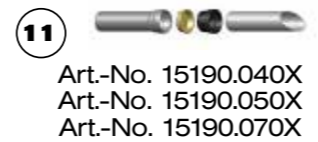
LORO-X Branch with bend

short version for small distance to the parapet

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LORO-X Branch with short socket

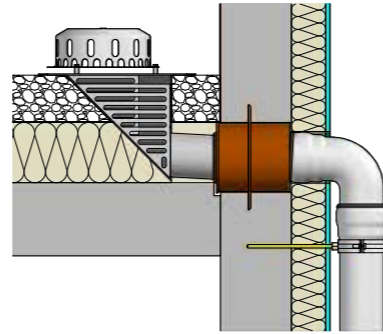


LORO-X Waterproof concrete spout

30-31

**1 Product innovation 1:
LORO-X height-adjustable
strainer unit for inverted roof**

LORO-X height-adjustable strainer unit,
for the main drainage of inverted roofs,
with maximum thermal insulation due to its triangular form.



In the case of the height-variable parapet drainage for inverted roofs, the strainer unit can be adjusted to the strength of the thermal insulation by moving the triangular upper and lower parts. Due to the triangular form, the drainage is optimized in the direction of the drainage pipe and the recess in the thermal insulation is minimized at the same time.

On the triangular upper part different LORO-X strainer units can be installed in order to be able to guarantee a flexible adjustment to different roof structures above the thermal insulation level. Through the triangular lower part the water can also flow off from the area below the thermal insulation.

The height-adjustable parapet drain with gravity flow is available in the nominal diameters DN 70 and DN 100.

LORO-X Strainer element with adjustable height compensation in vapor barrier

Advantages:

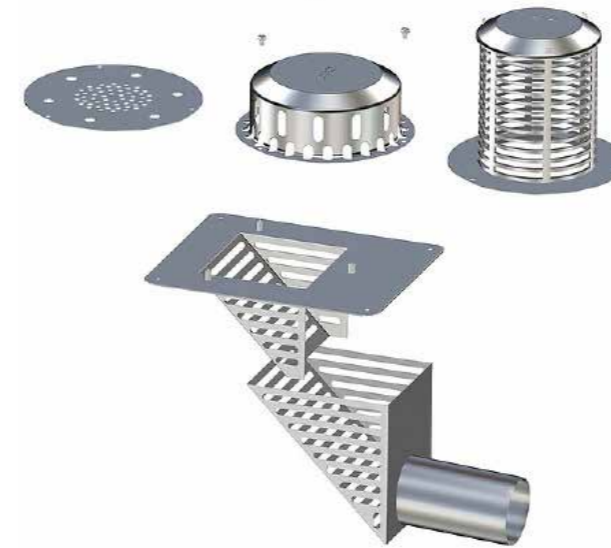
- for height-adjustable thermal insulation in the case of inverted roofs
- maximum insulation due to its triangular form
- minimum cold bridge
- for inverted roof made of waterproof concrete or with vapor barrier
- with drainage board for low paving slabs
- with DRAINLET® hood for smooth surfaces
- with control shaft for gravel

LORO-X Strainer element with adjustable height compensation in vapor barrier

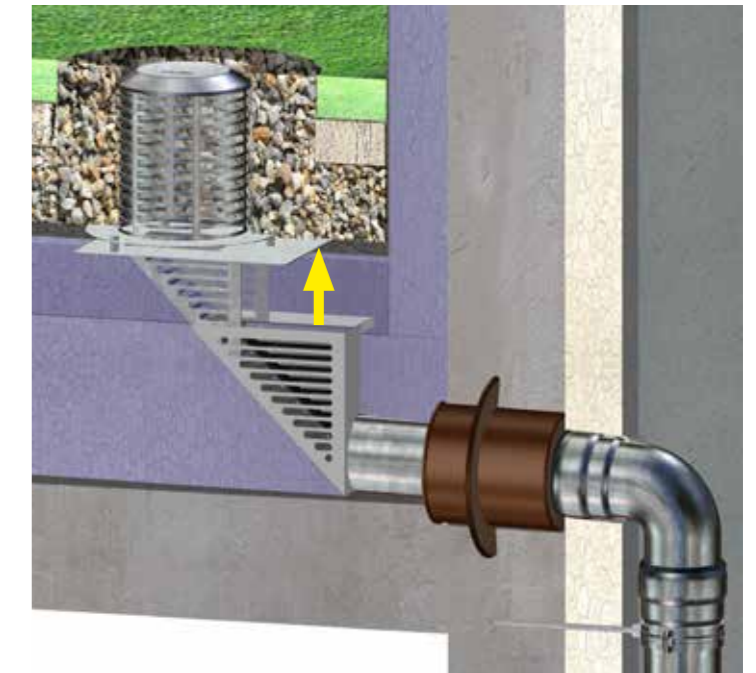
	made of stainless steel	DN 70	DN 100
		19497.070X	19497.100X
		•	•

Application examples

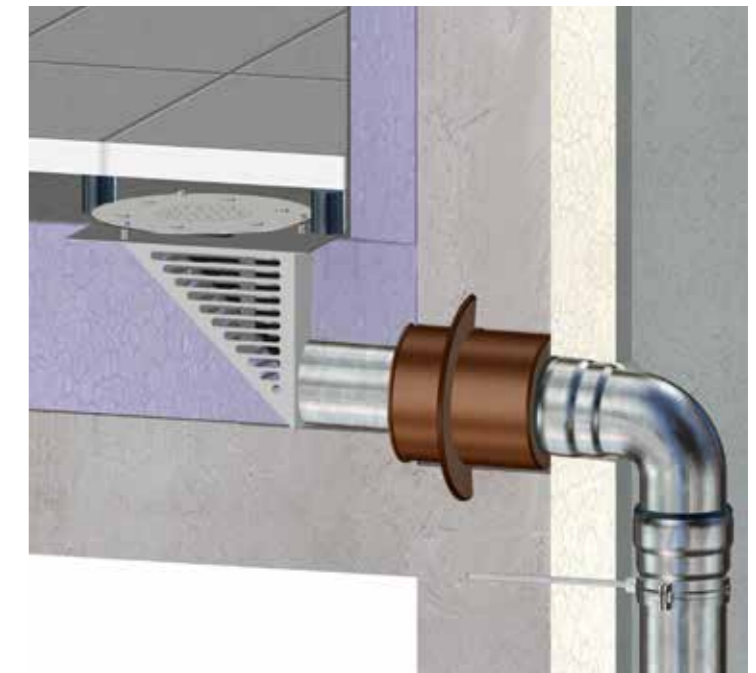
- Drainage board**
made of stainless steel
No. 20004.000X
- Strainer basket**
made of stainless steel
No. 21004.000X
- Strainer unit**
made of stainless steel
No. 19495.000X



Combinable with LORO-X drainage board, DRAINLET hood and high strainer basket



Application example with high strainer basket for graveled inverted roofs with waterproof concrete penetration



Application example with drainage board for inverted roofs on balconies and terraces with supported slabs with waterproof concrete penetration

2 Product innovation 2: LORO-X elevated gratings with and without pipe penetration

LORO-X elevated gratings

for LORO-X parapet and flat roof drains as well as for the optimal penetration of LORO-X steel discharge pipes in the case of set-back storeys and cascade construction.



LORO-X Grating unit, with pipe penetration DN 100

	400 mm x 155 mm	DN 100
		60401.100X
		•

LORO-X Grating unit, without pipe penetration

	400 mm x 155 mm	DN 100
		60402.000X
		•

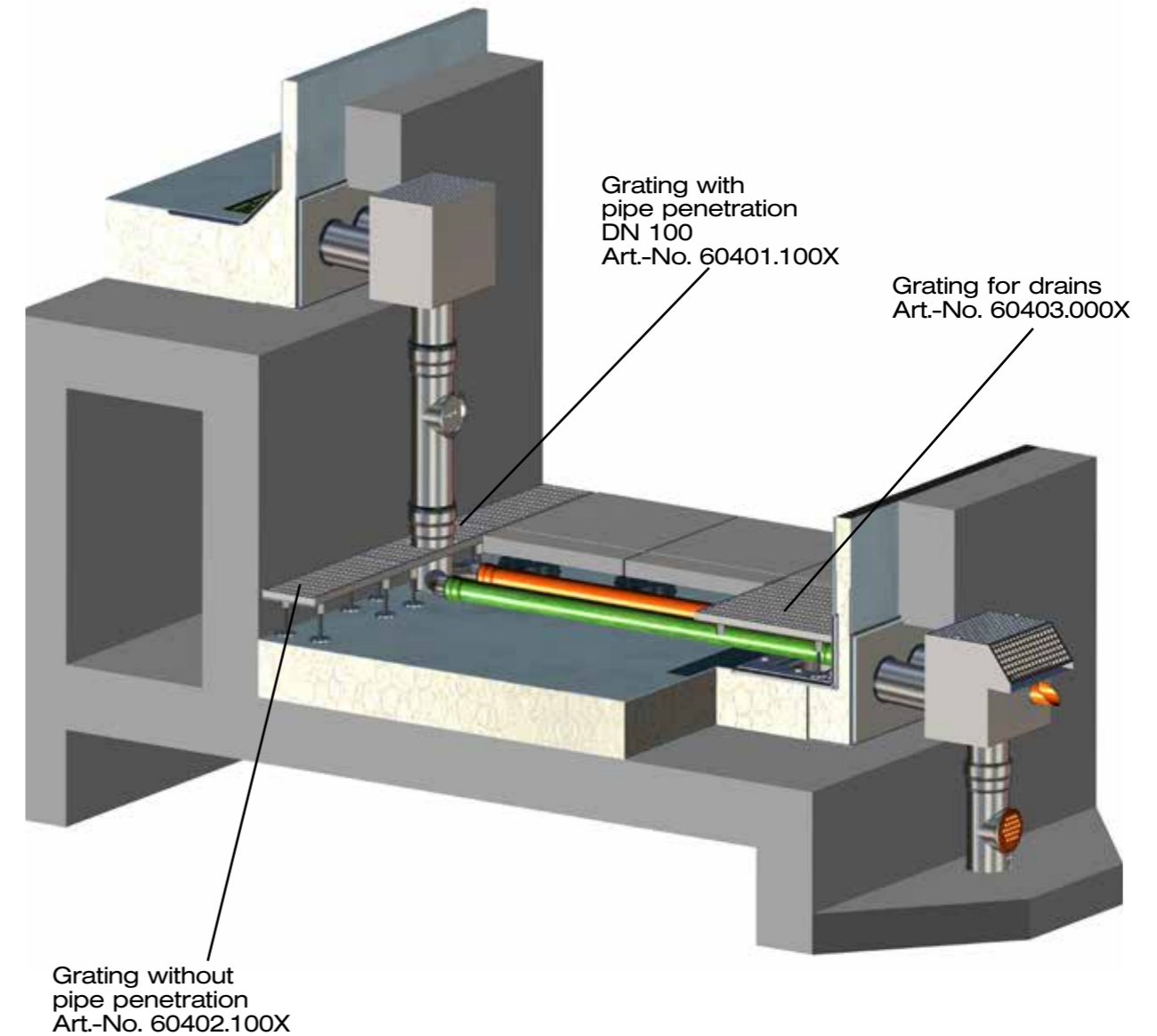
LORO-X Grating unit, for LORO-X roof drains

	400 mm x 400 mm	60403.000X
		•

LORO-X Feet, height-adjustable for all grating units

	80 mm - 100 mm for grating unit	60414.000X
		•
	100 mm - 120 mm for grating unit	60415.000X
		•
	120 mm - 140 mm for grating unit	60416.000X
		•

Application example



**3 Product innovation 3:
LORO-X Insulated pipe penetration
made of waterproof concrete**



LORO offers special pipe penetrations with locking flange for waterproof concrete. Especially when pouring concrete on site penetrations with locking flange provide increased safety because usually there is no further sealing level when using waterproof concrete and because the possibly ingressing seepage can be stopped by the circumferential locking flange.

The new roof and wall penetration with integrated thermal insulation for roofs made of waterproof concrete is equipped with a factory-fitted insulation layer so that the cold water (in the case of flat roof drainage) is kept in the medium-carrying inner pipe.

According to the principle of the proven LORO-X composite pipe, the room between the medium-carrying inner pipe and the outer pipe that is equipped with the locking flange is filled with an insulated layer made of 2K-PU-foam.

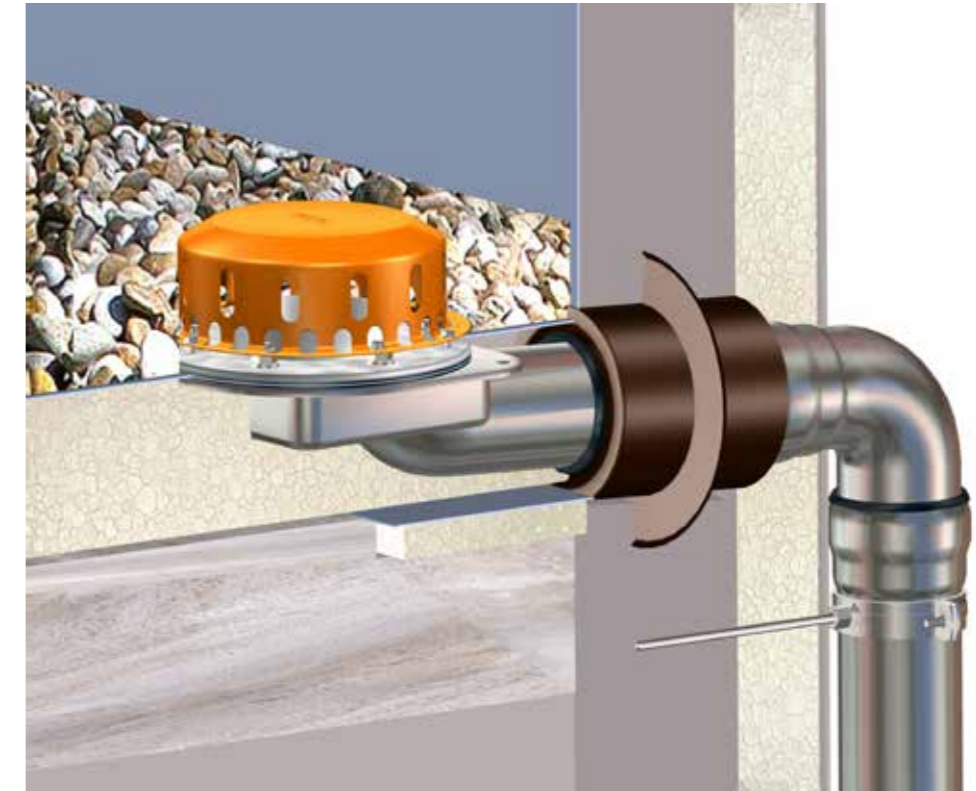
Advantages:

- pipe penetration through waterproof concrete without sealing sheet
- suitable for drainage and ventilation
- locking flange against ingressing water
- integrated thermal insulation
- available in the nominal diameters DN 70, DN 100 and DN 125

LORO-X Roof and wall penetration with locking flange for waterproof concrete

		DN 70	DN 100	DN 125
	made of galvanized steel, with thermal insulation	19480.070X	19480.100X	19480.125X
		•	•	•

Application examples



LORO-X Parapet penetration with locking flange for waterproof concrete



LORO-X Flat roof penetration with locking flange for waterproof concrete, for drainage and ventilation

4 Product innovation 4: LORO-X Retention rotary slide

LORO-X Retention rotary, with calculation programme based on measurements
 When it comes to retention roof drainage there is a growing need to control the retention drainage by adjusting the retention openings at the retention pipe. For this purpose, the new retention rotary slide has been developed.

Most importantly, the connection between the retention discharge and the retention water height can be securely realized by adjusting the rotary slide.

All five rectangular drainage openings have the same size and are positioned next to each other. They enable that every opening, independent from the other openings, has the same connection of retention discharge and retention water height. This ensures that with every additional opening exactly a multiple of the discharge is realized and that an undesirable interaction between the discharge capacities and the waterheights is excluded.



Picture 1

The 4 following pictures outline an example.

Picture 3 The retention water height in the table depending on the number of opened retention openings (at the top of the table) and the retention discharge (on the left side of the table)

Number of opened retention drainage openings

Retention-discharge Q Liter per second	Number of opened retention drainage openings				
	□ 1	□□ 2	□□□ 3	□□□□ 4	□□□□□ 5
0	10	10	10	10	10
0,1	18	12	11	10	10
0,2	41	18	13	12	11
0,3	79	27	18	14	13
0,4	132	41	24	18	15
0,5	201	58	31	22	18
0,6	285	79	41	27	21
0,7	385	104	52	33	25
0,8	499	132	64	41	30
0,9	629	165	79	49	35
1	775	201	95	58	41
1,1	935	241	113	68	47
1,2	1111	285	132	79	54
1,3	1302	333	154	91	62
1,4	1508	385	176	104	70
1,5	1730	440	201	118	79
1,6	1967	499	227	132	88

Retention water height in mm

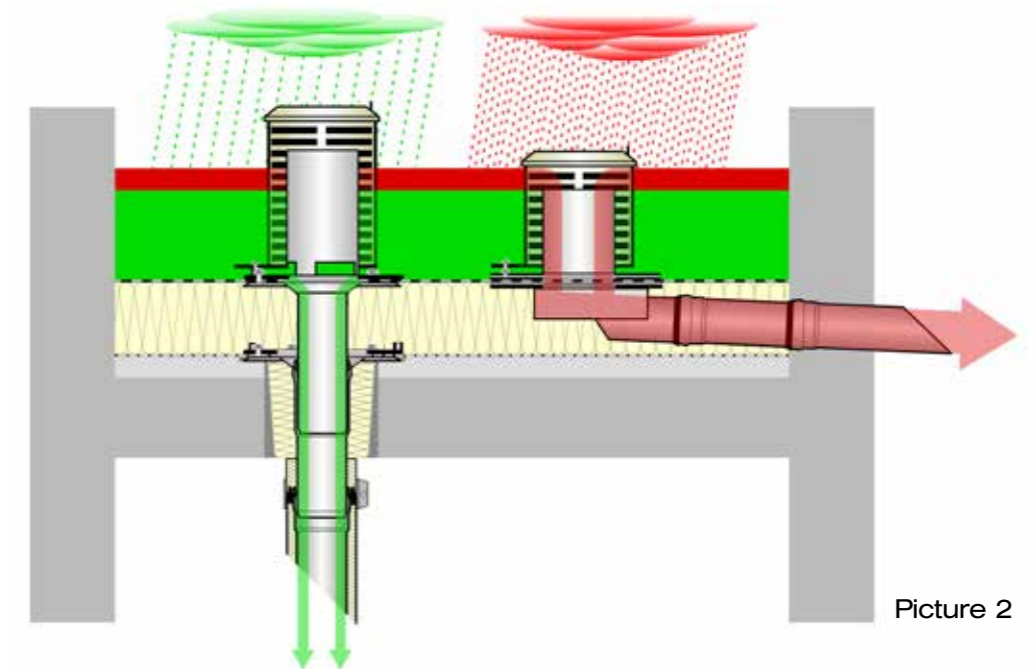
Example for the usage of the rotary slide retention value table:
 given: required retention discharge 0.5 l/s, desired retention water height: 31 mm,
 number of retention discharge openings required to be open: 3.

LORO-X Retention rotary slide

		14514.100X
		•

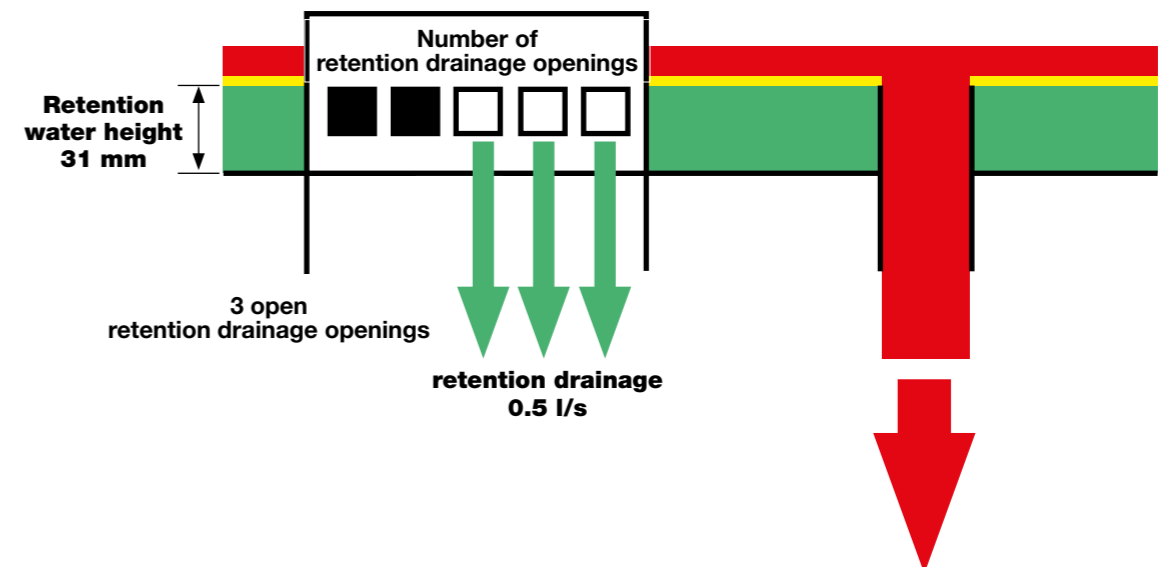
LORO-X VARIOFIT Retention roof drainage

LORO-X VARIOFIT Emergency drainage

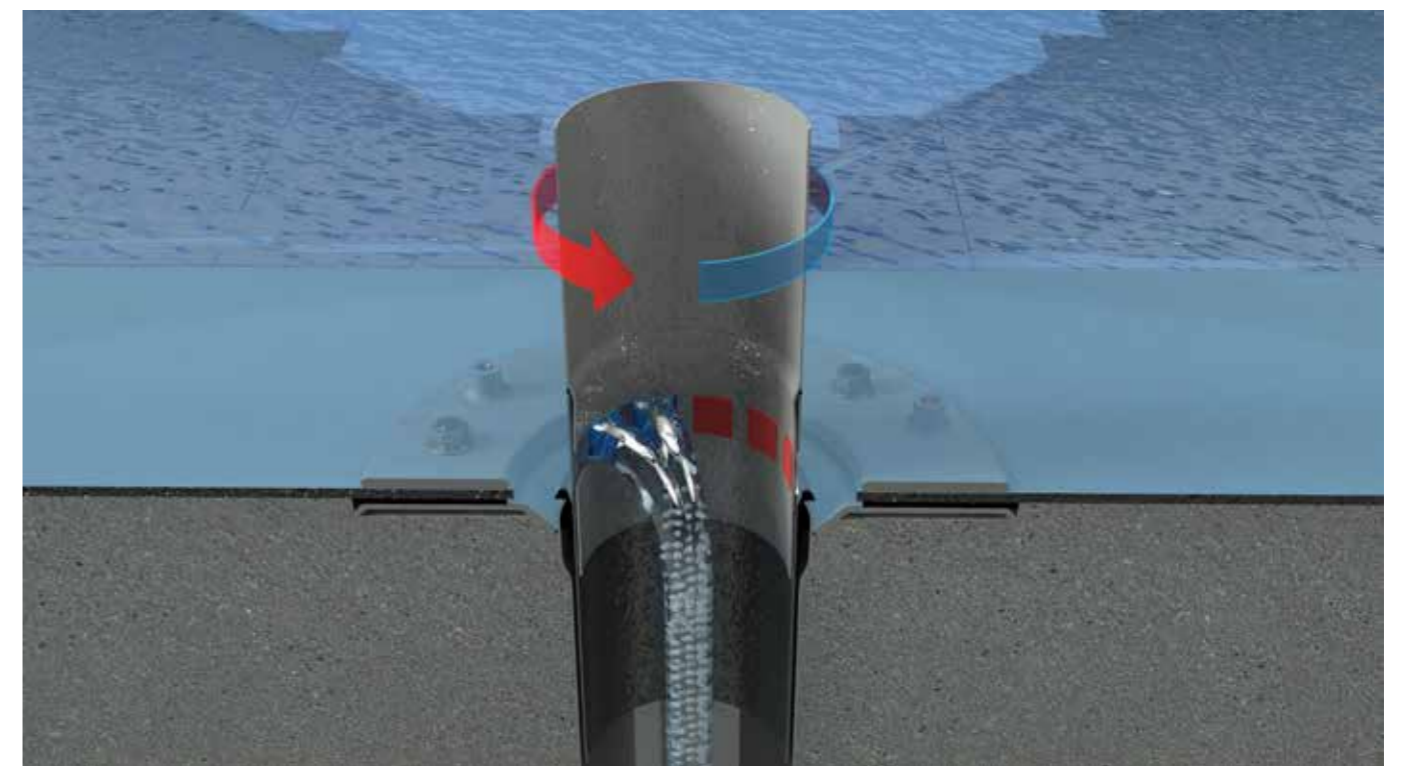
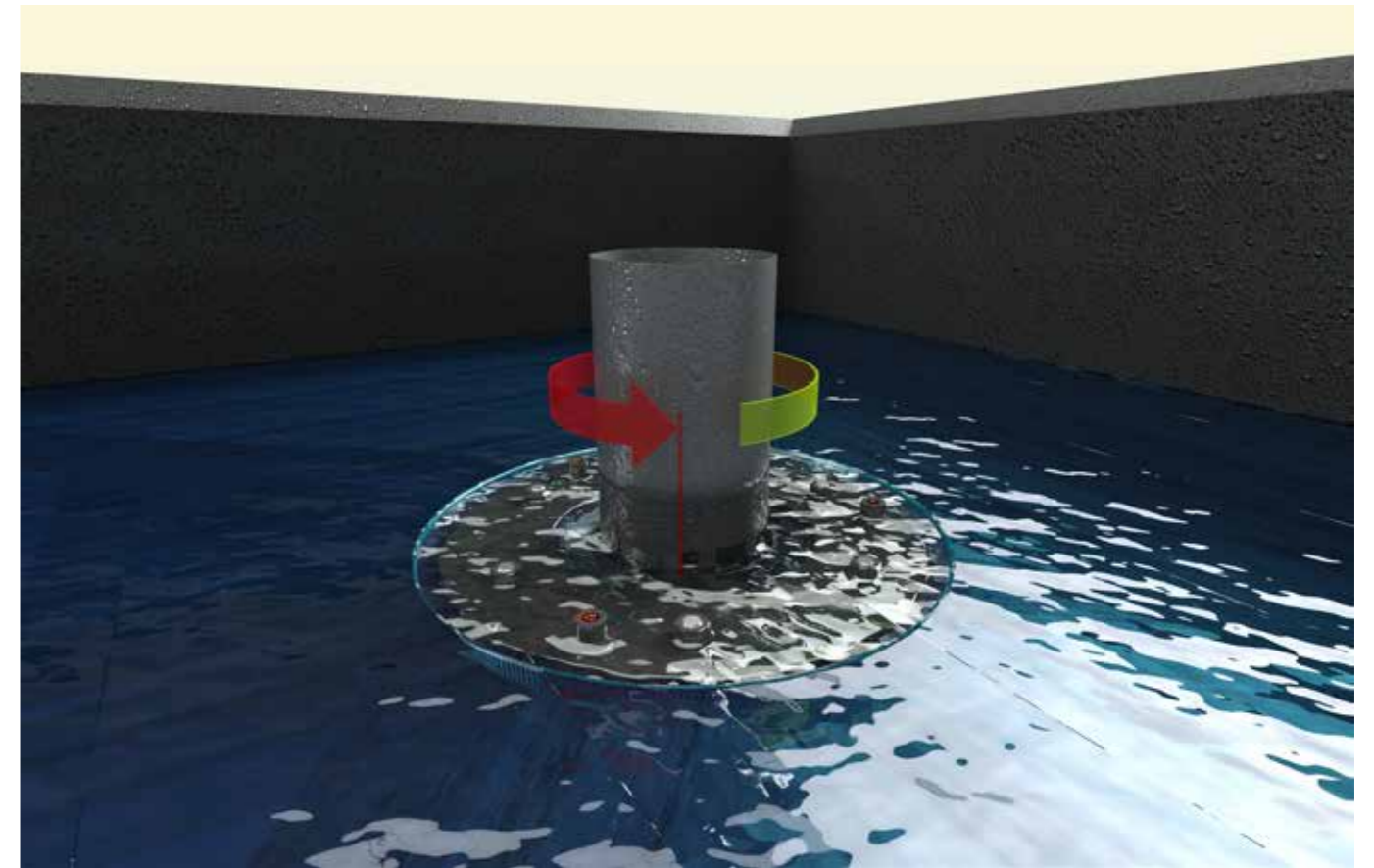
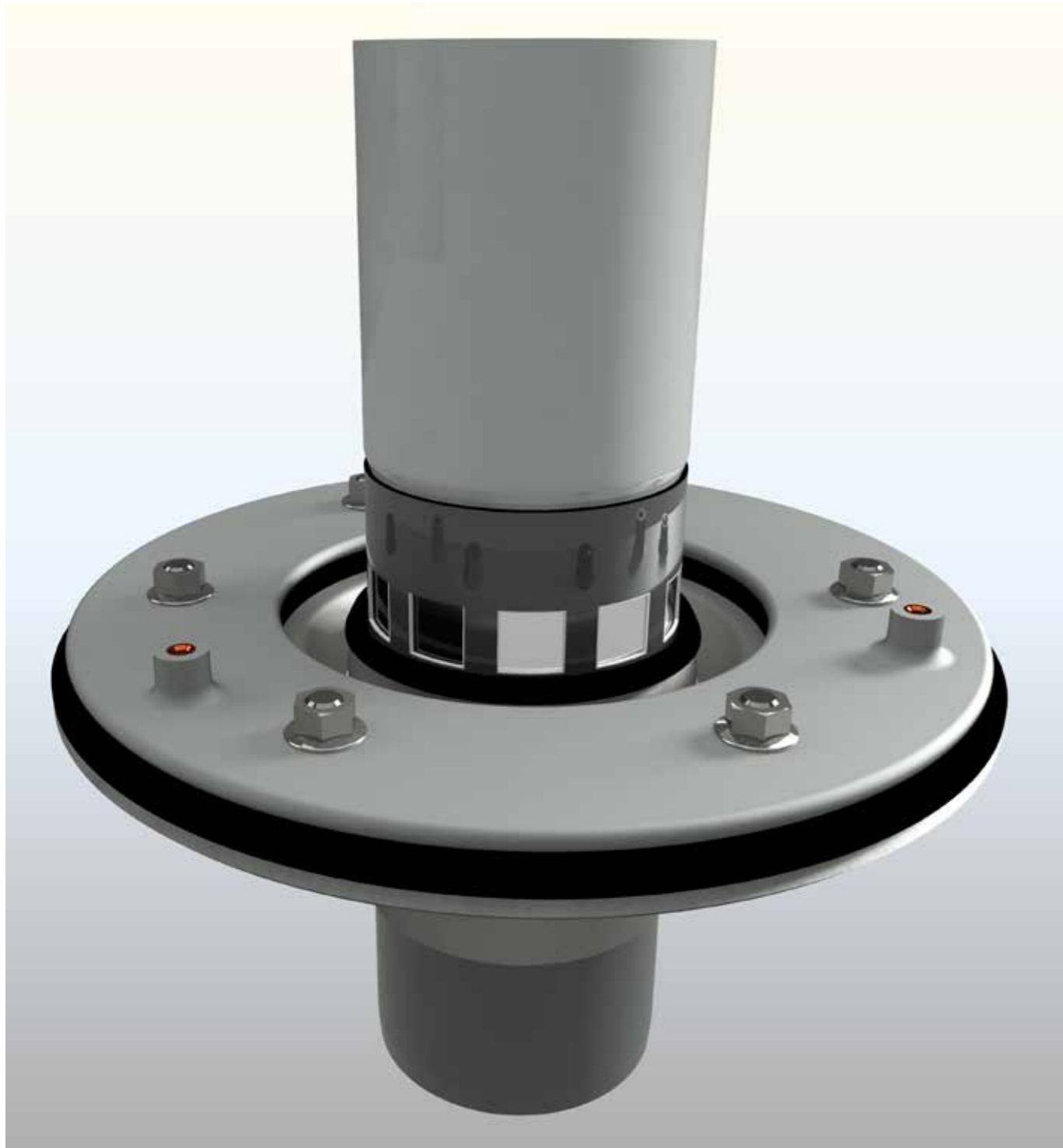


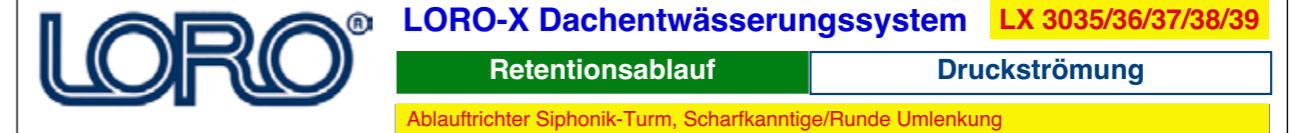
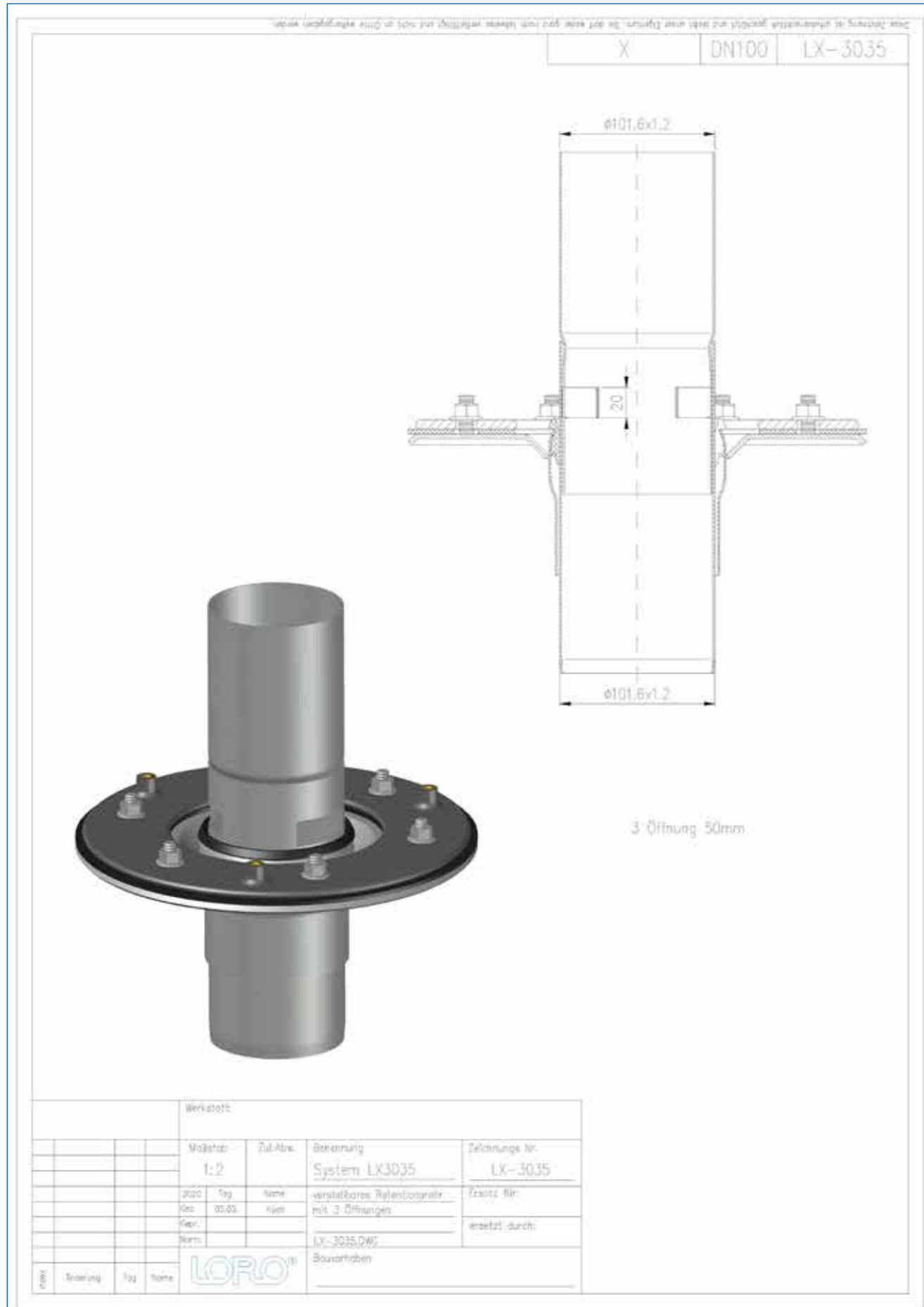
Picture 2

Picture 4 Function of the rotary slide in the retention pipe for the opening and closing of a varying number of retention drainage openings according to the retention value table

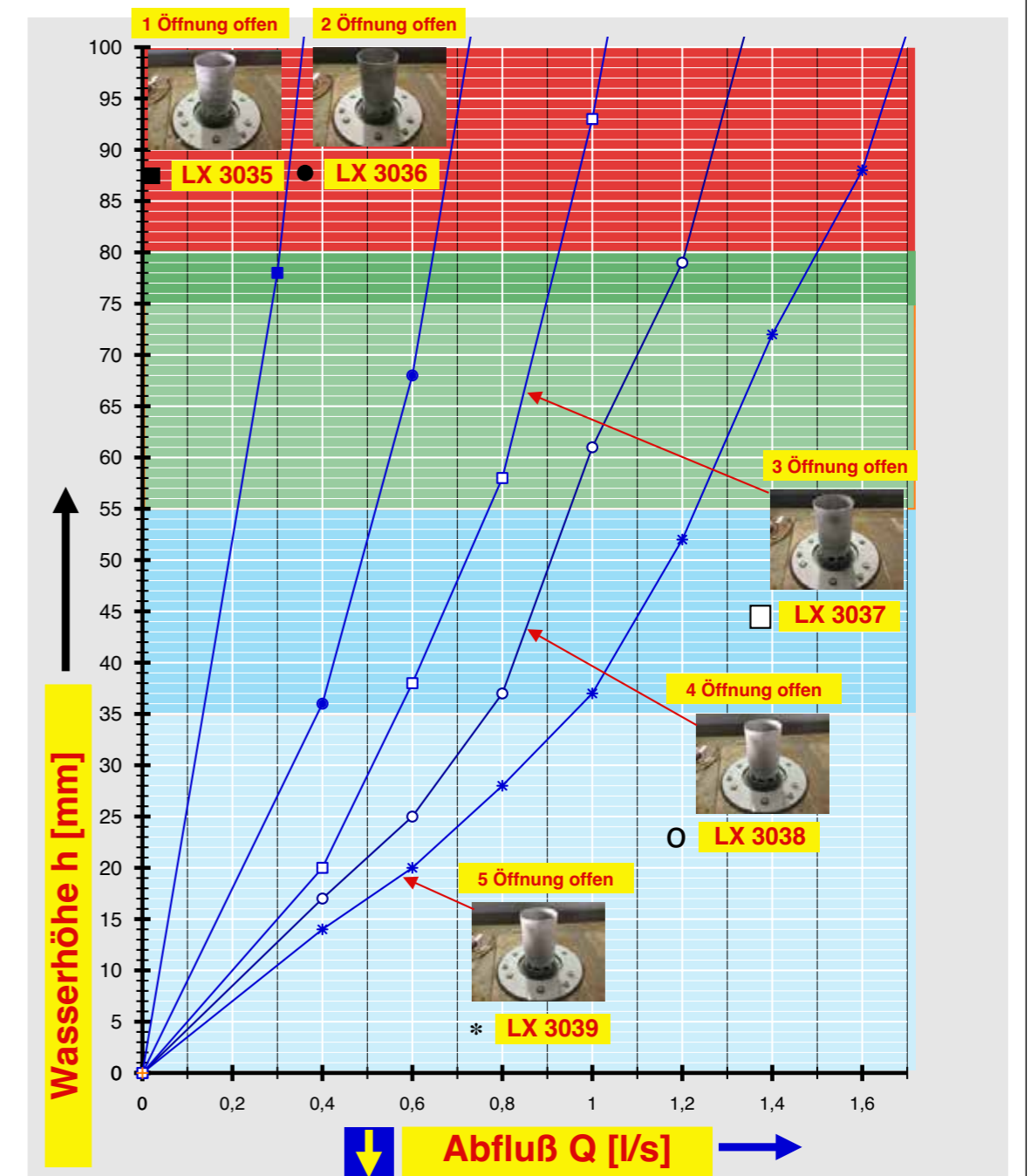


Example: In order to achieve a retention discharge of 0.5 l/s according to the retention value table, 3 retention drainage openings of the rotary slide have to be open.





LORO-X Abflusskurve Vergleich LXV 236



Wasserhöhe	mm	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
Abfluss LX 3035	l/s	-	-	-	-	-	-	-	-	-	-	-	-	-	0,31	0,33
Abfluss LX 3036	l/s	-	-	-	-	0,42	0,46	0,49	0,52	0,55	0,58	0,60	0,62	0,65	0,66	0,68
Abfluss LX 3037	l/s	0,40	0,45	0,50	0,56	0,62	0,67	0,71	0,77	0,81	0,84	0,87	0,90	0,92	0,95	0,98
Abfluss LX 3038	l/s	0,47	0,60	0,68	0,76	0,82	0,86	0,90	0,95	0,99	1,04	1,10	1,15	1,20	1,24	1,26
Abfluss LX 3039	l/s	0,60	0,73	0,84	0,95	1,04	1,10	1,17	1,23	1,28	1,33	1,38	1,44	1,50	1,56	1,61

Datei: "LXV 3035 3036 30383039.RAG" Seite 1 von 6 Datum: 17.04.20

5 Product innovation 5: LORO-X DRAINLET®/DRAINJET® Mini DN 70, for box gutters

LORO's patented roof drainage systems for the main and emergency drainage have the advantage that the emergency drainage does not flow uncontrolledly into the open via the edge of the channel or to lower areas. That is why the system is especially suitable for inside and outside channels with increased safety requirements for areas below the channel that are especially in need of protection.

Especially suitable for roof drainage with gravity flow, siphonic flow and pressing gravity flow in the case of cascade roof drainage.



LORO-DRAINLET® Mini, Series 49, for metal channels

made of stainless steel, DN 70, according to DIN EN 1253, box gutter drainage with gravity flow for channel width from 150 mm

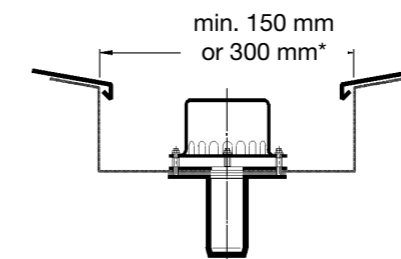
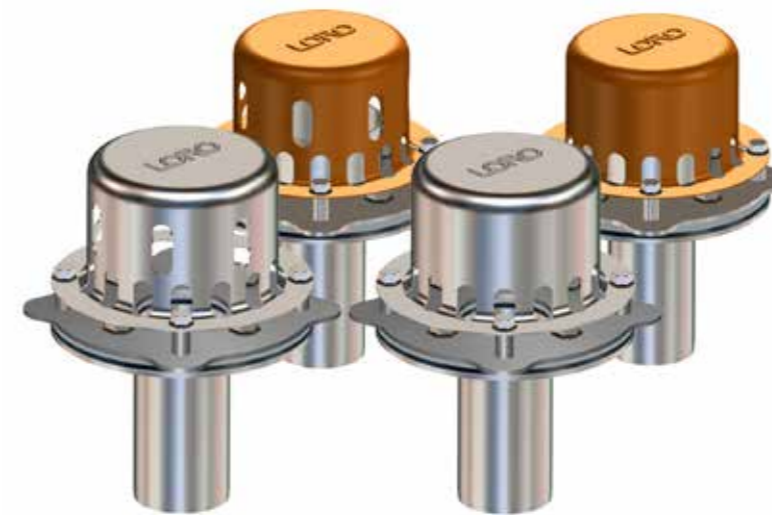
	Main drainage	DN 70
	Gravity flow	
	one-piece , without thermal insulation according to specification sheet LX3045	21118.070X
		•
	Emergency drainage	DN 70
	Gravity flow	
	one-piece , without thermal insulation according to specification sheet LX3047	21119.070X
		•

LORO-DRAINJET® Mini, Series 49

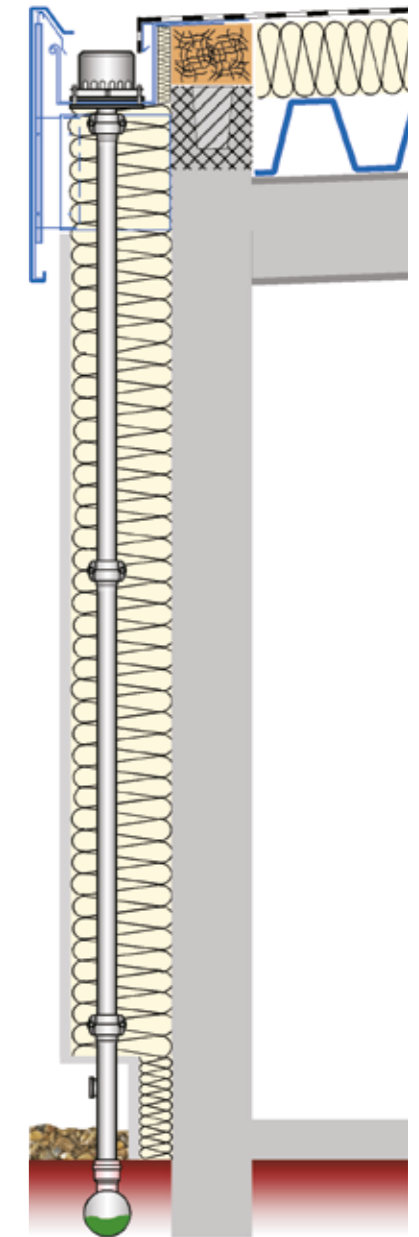
made of stainless steel, DN 70, according to DIN EN 1253, box gutter drainage with gravity flow for channel width from 150 mm

	Main drainage	DN 70
	Siphonic flow	
	one-piece , without thermal insulation according to specification sheet LX3044	21116.070X
		•
	Emergency drainage	DN 70
	Siphonic flow	
	one-piece , without thermal insulation 60 mm weir height according to specification sheet LX3046	21117.070X
		•
	Emergency drainage	DN 70
	Siphonic flow	
	one-piece , without thermal insulation 80 mm weir height according to specification sheet LX2070	21120.070X
		•

Example: Cornice channel with backflow-proof LORO-X downpipe in the facade.



* depending on channel measurements



Advantages:

- secure proof of performance due to system checks
- in DN 70 suitable for DRAINJET® standard special parts for siphonic flow
- space-saving for box gutters from 150 mm width
- high discharge rate up to 12.4 l/s with siphonic flow
- for outside and inside box gutters
- break-proof, shock-resistant and treadable due to complete system made of steel
- downpipe behind the facade as backflow-proof and pressure-resistant complete system
- practical clamping flange „without soldering or welding” for all metallic box gutters

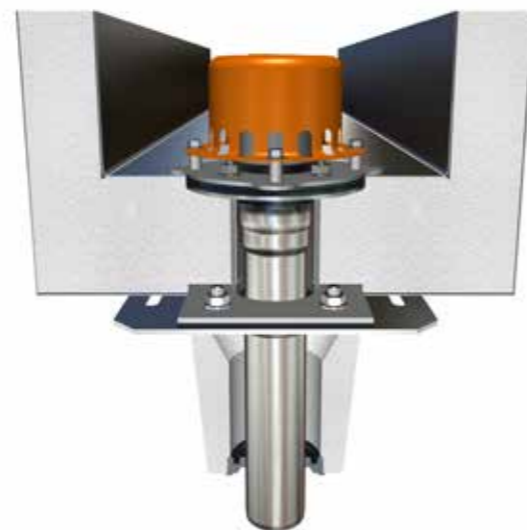
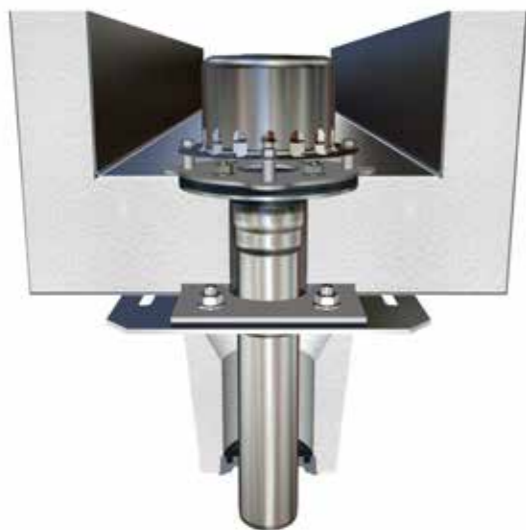
Example: Low point line as metallic box gutter on a flat roof.



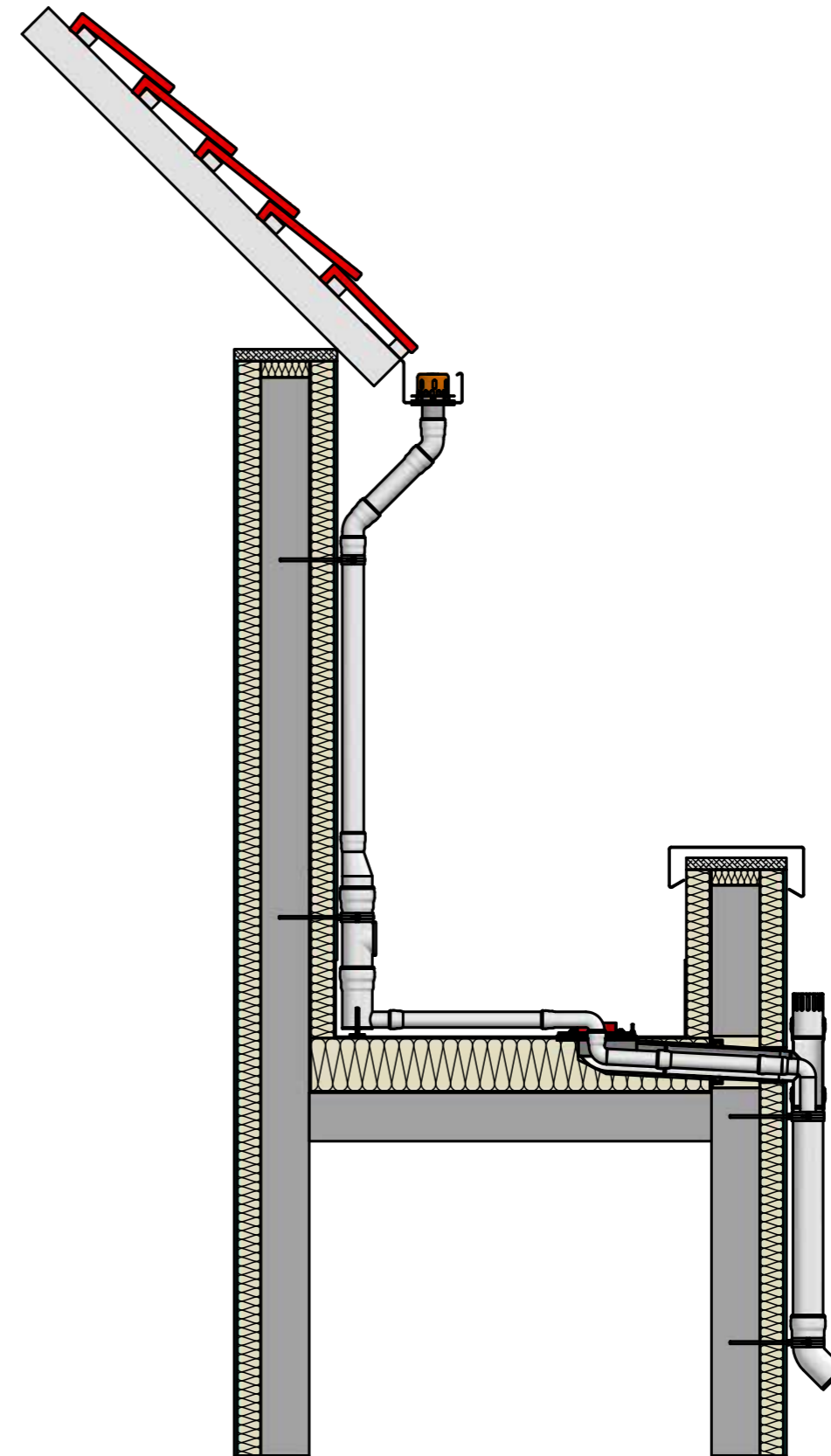
Example: insulated, metallic box gutter with two-piece DRAINJET mini drain.

Main drainage

Emergency drainage



Example: Roof terrace below a pitched roof with outside gutter box.



6 Product innovation 6: LORO-X Sliding flanges for vapor barrier height-adjustable bendable

LORO-X VARIOKANT Sliding flanges for bending on site are suitable for a vapor diffusion-tight pipe penetration through the vapor barrier, especially for the drain pipes of the LORO-X parapet drains for the main and emergency drainage.

The sliding flange is available as pipe penetration and for „double pipe“ with two pipe penetrations lying next to each other. In this case, the distance dimensions are optimized for our LORO-X DUOFLUX double pipe parapet drains and double pipe collector boxes.


The bonding flange made of stainless steel can be bended with customary tools so that the height of the pipe penetration can be variably and continuously adapted to the circumstances of the building.



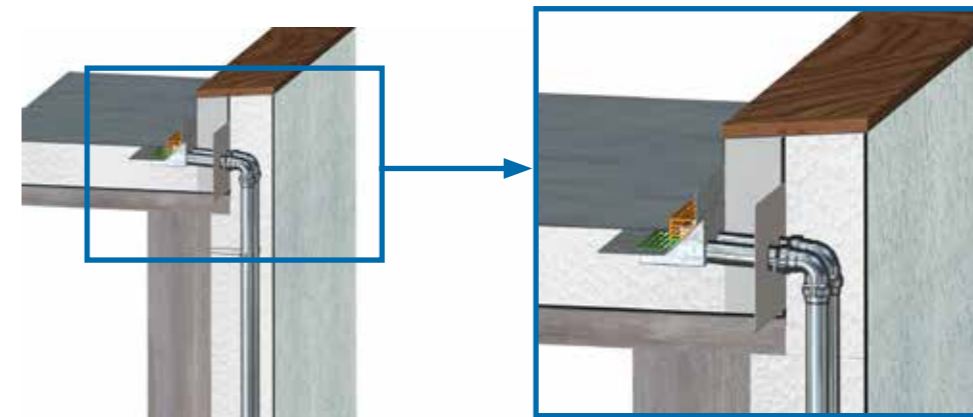
LORO-X Sliding flange for double pipe for bending on site

		DN 70	DN 100
		13073.070X	13073.100X
		•	•

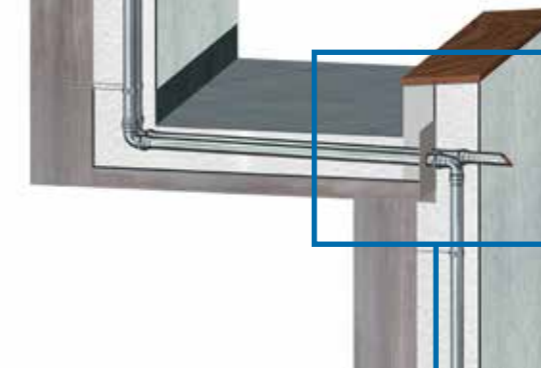
LORO-X Sliding flange for bending on site

		DN 40	DN 50	DN 70	DN 100
		15073.040X	15073.050X	15073.070X	15073.100X
		•	•	•	•

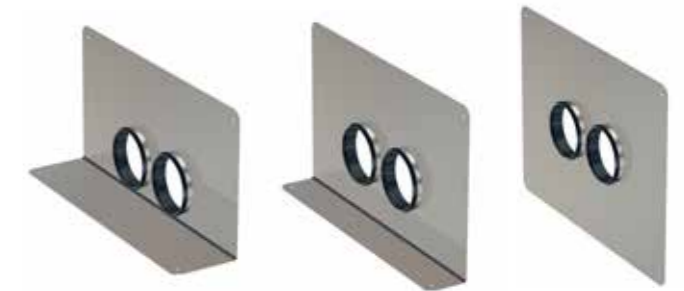
Application examples



For DUOFLUX® double pipe drains. Penetration through the vapor barrier



For the penetration through the vapor barrier of pipes that are lying next to each other



Height-adjustable bendable, depending on the thickness of the insulation or height of the emergency drainage.

7

Product innovation 7: LORO-X Series 43, parapet-direct, with bonding flange 90° for liquid plastic



The popular LORO-X Series 43 parapet-direct has been extended. Further space-saving drains with bonding flange and 90°-degree upstand for liquid plastic have been added.

Available are a main drain and an emergency drain each in DN 70 and DN 100, optimized for a safe gravity flow.

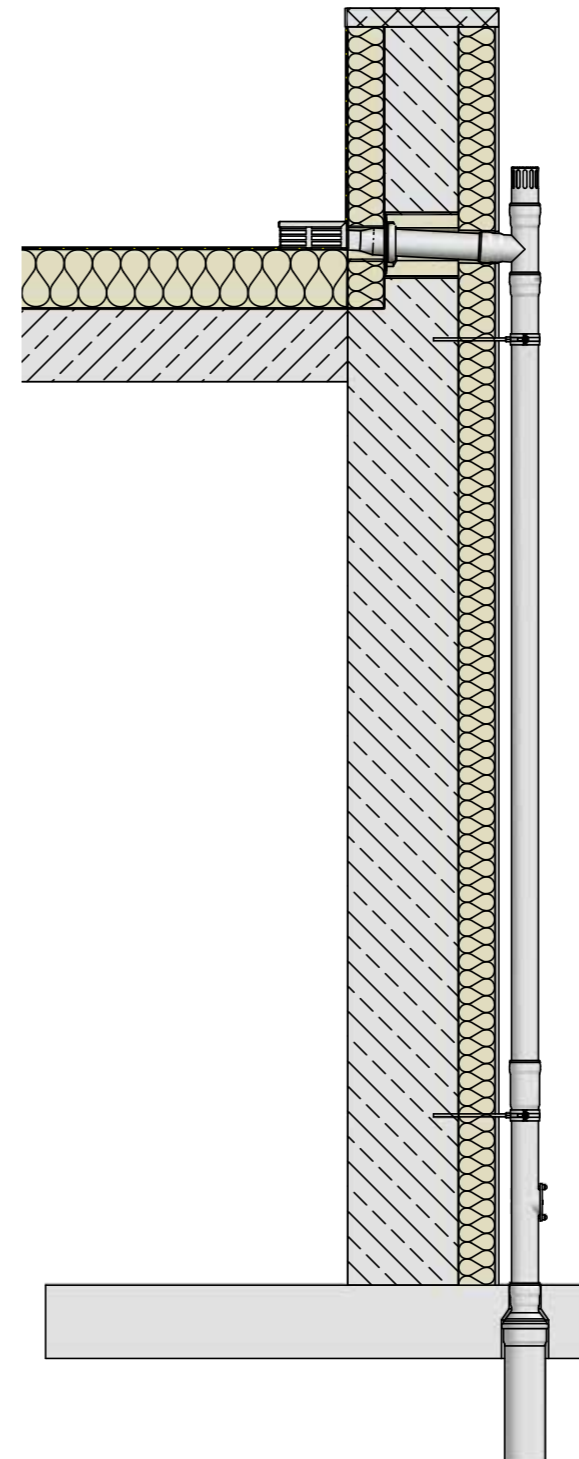
LORO-X Parapet-direct, with bonding flange 90° for liquid plastic

	Main drainage	DN 70	DN 100
	Gravity flow		
	made of galvanized steel	01331.070X	01331.100X
		•	•

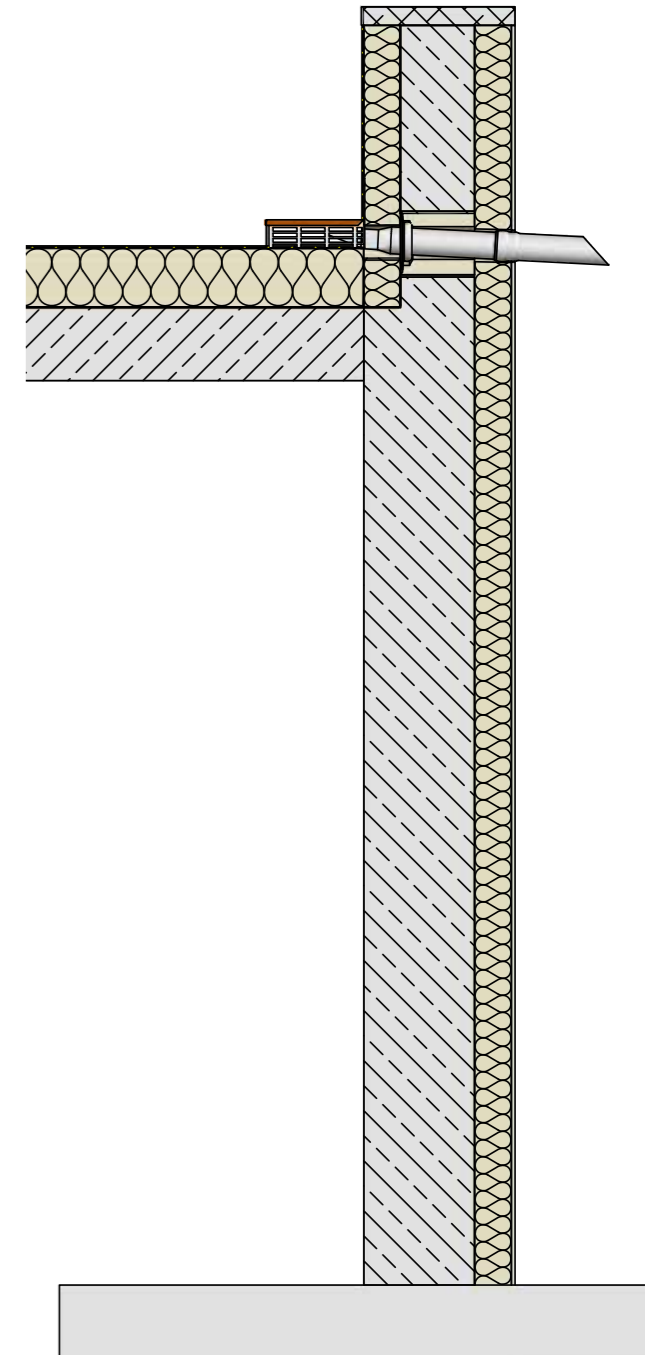
	Emergency drainage	DN 70	DN 100
	Gravity flow		
	made of galvanized steel	01329.070X	01329.100X
		•	•

Application examples

Main drainage



Emergency drainage



8a Product innovation 8: LORO-X Balcony drainage Series V-AK variable, and strainer unit made of stainless steel, for Series I, IK, G, GF and GS

The balcony drainage Series V-AK with upstand is always used in situations where a small distance to the wall is desired. The standard upstand, however, determines a fixed distance of the downpipe to the raised component.

The new variable bending flange of Series V-AK enables setting a variable distance of the downpipe to the wall of the balcony. Thus, the local circumstances can be optimally considered.

LORO-X Set up element Series V-AK, with bonding flange and variable bending flange

	made of stainless steel	DN 70
		21219.070X
		•

8b

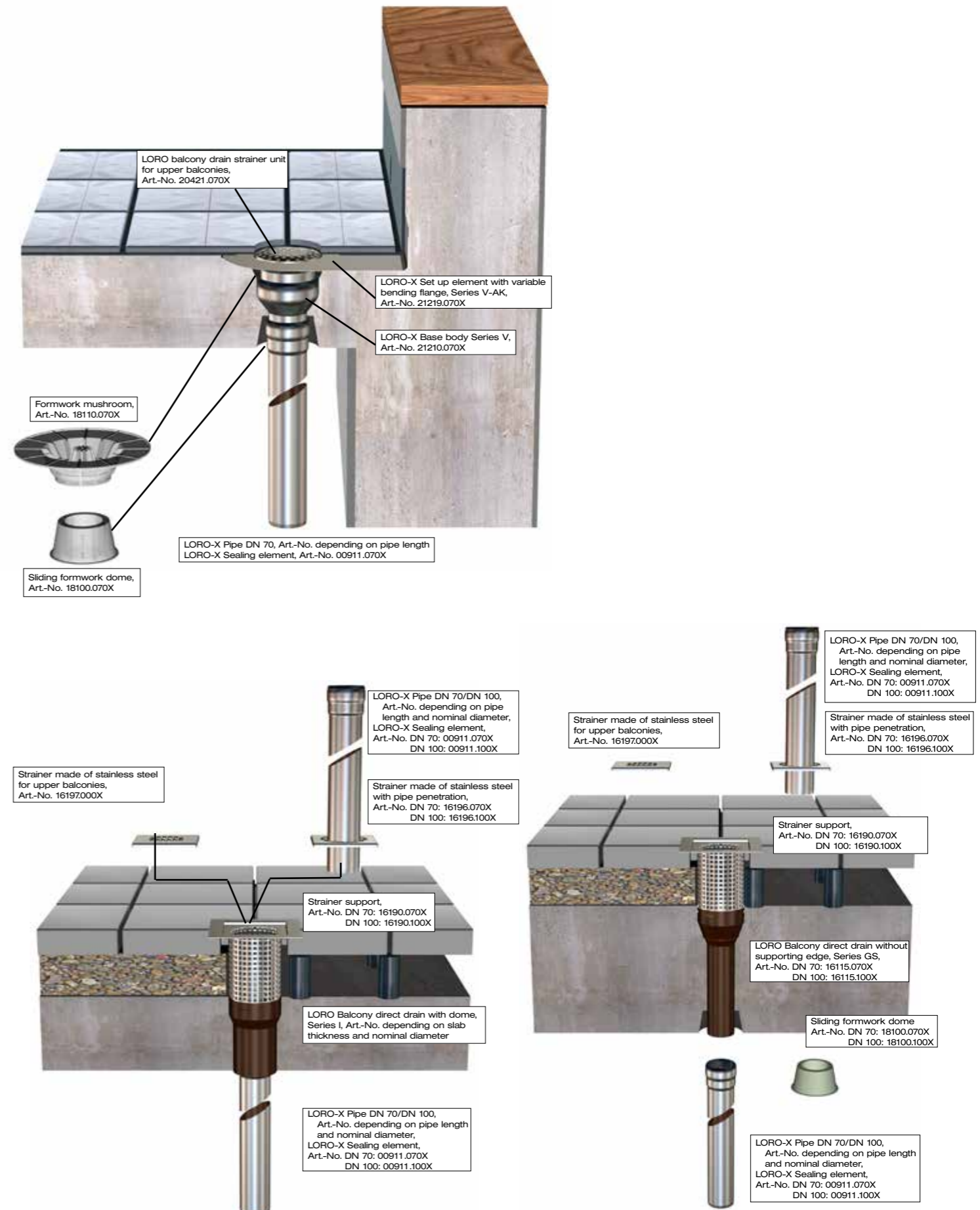
The LORO-X strainer support for balcony drains of Series I, IK, G, GF and GS is a high-quality alternative to the standard strainer supports made of plastic.

End strainers for single drains as well as ring strainers for direct drains can be inserted into the strainer support.

The circumferential collar as decorative metal sheet upgrades the balcony drainage on the second, the visible, drainage level.

LORO-X Strainer support, for balcony drains Series I, IK, G, GF and GS

	made of stainless steel	DN 70	DN 100
		16190.070X	16190.100X
		•	•



9a

Product innovation 9: LORO-X Fittings for parapet and cascade drainage



The LORO-X deflection fitting provides the transition from a pipe-in-pipe downpipe from the roof (DN 100/DN 50) into a horizontal offset across the roof terrace (DN 50/DN 50) for a separated main and emergency drainage.

The back-to-front version has been added to the product range by popular request. Hence, the side for the main and emergency drainage can be freely chosen based on architectural reasons.

LORO-X Deflection fitting, emergency drain on the right*

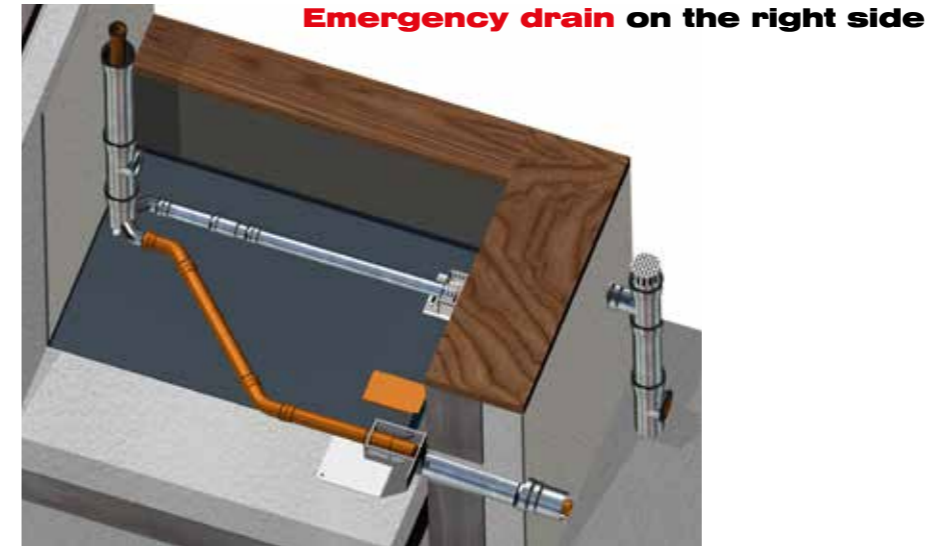
		DN 100/50/50
	made of galvanized steel	13240.DBBX
		•

*Attention: Cannot be combined with the LORO-X QUATTROFLUX!

9b

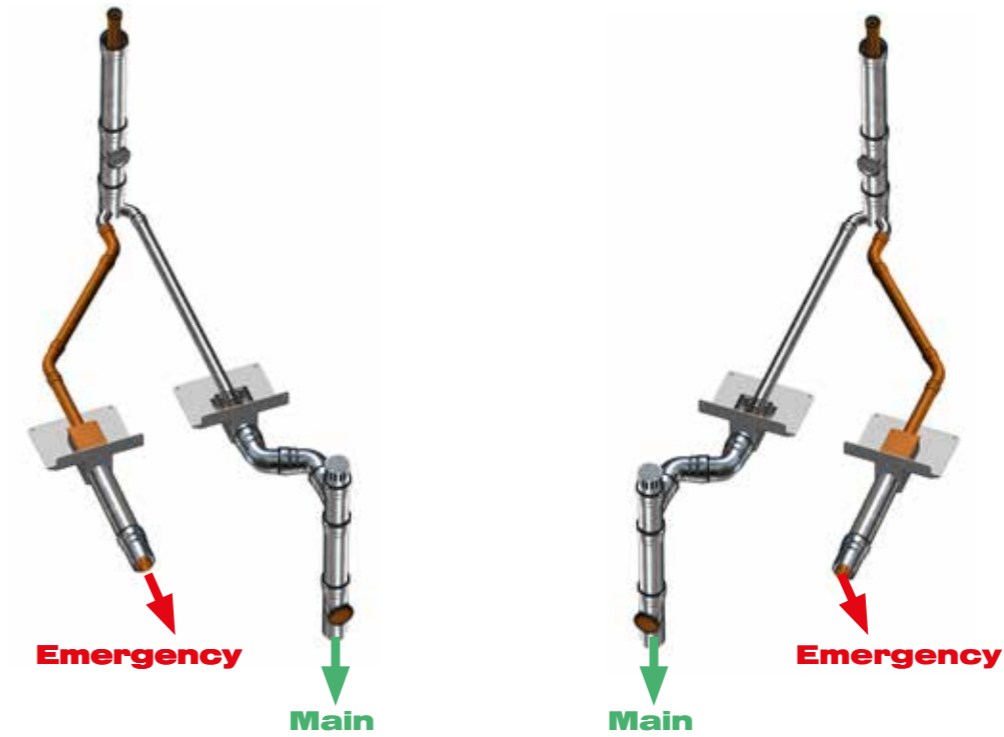
LORO-X Slip in socket, for length compensation and installation between 2 fixed points

		DN 70	DN 100
	made of galvanized steel	00813.070X	00813.100X
		•	•



Emergency drain on the right side

Emergency drain on the left side



LORO-X Slip in socket, for length compensation and installation between 2 fixed points

10 Product innovation 10: LORO-X Fittings for parapet and cascade drainage Branches with small distance to the wall

In the case of a parapet drainage, it is often difficult or even impossible to install the socket connection of a standard branch in the facade. Due to the fact that the distance of the downpipe to the facade is often comparatively small, LORO offers branches with a special short socket for these cases. With these short sockets the distance to the facade can be minimized.

Branches with short socket are available as normal version in DN 70 as well as DN 100 and also as pipe-in-pipe branch DN100/50 for main-emergency-combination systems.



LORO-X Branch with bend, short version for small distance to the parapet

		DN 100
	made of galvanized steel	13550.100X
		•

LORO-X Branch with short socket

		DN 70	DN 100
	made of galvanized steel	00201.CC0X	00201.DD0X
		•	•

Position	Name	Art-No.
1	LORO-X Pipe DN 50	depending on pipe length
2	Sealing element DN 50, for every LORO-X socket DN 50	00911.050X
3	LORO-X bend 45° DN 50 with narrow radius	00352.050X
4	LORO-X Pipe DN 50	01401.050X
5	LORO-X DUOSTREAM Multi-storey drain	13461.100X
6	LORO-X Sliding flange, for bending on site	15073.100X
7	LORO-X Securing clamp DN 100	00806.100X
8	LORO-X Pipe DN 50	01401.050X
9	LORO-X Pipe DN 100	01401.100X
10	LORO-X Ventilation piece DN 100	13217.100X
11	Sealing element DN 100, for every LORO-X socket DN 100	00911.100X
12	Double pipe branch DN 100 with bend DN 50	13550.100X
13	LORO-X Pipe clip DN 100	00975.100X
14	LORO-X Pipe DN 100	depending on pipe length
15	LORO-X Rain standpipe DN 100 with high performance safety overflow	55154.100X
16	Connector from LORO-X pipe to KA-socket	00630.100X
17	LORO grating	60403.000X
18	4x foot height-adjustable 80-100 mm	60414.000X



**11 Product innovation 11:
LORO-X Waterproof concrete spout
for balconies for setting in concrete
at the concrete plant**



The LORO-X waterproof concrete spout consists of 4 parts. Regarding the installation, it can be optimally used for the application at raised components made of waterproof concrete that have been manufactured at the concrete plant.

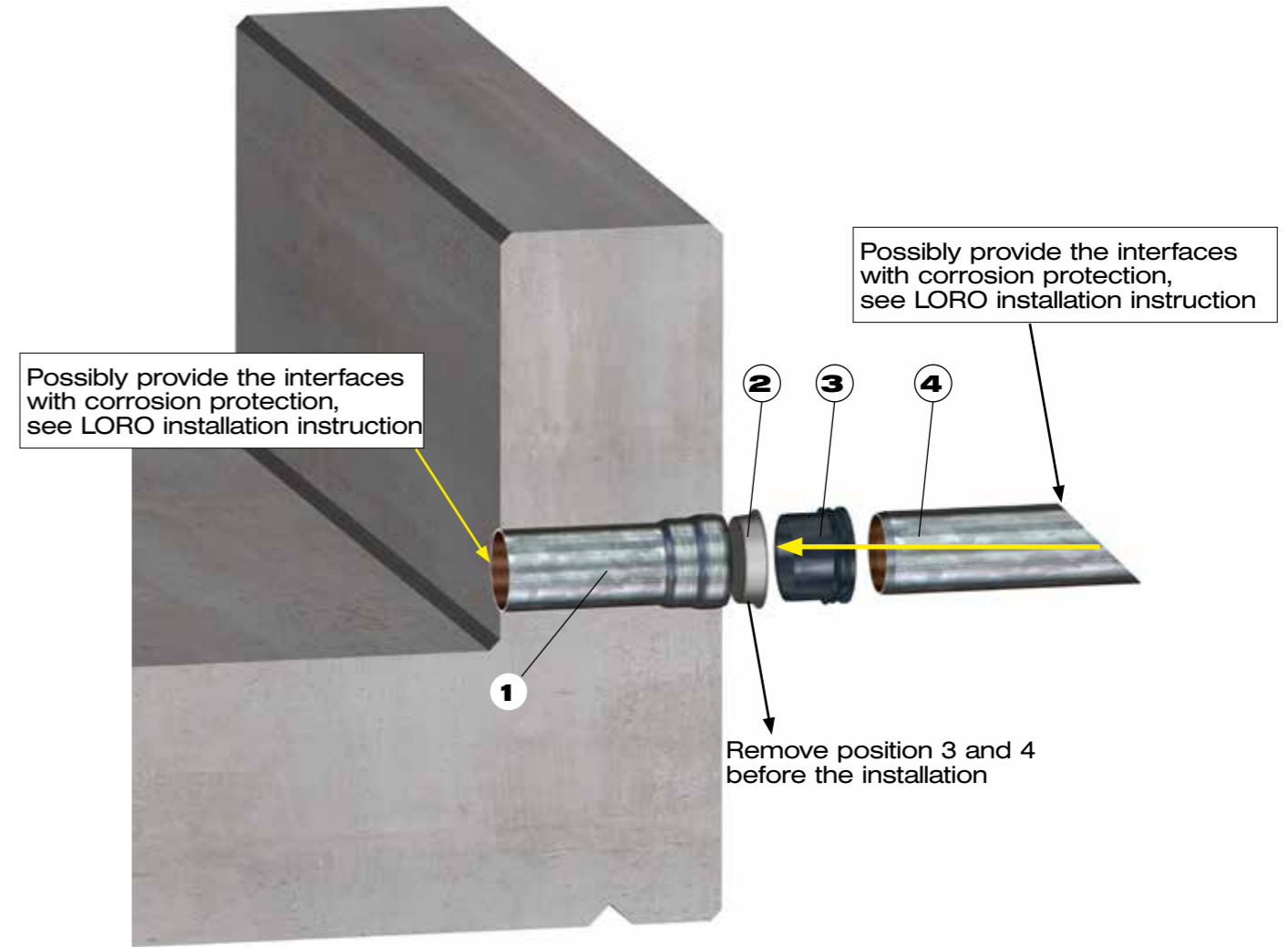
First, the base body (1) is encased in concrete at the concrete plant. During the encasing in concrete, the socket protection cap (2) prevents the unintended entering of concrete into the spout. During transport to the construction site, there are no dangerous parts sticking out because the base body closes flush on both sides.

Only after the installation at the construction site, the protruding spout (4) will be inserted together with the sealing element (3).

LORO-X Waterproof concrete spout

		DN 40	DN 50	DN 70
		15190.040X	15190.050X	15190.070X
		•	•	•

Application examples



- 1. LORO-X Pipe with one socket
- 2. LORO-X Socket protection cap as concrete-placing aid
- 3. LORO-X VAC sealing element
- 4. LORO-X Spout

