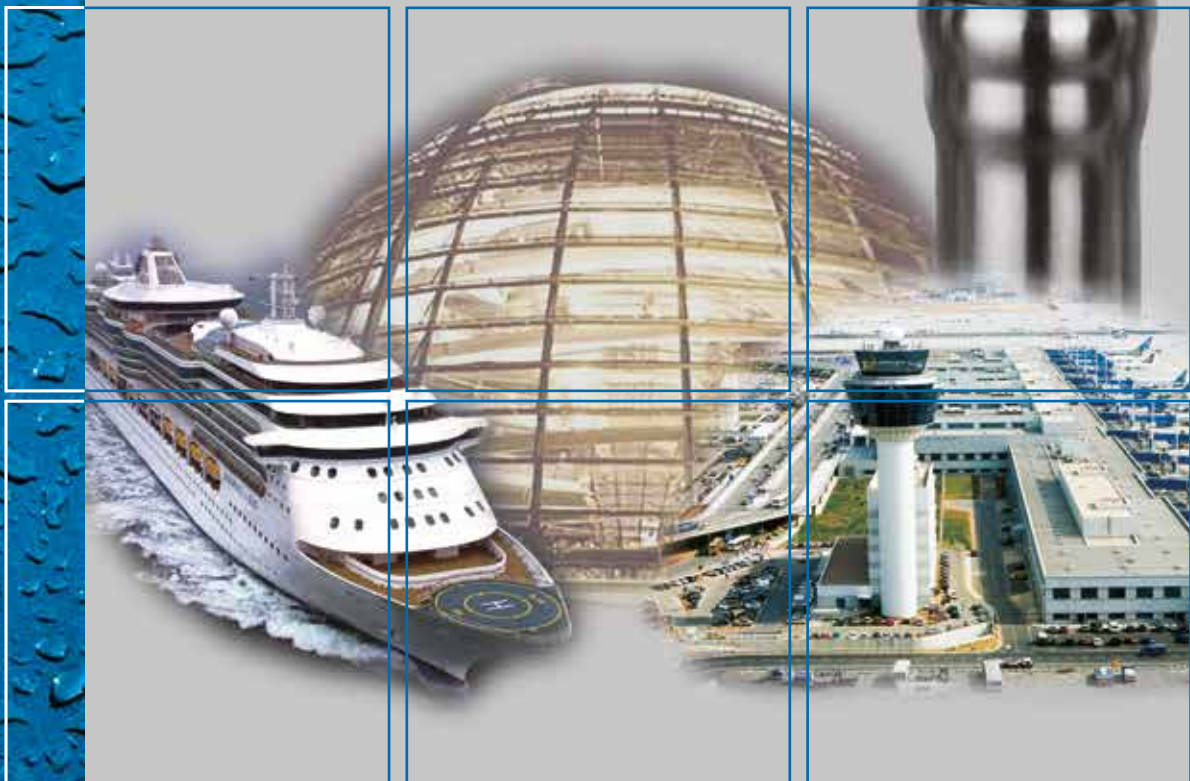


# LORO-X Steel discharge pipes

## LORO-X Steel discharge pipes










DN 32-300  
according to  
DIN EN 1123














LORO®



Steel hard arguments for  
**LORO-X**  
**Roof drainage systems**  
 with LORO-X push-fit socket joint,  
 according to DIN EN 1123

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Technischer Stand: August 2022.

Technische Änderungen vorbehalten.

## LORO-X steel discharge pipes, the sum of many positive properties.



Athens Airport



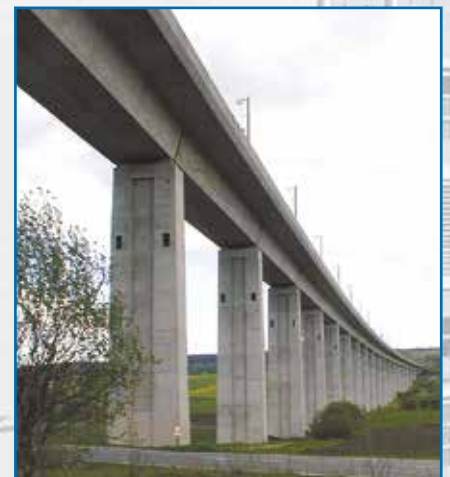
NORD LB, Hanover



TUI Arena, Hanover



ICE



DB line (bridge construction)



Multi-storey car park, Hanover  
Exhibition Centre



Arena 'Auf Schalke', Gelsenkirchen

The decisive material and installation advantages and the reliability of the LORO-X push-fit socket connection – manufactured hundreds of millions of times – lead to building owners, planners and installers using LORO-X steel discharge pipes for the drainage of residential buildings, hotels, schools, public buildings, bridges, industrial buildings and ship projects.



Radiance of the Seas



German Pavilion, Hanover



- low weight
- high strength
- incombustible
- insensitive to frost
- high temperature resistance
- fast, simple installation
- tight through insertion: no screwing, gluing, soldering or welding
- low fastening expenditure
- complete range of fittings
- international approvals



German Bundestag, Berlin



Transparent factory, Dresden



## LORO-X Steel discharge pipes and fittings DN 32 - DN 300 according to DIN EN 1123

**for the drainage of wastewater in buildings and on properties (grey water and rain water)**

**LORO-X steel discharge pipes** from DN 40 to DN 300 according to DIN EN 1123, hot-dip galvanised with additional inside coating, have proven their worth for more than 50 years in drainage systems for buildings and properties for grey water and rain water.

**The hot-dip galvanising** and additional inside coating of all pipes and fittings offers optimum DUPLEX corrosion protection.

**Fast installation:** A key feature is the LORO-X two-stage socket with special sealing elements for problem-free connection of the pipes. The decisive material and installation advantages and the reliability of the LORO-X push-fit socket connection – manufactured hundreds of millions of times – lead to building owners, planners and installers using LORO-X steel discharge pipes for the drainage of residential buildings, hotels, hospitals, schools, public buildings, industrial buildings and ship projects.

**Pressure-resistant and stable:** In conjunction with LORO-X anchor clips, LORO-X steel discharge pipes are also used with increasing success as pressure pipes, for example for cooling water suction pipes and similar. LORO-X steel discharge pipes are impact proof, shock proof and frost proof, incombustible and dimensionally stable.

**Fittings:** A versatile range of fittings solves every installation case.

**XML without socket:** The nominal sizes DN 250 and DN 300 are assembled without sockets with CV connectors for rain water drainage.

### Advantages of the steel discharge pipe:

- shock proof and dimensionally stable
- incombustible
- not susceptible to heat or cold

### Advantages of the LORO-X push-fit socket connection:

- stable sealing chamber
- resistant to buckling
- fast installation

## LORO-X steel discharge pipes – the sum of many positive properties.

All technical data, references to standards, test reports, technical specifications etc. correspond to the status at the time of going to print.  
No rights can be derived from this information.



**The LORO-X socket**

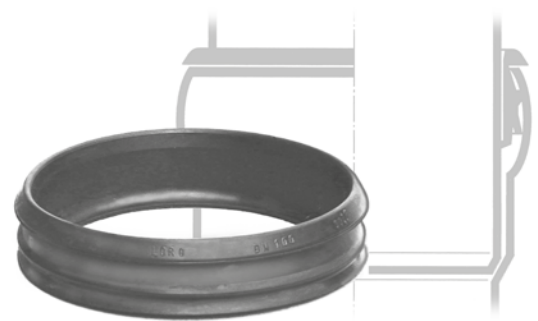
The LORO-X socket is a two-stage push-fit socket. The upper socket chamber accepts the sealing element. The centring lower part protects the socket joint against buckling of the pipeline and against one-sided compaction of the sealing element in case of horizontal installation. The LORO-X push-fit socket connection has proven its worth countless times for gravity drainage and siphonic flow. Its stability vouches for safety and trust. Reason enough to stick to it.



LORO-X socket

**The LORO-X sealing element**

The LORO-X sealing element is formed as a lip sleeve. It is inserted in the upper socket chamber. Through the insertion of the pipe end, the sealing lips are pressed against the inner wall of the sealing chamber and against the outer wall of the insert pipe. The collar of the sealing element, which rests on the rim of the socket, prevents it from being pulled out of place during insertion. The collar is visible all round and can thus be used to check for a perfectly manufactured socket joint. If the pressure inside the pipe increases, the lips of the sealing element are pressed more firmly against the pipe walls.



**Fast installation, low spatial requirement**

LORO-X STEEL DISCHARGE PIPES are among the fastest when it comes to installing. Time studies for the SHK Lower Saxony professional association's Sanitary Technology calculation manual are the proof. The expenditure for the fastenings and fixed point holders is lower than for other materials. The LORO-X push-fit socket enables the compensation of tolerances during the assembly. The practice-oriented and purposefully designed range of pipes (lengths from 250 mm to 6000 mm) reduces the separation of pipelines to a minimum. At the same time, pipes with sockets at both ends allow installation without pipe offcuts.

LORO-X STEEL DISCHARGE PIPES need only small recesses. A space-saving pipe layout is achieved with small external diameters, bends with tight radii or with prefabricated special fittings.



#### Technical data

##### Pipe material

Quality precision steel pipe according to DIN EN 10305-3 (DN 32 - DN 150) and DIN 2458 (DN 200 - DN 300)  
 Tensile strength:  $R_m$  310-410 N/mm<sup>2</sup>  
 Elongation at rupture:  $A_5$  min. 28%  
 Shear strength: around 65 – 75% of the tensile strength  
 Dynamic modulus of elasticity: at 20 °C = 212 N/mm<sup>2</sup>  
 Thermal conductivity: at 20 °C = 55 W/m°C  
 Length expansion coefficient: 0.0117 mm/m°C  
 Example: 3 m pipe, temperature difference 25 °C  
 Elongation =  $3.0 \times 25 \times 0.0117 = 0.8775$  mm



##### Corrosion protection

Hot-dip galvanised inside and outside according to DIN EN 1123 / DIN EN ISO 1461 with additional inside coating, colour: red-brown. The inside coating forms a corrosion protection barrier against aggressive exhaust air in the area of the surfaces not in contact with the wastewater (e.g. in ventilation pipes) and increases the resistance to the chemical and mechanical influences of household wastewater, surface water and groundwater. Consultation with LOROWERK is necessary in case of deviations. The smooth surface inside the pipe reduces friction resistance and encrustation. The cut surfaces of pipes that have been cut to length do not corrode. The interactive zinc boundary layers produce the well-known cathodic protection.



##### Sealing elements

Standard:  
 NB (NBR) nitrile-butadiene rubber, trade name e.g. PERBUNAN N, DN 40 - DN 50, resistant at wastewater temperatures up to 95 °C.  
 SB (SBR) styrene-butadiene copolymer, trade name e.g. BUNA, DN 70 - DN 200, resistant at wastewater temperatures up to 95 °C.  
 Further sealing element qualities on enquiry.



##### Tightness values

LORO-X steel discharge pipes are watertight and gastight with the operating pressures and gravity drainage normal in building drainage. The tightness values of the LORO-X push-fit socket connection lie above the requirement of the former DIN 1986-100 standard (internal and external overpressure 0 – 0.5 bar) for all nominal sizes.

For higher pressures the socket joint can be secured against axial thrust by the LORO-X anchor clip, no. 806x (DN 32 – DN 125).

The following values are achieved when installing with LORO-X anchor clips or anchor hoops and glued sealing element:

DN 40 - 50	= 15 bar overpressure
DN 70 - 100	= 5 bar overpressure
DN 125	= 4 bar overpressure
DN 150 - 200	= 1.5 bar overpressure
DN 250 - 300	= 3.0 bar overpressure*

LORO-X anchor hoops, no. 808x, are available for the additional axial securing of pipes and fittings in the sizes DN 150 and DN 200.

Custom-made cleaning pipes and closing plugs are available for pressures above 0.5 bar.

##### Fire resistance

According to DIN 4102 LORO-X steel discharge pipes are to be assigned to building material class A1, incombustible, and are classified as incombustible according to DIN 1986-100.

##### Supervision

LORO-X steel discharge pipes are manufactured according to DIN EN 1123. The manufacturing supervision for pipes and fittings is performed by the Würzburg Materials Testing Office of LGA QualiTest GmbH and for sealing elements by the State Materials Testing Office of North Rhine-Westphalia in Dortmund (external supervision).
















**System overview**

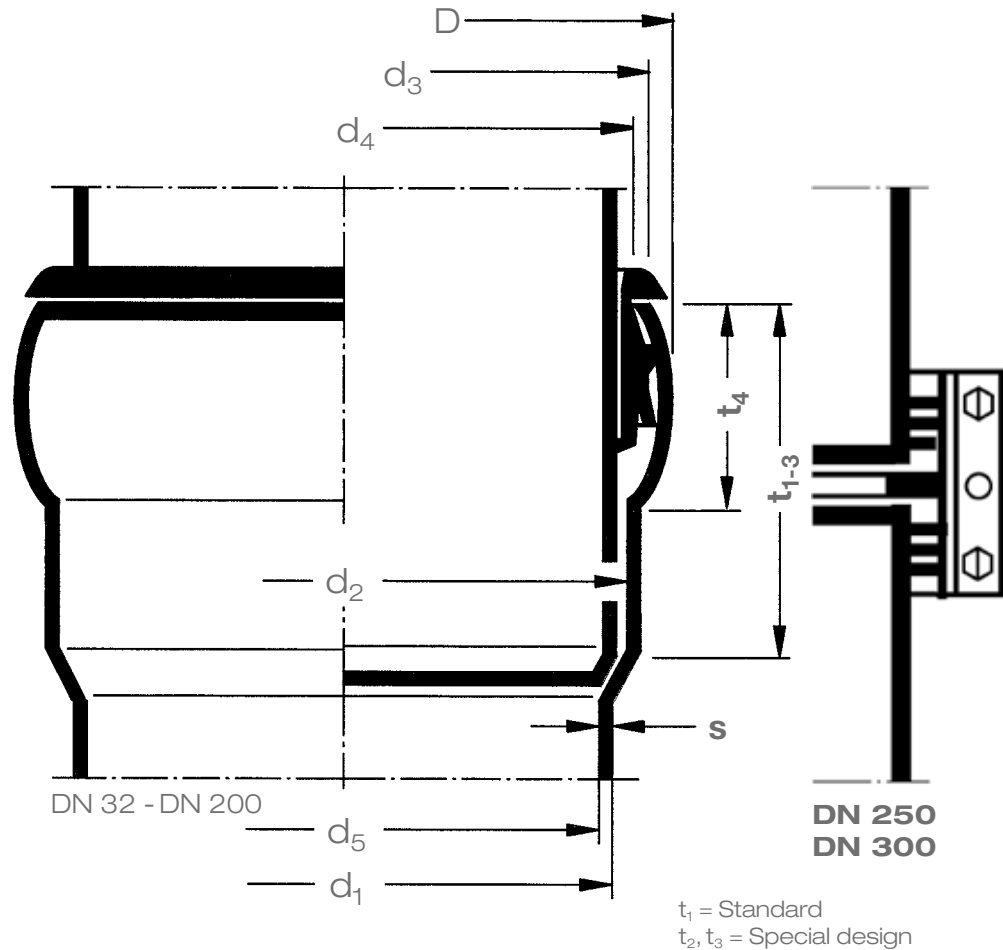
<b>LORO-X steel discharge pipes</b>		32	40	50	70	80	100	125	150	200
	Pipes with one socket	●	●	●	●	●	●	●	●	●
	Pipes with two sockets	-	●	●	●	●	●	-	-	-
	Branches	●	●	●	●	●	●	●	●	●
	Reducing branches	●	●	●	●	●	●	●	●	●
	Reducing double branches	-	-	●	●	-	●	●	●	●
	Reducing corner double branches	-	-	●	●	-	●	-	-	-
	Transition branches	-	●	●	●	-	-	-	-	-
	Bends	●	●	●	●	●	●	●	●	●
	Bends with tight radius	-	●	●	●	●	-	-	-	-
	Angle bends	-	●	●	●	●	●	-	-	-
	Offset pipes	-	-	●	●	●	●	●	-	-
	Bends with smoothing length	-	-	-	-	-	●	-	-	-
	Odour traps	-	-	-	●	-	●	-	-	-
	Cleaning pipes	-	●	●	●	●	●	●	●	●
	Rain standpipes, round	-	-	-	●	●	●	●	●	-
	Downpipe supports	-	-	-	-	-	●	●	●	●
	Connectors to pipes from other manufacturers	-	-	●	●	●	●	●	●	●
	Threaded connector	-	●	●	-	-	-	-	-	-
	Transition pipes	●	●	●	●	●	●	●	●	●
	Socket pieces	-	●	●	●	●	●	●	●	●
	Anchor clips	●	●	●	●	●	●	●	●	●
	Closing plugs	-	●	●	●	●	●	●	●	●
	Sealing elements	●	●	●	●	●	●	●	●	●
	Sealing elements for vacuum drainage	-	●	●	●	-	-	-	-	-
	Pipe clips	-	●	●	●	●	●	●	●	●

**System overview**

<b>LORO-XML Steel discharge pipes without socket</b>		DN	250	DN 300
	Pipes		●	●
	Branches		●	●
	Bends		●	●
	Cleaning pipes		●	●
	Transition pipes		●	●
	Connectors		●	●
	Down pipe supports		●	●
	Closing plugs		●	●
	CV connector		●	●
	CV claw		●	●
	Pipe clips		●	●

● as standard program available

## Dimensions and weights



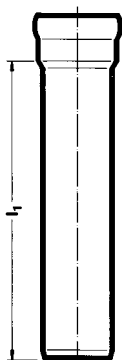
Pipe- and socket dimensions\*

DN	D	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	s	t <sub>1</sub>	t <sub>2</sub>	t <sub>3</sub>	t <sub>4</sub>	kg/m	kg/m**	F***
32	39,0	32	34	37	34	30,0	1,0	25	-	-	16	0,8	1,6	706,9
40	51,0	42	45	48	45	39,0	1,5	30	70	100	16	1,5	2,6	1194,6
50	63,0	53	56	60	56	50,0	1,5	38	90	130	19	2,0	4,0	1963,5
70	84,2	73	76	81	76	69,8	1,6	55	120	175	27	3,0	6,8	3826,5
80	102,2	89	92	99	92	85,8	1,6	60	130	190	31	3,5	9,3	5781,8
100	118,0	102	106	114	107	98,0	2,0	70	150	220	38	4,9	12,4	7543,0
125	152,0	133	138	147	140	128,0	2,5	75	160	235	41	8,0	20,8	12868,0
150	181,0	159	164	176	168	154,0	2,5	80	170	250	46	9,6	28,2	18626,5
200	246,8	219	224	241	228	213,2	2,9	120	250	370	76	15,7	51,4	35699,7
250	-	273	-	-	-	265,0	4,0	-	-	-	-	24,2	81,7	55154,6
300	-	324	-	-	-	316,0	4,0	-	-	-	-	31,7	110,0	78426,7

\* Tolerance of dimensions for pipes and fittings, according to DIN EN 1123 part 2

\*\* kg/m filled to capacity with water

\*\*\* F = Cross section (mm<sup>2</sup>)

**Pipes with one socket**


l <sub>1</sub> = 250 mm		
Art.-No.	DN	kg
01401.032X	32	0,2
01401.040X	40	0,5
01401.050X	50	0,6
01401.070X	70	0,9
01401.080X	80	1,2
01401.100X	100	1,7
01401.125X	125	2,7
01401.150X	150	3,3
01401.200X	200	5,8

l <sub>1</sub> = 500 mm		
Art.-No.	DN	kg
01301.032X	32	0,5
01301.040X	40	0,8
01301.050X	50	1,1
01301.070X	70	1,7
01301.080X	80	2,1
01301.100X	100	2,9
01301.125X	125	4,8
01301.150X	150	5,8
01301.200X	200	9,5

l <sub>1</sub> = 750 mm		
Art.-No.	DN	kg
01211.040X	40	1,1
01211.050X	50	1,6
01211.070X	70	2,5
01211.080X	80	3,1
01211.100X	100	4,3
01211.125X	125	7,1
01211.150X	150	8,4
01211.200X	200	13,2

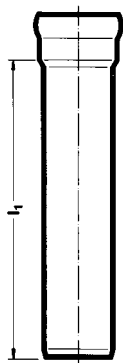
l <sub>1</sub> = 1000 mm		
Art.-No.	DN	kg
01201.032X	32	1,0
01201.040X	40	1,4
01201.050X	50	2,1
01201.070X	70	3,2
01201.080X	80	4,2
01201.100X	100	5,6
01201.125X	125	9,0
01201.150X	150	10,8
01201.200X	200	18,2

l <sub>1</sub> = 1500 mm		
Art.-No.	DN	kg
01111.032X	32	1,5
01111.040X	40	2,5
01111.050X	50	3,2
01111.070X	70	4,7
01111.080X	80	6,0
01111.100X	100	9,1
01111.125X	125	13,1
01111.150X	150	16,8
01111.200X	200	25,4

l <sub>1</sub> = 2000 mm		
Art.-No.	DN	kg
01101.032X	32	2,0
01101.040X	40	3,3
01101.050X	50	4,3
01101.070X	70	6,4
01101.080X	80	8,1
01101.100X	100	11,2
01101.125X	125	17,2
01101.150X	150	22,1
01101.200X	200	34,4

l <sub>1</sub> = 2500 mm		
Art.-No.	DN	kg
01004.040X	40	4,1
01004.050X	50	5,4
01004.070X	70	8,0
01004.080X	80	10,0
01004.100X	100	14,0
01004.125X	125	21,4
01004.150X	150	27,5
01004.200X	200	41,1

l <sub>1</sub> = 2750 mm		
Art.-No.	DN	kg
01005.050X	50	5,9
01005.070X	70	8,8
01005.080X	80	10,3
01005.100X	100	15,4
01005.125X	125	23,5

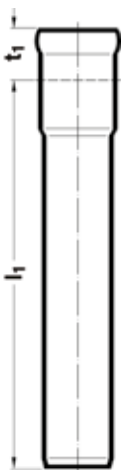
**Pipes with one socket**


l <sub>1</sub> = 3000 mm		
Art.-No.	DN	kg
01001.040X	40	5,0
01001.050X	50	6,4
01001.070X	70	9,5
01001.080X	80	12,0
01001.100X	100	16,6
01001.125X	125	27,4
01001.150X	150	32,7
01001.200X	200	50,3

l <sub>1</sub> = 4000 mm		
Art.-No.	DN	kg
01011.050X	50	8,6
01011.070X	70	12,8
01011.080X	80	16,0
01011.100X	100	22,2
01011.125X	125	33,9
01011.150X	150	45,0
01011.200X	200	64,7

l <sub>1</sub> = 5000 mm		
Art.-No.	DN	kg
01013.070X	70	15,8
01013.080X	80	19,8
01013.100X	100	27,6
01013.125X	125	45,7
01013.150X	150	55,5

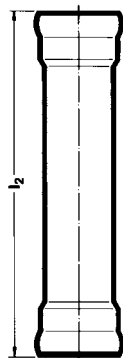
l <sub>1</sub> = 6000 mm		
Art.-No.	DN	kg
01014.070X	70	18,9
01014.080X	80	23,9
01014.100X	100	33,0
01014.125X	125	54,6
01014.150X	150	66,3


**Pipes with long socket\***

l <sub>1</sub> = 2500* mm			
Art.-No.	DN	t <sub>1</sub>	kg
01002.050X	50	38	5,2
01002.070X	70	55	7,9
01002.100X	100	70	14,0

l <sub>1</sub> = 2750* mm			
Art.-No.	DN	t <sub>1</sub>	kg
01003.050X	50	38	5,7
01003.070X	70	55	8,7
01003.100X	100	70	15,3

\* Specially for connections from floor to floor in connection with LORO-balcony drains

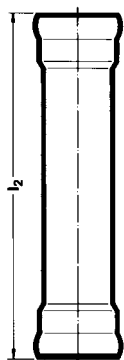
**Pipes with two socket**


l <sub>2</sub> = 250 mm		
Art.-No.	DN	kg
00140.040X	40	0,4
00140.050X	50	0,5
00140.070X	70	0,8

l <sub>2</sub> = 500 mm		
Art.-No.	DN	kg
00130.040X	40	0,7
00130.050X	50	1,0
00130.070X	70	1,5
00130.100X	100	2,8

l <sub>2</sub> = 750 mm		
Art.-No.	DN	kg
00121.040X	40	1,2
00121.050X	50	1,5
00121.070X	70	2,3
00121.080X	80	3,0
00121.100X	100	4,0

l <sub>2</sub> = 1000 mm		
Art.-No.	DN	kg
00120.040X	40	1,6
00120.050X	50	2,0
00120.070X	70	3,0
00120.080X	80	3,8
00120.100X	100	5,2



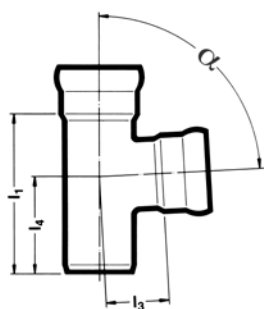
#### Pipes with two socket

$l_2 = 2000 \text{ mm}$

Art.-No.	DN	kg
00110.040X	40	3,3
00110.050X	50	4,2
00110.070X	70	6,2
00110.080X	80	7,9
00110.100X	100	10,9

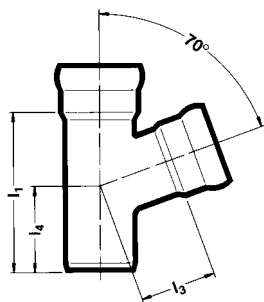
$l_2 = 3000 \text{ mm}$

Art.-No.	DN	kg
00100.040X	40	4,8
00100.050X	50	6,3
00100.070X	70	9,3
00100.080X	80	11,7
00100.100X	100	16,3



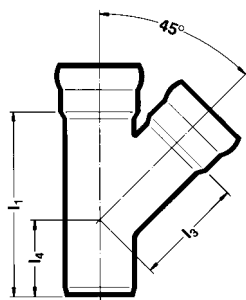
#### Branches 87°

Art.-No.	DN	$l_1$	$l_3$	$l_4$	kg
00200.AA0X	40	110	40	70	0,3
00200.BB0X	50	130	50	80	0,5
00200.CC0X	70	175	65	110	0,9
00200.MM0X	80	205	78	135	1,4
00200.DD0X	100	230	90	140	2,2
00200.EE0X	125	285	120	170	4,0
00200.FF0X	150	320	135	190	5,2
00200.GG0X	200	420	170	260	10,9



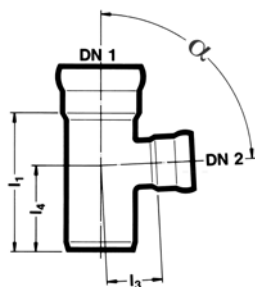
#### Branches 70°

Art.-No.	DN	$l_1$	$l_3$	$l_4$	kg
00210.AA0X	40	110	50	60	0,3
00210.BB0X	50	130	60	70	0,5
00210.CC0X	70	175	75	95	0,9
00210.DD0X	100	230	110	125	2,3
00210.EE0X	125	285	145	150	4,2
00210.FF0X	150	320	160	160	5,4
00210.GG0X	200	420	210	220	11,4

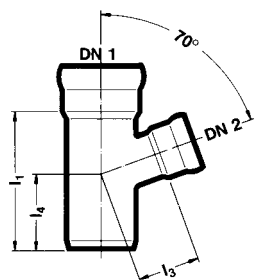


#### Branches 45°

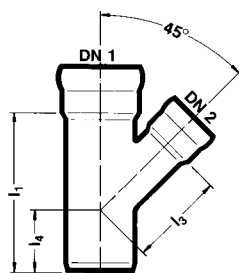
Art.-No.	DN	$l_1$	$l_3$	$l_4$	kg
00220.LL0X	32	104	64	46	0,1
00220.AA0X	40	125	70	55	0,4
00220.BB0X	50	150	90	65	0,6
00220.CC0X	70	200	115	85	1,1
00220.MM0X	80	235	138	97	1,6
00220.DD0X	100	265	155	110	2,5
00220.EE0X	125	340	210	130	4,9
00220.FF0X	150	380	240	140	6,2
00220.GG0X	200	500	320	190	13,1

**Reducing Branches 87°**


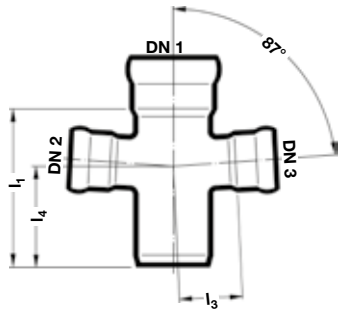
Art.-No.	DN 1	DN 2	l <sub>1</sub>	l <sub>3</sub>	l <sub>4</sub>	kg
<a href="#">00230.BA0X</a>	50	40	120	46	75	0,4
<a href="#">00230.CA0X</a>	70	40	145	57	95	0,7
<a href="#">00230.CB0X</a>	70	50	150	61	100	0,8
<a href="#">00230.MB0X</a>	80	50	155	69	103	1,0
<a href="#">00230.MC0X</a>	80	70	175	75	115	1,2
<a href="#">00230.DA0X</a>	100	40	175	72	115	1,4
<a href="#">00230.DB0X</a>	100	50	180	76	115	1,5
<a href="#">00230.DC0X</a>	100	70	200	80	125	1,7
<a href="#">00230.DM0X</a>	100	80	210	85	135	2,0
<a href="#">00230.EB0X</a>	125	50	200	91	125	2,4
<a href="#">00230.EC0X</a>	125	70	225	95	140	2,8
<a href="#">00230.ED0X</a>	125	100	255	105	155	3,3
<a href="#">00230.FC0X</a>	150	70	225	109	140	3,3
<a href="#">00230.FD0X</a>	150	100	255	119	155	3,9
<a href="#">00230.FE0X</a>	150	125	290	134	175	4,6
<a href="#">00230.GE0X</a>	200	125	325	165	210	8,1
<a href="#">00230.GF0X</a>	200	150	355	166	225	8,8

**Reducing Branches 70°**


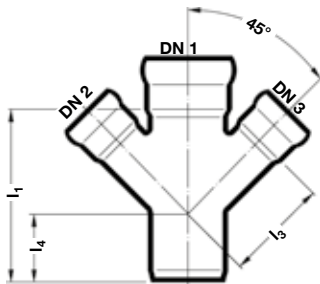
Art.-No.	DN 1	DN 2	l <sub>1</sub>	l <sub>3</sub>	l <sub>4</sub>	kg
<a href="#">00240.BA0X</a>	50	40	120	57	65	0,5
<a href="#">00240.CB0X</a>	70	50	150	72	85	0,8
<a href="#">00240.MC0X</a>	80	70	180	85	95	1,1
<a href="#">00240.DB0X</a>	100	50	180	87	95	1,5
<a href="#">00240.DC0X</a>	100	70	200	90	110	1,8

**Reducing Branches 45°**


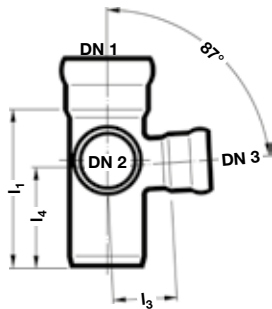
Art.-No.	DN 1	DN 2	l <sub>1</sub>	l <sub>3</sub>	l <sub>4</sub>	kg
<a href="#">00250.ALOX</a>	40	32	105	62	44	0,2
<a href="#">00250.BLOX</a>	50	32	110	70	45	0,4
<a href="#">00250.BA0X</a>	50	40	130	79	50	0,5
<a href="#">00250.CA0X</a>	70	40	150	95	60	0,7
<a href="#">00250.CB0X</a>	70	50	175	106	75	0,9
<a href="#">00250.MB0X</a>	80	50	185	117	72	1,1
<a href="#">00250.MC0X</a>	80	70	200	125	85	1,3
<a href="#">00250.DA0X</a>	100	40	180	116	65	1,5
<a href="#">00250.DB0X</a>	100	50	200	127	75	1,7
<a href="#">00250.DC0X</a>	100	70	230	136	90	2,0
<a href="#">00250.DM0X</a>	100	80	250	145	100	2,1
<a href="#">00250.EB0X</a>	125	50	225	148	75	2,7
<a href="#">00250.EC0X</a>	125	70	255	157	90	3,1
<a href="#">00250.ED0X</a>	125	100	290	176	105	3,9
<a href="#">00250.FC0X</a>	150	70	255	177	80	3,7
<a href="#">00250.FD0X</a>	150	100	290	195	95	4,5
<a href="#">00250.FE0X</a>	150	125	340	230	120	5,6
<a href="#">00250.GD0X</a>	200	100	325	240	100	7,6
<a href="#">00250.GE0X</a>	200	125	380	274	130	9,1
<a href="#">00250.GF0X</a>	200	150	420	284	150	9,9

**Reducing double branches 87°**


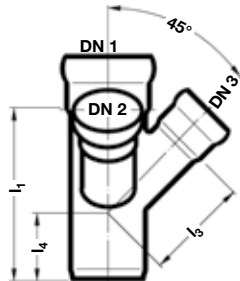
Art.-No.	DN 1	DN 2	DN 3	l <sub>1</sub>	l <sub>3</sub>	l <sub>4</sub>	kg
00260.CBBX	70	50	50	150	61	100	0,9
00260.DBBX	100	50	50	180	76	115	1,6
00260.DCCX	100	70	70	200	80	125	1,9

**Reducing double branches 45°**


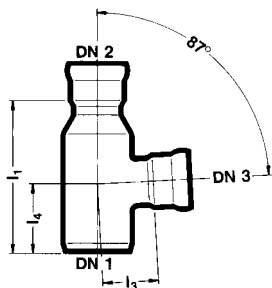
Art.-No.	DN 1	DN 2	DN 3	l <sub>1</sub>	l <sub>3</sub>	l <sub>4</sub>	kg
00280.CBBX	70	50	50	175	106	75	1,0
00280.DBBX	100	50	50	200	127	75	1,8
00280.DCCX	100	70	70	230	136	90	2,3
00280.EDDX	125	100	100	290	176	105	4,7
00280.FDDX	150	100	100	290	195	95	5,6
00280.FEEX	150	125	125	340	230	120	7,6

**Reducing corner double branches 87°**


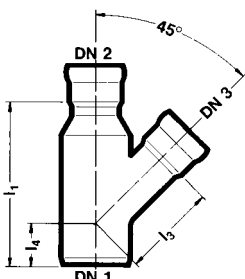
Art.-No.	DN 1	DN 2	DN 3	l <sub>1</sub>	l <sub>3</sub>	l <sub>4</sub>	kg
00261.CBBX	70	50	50	150	61	100	0,9
00261.DCCX	100	70	70	200	80	125	1,9

**Reducing corner double branches 45°**


Art.-No.	DN 1	DN 2	DN 3	l <sub>1</sub>	l <sub>3</sub>	l <sub>4</sub>	kg
00281.CBBX	70	50	50	175	106	75	1,0
00281.DCCX	100	70	70	230	136	90	2,4

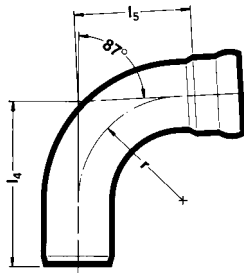
**Reducing branches 87°**


Art.-No.	DN 1	DN 2	DN 3	l <sub>1</sub>	l <sub>3</sub>	l <sub>4</sub>	kg
00231.BABX	50	40	50	150	50	80	0,5
00231.CBBX	70	50	50	180	61	100	0,7
00231.CABX	70	40	50	195	61	100	0,8

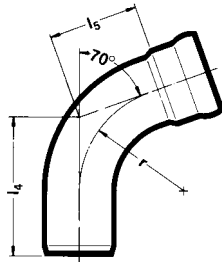
**Reducing branches 45°**


Art.-No.	DN 1	DN 2	DN 3	l <sub>1</sub>	l <sub>3</sub>	l <sub>4</sub>	kg
00251.BABX	50	40	50	170	90	65	0,5
00251.CBBX	70	50	50	200	106	75	0,9
00251.CABX	70	40	50	210	106	75	0,8

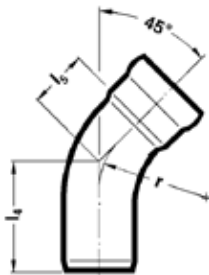


**Bends 87°**


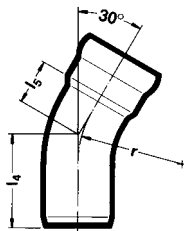
Art.-No.	DN	l <sub>4</sub>	l <sub>5</sub>	r	kg
00300.032X	32	100	70	50	0,2
00300.040X	40	122	92	67,5	0,4
00300.050X	50	148	120	82,5	0,6
00300.070X	70	185	146	117,5	1,0
00300.080X	80	207	177	133,5	1,5
00300.100X	100	161	91	70	1,7
00300.125X	125	179	97	90	2,8
00300.150X	150	220	133	105	4,2
00300.200X	200	435	330	305	21,1

**70°**


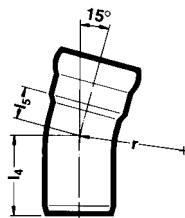
Art.-No.	DN	l <sub>4</sub>	l <sub>5</sub>	r	kg
00310.040X	40	105	75	67,5	0,3
00310.050X	50	128	100	82,5	0,5
00310.070X	70	157	118	117,5	0,8
00310.080X	80	173	144	133,5	1,4
00310.100X	100	144	74	70	1,5
00310.125X	125	157	75	90	2,6
00310.150X	150	194	107	105	3,8
00310.200X	200	360	254	305	17,5

**45°**


Art.-No.	DN	l <sub>4</sub>	l <sub>5</sub>	r	kg
00320.032X	32	75	45	50	0,1
00320.040X	40	86	56	67,5	0,3
00320.050X	50	104	76	82,5	0,4
00320.070X	70	122	83	117,5	0,8
00320.080X	80	135	104	133,5	1,2
00320.100X	100	124	54	70	1,3
00320.125X	125	131	58	90	2,3
00320.150X	150	164	77	105	3,3
00320.200X	200	270	166	305	12,3

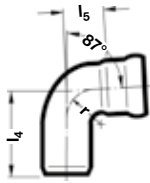
**30°**


Art.-No.	DN	l <sub>4</sub>	l <sub>5</sub>	r	kg
00330.032X	32	65	35	50	0,1
00330.040X	40	76	46	67,5	0,3
00330.050X	50	92	64	82,5	0,4
00330.070X	70	105	66	117,5	0,7
00330.080X	80	116	86	133,5	1,0
00330.100X	100	114	44	70	1,2
00330.125X	125	118	45	90	2,1
00330.150X	150	148	61	105	3,0
00330.200X	200	165	45	-	5,9

**15°**


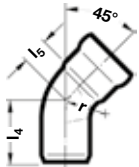
Art.-No.	DN	l <sub>4</sub>	l <sub>5</sub>	r	kg
00340.032X	32	58	28	50	0,1
00340.040X	40	67	37	67,5	0,2
00340.050X	50	81	53	82,5	0,4
00340.070X	70	89	50	117,5	0,6
00340.080X	80	98	68	133,5	0,9
00340.100X	100	104	34	70	1,1
00340.125X	125	112	37	-	2,0
00340.150X	150	120	40	-	2,8
00340.200X	200	165	45	-	5,2

#### Bends with short radius 87°



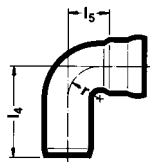
Art.-No.	DN	l <sub>4</sub>	l <sub>5</sub>	r	kg
00350.040X	40	78	33	26,5	0,3
00350.050X	50	98	44	36,5	0,4
00350.070X	70	117	59	50	0,7
00350.080X	080	137	72	60	1,0

#### 45°

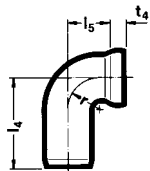


Art.-No.	DN	l <sub>4</sub>	l <sub>5</sub>	r	kg
00352.040X	40	65	20	26,5	0,2
00352.050X	50	79	24	36,5	0,3
00352.070X	70	91	32	50	0,6

#### Angle bends 90°

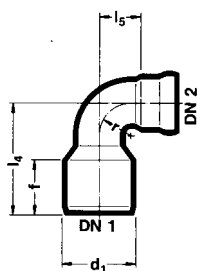


Art.-No.	DN	l <sub>4</sub>	l <sub>5</sub>	r	kg
00500.040X	40	80	36	26,5	0,3
00500.050X	50	100	45	36,5	0,4
00500.070X	70	120	63	50	0,7
00500.080X	80	140	66	60	1,0
00500.100X	100	165	95	70	1,7



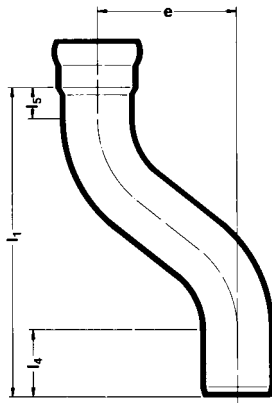
#### Angle bends 90°, with short socket

Art.-No.	DN	t <sub>4</sub>	l <sub>4</sub>	l <sub>5</sub>	r	kg
00510.040X	40	16	80	35	26	0,2
00510.050X	50	19	100	45	36,5	0,3

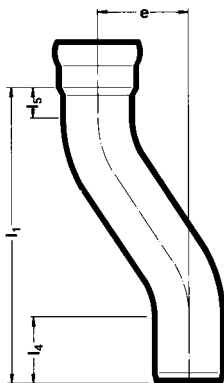


#### Reducing angle bends 90°, with standard socket

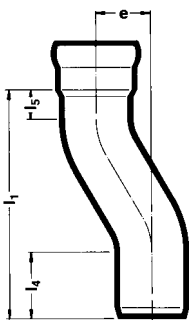
Art.-No.	DN 1	DN 2	l <sub>4</sub>	l <sub>5</sub>	f	d <sub>1</sub>	r	kg
00501.BA0X	50	40	100	35	50	53	26,5	0,3
00501.CB0X	70	50	140	45	70	73	36,5	0,5


**Offset pipes  
Sprung e = 200 mm**

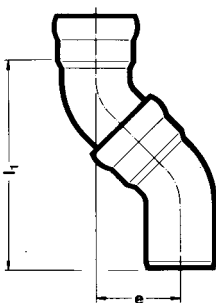
Art.-No.	DN	l <sub>1</sub>	l <sub>4</sub>	l <sub>5</sub>	kg
00380.050X	50	323	70	38	0,9
00380.070X	70	359	73,5	35	1,5
00380.080X	80	405	75	55	1,9
00380.100X	100	370	95	17	2,9
00380.125X	125	387	95	20	4,9


**Offset pipes  
Sprung e = 130 mm**

Art.-No.	DN	l <sub>1</sub>	l <sub>4</sub>	l <sub>5</sub>	kg
00390.050X	50	280	70	38	0,8
00390.070X	70	335	73,5	35	1,3
00390.080X	80	390	75	55	1,9
00390.100X	100	300	95	17	2,3
00390.125X	125	314	95	20	3,8

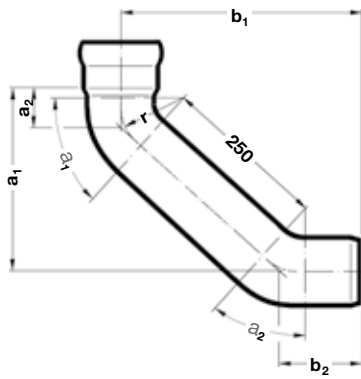

**Offset pipes  
Sprung e = 75 mm**

Art.-No.	DN	l <sub>1</sub>	l <sub>4</sub>	l <sub>5</sub>	kg
00400.050X	50	285	70	38	0,7
00400.070X	70	300	73,5	35	1,2
00400.080X	80	351	75	55	1,6
00400.100X	100	245	95	17	1,9
00400.125X	125	255	95	20	3,3


**Dimensions of offset pipes by using bends**

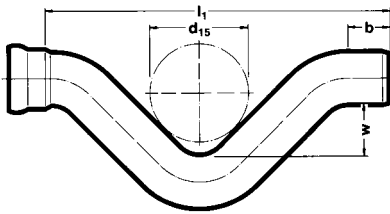
	15°		30°		45°		70°		87°	
	e(mm)	l <sub>1</sub> (mm)	e(mm)	l <sub>1</sub> (mm)	e(mm)	l <sub>1</sub> (mm)	e(mm)	l <sub>1</sub> (mm)	e(mm)	l <sub>1</sub> (mm)
DN 40	27	204	61	228	100	242	169	242	214	225
DN 50	35	263	78	291	127	307	214	306	268	282
DN 50*	-	-	-	-	73	176	-	-	143	150
DN 70	36	273	86	319	145	350	258	369	331	348
DN 70*	-	-	-	-	87	210	-	-	176	186
DN 80	43	326	101	376	169	407	297	425	383	404
DN 100	36	271	79	294	126	304	205	293	252	265
DN 125	39	293	82	305	134	323	218	311	276	291
DN 150	41	315	105	391	170	411	284	403	353	372
DN	54	413	105	392	308	744	577	824	764	806

\* Bends with short radius.



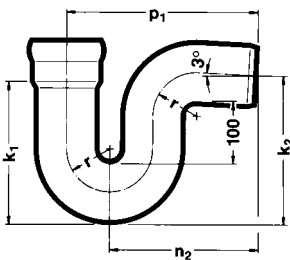
#### Bends with smoothing length

Art.-No.	DN	a <sub>1</sub>	a <sub>2</sub>	b <sub>1</sub>	b <sub>2</sub>	r	kg		
03521.100X	100	44	44	269	48	337	124	70	3,0



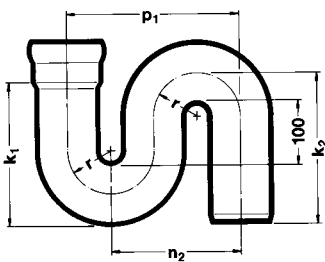
#### Tubular Traps

Art.-No.	DN	b	l <sub>1</sub>	w	d <sub>15</sub>	kg
00430.070X	70	73,5	576	100	170	2,3
00430.100X	100	95,0	620	100	205	4,6



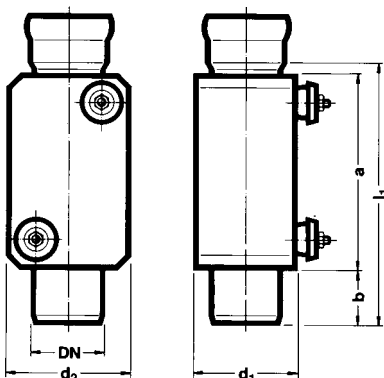
#### P-Traps

Art.-No.	DN	p <sub>1</sub>	n <sub>2</sub>	k <sub>1</sub>	k <sub>2</sub>	r	kg
04375.070X	70	220	170	166	203	50	1,7
04375.100X	100	305	235	246	281	70	4,0



#### S-Traps

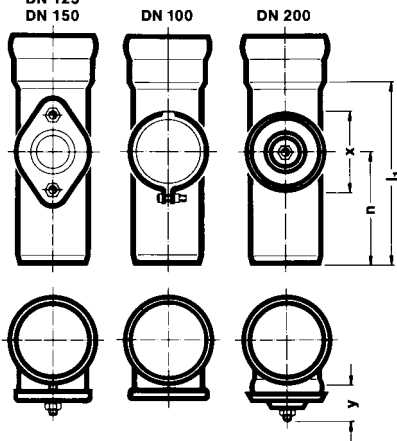
Art.-No.	DN	p <sub>1</sub>	n <sub>2</sub>	k <sub>1</sub>	k <sub>2</sub>	r	kg
04373.070X	70	200	150	170	206	50	2,2
04373.100X	100	280	210	236	251	70	5,0



#### Downpipe traps\* with circular clean-out opening

Art.-No.	DN	l <sub>1</sub>	a	b	d <sub>1</sub>	d <sub>2</sub>	kg
04374.070X	70	294	219	65	112	122	3,4
04374.100X	100	386	286	85	146	180	6,3

\* For pressure up to 0,5 bar available in special design on request.

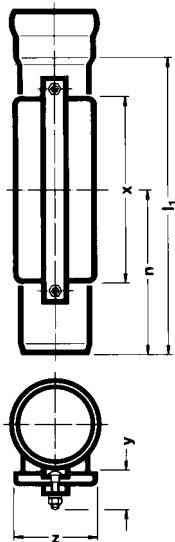
DN 40  
 DN 50  
 DN 70  
 DN 80  
 DN 125  
 DN 150

**Cleaning pipes with circular clean-out opening\***

Art.-No.	DN	l <sub>1</sub>	n	x	y	kg
00550.040X	40	125	80	74	16	0,3
00550.050X	50	150	95	86	16	0,5
00550.070X	70	200	125	100	16	0,9
00550.080X	80	240	145	125	25	1,4
00550.100X	100	265	165	112	16	1,9
00550.125X	125	290	185	165	25	3,5
00550.150X	150	320	190	190	25	4,5
00550.200X	200	420	260	190	25	9,7

**Cleaning pipes with rectangular clean-out opening\***

Art.-No.	DN	l <sub>1</sub>	n	x	y	z	kg
00553.100X	100	450	255	280	46	130	5,1
00553.125X	125	455	260	280	46	130	6,6
00553.150X	150	460	265	280	46	130	7,5
00553.200X	200	500	305	280	46	130	12,5

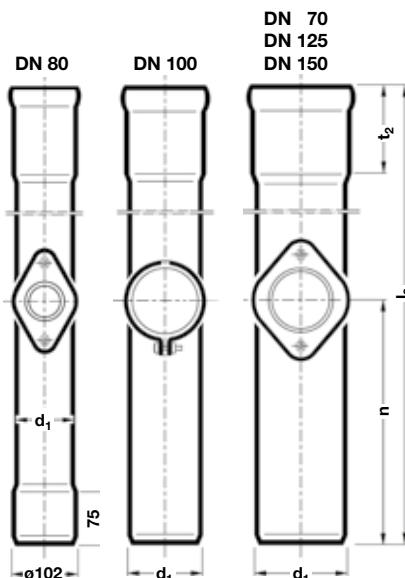
\* For pressure up to 0,5 bar available in special design on request.

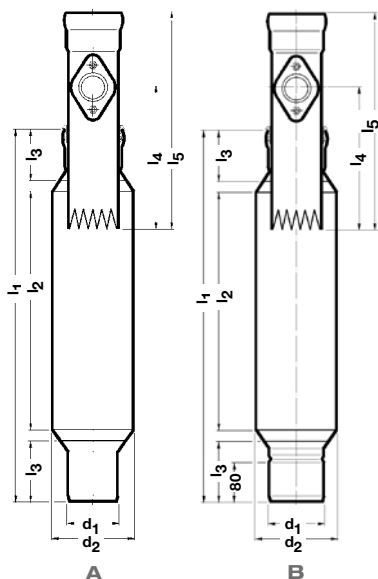

**Stand pipes**
**a: without cleaning opening**
**b: with cleaning opening\***

siehe auch gesonderten Prospekt: LORO-Regenstandrohre

Art.-No.			DN	l <sub>2</sub>	d <sub>1</sub>	t <sub>2</sub>	n	kg
a	b							
05526.	05510.	070X	70	1000	73	120	620	2,9
-	05515.	070X	70	1500	73	120	620	4,3
-	05520.	070X	70	2000	73	120	620	5,7
-	05530.	070X	70	3000	73	120	620	8,5
05526.	05510.	080X	80	1000	89	130	620	3,5
-	05515.	080X	80	1500	89	130	620	5,2
-	05520.	080X	80	2000	89	130	620	7,0
-	05530.	080X	80	3000	89	130	620	10,4
05526.	05510.	100X	100	1000	102	150	620	5,0
05525.	05515.	100X	100	1500	102	150	620	7,4
05524.	05520.	100X	100	2000	102	150	620	9,9
-	05530.	100X	100	3000	102	150	620	14,8
05526.	05510.	125X	125	1000	133	160	620	8,1
05525.	05515.	125X	125	1500	133	160	620	12,1
05524.	05520.	125X	125	2000	133	160	620	16,2
-	05530.	125X	125	3000	133	160	620	24,2
05526.	05510.	150X	150	1000	159	170	620	9,7
-	05515.	150X	150	1500	159	170	620	14,5
-	05520.	150X	150	2000	159	170	620	19,4
-	05530.	150X	150	3000	159	170	620	29,0

\* For pressure up to 0,5 bar available in special design on request.

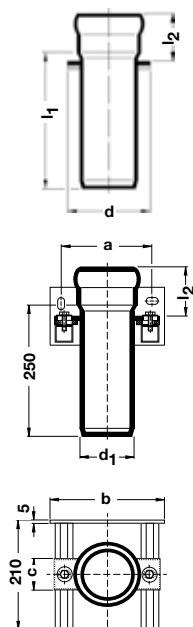



**A LORO-X rat-stop with cleaning opening**

Art.-No.	DN	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>	d <sub>1</sub>	d <sub>2</sub>	kg
05571.100X	100	650	350	120	280	420	102	168,3	7,8
05571.125X	125	640	350	125	300	470	133	193,7	11,3

**B LORO-X rat-stop with cleaning opening with outlet ø 110 mm**

Art.-No.	DN	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>	d <sub>1</sub>	d <sub>2</sub>	kg
05572.100X	100	650	350	120	280	420	110	168,3	7,9

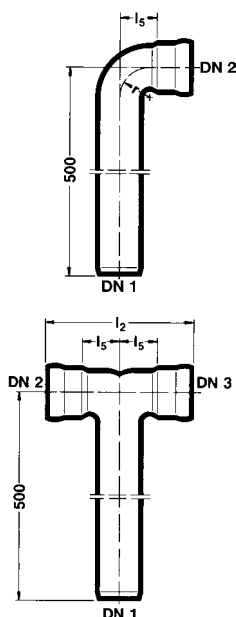

**LORO-X down pipe supports**

Art.-No.	DN	l <sub>1</sub>	l <sub>2</sub>	d	kg
82650.070X	70	250	65	125	1,8
82650.080X	80	250	70	136	2,0
82650.100X	100	250	80	150	2,5
82650.125X	125	250	85	180	3,6
82650.150X	150	250	90	205	4,3
82650.200X	200	250	130	265	7,0

**LORO-X down pipe supports**

with mounting bracket and sound insulation

Art.-No.	DN	a	b	c	d <sub>1</sub>	l <sub>2</sub>	kg
82652.070X	70	144	189	50	73	65	2,5
82652.100X	100	174	219	60	102	80	3,5
82652.125X	125	201	246	60	133	85	4,6
82652.150X	150	224	269	60	159	90	5,2
82652.200X	200	274	319	60	219	130	7,9


**LORO-X basin connector 90°**

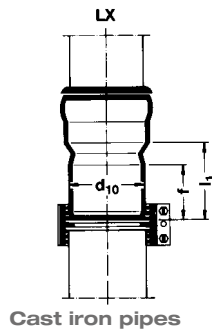
Art.-No.	DN 1	DN 2	l <sub>5</sub>	r	kg
00504.040X	40	40	35	26,5	0,8
00504.050X	50	50	45	36,5	1,2

**LORO-X Y-tees 90°**

Art.-No.	DN 1	DN 2	DN 3	l <sub>5</sub>	l <sub>2</sub>	kg
00512.BBBX	50	50	50	42	160	1,3

**Connectors for the connection to cast iron pipes (SML)**

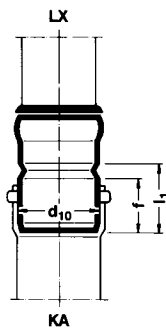
according to DIN EN 877



Cast iron pipes

Art.-No.	DN (LX)	DN (SML)	$l_1$	$d_{10}$	f	kg
00610.050X	50	50	95	58	70	0,3
00620.070X	70	70	105	78	80	0,5
00630.050X	50	100	150	110	80	0,8
00624.070X	70	80	60	83	40	0,4
00630.070X	70	100	120	110	80	0,8
00625.080X	80	80	100	83	53	0,6
00630.080X	80	100	120	110	80	0,9
00630.100X	100	100	110	110	80	1,0
00600.DE0X	100	125	160	133	100	1,6
00600.DF0X	100	150	155	160	110	1,9
00600.EF0X	125	150	150	160	110	2,2
-	125	125			direct	
-	150	150			direct	
00670.200X	200	200	170	210	120	4,6

**Connectors for the connection to plastic pipe socket (KA),**

 according to DIN EN 1329(unplasticised PVC), DIN EN 1453 (unplasticised PVC),  
 DIN EN 1566 (unplasticised PE), DIN EN 1519 (PP), DIN EN 1451 (ABS/ASA)


KA

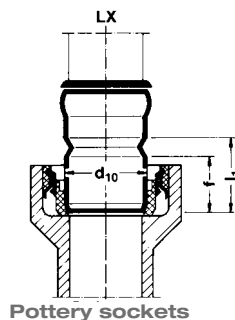
Art.-No.	DN (LX)	DN (KA)	$l_1$	$d_{10}$	f	kg
00612.050X	50	50	60	50	45	0,2
00622.070X	70	70	95	75	65	0,5
00630.050X	50	100	150	110	80	0,8
00630.070X	70	100	120	110	80	0,8
00630.080X	80	100	120	110	80	0,9
00630.100X	100	100	110	110	80	1,0
00642.100X	100	125	140	125	85	1,5
00642.125X	125	125	130	125	85	1,7
00600.DF0X	100	150	155	160	110	1,9
00600.EF0X	125	150	150	160	110	2,2
-	150	150			direct	
00672.150X	150	200	240	200	130	6,1
00672.200X	200	200	180	200	125	4,6

**Connectors for the connection to plastic pipe socket of unplasticised PE, according to DIN EN 1519**

Art.-No.	DN (LX)	DN (PE)	$l_1$	$d_{10}$	f	kg
00615.050X	50	50	62	56	50	0,3

**Connectors for the connection to pottery sockets\***

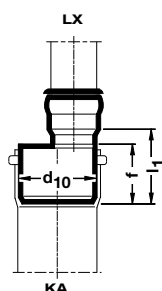
according to DIN EN 295



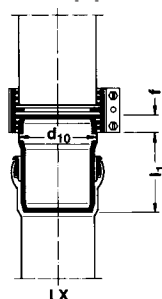
Pottery sockets

Art.-No.	DN (LX)	DN (St)	$l_1$	$d_{10}$	f	kg
00630.050X	50	100	150	110	80	0,8
00630.070X	70	100	120	110	80	0,8
00630.100X	100	100	110	110	80	1,0
00600.DE0X	100	125	160	133	100	1,6
00600.DF0X	100	150	155	160	110	1,9
-	125	125			direct	
00600.EF0X	125	150	150	160	110	2,2
-	150	150			direct	
00670.125X	125	200	225	210	120	4,1
00670.150X	150	200	220	210	120	4,1
00670.200X	200	200	170	210	120	4,6

\* Utilisation in conjunction with transition ring for cast pipe of the pottery manufacturer.


**Connectors from LORO-X Pipe to plastic pipe socket (KA),  
eccentric form 2**

Art.-No.	DN (LX)	DN (KA)	$l_1$	$d_{10}$	f	kg
00643.CE0X	70	125	102	125	92	1,2
00643.DG0X	100	200	155	200	129	3,1
00643.EG0X	125	200	155	200	129	3,3
00643.EH0X	125	250	189	250	164	6,3
00643.FH0X	150	250	204	250	164	6,5

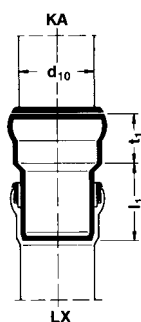
**Cast iron pipes**

**Connectors from cast iron discharge pipes (SML),  
according to DIN EN 877, to LORO-X Socket (LX)**

Art.-No.	DN (SML)	DN (LX)	$l_1$	$d_{10}$	f	kg
00710.050X	50	50	70,5	58	22,5	0,2
00710.070X	70	70	85,5	78	22,5	0,3
00710.080X	80	80	112,5	83	22,5	0,5
00710.100X	100	100	109,5	110	22,5	0,7
00712.070X	80	70	92,5	83	22,5	0,4
-	125	125*			direct	
-	150	150*			direct	

\* SML pipes DN 125 and DN 150 can be connected to LORO-X Sockets with sealing element

**Connectors from discharge pipes of plastic (KA),**

according to DIN EN 1329 (unplasticised PVC), DIN EN 1453 (unplasticised PVC) DIN EN 1566 (unplasticised PE), DIN EN 1519 (PP), DIN EN 1451 (ABS/ASA),  
**to LORO-X Socket (LX)\*\***



Art.-No.	DN (KA)	DN (LX)	$l_1$	$t_1$	$d_{10}$	kg
-	50	50***			direct	
00750.070X	70	70	95	55	75	0,5
00750.100X	100	100	110	70	110	1,0
-	125	125****			direct	
-	150	150*****			direct	

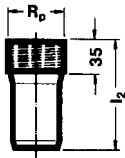
\*\* Attached sealing elements: No. 911X (DN 70) resp. No. 933X (DN 100).

\*\*\* KA-pipes DN 50 are directly connectable LORO-X Sockets DN 50 with sealing element No. 915X.

\*\*\*\* KA-pipes DN 150 are directly connectable to LORO-X Sockets DN 150 with sealing element No. 911X.

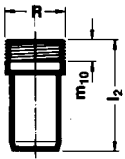
\*\*\*\*\* KA-Rohre DN 150 passen mit Dichtelement Nr. 911X direkt in LORO-X Muffen DN 150.




**Connectors with internal thread\***

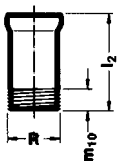
Art.-No.	DN	$l_2$	$R_p$	kg
00720.040X	40	140	Rp 1 1/2	0,3
00721.040X	40	140	Rp 1 1/4	0,2
00720.050X	50	140	Rp2	0,4
00721.050X	50	140	Rp 1 1/2	0,3

\* not for Sanitary installation, hot-dip galvanized (without internal coating)


**Connectors with external thread\***

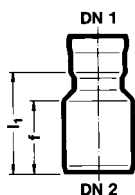
Art.-No.	DN	$l_2$	R	$m_{10}$	kg
00700.040X	40	140	R 1 1/2	19	0,3
00702.040X	40	140	R 1 1/4	19	0,2
00700.050X	50	140	R 2	24	0,4
00702.050X	50	140	R 1 1/2	19	0,3

\* not for Sanitary installation, hot-dip galvanized (without internal coating)


**Connectors with external thread and socket\***

Art.-No.	DN	$l_2$	R	$m_{10}$	kg
00701.040X	40	100	R 1 1/2	19	0,3
00705.040X	40	100	R 1 1/4	19	0,2
00701.050X	50	100	R 2	24	0,4
00705.050X	50	100	R 1 1/2	19	0,3

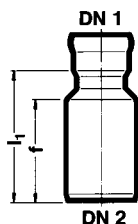
\* not for Sanitary installation, hot-dip galvanized (without internal coating)

**Transition pipes (concentric reducers)**


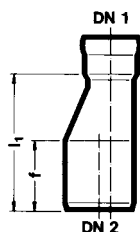
Art.-No.	DN 1	DN 2	$l_1$	f	kg
<a href="#">00600.AB0X</a>	40	50	85	60	0,3
<a href="#">00600.AC0X</a>	40	70	120	70	0,4
<a href="#">00600.BC0X</a>	50	70	110	70	0,4
<a href="#">00600.BD0X</a>	50	100	160	100	0,8
<a href="#">00600.CM0X</a>	70	80	130	85	0,7
<a href="#">00600.CD0X</a>	70	100	140	100	0,9
<a href="#">00600.CE0X</a>	70	125	160	100	1,3
<a href="#">00600.MD0X</a>	80	100	140	100	0,8
<a href="#">00600.DE0X</a>	100	125	160	100	1,6
<a href="#">00600.DF0X</a>	100	150	170	110	1,9
<a href="#">00600.DG0X</a>	100	200	250	140	3,3
<a href="#">00600.EF0X</a>	125	150	150	110	2,2
<a href="#">00600.EG0X</a>	125	200	225	120	3,8
<a href="#">00600.FG0X</a>	150	200	235	140	4,0

**Transition pipes (concentric reducers)**

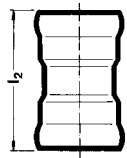
with extended spigot end fitting for securing clamp No. 806X



Art.-No.	DN 1	DN 2	$l_1$	f	kg
<a href="#">00603.LA0X</a>	32	40	103	68	0,2
<a href="#">00603.LB0X</a>	32	50	130	85	0,3
<a href="#">00603.AB0X</a>	40	50	120	95	0,3
<a href="#">00603.AC0X</a>	40	70	140	70	0,5
<a href="#">00603.BC0X</a>	50	70	145	100	0,5
<a href="#">00603.BD0X</a>	50	100	185	120	1,0
<a href="#">00603.CM0X</a>	70	80	135	105	0,7
<a href="#">00603.CD0X</a>	70	100	160	120	1,0
<a href="#">00603.MD0X</a>	80	100	155	120	1,2
<a href="#">00603.DE0X</a>	100	125	190	130	1,8
<a href="#">00603.EF0X</a>	125	150	175	125	2,4
<a href="#">00603.FG0X</a>	150	200	260	170	4,7

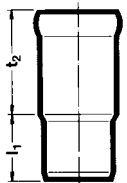
**Transition pipes (eccentric reducers)**


Art.-No.	DN 1	DN 2	$l_1$	f	kg
<a href="#">00601.AB0X</a>	40	50	110	60	0,3
<a href="#">00601.BC0X</a>	50	70	140	70	0,5
<a href="#">00601.BD0X</a>	50	100	235	100	1,0
<a href="#">00601.CM0X</a>	70	80	135	75	0,7
<a href="#">00601.CD0X</a>	70	100	195	100	1,1
<a href="#">00601.CE0X</a>	70	125	245	100	1,6
<a href="#">00601.MD0X</a>	80	100	195	100	1,3
<a href="#">00601.DE0X</a>	100	125	170	100	1,7
<a href="#">00601.DF0X</a>	100	150	245	100	2,2
<a href="#">00601.EF0X</a>	125	150	177	100	2,4
<a href="#">00601.FG0X</a>	150	200	235	140	4,4


**Double socket\***

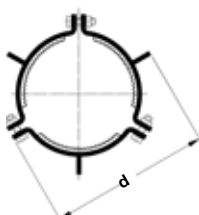
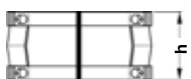
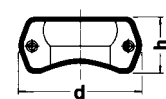
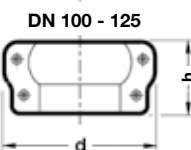
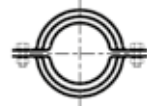
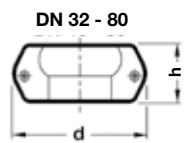
Art.-No.	DN	l <sub>2</sub>	kg
00560.040X	40	76	0,1
00560.050X	50	94	0,2
00560.070X	70	135	0,4
00560.080X	80	150	0,6
00560.100X	100	180	1,0
00560.125X	125	190	1,7
00560.150X	150	200	2,2
00560.200X	200	290	4,8

\* Application not permitted in areas of frost-hazard.


**Push-fit sockets with long sockets**

Art.-No.	DN	l <sub>1</sub>	t <sub>2</sub>	kg
00810.040X	40	50	70	0,2
00810.050X	50	60	90	0,3
00810.070X	70	70	120	0,6
00810.080X	80	80	130	0,9
00810.100X	100	90	150	1,3
00810.125X	125	100	160	2,3
00810.150X	150	115	170	2,9
00810.200X	200	150	250	6,4

**Anchor clips** for saving the socket-connection against axial shove in case of pressure-tight mounting.



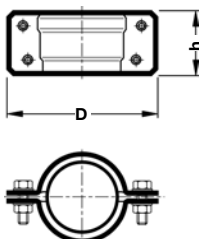
Art.-No.	DN	d	h	kg
00806.032X	32	75	40	0,2
00806.040X	40	85	49	0,2
00806.050X	50	110	60	0,4
00806.070X	70	135	64	0,5
00806.080X	80	150	70	0,6
00806.100X	100	185	81	1,0
00806.125X	125	220	90	1,3

**Anchor clips** with couout for the connection of pipes and branches

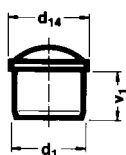
Art.-No.	DN	d	h	kg
08061.040X	40	85	49	0,2
08061.050X	50	110	60	0,3
08061.070X	70	135	64	0,4
08061.080X	80	150	70	0,5
08061.100X	100	185	81	0,9
08061.125X	125	220	90	1,2

**Anchor hoops**

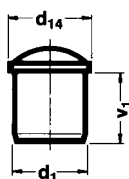
Art.-No.	DN	d	h	kg
00808.150X	150	230	96	1,4
00808.200X	200	300	122	1,9

**Pressure pipe clip PN 12 ( test pressure 48 bar), steel, hot dip galvanized** only applicable in LORO-X Systems (prooved by IACS UR P2.11).


Art.-No.	DN	D	h	kg
<a href="#">08070.050X</a>	50	130	52	0,7
<a href="#">08070.070X</a>	70	150	63	0,9
<a href="#">08070.080X</a>	80	170	79	1,4
<a href="#">08070.100X</a>	100	190	94	1,8
<a href="#">08070.125X</a>	125	230	95	2,8

**Closing plugs made of steel**


Art.-No.	DN	d <sub>1</sub>	d <sub>14</sub>	v <sub>1</sub>	kg
<a href="#">00800.040X</a>	40	42	53	30	0,1
<a href="#">00800.050X</a>	50	53	68	38	0,1
<a href="#">00800.070X</a>	70	73	90	55	0,3
<a href="#">00800.080X</a>	80	89	110	60	0,4
<a href="#">00800.100X</a>	100	102	120	70	0,6
<a href="#">00800.125X</a>	125	133	157	75	1,1
<a href="#">00800.150X</a>	150	159	190	80	1,4
<a href="#">00800.200X</a>	200	219	260	120	2,2

**Closing plugs made of steel with extended spigot end fitting\***


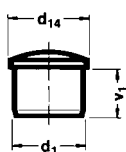
Art.-No.	DN	d <sub>1</sub>	d <sub>14</sub>	v <sub>1</sub>	kg
<a href="#">08001.040X</a>	40	42	53	70	0,2
<a href="#">08001.050X</a>	50	53	68	85	0,2
<a href="#">08001.070X</a>	70	73	90	100	0,4
<a href="#">08001.080X</a>	80	89	110	105	0,5
<a href="#">08001.100X</a>	100	102	120	120	0,7
<a href="#">08001.125X</a>	125	133	157	130	1,3
<a href="#">08001.150X</a>	150*	159	190	125	1,6
<a href="#">08001.200X</a>	200*	219	260	165	4,1

\* For pressure pipes, application in association with LORO-X Anchor clips No. 806X / LORO-X anchor hoops 808X.

**Closing plugs with threaded coupling\***


Art.-No.	DN	kg
<a href="#">00805.040X</a>	40	0,1
<a href="#">00805.050X</a>	50	0,1
<a href="#">00805.070X</a>	70	0,2
<a href="#">00805.080X</a>	80	0,3
<a href="#">00805.100X</a>	100	0,5
<a href="#">00805.125X</a>	125	0,8
<a href="#">00805.150X</a>	150	1,1

\* For pressure up to 0,5 bar available in special design on request.

**Closing cap made of plastic**


Art.-No.	DN	d <sub>1</sub>	d <sub>14</sub>	v <sub>1</sub>	kg
<a href="#">00924.040X</a>	40	42	50	30	0,01
<a href="#">00924.050X</a>	50	52	70	35	0,02
<a href="#">00924.070X</a>	70	73	84	52	0,03
<a href="#">00924.100X</a>	100	102	116	68	0,06


**Sealing elements for LORO-X Pipe**

Art.-No.	DN	kg
00911.032X	32	0,006
00911.040X	40	0,008
00911.050X	50	0,012
00911.070X	70	0,022
00911.080X	80	0,035
00911.100X	100	0,050
00911.125X	125	0,100
00911.150X	150	0,150
00911.200X	200	0,300

for transition LX-Pipe/Ms-pipe 32 mm

Art.-No.	DN	kg
00913.040X	40	0,013
00913.050X	50	0,036

for transition to Ms.-pipe 38 mm, plastic pipe siphon 40 mm/LX-Socket

Art.-No.	DN	kg
00914.040X	40	0,009
00914.050X	50	0,024

for transition to MS-pipe 48 mm, plastic pipe siphon 50 mm/LX-Socket

Art.-No.	DN	kg
00915.050X	50	0,013

for transition from LORO-X Socket to 40 mm plastic siphon

Art.-No.	DN	kg
00914.040X	40	0,009
00914.050X	50	0,024

for transition from LORO-X Socket to 50 mm plastic siphon

Art.-No.	DN	kg
00915.050X	50	0,013

for transition from LORO-X Special Socket to DN 100 plastic pipe

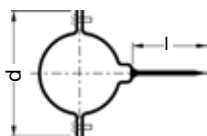
Art.-No.	DN	kg
00933.100X	100	0,046

for transition from DN 100 plastic socket to LORO-X Pipe

Art.-No.	DN	kg
00937.100X	100	0,050

for transition from KA-Pipe to LORO-X Socket DN 125

Art.-No.	DN	kg
00944.125X	125	0,150

**LORO-X Pipe clips with knocking pin steel, galvanized**


Art.-No.	DN	d	l	kg
<a href="#">00990.040X</a>	40	80	80	0,08
<a href="#">00990.050X</a>	50	95	80	0,10
<a href="#">00990.070X</a>	70	120	80	0,12
<a href="#">00990.080X</a>	80	134	80	0,14
<a href="#">00990.100X</a>	100	150	100	0,16
<a href="#">00990.125X</a>	125	193	120	0,29
<a href="#">00990.150X</a>	150	215	120	0,40
<a href="#">00990.200X</a>	200	285	150	0,80

with extended knocking pin l = 150 mm

Art.-No.	DN	d	l	kg
<a href="#">09917.070X</a>	70	120	150	0,17
<a href="#">09917.100X</a>	100	150	150	0,23
<a href="#">09917.125X</a>	125	193	150	0,45

with extended knocking pin l = 200 mm

Art.-No.	DN	d	l	kg
<a href="#">09918.100X</a>	100	150	200	0,35

with extended knocking pin l = 300 mm

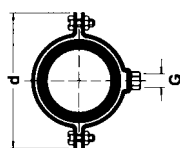
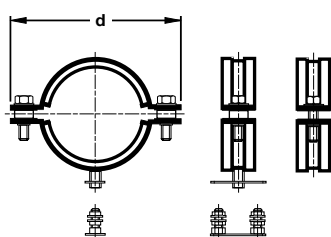
Art.-No.	DN	d	l	kg
<a href="#">09919.100X</a>	100	150	300	0,50

**LORO-X Pipe clips with connecting thread steel, galvanized**
**with sound insulation**

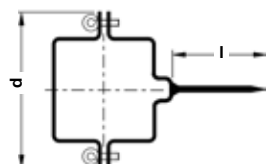
Art.-Nr.	DN	d	G	kg
<a href="#">00972.040X</a>	40	103	M 8	0,20
<a href="#">00972.050X</a>	50	113	M 8/10	0,30
<a href="#">00972.070X</a>	70	133	M 8/10	0,40
<a href="#">00974.080X</a>	80	157	M 10	0,40
<a href="#">00974.100X</a>	100	165	M10/12	0,40
<a href="#">00976.125X</a>	125	200	M 12	0,80
<a href="#">00976.150X</a>	150	228	M 12	0,90
<a href="#">00976.168X</a>	168	233	M 12	0,80
<a href="#">00976.200X</a>	200	287	M 12	1,00

**without sound insulation**

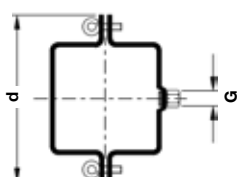
Art.-Nr.	DN	d	G	kg
<a href="#">00973.040X</a>	40	92	M 8	0,20
<a href="#">00973.050X</a>	50	103	M 8/10	0,20
<a href="#">00973.070X</a>	70	123	M 8/10	0,24
<a href="#">00975.080X</a>	80	144	M 10	0,30
<a href="#">00975.100X</a>	100	156	M10/12	0,30
<a href="#">00977.125X</a>	125	189	M 12	0,50
<a href="#">00977.150X</a>	150	216	M 12	0,60
<a href="#">00977.168X</a>	168	220	M 12	0,60
<a href="#">00977.200X</a>	200	283	M 12	0,80


**LORO-X Support and fixing clip with sound insulation**


Art.-No.	DN	d	kg
<a href="#">00979.070X</a>	70	149	0,9
<a href="#">00979.080X</a>	80	164	1,1
<a href="#">00979.100X</a>	100	176	1,2
<a href="#">00979.125X</a>	125	199	1,3
<a href="#">00979.150X</a>	150	234	1,5
<a href="#">00979.168X</a>	168	242	1,6
<a href="#">00979.200X</a>	200	295	1,9

**LORO-X Pipe clips, quadratic, galvanized**


Art.-No.	DN	d	l	kg
<a href="#">00993.070X</a>	70	115	80	0,15
<a href="#">00993.100X</a>	100	150	100	0,23

**LORO-X Pipe clips, quadratic, for set screws or threaded rods M 10, galvanized**


Art.-No.	DN	d	G	kg
<a href="#">00991.080X</a>	80	140	M 10	0,15
<a href="#">00991.100X</a>	100	162	M 10	0,23
<a href="#">00991.125X</a>	125	176	M 10	0,23

**Threaded pins\***


Art.-No.	Länge in mm
09601.060X	M 8 x 60
09601.080X	M 8 x 80
09601.100X	M 8 x 100
09602.060X	M 10 x 60
09602.100X	M 10 x 100
09602.120X	M 10 x 120
09612.120X	M 12 x 120

**Threaded rods\*\***

Art.-No.	Länge in mm
09613.000X	M 8 x 1000
09614.000X	M 10 x 1000
09615.000X	M 12 x 1000

**Hanger bolts\***


Art.-No.	Länge in mm
09603.100X	M 8 x 100
09603.120X	M 8 x 120
09603.200X	M 8 x 200
09604.100X	M 10 x 100
09604.120X	M 10 x 120
09604.200X	M 10 x 200
09622.100X	M 12 x 100
09622.120X	M 12 x 120
09622.200X	M 12 x 200

\*\* packaging unit to 25 pieces

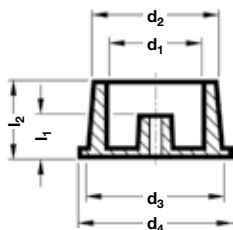
\*\* packaging unit to 10 pieces

**Socket protection caps made of plastic**

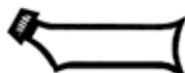

Art.-No.	DN	kg
00922.040X	40	0,005
00922.050X	50	0,008
00922.070X	70	0,020
00922.100X	100	0,025
00922.125X	125	0,050

**Put off casing cover**

made of plastic



Art.-No.	DN	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	kg
18100.050X	50	55	72	89	96	30	50	0,1
18100.070X	70	77	96	118	128	35	65	0,2
18100.100X	100	106	132	161	169	50	83	0,3

**LORO-X Lubricant**


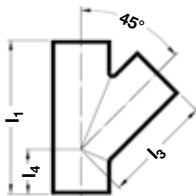
Art.-No.	
00986.000X	250 g - Tube
09861.000X	1000 g - Dose

**Original LORO-X Adhesive**

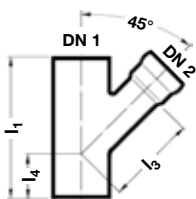

Art.-No.	
00985.000X	125 ccm

**LORO-XML Steel discharge pipes without socket, DN 250 - DN 300**
**Pipes**

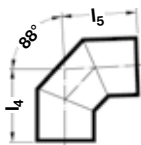

Art.-No.	DN	l <sub>1</sub>	D	s	kg
01050.250X	250	3000	273	4,0	80,0
01050.300X	300	3000	324	4,0	95,0

**Branches without socket 45°**


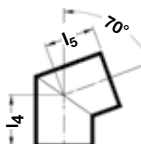
Art.-No.	DN	l <sub>1</sub>	l <sub>3</sub>	l <sub>4</sub>	kg
02250.HH0X	250	575	430	145	14,5
02250.KK0X	300	660	505	155	18,0
02250.KH0X	300/250	590	465	125	16,0

**Branches 45° without socket/socket**


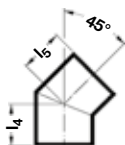
Art.-No.	DN 1	DN 2	l <sub>1</sub>	l <sub>3</sub>	l <sub>4</sub>	kg
02260.HD0X	250	100	340	280	30	8,0
02260.HE0X	250	125	380	315	45	8,5
02260.HF0X	250	150	415	325	65	9,0
02260.HG0X	250	200	540	360	105	10,5
02260.KD0X	300	100	350	315	105	11,0
02260.KE0X	300	125	385	350	25	11,5
02260.KF0X	300	150	420	360	40	12,0
02260.KG0X	300	200	550	395	85	13,5

**Bend without socket 88°**


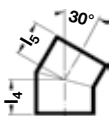
Art.-No.	DN	l <sub>4</sub>	l <sub>5</sub>	kg
03004.250X	250	245	245	12,6
03004.300X	300	285	285	17,3

**Bend without socket 70°**


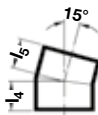
Art.-No.	DN	l <sub>4</sub>	l <sub>5</sub>	kg
03005.250X	250	184	184	10,8
03005.300X	300	204	204	14,2

**Bend without socket 45°**


Art.-No.	DN	l <sub>4</sub>	l <sub>5</sub>	kg
03006.250X	250	145	145	8,5
03006.300X	300	155	155	10,8

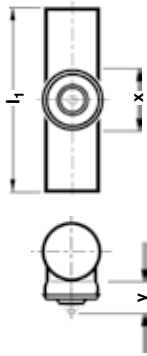
**Bend without socket 30°**


Art.-No.	DN	l <sub>4</sub>	l <sub>5</sub>	kg
03007.250X	250	125	125	7,3
03007.300X	300	134	134	9,3

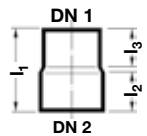
**Bend without socket 15°**


Art.-No.	DN	l <sub>4</sub>	l <sub>5</sub>	kg
03008.250X	250	106	106	6,1
03008.300X	300	112	112	7,8

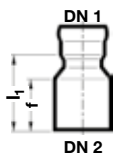



**Cleaning pipes, without socket**

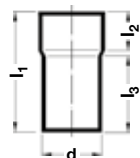
Art.-No.	DN	l <sub>1</sub>	x	y	kg
00556.250X	250	480	190	25	12,5
00556.300X	300	580	190	25	18,0


**Transition pipes without sockets/without sockets**  
(Concentric reducers)

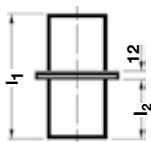
Art.-No.	DN 1	DN 2	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	kg
06005.HK0X	250	300	210	80	70	9,0


**Transition pipes without socket/socket**  
(Concentric reducers)

Art.-No.	DN 1	DN 2	l <sub>1</sub>	f	kg
06006.FH0X	150	250	200	70	5,5
06006.GH0X	200	250	140	70	6,5
06006.FK0X	150	300	265	80	6,0
06006.GK0X	200	300	200	80	7,0


**Connctors\* from LORO-XML Pipe to Plastic Pipe Sockets**  
(KA-Socket)

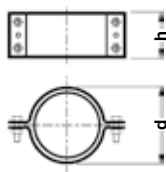
Art.-No.	DN	d	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	kg
00770.250X	250	250	260	70	160	11,5
00770.300X	300	315	290	80	180	13,5


**Down pipe supports with rubber layer**

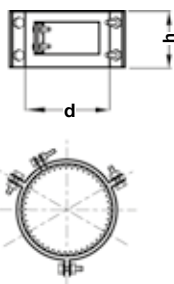
Art.-No.	DN	l <sub>1</sub>	l <sub>2</sub>	kg
08266.250X	250	300	144	10,5
08266.300X	300	300	144	13,5


**Closing plugs made of steel**

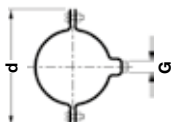
Art.-No.	DN	l <sub>1</sub>	kg
08003.250X	250	90	2,5
08003.300X	300	90	3,0


**CV connector**

Art.-No.	DN	d	h	kg
09070.250X	250	290	78	0,8
09070.300X	300	342	78	0,9


**CV claw**

Art.-No.	DN	d	h	kg
09071.250X	250	297	138	5,2
09071.300X	300	349	138	6,0

**LORO-X Pipe clips with connecting thread without sound insulation**


Art.-No.	DN	d	G	kg
00977.250X	250	327	M 12	1,2
00977.300X	300	378	M 12	1,1

**LORO-X Pipe clips with connecting thread with sound insulation**


Art.-No.	DN	d	G	kg
00976.250X	250	342	M 12	1,2
00976.300X	300	393	M 12	1,4

# Assembly and Installation Instructions

## LORO-X steel discharge pipes, DN 32-DN 200

LORO-X stainless steel discharge pipes are planned and installed in accordance with the technical rules and regulations of DIN EN 12056 (Gravity Drainage Systems inside Buildings) and DIN 1986 Parts 3, 4 and 100 (Drainage Systems for Land

and Buildings). Amongst others, DIN 4102 (Fire Prevention in Buildings) and DIN 4109 (Noise Control in Buildings) are also to be observed.

### 1. Establishing the LORO-X push-fit socket connection

For LORO-X push-in joints we recommend to use original sealing elements with the manufacturer's mark LORO. With consistent use of all LORO-X system parts, we ensure the tightness of the LORO-X push-in joint. Store LORO-X sealing elements at room temperature for easier assembly in case of lower outside temperatures.

- 1.1 Place sealing element in inclined position on the edge of the sealing chamber. Push in top sealing element with your finger and let it engage in the sealing chamber until the collar of the sealing element lies level on the socket edge.
- 1.2 Smear only original LORO-X lubricant no. 986X or 9861X over the entire surface on the inside of the sealing element and the outside of the insert pipe. Surplus lubricant is to be removed. The use of other lubricants may lead to visual and technical impairments.
- 1.3 Line up the socket and insert pipe and push together, twisting gently. Push the insert pipe in as far as the socket base. For installing pipes of a nominal size DN 40 – DN 200, an assembly aid can be borrowed from the factory.
- 1.4 Finished LORO-X socket joint according to DIN 1986 (permanent tightness with an internal and external overpressure of 0 – 0.5 bar).
- 1.5 If higher pressures are expected, the socket joint can be secured using the LORO-X anchor clip, no. 806X (DN 32 – DN 125) or the LORO-X anchor hoop, no. 808X (DN 150 – DN 200). Tighten the screws of the LORO-X or LORO-XCL anchor clip and LORO-X anchor hoop all round evenly.

#### Tightening torque:

Version	Diameter	Hex wrench	Tightening torque
LORO-X anchor clip	DN 32 - 40	13	15 Nm
LORO-X anchor clip	DN 50 - 125	15	30 Nm
LORO-X anchor hoop	DN 150 - 200	17	50 Nm

### 2. Cutting to length

It is best to use a pipe cutter to cut the LORO-X pipes to length. When cutting, the zinc coating provides cathodic protection for the inner pipe and prevents under-rusting. They can also be cut at right angles to the pipe axis with an angle grinder with a parting wheel or saw.

After chamfering, a post-treatment with cold zinc is recommended as additional corrosion protection.

#### The pipe ends must be deburred inside and outside.

LORO-X pipes can be supplied with two sockets up to DN 100. This prevents waste pieces without sockets being produced when cutting to length. The cut-to-length pipe ends with sockets can be used as adaptors. Waste is reduced as a result.

If a pipe section has no socket, add a LORO-X double socket no. 560X, to turn it into a socket pipe. Glue the double socket onto the remaining pipe with the LORO-X sealing element, no. 911X, and LORO-X adhesive no. 985X.

**Attention:** In frost-exposed areas, sockets (including double sockets) must not be facing opposite to the flow direction.



### 3. Pipe fastening

The following pipe clips from our product range can be used for fastening the pipes:

- Pipe clips with knocking pin (if substrate is firm).
- Pipe clips with connecting threaded socket for hanger bolt or set screw, with/without sound-damping.
- Anchor clip up to DN 125 for suspension with perforated strap or flat bar. The firm seating of the anchor clip on the pipe and socket must not be impaired.

#### Fastening systems:

The pipe system has to be fastened in accordance with the requirements (e. g. fixed point, pipe clips etc.).

#### The following basically applies for connecting and collector pipe:

- the distance between **fixed points** should be 12 m.
- the distance from **suspensions** should be

DN	32	40	50	70	80	100	125	150	200
X	2.0m	2.0m	2.0m	3.0m	3.0m	3.0m	3.0m	3.0m	3.0m

For fastening LORO-XML pipes (pipe without sockets), DN 250 and DN 300, please request the installation instruction LORO-XML steel discharge pipes DN 250/300.

**for downpipes:**

- 3 m spacing.
- Downpipe supports can be placed every 12 m, if the weight of the downpipe is not lifted completely by the pipe clips.
- Fixed point at the transition of collector pipe and downpipe.

For the fastening of LORO-X pipes the following weights have to be taken into account:

1 m pipe completely filled with water weighs:

DN	LX steel discharge pipe kg/m	LX composite pipe kg/m
32	1.6	5.2
40	2.6	6.1
50	4.0	8.3
70*	6.8	13.8
80*	9.3	17.8
100*	12.4	22.5
125*	20.8	38.8
150*	28.2	49.1
200	51.4	78.7
250	81.7	-
300	110.0	-

\*Pipes 5 m and 6 m are equipped with small lugs.

**4. Tightness values when using the anchor clip, no. 806X, or the anchor hoop, no. 808X**

The tightness of the LORO-X push-fit socket connection is secured till at least 0.5 bar for all nominal sizes.

If higher pressures are expected, the socket joint can be secured against axial thrust by the LORO-X anchor clip (DN 32 – DN 125) or by the anchor hoop (DN 150 – DN 200).

The tightness is ensured with LORO-X sealing element and LORO-X anchor clip until:

DN 40: 15 bar overpressure	DN 100: 5 bar overpressure
DN 50: 15 bar overpressure	DN 125: 4 bar overpressure
DN 70: 5 bar overpressure	DN 150: 1.5 bar overpressure
DN 80: 5 bar overpressure	DN 200: 1.5 bar overpressure

LORO-X steel discharge pipes DN 40, DN 50 and DN 70 are vacuum-tight to 0.2 bar absolute pressure (80% vacuum) even under vibration when using the LORO-X VAC sealing element.

**5. Thermal expansion**

LORO-X steel discharge pipes have a low coefficient of expansion: 0.0117 mm/m per °C.

**Example:**

3 m pipe, temperature difference = 25 °C

Elongation = 3 x 25 x 0.0117 = 0.8775 mm

**6. Casting in**

The expansion coefficient of the steel discharge pipe corresponds approximately to that of the concrete. Casting-in of hot-dip galvanised steel discharge pipes has been state of the art for years.

If additives are used in the concrete (frost protection, retarder, setting accelerator), the outer pipe must be given a coat of a standard building protection agent on site.

It is advantageous to use LORO-X clips with an insulation layer for fixing in the concrete. For socket joints inside the concrete, the LORO-X anchor clip or anchor hoop can be used as an additional safety measure. When using the LORO-X anchor clip or anchor hoop, the socket joint is secured against axial thrust.

**7. Underground installation**

According to DIN 1986-100, LORO-X steel discharge pipes are also approved for underground installation. In this case, depending on the load/surrounding ground, LORO-X steel discharge pipes must be provided on site with corrosion protection according to DIN 30672.

**8. Releasing the socket joint**

Heat the insert pipe well with a soft soldering flame close to the socket rim until the pipe can be pulled out of the socket. The tip of the flame should be about 10 cm away from the pipe to be heated.

The sealing element is to be renewed when reassembling the socket joint.

**9. Painting**

Hot-dip galvanised steel discharge pipes can be painted. Use paints specially designed for hot-dip galvanized substrates.

**10. Connection to other types of pipe**

LORO-X connectors are to be used to connect LORO-X pipes to other types of pipe (cast iron pipe, plastic pipe, stoneware pipe). The sealing elements to match the LORO-X sockets of the connectors are supplied by LOROWERK. Original sealing elements for the sockets of the external makes are not part of our scope of supply. LOROWERK supplies special sealing elements for the connection of odour traps of sanitary objects.

**11. Other installation instructions**

1. Pipes exposed to corrosion by electrical current, corrosive liquids, gases or fumes, must be protected in a suitable manner.
2. Pipes with corrosion protection (hot-dip galvanising with added inside coating) cannot be welded.
3. Roof drains and pipes in areas endangered by frost are recommended to be completed by a trace heating by customer (see EN 12056, Part 1, or DIN 1986, Part 100).
4. **Attention:** LORO-X steel discharge pipes must be checked for leak-tightness by the installer after installation.

**12. Auxiliary tools**

The following assembly aids can be provided on request:

- Assembly tool for making socket joint
- Pipe cutter

**13. Supervision**

Supervision is done by:

For rubber sealing elements: **MPA-NRW**

For steel discharge pipes: **LGA QualiTest GmbH**



DIN EN 1123



DIN EN 1123

# Assembly and installation instructions

## LORO-XML steel discharge pipes, DN 250/DN 300

Technical status: April 2018.  
Subject to technical changes.

Follow the assembly instructions and notes below for the professional assembly of LORO-XML pipes.

Particular attention should be paid to the notes regarding the longitudinal force fit of the connections for pressurised pipes as well as the fastenings of the pipes.

### 1. Making the LORO-XML pipe connection

1.1 Push the EPDM sealing sleeve onto the end of the pipe. The internal spacer ring must rest evenly on the pipe rim.



1.2 Turn the top half of the sealing sleeve inside out.  
**Attention:** please check whether the central lip lies between both pipe ends.



1.3 Place the next pipe or fitting flush and centrally against the spacer ring.



1.4 Fold back the inverted half of the sealing sleeve the right way around.



1.5 Place the clamping sleeve around the sealing sleeve. Tighten the two clamping screws alternately, evenly with a tightening torque of 15 - 20 Nm. The guide and threaded plates of the closure must push themselves together parallel to one another.



### 2. Cutting the pipes to length

LORO-XML pipes are supplied in the nominal diameters DN 250 and DN 300 and in lengths of 1.0 and 3.0 m. They can be cut using pipe cutters, electric hacksaws or angle grinders.

The cut surfaces must be deburred.

**Important:** The cut must be implemented at a right-angle to the pipe axis.

### 3. Connection using CV connectors

The connection consists of two parts: The clamping sleeve made of rustproof steel and the sealing sleeve made of EPDM.

Tools for making the connection: screwdriver, box spanner or impact screwdriver.

#### 4. Fastening LORO-XML pipes

The distances between the fastenings should be as even as possible and should not exceed a distance of 2.0 m. Pipes of 2.0 m or more in length must be fastened twice, shorter pipes at least once.

The fastenings should be mounted at even distances between the connectors, wherein the distance of 750 mm before and after a connection is not to be exceeded.

Downpipes are to be additionally supported by a downpipe support before the transition to an underground pipe or to a turn to the horizontal. In the case of longer downpipes, downpipe supports are to be installed at distances of 12.0 m.

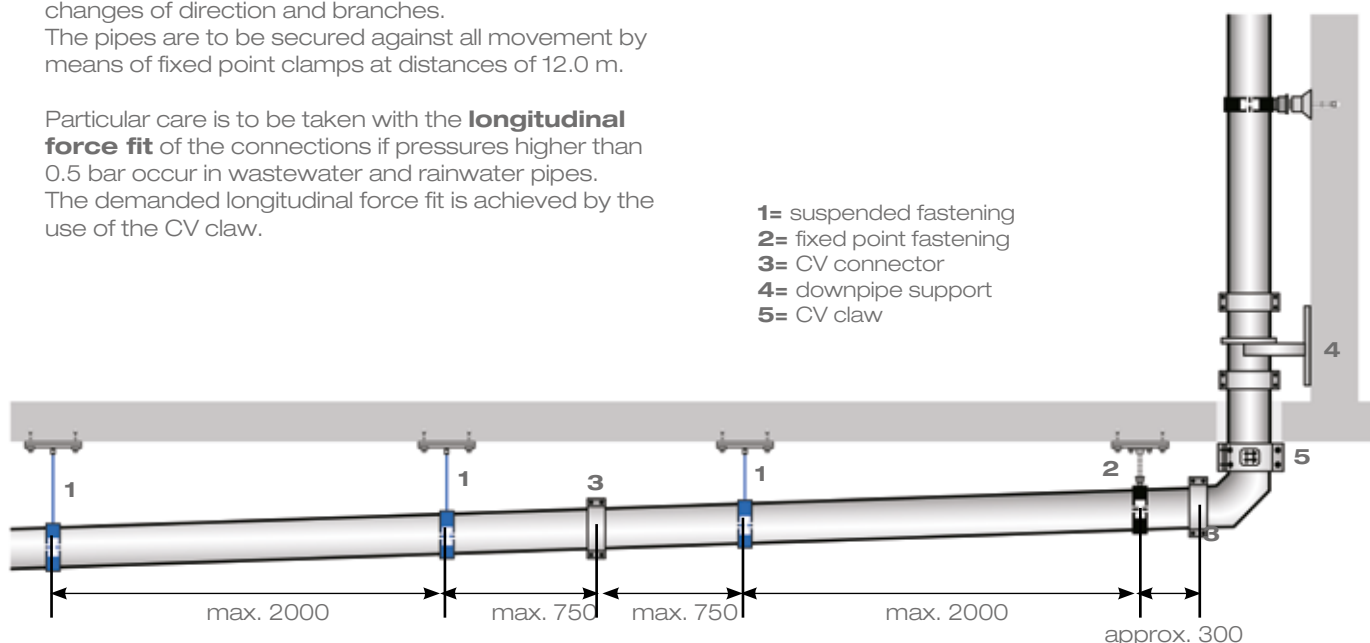
Horizontal pipes must be adequately fastened at all changes of direction and branches.

The pipes are to be secured against all movement by means of fixed point clamps at distances of 12.0 m.

Particular care is to be taken with the **longitudinal force fit** of the connections if pressures higher than 0.5 bar occur in wastewater and rainwater pipes. The demanded longitudinal force fit is achieved by the use of the CV claw.

LORO-XML pipes in the LORO-DRAINJET® rapid drainage system must be secured with **CV claws** according to the "LORO DRAINJET®" installation instructions.

Pipe clips, CV connectors, CV claws and downpipe supports are included in the LORO-X sleeveless steel discharge pipe range. Accessories such as rail mounting systems, downpipe support holders and fixed point clamps are not supplied by LOROWERK. We would refer you here to companies such as Bis-Walraven and Hilti.



- 1= suspended fastening
- 2= fixed point fastening
- 3= CV connector
- 4= downpipe support
- 5= CV claw

Weight in kg/m	DN 250	DN 300
LORO-XML pipe	24.2	31.7
LORO-XML pipe completely filled with water	81.7	110.0

#### 5. Assembly instructions for CV claw

Place the individual segments of the CV claw with a cut-out over the screw connection of the CV connector and bolt loosely. The claw tips of the CV claw must seize the pipe and not the edge of the CV connector.

In order to ensure even seating of the CV claw, the bolts are tightened alternately and diagonally; the distance between clamping parts should as far as possible be the same and parallel afterwards.

The tightening torque is 60 - 65 Nm.



#### 6. Trace heating

Roof drains and pipes in areas endangered by frost are recommended to be completed by a trace heating by customer (see EN 12056, Part 1, or DIN 1986, Part 100).

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

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