

PREIS[®]

DRAINAGE SYSTEMS

SML - Cast Iron Socketless Drain Pipe Systems for Building Drainage



PREIS® SML - the cast iron socketless pipe system



— Cast iron is the classic material for domestic drainage pipes.

SML – since 1982, the cast iron socketless pipe system has completely replaced the socket drainage pipe. A tried-and-tested pipe material, easy to handle fittings and reliable couplings provide for a space-saving, fail-safe and durable pipe system that fully meets the high demands of today’s quality of living standards and state of the art technical building requirements. At the same time, it fulfils many critical safety requirements such as sound insulation and fireproofing.

Due to the high level of quality in SML systems, these cast iron pipes are used for the most important sections of pipe systems in a building’s drainage system (downpipes, collecting pipes and box-type inside rainwater drainpipes).

The following standards and regulations are relevant to PREIS®SML products:

EN 877 | Cast iron pipes and fittings, their joints and accessories for the evacuation of water from building. Requirements, test methods and quality assurance.

DIN 19522 | Complementary standard to EN 877. This standard mainly includes details about design and layout measures of pipes and fittings.

RAL-GZ 698 | RAL quality label demanding a notably extended test range and stricter requirements on quality, which goes far beyond the requirements of EN 877.

CE Label | Declaration of conformity according to the European Directive for construction products (89/106/EEC).

EN 1561 | Standard for founding of products made from grey cast iron with lamellar graphite.

Material characteristics



Density
approx. 7.2 kg/dm³ (71.5 kN/m³)

Tensile strength
≥ 150 MPa for fittings
≥ 200 MPa for pipes

Compressive strength
approx. 3 to 4 times the value for tensile strength

Shear strength
approx. 1.1 to 1.6 times the value for tensile strength

Crushing strength
(peak compressive strength)
≥ 350 MPa

Modulus of elasticity
8 x 10⁴ to 12 x 10⁴ N/mm²

Poisson’s ratio ~ (0,3)

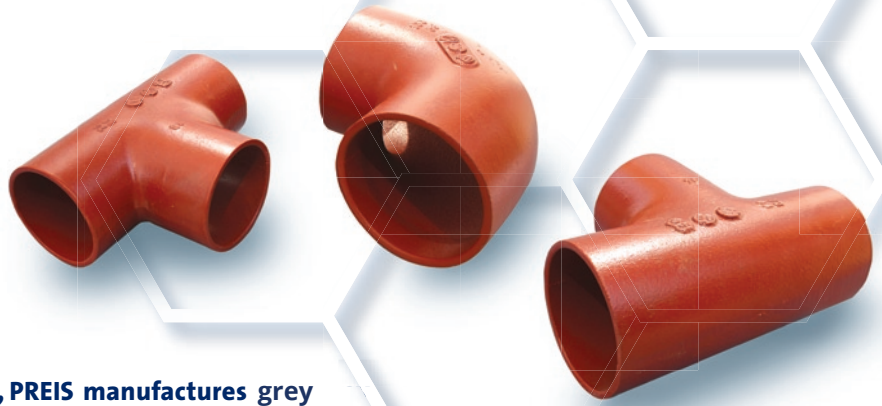
Heat resistance
PREIS® SML complies with fire resistance class A2 according to EN 13501 - not combustible*

Coefficient of thermal conductivity
50-60 W/mK (at 20° C)

Coefficient of linear expansion
only 0.0105 mm/mK (between 0 and 100° C) more or less similar to concrete; can be set in concrete without any difficulty

Chemical resistance
PREIS® SML is highly resistible against domestic sewage water with a pH value between pH2 and pH12

***Annex F.2 of EN 877 confirms:** „Cast Iron products in accordance with this European Standard are non-flammable and non-combustible. In case of fire they contain their functional characteristics and they remain fire proof for a few hours, that is to say during this period their walls are tight against flames and gases and they remain free from bursts, distortions and they are failsafe. Wall and ceiling pass-throughs remain intact.”



Production

At the foundry of FERRO-PREIS, PREIS manufactures grey cast iron products containing flake granite (lamellar graphite).

The **FERRO-PREIS** plant is equipped with state of the art machinery. This enables us to produce in an efficient and environment-friendly way.

The quality of our products is extremely important to us. Therefore, **PREIS / FERRO-PREIS** takes the opportunity to continuously monitor all production steps to constantly improve production processes.

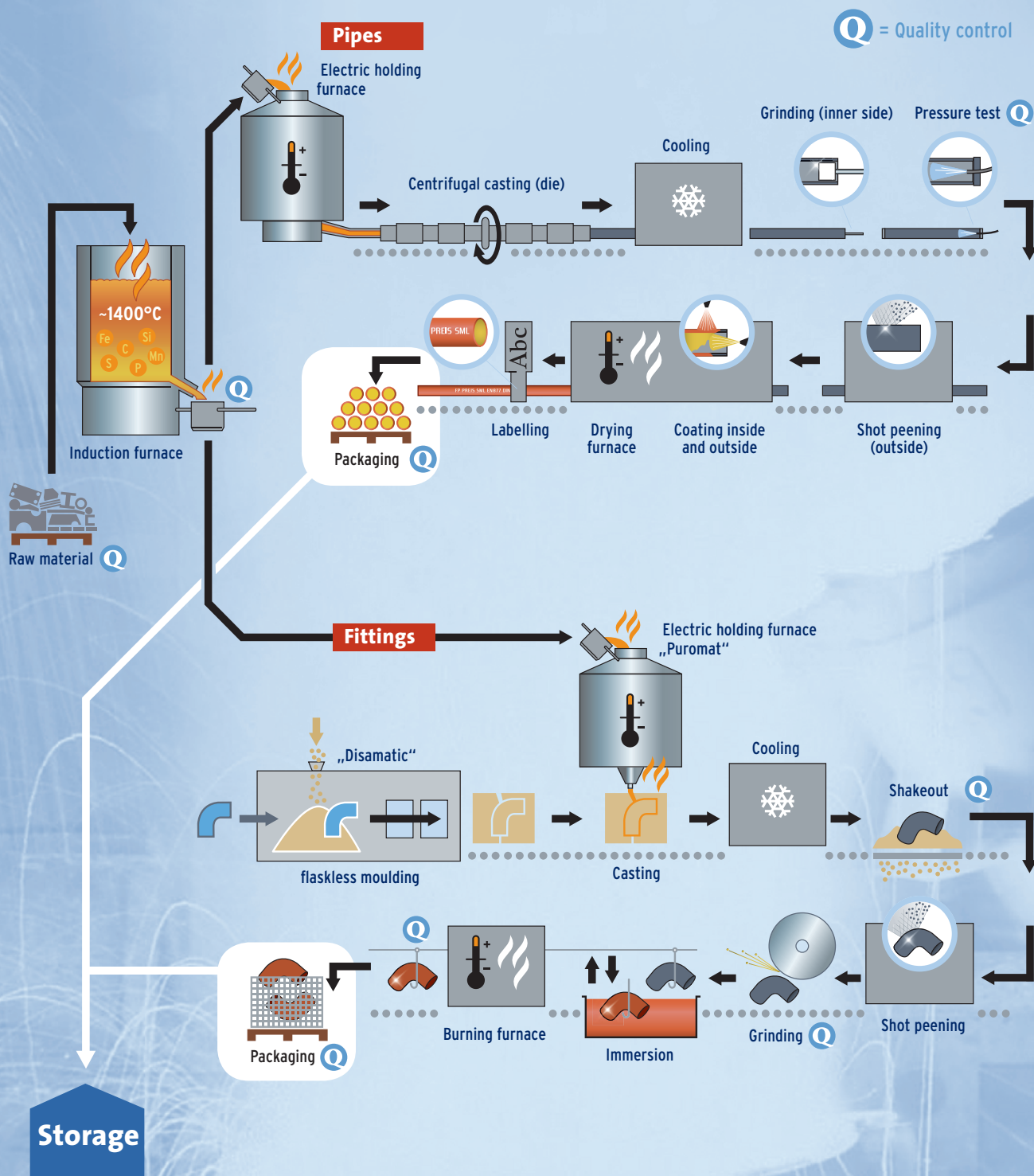
Hence, for very complex geometric shapes of cast iron parts we use a state-of-the-art 3-D measuring system during on-going product development and for carrying out inspection of the products.

All working processes are accompanied and supervised by international certifications:

- ISO 9001:2008: Certificate of quality management
- ISO 14001:2009: operational environment
- BS OHSAS 18001: 2007: Occupational health and safety as a quality standard



Production process



Coating technology for SML pipes and fittings

SML pipes and fittings are supplied with a high quality, reddish brown epoxy resin coating.

The paint for fittings is applied as a dip coating with fully cross-linked epoxy resin coating, coating thickness 40 µm, inside and outside of the piece, then to be heat-treated at 180°C during 45 minutes. This causes a compound to be built between the fitting and the coating which is of extra high strength, thus providing the pieces with thermal and chemical resistance that goes far beyond the stringent requirements of EN 877 and RAL-GZ 698.

Product labelling



- 1 **FP** manufacturer and production label
- 2 **DIN** label
- 3 **CE** - label of conformity
- 4 **EN 877** reference to the standard
- 5 **RAL** quality label of the GEG
- 6 **Nominal width and angular position** of the fitting
- 7 **Month/year** period of production

On the outside, **SML pipes** are coated with a reddish brown 40µm thick base coating in accordance with DIN EN 877 that can be repainted with any standard colour varnish or finish commercially available. On the inner side, the coating is sprayed with a completely cross-linked, ochre-coloured epoxy material (120µm), thus, protecting the pipe from aggressive domestic effluents.



Resistance of the inside coating of PREIS® SML pipes and fittings

— for domestic facilities and discontinuous use

Resistance	to 23° C	to 50° C	to 80° C	Quality
pH0				<p>The quality of the inside coating is decisive for the durability of the drainage system.</p> <p>Increasingly aggressive domestic sewage water brings about high demands on the inside coating.</p> <p>PREIS® SML pipes and fittings cover a wide range of usage in evacuation of water in buildings.</p>
pH1 (except for organic acids)				
pH2 (except for organic acids)				
Lime-scale dissolving agents				
Cleaning agents				
Detergents				
Disinfectants				
Stain remover				
Oxidants				
Water, salts				
Drain cleaner				
Solvents				
pH12				
pH13				

EN 877

Agreement on assumption of liability entered into with the ZVSHK

The agreement on assumption of liability signed between PREIS and the ZVSHK (Central Association for sanitation, heating, air-conditioning) shall provide and guarantee a higher level of security and cooperation in case of claims due to damages to all the German SHK member companies.

In case of non-compliance of the responsibilities under this agreement, incurring liabilities hereunder or direct consequential damages, the liability extends to a maximum of 1.2 million Euro per claim.

This agreement includes all products delivered by PREIS

- PREIS® SML pipes
- PREIS® SML fittings
- PREIS® couplings and clamps

For further information go to www.wasserwaermeluft.de



The benefits of cast iron drainage systems



Noise protection
reduced sound transmission



Preventive fire protection
PREIS® SML pipes and fittings are not combustible



Not sensitive to heat and cold
low thermal expansion (0.0105 mm/mK)
more or less similar to concrete; It can, therefore, be set in concrete without any difficulty



Easy-to-assemble
in a flexible manner – no need for special tools



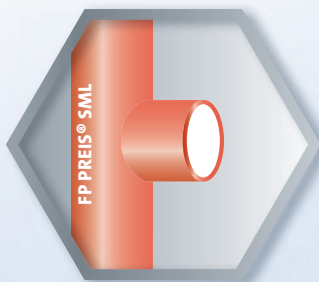
100% recyclable
no problems with disposal



No waste of resources
PREIS® SML products are mainly made of scrap iron



Pipe internal coating
consists of a high quality 2-component system



Optimum corrosion protection
for fittings thanks to the refined epoxy resin coating



Time-saving
quick assembly by means of plug-in couplings



High durability
exceeding the requirements of EN 877



High abrasion resistance
easy flow due to the smooth surface



Sturdy and dimensionally stable
impact resistant



Sound insulation

Sound insulation is one of the main advantages of PREIS® SML.

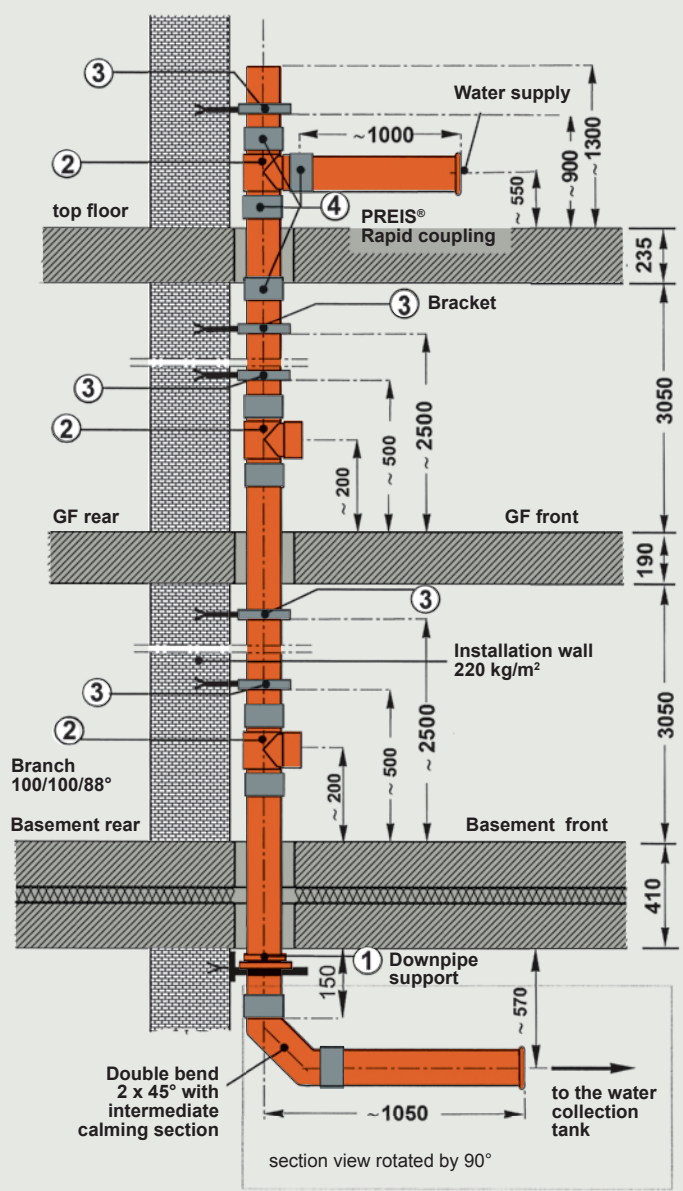
Due to the high density of cast iron and the buffer effect of the rubber lining in the couplings, sound transmission is reduced to a minimum so that the system is a grant for silent drainage. This provides the basis for general well-being in both, homes and offices, which is required by law and laid down in DIN 4109.

Testing

In December 2011, Preis conducted a sound insulation test according to DIN 4109 and EN 14366 at the renowned Fraunhofer Institute in Stuttgart, Germany. For the tests, standard PREIS® SML pipes and fittings were used along with the PREIS® Rapid couplings for connections and standard clamps for the wall fixing. (See details on the right side).

- ① Downpipe support
- ② Branch 100/100/88°
- ③ Bracket
- ④ Rapid coupling

Arrangement of the drainage system,
fixed at an installation wall with different
pipe brackets (reproduction not scaled,
dimensions given in mm).
Outline Fraunhofer-Institute for Building
Physics



Sound level

The bottom row in the table below shows the sound level, if the downpipe is not attached to the wall - that is to say it is installed independently. This test has been carried out to isolate the airborne sound from the structure-borne sound.




The tests also have demonstrated that the cast iron drainage system with rapid couplings as a free-standing system emits a very low level of noise. **The crucial point in sound insulation lies in the pipe clamps for wall and ceiling installation**, that is to say, in the connections of the pipe system to wall and / or ceiling.

If a vibration-decoupling element is used, the sound level can be reduced even more significantly (see corresponding table) until a sound level is reached which is not longer audible for human ears.

Conclusion

The tests focused on simulating common, real-life situations to show that those figures can be reproduced in both, a laboratory environment and in everyday installation on site.

Hence, PREIS® SML proved to be the best choice to fulfil the provisions of sound protection using standard products without any additional, costly measures.

PREIS® SML in combination with:	Flow of water [litres per second]			
	0,5	1,0	2,0	4,0
Pipe clamp without rubber lining				
	Sound level in the ground floor (behind the wall - "GF rear") in [db(A)]			
	21	26	31	36
Pipe clamp with rubber lining				
	Sound level in the ground floor (behind the wall - "GF rear") in [db(A)]			
	16	20	25	30
Pipe clamp without rubber lining + vibration-decoupling element				
	Sound level in the ground floor (behind the wall - "GF rear") in [db(A)]			
	<10	<10	12	15
Free-standing downpipe				
Not fixed at the wall. The downpipe only rests at the downpipe support. The values shown refer exclusively to airborne sound; structure borne sound is explicitly excluded. (Test results are not foreseen for official purposes, only to provide information).	Sound level in the ground floor (behind the wall - "GF rear") in [db(A)]			
	-1	1	5	10



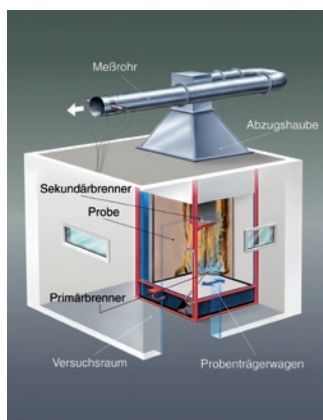
Preventive fire protection

PREIS® SML fulfils all requirements.

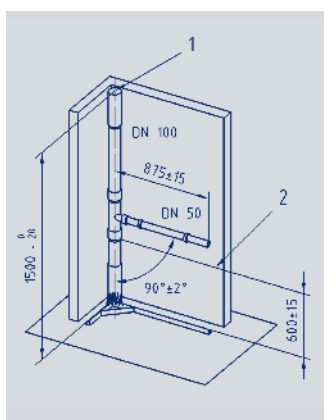
Preventive fire protection is the generic term for all preventive measures taken to inhibit or limit fire outbreak, spreading of fire or the effects of fire. Constructional measures are varied, especially for public buildings where people gather, and they already start with the selection of materials and components.

As set forth in EN 877, the Austrian Research Institute for Chemistry and Technology tested our cast-iron PREIS® SML drainage system under the fire behaviour according to EN 13823 (reaction to fire tests for building products) by means of the SBI-test (Single Burning Item Test) and according to EN ISO 1716 (Determination of the heat of combustion) by means of an oxygen bomb calorimeter and it confirmed the **classification of A2** according to EN 13501.

SBI-test (Single-Burning-Item-Test):



Test scenario according to DIN EN 13823



Installation



Firing

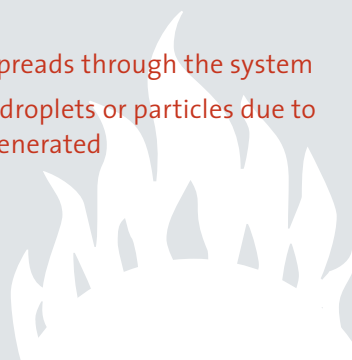


Results

The excellent properties of our cast-iron drainage system have been confirmed:



- non-flammable (fire protection class A2 acc. to EN 13501)
- no smoke spreads through the system
- no flaming droplets or particles due to high heat generated





Evidence of quality and safety given by the GEG quality label

— This quality label from GEG is a guarantee for cast iron drainage systems you can trust also in future.

For quality assurance reasons, the „German Institute for Quality Assurance and Certification“ (RAL), Sankt Augustin, took the lead and founded the Gütegemeinschaft Entwässerungstechnik Guss e.V. (GEG - German Association for Drainage Technology Castings).

Its main objective is to guarantee excellent product quality also for the future - documented by the quality label (RAL-GZ 698). There are suppliers who do not comply with the required quality objectives which have always been a relevant criterion for cast iron drain pipes. The quality label takes into account the need for safety of all our partners, such as distributors, craftsmen, planning firms or authorities.

The quality label is awarded upon successful completion of an extensive initial test by independent, recognised test institutes. In addition, the test institutes conduct ad hoc external inspections at least twice a year to assure the quality of the products to meet the stringent quality requirements.

These measures guarantee consistently high quality and spell out the great responsibility of manufacturers towards their partners in the market, for example distributors, fitters and end customers.

Requirements and inspections

Requirements as of →	EN 877	GEG
salt spraying	350 hours	1,500 hours
Resistance to waste water*	30 days at 23°C	30 days at 50°C
Chemical resistance	within a range of pH 2 to pH 12, 30 days at 23°C	enhanced tests with aggressive substances such as phosphoric acid (pH 1)

*For typical composition of waste water see EN 877, chapter 5.7.2.2, table 5

Third party certified quality assurance

We continually strive for a certified quality assurance system and quality assurance of cast iron drainage pipes, fittings and couplings.



Dimensions

Pipes / fittings / couplings

Nominal width DN	External diameter		Wall thickness		Insertion length (sealing zone) t	Pipe weight		Surface approx. m² per m
	DE	Permitted deviation	e	Pipes and fittings permitted deviation		empty approx. kg/m	Full approx. kg/m	
50	58	+2	3,5	-0,5	30	4,3	6,4	0,18
70	78		3,5	-0,5	35	5,9	9,9	0,25
75-S	75		3,5	-0,5	35	5,7	10,1	0,25
80	83	-1	3,5	-0,5	35	6,3	10,6	0,26
100	110		3,5	-0,5	40	8,5	16,7	0,35
125	135	+2	4,0	-0,5	45	11,9	24,5	0,42
150	160	-2	4,0	-0,5	50	14,2	32,2	0,50
200	210	+2,5	5,0	-1,0	60	23,3	54,5	0,65
250	274	-2,5	5,5	-1,0	70	33,5	87,6	0,85
300	326		6,0	-1,0	80	43,6	120,6	1,02

SML pipes and fittings

Product overview

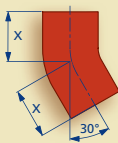


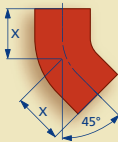
3000 mm PIPE	DN	kg/pcs.	ART.NR.	PU
	50	13,0	26620	37
	70	17,7	26621	41
	75-S	17,0	19903	41
	80	18,9	26622	38
	100	25,4	26623	38
	125	35,7	26624	23
	150	42,5	26626	20
	200	69,8	26627	10
	250	100,5	26628	8
	300	130,7	26629	6

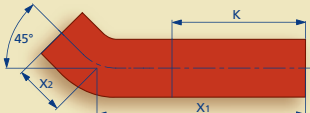
15° BEND	DN	kg/pcs.	ART.NR.	X
	50	0,4	11270	40
	70	0,6	11269	45
	75-S	0,6	25935	45
	80	0,7	19945	45
	100	1,0	10041	50
	125	1,8	11268	60
	150	2,6	11267	65
	200	4,6	19844	80

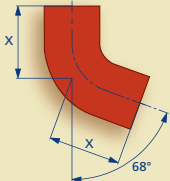
22° BEND	DN	kg/pcs.	ART.NR.	X
	75-S	0,7	20916	45
	100	1,3	25964	50

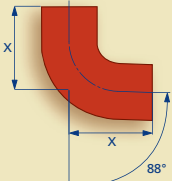
75-S = Scandinavian norm. Further products available on request

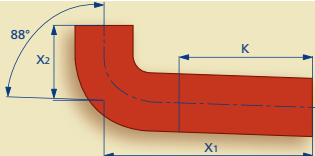
30° BEND	DN	kg/pcs.	ART.NR.	X
	50	0,5	11266	45
	70	0,7	10042	50
	75-S	0,7	25936	50
	80	0,8	19946	50
	100	1,3	10043	60
	125	2,1	11265	70
	150	3,0	11264	80
	200	5,4	19845	95
	250	8,0	10045	110
	300	14,0	10048	130

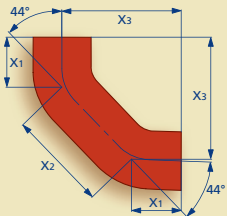
45° BEND	DN	kg/pcs.	ART.NR.	X
	50	0,5	10050	50
	70	0,9	10067	60
	75-S	0,8	15552	60
	80	0,9	13875	60
	100	1,6	10073	70
	125	2,3	10076	80
	150	3,5	10079	90
	200	5,7	10082	110
	250	10,3	18242	130
	300	16,5	10096	155

BEND WITH LONG 45° LEG	DN	kg/pcs.	ART.NR.	X1	X2	K
	100	3,5	10101	250	70	180

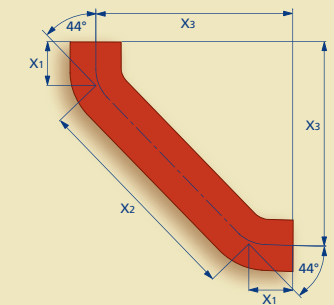
68° BEND	DN	kg/pcs.	ART.NR.	X
	50	0,7	19709	65
	70	1,1	10112	75
	75-S	1,1	25937	75
	80	1,2	23733	80
	100	1,9	10113	90
	125	2,9	11263	105
	150	4,1	11262	120
	200	7,7	10115	145

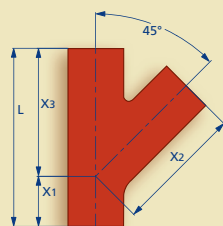
88° BEND	DN	kg/pcs.	ART.NR.	X
	50	0,7	10118	75
	70	1,2	10121	90
	75-S	1,2	15553	90
	80	1,3	13876	95
	100	2,1	10125	110
	125	3,2	10129	125
	150	4,3	10131	145
	200	8,8	18241	180

BEND WITH LONG 88° LEG	DN	kg/pcs.	ART.NR.	X	X2	K
	100	3,6	10109	250	110	140

88° DOUBLE BEND	DN	kg/pcs.	ART.NR.	X1	X2	X3
	50	1,0	19115	50	100	121
	70	1,8	19986	60	120	145
	80	1,9	19985	60	120	145
	100	3,2	10152	70	140	170
	125	4,3	10151	80	160	195
	150	6,2	10154	90	180	219

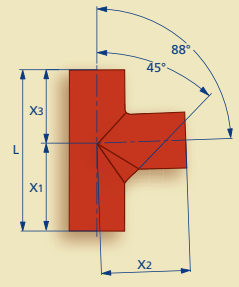
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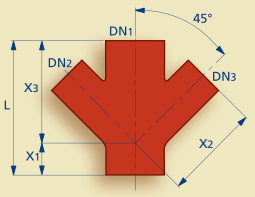
88° BEND WITH STRAIGHT LINE	DN	kg/pcs.	ART.NR.	X1	X2	X3
	100	4,8	10032	70	312	291
	125	6,4	10037	80	322	308
	150	8,7	10039	90	334	326

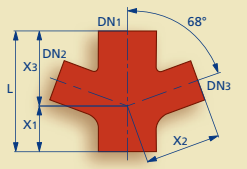
45° BRANCH	DN	kg/pcs.	ART.NR.	X1	X2	X3	L
	50 x 50	1,4	17017	50	135	135	185
	70 x 50	1,6	10002	40	150	150	190
	70 x 70	2,1	10028	55	160	160	215
	75-S x 50	1,6	25950	40	130	130	170
	75-S x 75-S	2,1	15554	55	160	160	215
	80 x 50	1,6	19756	45	135	135	180
	80 x 80	2,3	13878	60	155	155	215
	100 x 50	2,3	10029	35	165	165	200
	100 x 70	3,0	10030	50	185	185	235
	100 x 75-S	3,0	15555	50	185	185	235
	100 x 80	3,0	13877	50	170	170	220
	100 x 100	4,4	10033	70	205	205	275
	125 x 50	3,2	11301	20	185	185	205
	125 x 70	4,0	11302	40	200	200	240
	125 x 80	4,4	23831	51	189	189	240
	125 x 100	5,0	10034	60	220	220	280
	125 x 125	6,1	10035	80	240	240	320
	150 x 70	5,3	11300	30	215	215	245
	150 x 80	5,3	21002	115	140	105	220
	150 x 100	6,5	10060	55	240	240	295
	150 x 125	7,2	10061	70	255	255	325
	150 x 150	8,3	10062	90	265	265	355
	200 x 100	10,0	11299	40	265	265	305
	200 x 125	11,6	11298	55	280	280	335
	200 x 150	13,3	10063	75	300	300	375
	200 x 200	17,2	11297	115	340	340	455
	250 x 100	13,6	10064	15	310	310	325
	250 x 125	16,3	10065	35	335	335	370
	250 x 200	20,4	10068	90	385	385	475
	250 x 250	31,5	10071	130	430	430	560
	300 x 125	21,0	10072	15	360	360	375
	300 x 200	30,0	10074	70	440	415	485
	300 x 250	36,9	10075	115	465	465	580
	300 x 300	48,2	10077	155	505	505	660

75-S = Scandinavian norm. Further products available on request

68° BRANCH	DN	kg/pcs.	ART.NR.	X1	X2	X3	L
	50 x 50	0,9	24870	55	80	80	135
	70 x 50	1,0	24869	55	90	90	145
	70 x 70	1,2	22405	70	100	100	170
	100 x 50	1,9	10080	55	110	100	155
	100 x 70	2,4	10081	70	120	110	180
	100 x 100	2,9	10083	85	130	130	215
	125 x 100	3,9	11257	85	145	140	225

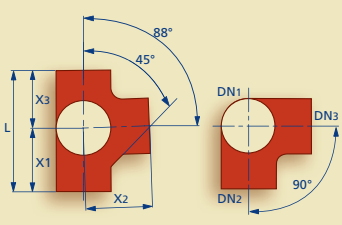
88° BRANCH	DN	kg/pcs.	ART.NR.	X1	X2	X3	L
	50 x 50	1,1	11296	79	80	66	145
	70 x 50	1,3	10086	83	90	72	155
	70 x 70	1,7	10087	97	95	83	180
	75-S x 75-S	1,6	20409	97	95	83	180
	80 x 50	1,4	19757	85	90	75	160
	80 x 80	1,8	13880	95	95	85	180
	100 x 50	2,1	10088	94	105	76	170
	100 x 70	2,4	10089	102	110	88	190
	100 x 75-S	2,3	18088	102	110	88	190
	100 x 80	2,4	13879	100	110	90	190
	100 x 100	2,9	10090	115	115	105	220
	125 x 50	3,0	11295	98	120	82	180
	125 x 70	3,6	10097	107	125	93	200
	125 x 80	3,4	23992	105	125	100	205
	125 x 100	4,0	11294	125	130	110	235
	125 x 125	4,6	19841	137	135	123	260
	150 x 50	4,4	10095	100	140	100	200
	150 x 100	4,7	10099	130	145	115	245
	150 x 125	6,2	19842	147	150	128	275
	150 x 150	6,9	19843	158	155	142	300

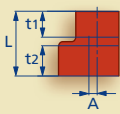
45° DOUBLE BRANCH	DN	kg/pcs.	ART.NR.	X1	X2	X3	L
	100x100x100	3,8	21186	70	130	130	215

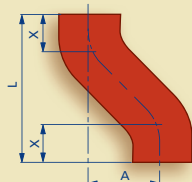
68° DOUBLE BRANCH	DN	kg/pcs.	ART.NR.	X1	X2	X3	L
	100x100x100	3,6	20463	85	130	130	215

75-S = Scandinavian norm. Further products available on request

88° DOUBLE BRANCH	DN	kg/pcs.	ART.NR.	X1	X2	X3	L
	100x50x50	2,2	11288	100	80	105	180
	100x70x70	3,0	20619	102	88	110	190
	100x100x100	3,9	10138	120	120	120	230
	125x100x100	5,0	19846	130	115	135	245
	150x100x100	7,1	19847	130	115	145	245

88° ANGLE DOUBLE BRANCH	DN	kg/pcs.	ART.NR.	X1	X2	X3	L
	100x100x100	3,8	10146	115	120	105	220
	150x100x100	6,1	21826	130	130	145	245

ECCENTRIC REDUCER	DN	kg/pcs.	ART.NR.	A	L
	70/50	0,7	10139	10	75
	75-S/50	0,6	20410	10	75
	80/50	0,7	13884	13	80
	100/50	0,9	10140	25	80
	100/70	0,9	10142	16	85
	100/75-S	0,9	18089	10	75
	100/80	1,0	13882	14	90
	125/50	1,4	19856	38,5	85
	125/70	1,6	10144	28,5	90
	125/80	1,7	23833	26	95
	125/100	1,8	10145	12,5	95
	150/70	2,2	11282	41	100
	150/80	2,3	20676	39	100
	150/100	2,4	10147	25	105
	150/125	2,6	10149	12,5	110
	200/100	4,1	18654	50	115
	200/125	4,1	19762	37,5	120
	200/150	4,3	18243	25	125
	250/150	5,6	18244	57	140
	250/200	5,8	18245	32	145
	300/250	12,4	19126	26	170

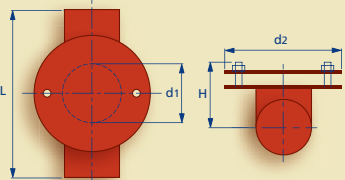
S-BEND	DN	kg/pcs.	ART.NR.	A
	100	2,5	11261	65 mm
		3,4	11258	130 mm

75-S = Scandinavian norm. Further products available on request

PLUG	DN	kg/pcs.	ART.NR.	L
	50	0,3	11284	30
	70	0,4	11287	35
	75-S	0,4	25952	35
	80	0,5	13888	40
	100	0,8	10150	40
	125	1,1	19114	45
	150	1,6	11290	50
	200	3,1	19850	60
	250	6,0	19851	70
	300	9,5	21633	80

DOWNPIPE BRACKET	DN	kg/pcs.	ART.NR.	D	L
	50	1,3	19852	87	200
	70	1,8	11276	106	200
	80	1,8	13887	118	220
	100	2,7	10106	145	200
	125	3,0	11275	170	200
	150	4,0	11274	195	200
	200	5,9	20499	245	200
	250	18,7	19854	340	300

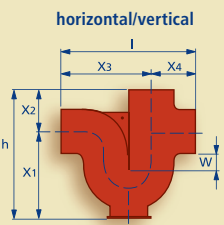
BEARING FOR DOWNPIPE BRACKET	DN	kg/pcs.	ART.NR.	D1	D2	A	B	C
	50	0,8	10104	61	93	195	148	25
	70	1,0	10024	81	114	215	166	26
	80	1,1	24013	87	133	218	175	19
	100	1,4	10027	115	147	250	202	28
	125	1,5	21139	138	171	275	224	28
	150	2,0	21918	163	199	300	252	30
	200	3,0	21237	215	250	360	310	30

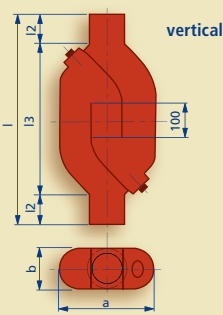
CLEANING PIPE WITH ○ COVER	DN	kg/pcs.	ART.NR.	H	d1	d2	L
	50	2,3	13226	59	53	105	190
	70	2,8	10133	69	73	125	210
	75-S	2,8	21783	68	73	125	210
	80	3,5	13885	71	73	125	210
	100	4,8	10135	84	104	159	260

CLEANING PIPE WITH □ COVER	DN	kg/pcs.	ART.NR.	H	G	d	A	F	L
	100	7,0	10122	83	160	100	200	230	340
	125	10,0	10128	101	190	125	225	255	370
	150	12,8	10130	112	215	150	250	280	395
	200	25,2	18468	137	265	200	300	330	465
	250	36,5	18469	170	330	259	350	426	570
	300	51,0	18471	195	380	309	400	476	640

CLEANING PIPE WITH TOGGLE COVER	DN	kg/pcs.	ART.NR.	A	F	d	H	L
	100	9,2	10114	250	275	110	160	400
	125	10,2	10117	250	275	135	172,5	410
	150	11,5	10119	250	275	160	185	420
	200	17,9	10120	250	275	210	210	440

75-S = Scandinavian norm. Further products available on request

SIPHON	DN	kg/pcs.	ART.NR.	l	h	X1	X2	X3	X4	w
	50	2,9	20182	190	250	182	68	122	68	60
	70	5,8	20170	265	293	200	93	172	93	60
	80	5,9	23848	265	293	200	93	172	93	60
	100	9,5	17988	325	392	282	110	215	110	100
	125	13,0	19859	390	446	316	130	260	130	100
	150	21,8	20191	470	493	348	145	325	145	100
	200	38,4	20177	600	600	420	180	400	200	100

RAINWATER SIPHON	DN	kg/pcs.	ART.NR.	l	l2	l3	a	b
	100	18,5	11271	588	90	408	276	124
	125	28,5	11272	687	100	487	344	144

75-S = Scandinavian norm. Further products available on request

SML couplings

Product overview



AXIAL RESTRAINT												compatibility chart				
DN and pressure (bar)												PREIS® Rapid coupling	PREIS® Rapid clamp	CV-coupling	kombination clamp	Universal-clamp
	50	70	80	75-S	100	125	150	200	250	300						
PREIS® Rapid coupling		0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,3	0,3		✓	✗	✓	✓
PREIS® Rapid clamp		10	10	10	10	7	6	4	3	–	–	✓		✗	✗	✗
CV-coupling		–	–	–	–	–	–	–	–	–	–	✗	✗		✓	✓
kombination clamp		10	10	10	10	10	5	5	3	–	–	✓	✗	✓		✗
Universal-clamp		–	–	–	–	–	–	Rapid 5	Rapid 3	Rapid 3		✓	✗	✓	✗	
		–	–	–	–	–	–	CV 5	CV 3	CV 3		✓	✗	✓	✗	

Couplings and clamps

Properties

PREIS® Rapid coupling with EPDM gasket		DN	PU	ART.NR.	Torque (Nm)
 <ul style="list-style-type: none"> • Building component approved according to EN 877 • Material: chromium steel 1.4520 • A special coating provides a high protection level against corrosion of all lockers and fittings • Axial restraint up to 0.5 bar inner pressure • Locked with only one screw (up to DN100) • Tightening without special tools, only visual check necessary • Quick assembly and disassembly • Integrated EPDM lining • High lateral rigidity enables the pipes to be pre-assembled • Meets the corresponding fire safety requirements 		50	100	20903	13-15
		70	100	20904	13-15
		75-S	100	23335	13-15
		80	100	20905	13-15
		100	50	20906	13-15
		125	35	20907	13-15
		150	25	20908	13-15
		200	15	27193	13-15
PREIS® Rapid INOX coupling with EPDM gasket		DN	PU	ART.NR.	Torque (Nm)
 <ul style="list-style-type: none"> • Applications: for underground laying and may also be exposed to all weather conditions for aggressive environments (when air contains salt, ...) • Axial restraint up to 0.5 bar inner pressure • Locked with only one screw (up to DN100) • Materials: <ul style="list-style-type: none"> - Coupling: stainless steel V4A 1.4571 - Locked by a screw M6 x 45 mm, 6 mm - Hexagon socket: stainless steel A4-80 - Clamping bolt: stainless steel V4A 1.4404 - Rubber gasket for sound reduction: EPDM – Shore=55° +/-5° 		50	50	26680	13-15
		70	50	26682	13-15
		75-S	50	26683	13-15
		80*	50	26684	13-15
		100	50	26685	13-15
		125*	35	26686	13-15
		150	25	26687	13-15
CV coupling with EPDM gasket		DN	PU	ART.NR.	Torque (Nm)
 <ul style="list-style-type: none"> • Tried and tested coupling for all standard application in wastewater pipelines • Double screw locked • Suitable for situations with reduced height • May also be used for repair work • Does not meet the fire safety requirements 		50	100	18405	4-6
		70	100	18406	4-6
		75-S	100	18408	4-6
		100	50	18409	10-12
		125	25	18410	10-12
		150	20	18411	10-12
		200	10	18412	15-20
		250	10	18413	15-20
		300	10	18414	15-20
PREIS® Rapid clamp		DN	PU	ART.NR.	Torque (Nm)
 <ul style="list-style-type: none"> • Material: DD11 - galvanized • Clip collar with axial restraint • For internal pressure loads up to 10 bar • Two parts clip collar with claws and four Allen screws (up to DN 125) • The same tools to be used as for PREIS® Rapid - couplings, therefore, no change of tools necessary = saves time • Applications: Pressurized pipes, rainwater and wastewater pipelines in areas affected by backwater 		50	25	21855	27-29
		70/80	25	21856	27-29
		100	25	21857	27-29
		125	10	21858	27-29
		150	10	21859	27-29

* in preparation


kombination clamp		DN	PU	ART.NR.	Torque (Nm)
 <ul style="list-style-type: none"> • Clip collar with axial restraint • For internal pressure loads up to 10 bar • Material: galvanized steel • Locker: galvanized steel • Screw size: <ul style="list-style-type: none"> - DN 50-80: cylinder head bolt with hexagon socket including flat washer M8 x 50 - DN 100-150: cylinder head bolt with hexagon socket including flat washer M10 x 45 • Applications: Rainwater and wastewater pipelines in areas at risk from backwater 		50	10	24768	12-14
		70/75-S	10	24769	12-14
		80	10	24770	12-14
		100	10	24771	32-35
		125	10	24772	32-35
		150	5	24348	45-49
		200	1	24349	40-50
Universal clamp		DN	PU	ART.NR.	Torque (Nm)
 <ul style="list-style-type: none"> • The clamp for high tensile loads <ul style="list-style-type: none"> - PREIS® RAPID for pressure loads up to 10 bar - CV for a maximum pressure load of 5 bar (DN 50-200) - CV for a maximum pressure load of 3 bar (DN 250-300) • Only two screws → shorter assembly time • Block tightening → no special tools required (visual check) • Only one clamp for several couplings → a 15% reduction in stockholding costs • Applications: Pump pressure lines for pump stations, rainwater and wastewater pipelines in areas at risk from backwater 		200	4	19997	Block tightening
		250	4	23196	Block tightening
		300	4	23197	Block tightening
Konfix		DN	PU	ART.NR.	—
 <ul style="list-style-type: none"> • For connecting pipes to other materials (steel or plastics) to SML • With NORMACLAMP® TORRO® in 12 mm range; stainless steel band 1.4016, powerful worm thread clamp • Material EPDM 		50	50	18240	—
		70	50	19120	—
		80	20	19999	—
		100	20	18656	—
		125	10	19121	—
Rollfix		DN	PU	ART.NR.	—
 <ul style="list-style-type: none"> • For connecting cast iron pipes to HT-pipes or to PVC pipes with sockets or for connecting PVC-pipes to cast iron pipes with socket • Saves time • No double stock-keeping necessary (Mengenring and O-ring) • Safe connection • Material EPDM 		50	1	25771	—
		70	1	25772	—
		100	1	25773	—
		125	1	26305	—
		150	1	26308	—
		200	1	26309	—

Universal couplings and connections for transitions


Universal coupling

Universal couplings and joints may be used for connecting pipes of different materials (SML, stoneware, LORO-X, eternit, skolan, plastic pipes, etc.). The possibilities of use of these couplings differ in resistance to pressure and in resistance to shear strength.

Universal coupling LP 0.6 bar *

Fields of applications: max. internal pressure 0.6 bar without shear strength Holding range: from 24 to 225 mm Recommended torque: up to 100mm - 3 Nm / from 100 mm - 6 Nm	Example:				
	Product denomination	Span d_i (mm)	Profile width (mm)	Weight (kg)	
	ALP115	100-115	120	0,45	


Universal coupling HP 2.5 bar *

Fields of applications: max. internal pressure 2.5 bar, exposed to shear strength Holding range: from 55 to 385 mm Recommended torque: 10 Nm	Example:				
	Product denomination	Span d_i (mm)	Profile width (mm)	Weight (kg)	
	AHP115	100-115	120	0,80	

Universal joint for transitions

Universal joints may be used for reliable and cost-efficient transitions or changes of nominal width for all pipe materials in domestic buildings. When connecting pipes with different nominal width, external diameters or different materials special attention has to be paid to the flow direction.

Universal joint 0.6 bar *

Fields of applications: up to 0.6 bar Internal pressure, without shear strength Holding range: from 32 to 460 mm Recommended torque: up to 100 mm - 3 Nm / from 100 mm - 6 Nm	Example:					
	Product denomination	Span A d_i (mm)	Span B d_i (mm)	Profile width (mm)	Weight (kg)	
	AUG1153	100-115	40-50	120	0,45	

*) **Material:** Universal joints and universal couplings are made of high-quality, ozone-resistant EPDM-elastomer (ethylene-propylenediene-caoutchouc). Clamping braces made from austenitic stainless premium steel (1.4301,V2A). **Resistance to chemicals:** Contact with benzine has to be avoided and it may be exposed to oil or solvents only in very restricted circumstances. High resistance to acids and alkaline solutions. Suitable for underground installation. Resistant to UV light. **Heat resistance:** between -40°C and +120°C.

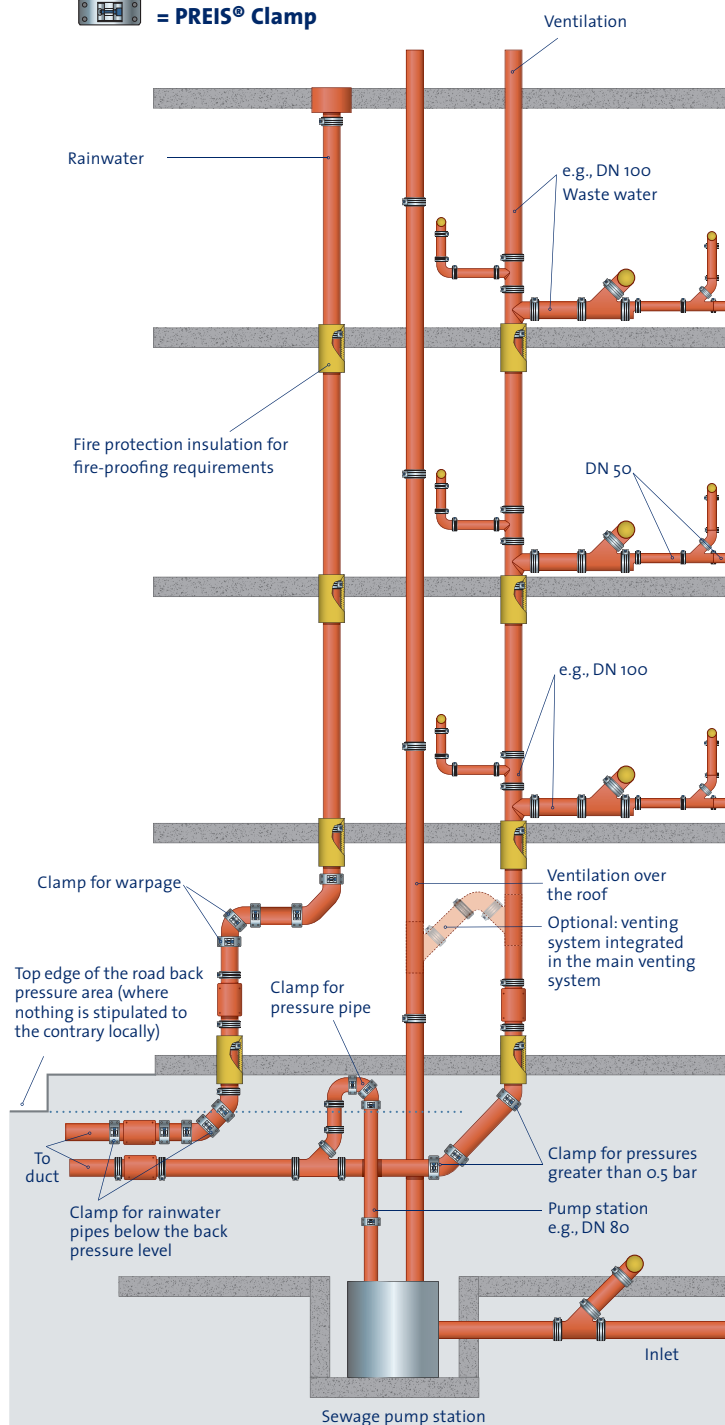
Assembly and installation instructions



= PREIS® Rapid coupling



= PREIS® Clamp



PREIS® SML pipes, fittings and coupling systems are produced and inspected according to EN 877.

The SML pipes are cut to the required length directly from the personnel working with the material. Pipes and fittings are joined with suitable pipe clamps.

Horizontal pipes have to be adequately fastened at all turns and branches. Downpipes have to be fastened at a maximum distance of 2 m. In buildings with 5 floors or more, the downpipes of DN 100 or larger should be secured against sinking by means of a downpipe support. Additionally, for higher buildings a downpipe support should be fitted at every subsequent fifth storey.

Drainage pipes are planned as unpressurized gravity flow lines. However, this does not exclude the pipe to be under pressure if certain operating conditions occur. As drainage and ventilation pipes are subject to possible interactions between the pipes and their environment, they have to be permanently leak-tight against internal and external pressure of between 0 and 0.5 bar. To sustain this pressure, those pipe parts subject to longitudinal movement must be fitted along the longitudinal axis, properly supported and secured.

This kind of fitting has to be used whenever interior pressure exceeding 0.5 bar may arise in the drainage pipes, such as in the following cases:

- **Rainwater pipes**
- **Pipes in the backwater area**
- **Wastewater pipes which run through more than one basement without further outlet**
- **Pressure pipes at wastewater pumps.**

Non-friction-fitted pipelines subject to possible internal pressure or pressure developing during operation. These pipes must be provided with a suitable fixture, above all along the turns, to secure the axes from slipping apart and separating.

The required resistance of the pipe and fitting connections to longitudinal forces is achieved by installing additional clamps (internal pressure load up to 10 bar possible) at the joints.

Further information on technical issues can be found in our brochure for technical specifications and details.



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