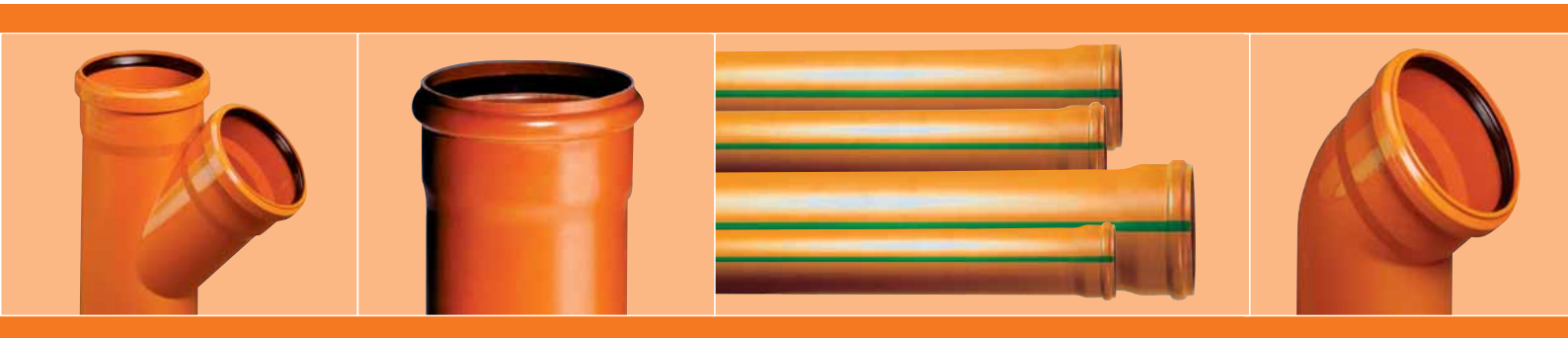




KG Pipes and Fittings
PVC underground drainage system



A convincing material: PVC

PVC is one of the most versatile plastics and one of the best tested materials. With the increasing requirements PVC has advanced itself continuously in regard to ecology, economy and technology and it will continue to do so in the future.

Magnaplast is committed to improving existing products and ensure a high level of quality and environmental safety. With the solid wall pipe systems we are breaking new ground and changed our PVC processing standards to the new environmental-friendly stabilizer Calcium-Zinc. All our PVC pipes and fittings are manufactured with Calcium-Zinc instead of lead.

This new material convinces with a long lifetime and the advantage of a new technology. The strict implementation of this sophisticated innovation increases the value of the system; however the excellent price-performance ratio persists.



The extruder. Modern extruder plants create the prerequisites necessary for an economical, first-class pipe production.



The heart of the production procedure.

Productfeatures, that are valid also tomorrow

Approvals

- Manufacturing acc. DIN EN 1401 for fittings and solid wall pipes; according DIN EN 13476-2 for Coex-pipes.
- Additionally magnaplast own several approvals for different countries.

Fittings

- More than 180 different fittings guarantees easy and low-costs installation

Pipes

- Ringstiffness SN 4 for general use
- Ringstiffness SN 8 for heavy load - safe to use under heavy goods vehicle traffic
- Leak proof due to a new sealing system

Pipes and Fittings:

- Chemical resistance to chemically aggressive media (DIN 8061 sheet 1)
- High degree of strength, elastic response
- Abrasion resistance
- Life time up to 100 years
- Environmental-friendly
- Easy to handle - low cost installation through push-fit connections
- Sealing rings according EN 681-1



Technical specifications

Production

Magnaplast pipes and fittings are produced in accordance with the technical conditions of delivery contained in DIN EN 1401 or DIN EN 13476-2.

Quality requirement

In accordance with DIN 8061

Connections

DN/OD 110-500 socket with a ring pre-mounted at the plant.

Sealing

Sealing rings in accordance with EN 681-1

Areas of application

The pipes and fittings are resistant to general sewage (pH 2–pH 12). In special cases check the resistance on supplementary sheet no. 1 in DIN 8061.

Material properties

EN 13476-2 Density 0,9 - 1,0 g/cm³

EN 1401-1 Density 1,4 - 1,5 g/cm³

Tensile strength

50–60 N/mm²

Elongation of rupture

10–50 %



Elasticity modulus

In accordance with DIN 53457 ≥ 3000 N/mm²

Heat conductivity

0.15 W/mK

Linear expansion coefficient

$\approx 0.8 \times 10^{-4}$ 1/K

Absorption of water

< 4 mg/cm³

Surface resistance

In accordance with DIN 53482 $> 10^{12}$ Ω

Colour

Orange/brown RAL 8023

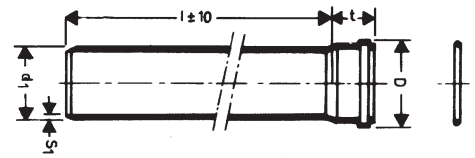


Magnaplast-Quality

We are one of the leading manufacturers of high-quality plastic pipe systems and are committed to offer a constant high quality level to our wholesalers and their customers.

This is one of the reasons why Magnaplast has set up a quality management system which complies with DIN EN ISO 9001:2000 requirements.

Foam core pipes and Solid wall pipes Ringstiffness SN 4 and SN 8



DN/OD	d ₁ mm	D mm	t max.	Foam core pipe DIN EN 13476-2		Solid wall pipe DIN EN 1401	
				SN 4 s 1	SN 8 s 1	SN 4 s 1	SN 8 s 1
110	110	128	76	3,20	3,20	3,20	3,20
125	125	145	82	3,20	3,70	3,20	3,70
160	160	183	100	4,00	4,70	4,00	4,70
200	200	226	120	4,90	5,90	4,90	5,90
250	250	287	140	6,20	7,30	6,20	7,30
315	315	355	160	7,70	9,20	7,70	9,20
400	400	445	190	9,80	11,70	9,80	11,70
500	500	567	220	12,30	14,60	12,30	14,60

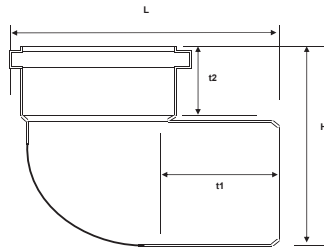


DN/OD	Length mm	SN 4 art.-no.	SN 8 art.-no.	SN 4 art.-no.	SN 8 art.-no.
110	500		220000	220065	
110	1000		220010	220070	220110
110	2000		220020	220075	220120
110	3000		220030	220080	220130
110	5000		220050	220085	
110	6000		220060	220090	220160
125	500	221000			
125	1000	221010			
125	2000	221020			
125	3000	221030			
125	5000	221050			
125	6000	221060			
160	500	222000			
160	1000	222010	222170	222070	229640
160	2000	222020		222075	229645
160	3000	222030	222180	222080	229650
160	5000	222050	222190	222085	229655
160	6000	222060		222090	229660
200	500	223000			
200	1000	223010	224170	223070	229675
200	2000	223020		223075	229680
200	3000	223030	224180	223080	229685
200	5000	223050	224190	223085	229690
200	6000	223060		223090	229695
250	1000	224010	224170		224110
250	2000	224020			
250	3000	224030	224180		224130
250	5000	224050	224190		224150
315	1000	225010	225170		225110
315	2000	225020			
315	3000	225030	225180		225130
315	5000	225050	225190		225150
400	1000	226010	226170		226110
400	2000	226020			
400	3000	226030	226180		226130
400	5000	226050	226190		226150
500	1000	227010	227170		227110
500	2000	227020			
500	3000	227030	227180		227130
500	5000	227050	227190		227150



Bends (KGB)

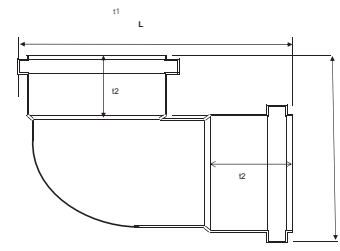
Subject to technical change



DN/OD	Degree	H mm	L mm	t ₁ mm	t ₂ mm	art.-no.
110	15°	130	160	62	58	220200
125	15°	150	170	70	53	221200
160	15°	187	207	82	67	222200
200	15°	230	250	102	78	223200
250	15°	290	315	129	99	224200
315	15°	360	360	135	110	225200
400	15°	470	445	160	155	226200
400	15°	485	615	240	135	226200
500	15°	575	570	220	190	227200
110	30°	150	180	62	57	220210
125	30°	165	195	70	56	221210
160	30°	205	240	83	65	222210
200	30°	255	295	102	80	223210
250	30°	320	370	130	98	224210
315	30°	390	425	135	110	225210
400	30°	505	535	170	150	226210
500	30°	392	660	195	180	227210
110	45°	160	190	65	49	220220
125	45°	180	220	70	68	221220
160	45°	255	265	86	65	222220
200	45°	275	335	104	94	223220
250	45°	345	400	131	97	224220
315	45°	420	470	135	110	225220
400	45°	560	645	185	130	226220
400	45°	685	745	195	190	226220
500	45°	690	790	225	150	227220
110	67°	175	200	65	51	220230
125	67°	200	230	72	68	221230
160	67°	240	270	86	65	222230
200	67°	293	347	106	79	223230
110	87°	180	180	65	52	220240
125	87°	200	210	72	58	221240
160	87°	245	265	85	65	222240
200	87°	320	330	105	94	223240
250	87°	385	410	130	97	224240
315	87°	445	647	135	110	225240
400	87°	560	620	170	125	226240
500	87°	830	890	195	185	227240

Bends (KGBD) 2 sockets

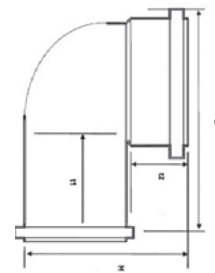
Subject to technical change



DN/OD	Degree	H mm	L mm	t ₁ mm	t ₂ mm	art.-no.
110	15°	129	174	58	58	228070
110	30°	144	196	58	58	228075
110	45°	164	213	58	58	228080

Bends (KGBSW) swept 1 or 2 sockets

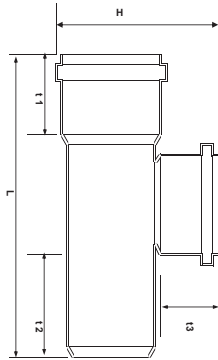
Subject to technical change



DN/OD	Degree	H mm	L mm	t ₁ mm	t ₂ mm	art.-no.
110	87°	225	225	60	57	228022
swept bend with 1 socket						
110	87°	235	235	57	57	228085
swept bend with 2 sockets						

Branch (KGEA) 45°

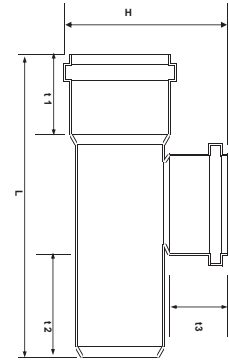
Subject to technical change



DN/OD	H mm	L mm	t1 mm	t2 mm	t3 mm	Article no.
110/110	235	278	50	63	50	220300
125/110	251	295	55	70	50	221310
125/125	365	312	55	67	55	221300
160/110	285	318	65	83	50	222320
160/125	300	338	65	85	55	222310
160/160	333	387	65	82	65	222300
200/110	268	318	82	105	51	223330
200/125	376	372	76	100	55	223320
200/160	376	421	80	100	65	223310
200/200	415	476	79	100	78	223300
250/110	380	485	100	210	50	224340
250/125	394	484	100	190	55	224330
250/160	424	483	98	140	65	224320
250/200	466	538	110	140	80	224310
250/250	519	605	110	135	110	224300
315/110	445	490	110	200	50	225350
315/125	448	490	110	181	56	225340
315/160	482	498	105	141	64	225330
315/200	528	568	110	154	80	225320
315/250	580	532	110	151	100	225310
315/315	638	710	110	151	110	225300
400/110	578	590	132	181	58	226360
400/125	578	651	140	165	77	226350
400/160	605	647	140	160	78	226340
400/250	655	750	140	160	100	226330
400/250	728	788	128	158	102	226320
400/315	793	855	130	130	115	226310
400/400	900	948	132	170	131	226300
500/110	710	700	150	205	55	227360
500/160	742	837	190	300	83	227350
500/200	777	750	157	180	88	227340
500/250	698	993	190	275	113	227330
500/315	915	970	160	180	115	227320
500/400	1010	1035	160	188	135	227310
500/500	1100	1080	160	170	160	227300

Branch (KGEA) 87°

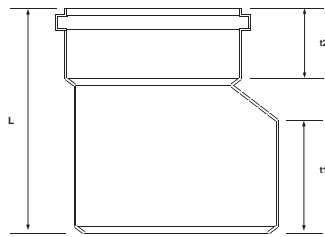
Subject to technical change



DN/OD	H mm	L mm	t1 mm	t2 mm	t3 mm	Article no.
110/110	175	242	53	65	52	220400
125/110	192	254	55	70	50	221410
125/125	197	268	55	71	57	221400
160/110	224	282	70	86	50	222420
160/125	232	328	65	118	55	222410
160/160	248	328	65	85	65	222400
200/110	268	318	82	105	51	223430
200/125	275	338	79	110	57	223420
200/160	288	368	81	105	68	223410
200/200	344	406	80	104	80	223400
250/110	320	433	100	170	50	224440
250/125	325	480	96	133	58	224430
250/160	340	414	97	133	68	224420
250/200	354	518	98	170	80	224410
250/250	354	503	95	133	95	224400
315/110	383	465	110	184	50	225450
315/160	405	465	110	160	69	225430
315/200	433	610	112	215	80	225420
315/250	448	612	110	190	100	225410
315/315	468	612	110	152	110	225400
400/110	504	580	140	163	70	226460
400/160	564	628	130	188	86	226440
400/200	538	636	142	168	100	226440
400/250	594	678	134	168	110	226430
400/315	605	764	138	170	120	226420
400/400	710	788	130	163	135	226410
500/160	683	710	150	220	87	227450
500/250	698	750	158	203	110	227430
500/315	715	841	158	180	115	227420
500/400	760	890	158	195	131	227410
500/500	815	987	190	248	183	227400

Reducer (KGR)

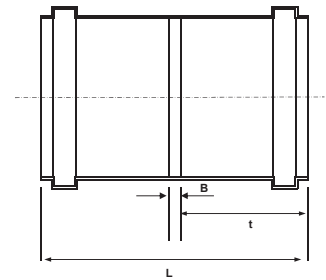
Subject to technical change



DN/OD	L mm	t1 mm	t2 mm	Article no.
110/125	144	70	50	221700
110/160	177	81	52	222700
160/125	174	81	52	222710
160/200	209	100	66	223700
250/200	255	125	80	224700
315/250	420	155	100	225700
400/315	415	170	120	226700
500/400	490	175	160	227700

Double socket (KGMM)

Subject to technical change



DN/OD	L mm	t mm	B mm	Article no.
110	129	62	5	220510
125	140	68	4	221510
160	178	86	6	222510
200	215	105	5	223510
250	258	126	6	224510

Socket plug (KGM)

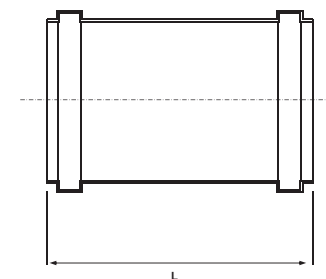
Subject to technical change



DN/OD	L mm	D mm	t1 mm	Article no.
110	45	119	42	220620
125	45	130	42	221620
160	60	170	57	222620
200	75	220	70	223620
250	89	264	89	224620
315	100	330	92	225620
400	115	421	104	226620
500	130	523	176	227620

Sleeve socket (KGU)

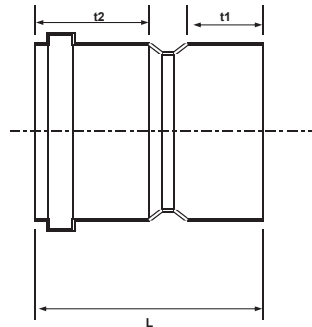
Subject to technical change



DN/OD	L mm	Article no.
110	128	220500
125	139	221500
160	177	222500
200	214	223500
250	258	224500
315	305	225500
400	320	226500
500	460	227500

Glued socket (KGAM)

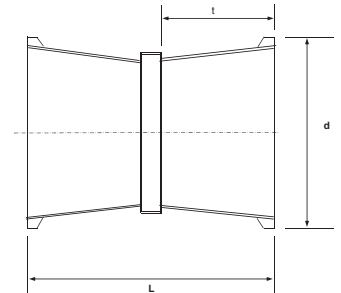
Subject to technical change



DN/OD	L mm	t1 mm	t2 mm	Article no.
110	88	51	32	220810
125	100	55	40	221810
160	120	65	49	222810
200	143	78	60	223810

Chamber lining (KGF)

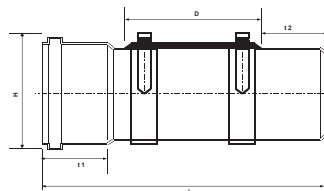
Subject to technical change



DN/OD	L mm	t mm	d mm	Article no.
110	111	50	132	820900
125	111	50	135	821900
160	111	50	172	822900
200	112	48	215	823900
110	241	116	130	820910
125	241	116	143	821910
160	243	115	190	822910
200	243	114	224	823910
250	240	110	290	824910
315	240	108	358	825910
400	240	107	447	826910
500	240	104	554	827910

Access pipe (KGRE)

Subject to technical change

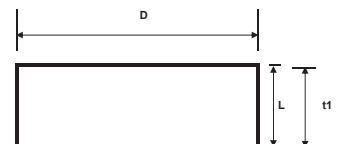


DN/OD	L mm	t1 mm	H* mm	D(Länge) mm	D(Breite) mm	Article no.
110	342	50	155	200	100	220600
125	360	55	165	200	100	221600
160	435	65	181	250	150	222600
200	523	80	260	298	188	223600

H * = Height with cover and bolts
D = Lid release internal dimensions
enliegende Rohrwölbung!

Cap (K GK)

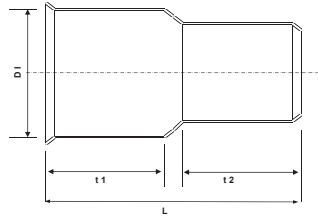
Subject to technical change



DN/OD	L mm	t1 mm	D mm	Article no.
110	45	43	117	220630
125	46	42	132	221630
160	53	50	169	222630
200	64	60	210	223630
250	55	45	525	224630
315	73	65	330	225630
400	80	65	410	226630
500	165	160	522	227630

Connection to cast pipe spigot end (KGUG)

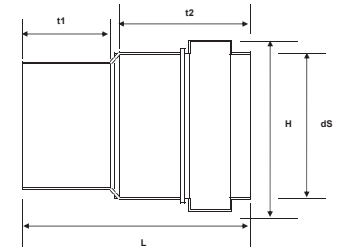
Subject to technical change



DN/OD	L	t1	t2	D1	Article no.
110	134	61	60	133	220820
125	152	66	68	159	221820
160	166	70	82	187	222820
200	199	80	98	239	223820

Connection to clay pipe spigot end (KGUS) System B

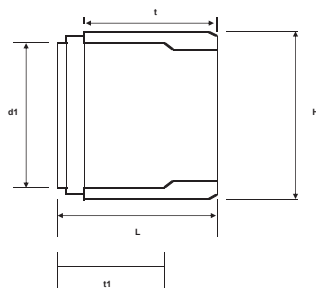
Subject to technical change



DN/OD	H	L	ds	t1	t2	Article no.
110	162	152	145	61	86	220830
125	192	173	170	68	100	221830
160	223	121	201	85	120	222830
200	287	254	259	103	142	223830

Connection to clay pipe socket (KGUSM) System B

Subject to technical change



DN/OD	L	H	d1	t	t1	Article no.
110	96	130	117	74	50	220840
125	93	157	132	73	55	221840
160	92	184	168	72	62	222840
200	100	238	210	73	78	223840
250	224	298	250	90	105	224840
315	246	354	300	97	125	225840

Sealings, NBR-sealings, Rings for KGUG and KGUS, Lubricant



KGUG (GA set)
DN/OD 40, 50, 70, 110, 125, 160

Lubricant
Content 150g, 250g, 500g

More fittings and colours available upon request

Installation-Instructions

1. Scope and area of application

1.1 Scope

The following instructions apply for the utilisation and installation of KG SN 4 pipes and fittings made of PVC-U in accordance with DIN EN 1401, or DIN EN 13476-2(pipes). Colour: orange/brown, RAL 8023, which, as a buried ground sewer system, sewer connection and sewer piping system serves to drain off waste water. In the case of piping within buildings, the guidelines on the application of combustible building materials in building construction and the respective assembly instructions for building drainage pipe installations are to be observed.

1.2 Area of application

Sewer pipes and sewer fittings made of PVC-U are used to drain away waste water. In the case of DN/OD 110 to 200, temperatures may not be constantly higher than 45° C, and in the case of DN/OD 250 to 600 they may not be constantly higher than 35° C. PVC sewer pipes and fittings are suitable for the drainage of chemically aggressive water in the region of pH 2 (acid) to pH 12 (basic). They are resistant to household waste water in accordance with DIN 1986-3. For the drainage of industrial waste water, both DIN 16929 and the supplement sheet no. 1 for DIN 8061 are to be observed.

1.2.1 Area of application without a static indication

Utilisation of KG SN 4 pipes and fittings made of PVC-U without static indication is permissible under the following conditions:

- Traffic load does not exceed bridge category 30 in accordance with DIN 1072.
- Minimum cover of 1.00 m under traffic surfaces and a minimum cover of 0.80 m under traffic-free surfaces or such surfaces which are only sometimes subject to light traffic.
- Maximum cover of 6.00 m on bedding in ditches with a width of at least those which are in compliance with DIN 4124 without traffic load; a maximum cover of 4.00 m in far wider ditches

and under embankments without traffic load; and a maximum cover of 3.50 in far wider ditches and under embankments under traffic surfaces.

- Bedding material in the area of the pipes: $\text{cal } \gamma < 20.5 \text{ kN/m}^3$, $\text{cal } \varphi \geq 22.5^\circ$ soil constants in accordance with DIN 1055, Part 2, Tables 1 and 2 taking into consideration binding mixed soils as in sections 5 and 6.

In unfavourable cases, the following soils in accordance with DIN 18196 may be included as far as this aspect is concerned:

Gravel and silt mixture, Gravel and clay mixture, Sand and silt mixture, Sand and clay mixture

- Requirement in accordance with DIN EN 1610; see here too section 5 of the special regulations in the general construction supervision authorisation of the German Institute of Construction Technology (ItBt). Bedding in the region of ground water may only be carried out when it has been ensured that no movement of the filling material can occur (e.g. bedding in a gravel filter layer or concrete).

1.2.2 Area of application with a static indication

Should there be any deviations from the above-mentioned conditions, a static indication has to be made, and the project questionnaire has to be filled out (see page 15).

A structural analysis may show that DN/OD 110 to 600 pipes with a wall thickness in accordance with DIN EN 1401 are not necessary or not sufficient. In such cases pipes with a wall thickness equivalent to another line in accordance with DIN 8062 can, or must, be selected.

Vertical deformation of the pipes once they have been installed and are under stress may, in accordance with DIN EN 1610, not exceed 6%.

	Deformation in %	
	Minimum	Maximum
Short-term (up to 30 months after installation)	5	8
Long-term (up to 50 years)	8-10	15

Note: According to recent international research results (see document N 570/ISO TC 138 SC 1), the data on deformation indicated for the short term and for the long term may be connected.

2. Transporting and storing PVC pipes and piping components

The piping components are to be transported with suitable vehicles and are to be properly loaded and unloaded. During transport, the entire length of the pipes should be supported if possible, in order to avoid sagging. Severe impact stress is to be avoided, particularly in temperatures around freezing point.

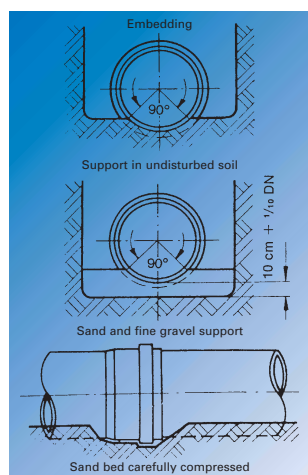
Pipes and fittings may be stored outdoors. The following measures must be observed on storing pipes:

- The pipes must be stored in such a manner that perfect support is ensured and that no deformation can occur.
- The layers of pipes can be stored both with or without wood in between the layers.
- On storing, pipe sockets should be horizontally and vertically unhampered.
- The stack height should not exceed 2 m.

Rubber sealing elements, insofar as these are not protected by a coat of finishing varnish, may not be stored outdoors for a long period.

2.1 Supporting and embedding

The supporting and embedding of pipes and fittings made of PVC-U in the case of buried ground piping are of vital significance and must therefore be carried out with great care in accordance with DIN EN 1610.



In the case of concrete casings for PVC pipes, it must be ensured that the casing is produced in such a manner that it can support itself alone without the pipe.

When bedding the pipes in the region of ground water, care must be taken that the filling material does not move (e.g. embedding in a gravel filter layer or in concrete).



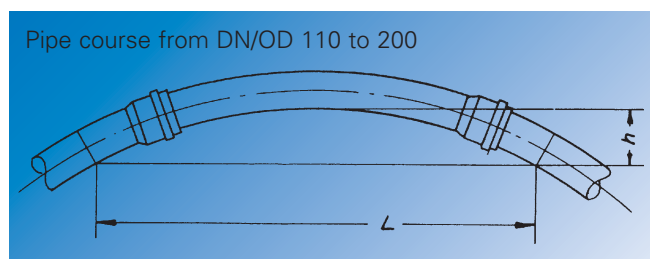
On bedding in soil under foundations, there must be a minimum cover of 150 mm over the socket. In the case of direct burdening by construction components, protective pipes must be laid if necessary.

2.2 Installation procedure

Each pipe and fitting is to be levelled according to drop and direction. A straight, continuous path in the stipulated slope is to be observed. In exceptional cases DN/OD 110 to 200 pipes can be installed as indicated in the following diagram. The data indicated on the following tables, may, however not be exceeded.

Gauges h max. or bending radius R in m at a length L of:

DN/OD	110	125	160	200
8 m	0,24	0,21	0,17	0,13
12 m	0,54	0,48	0,38	0,30
16 m	0,97	0,85	0,67	0,53
R	33	38	47	61



From DN/OD 250 pipes must be laid straight and free of tension.



3. Producing a connection for pipes and fittings

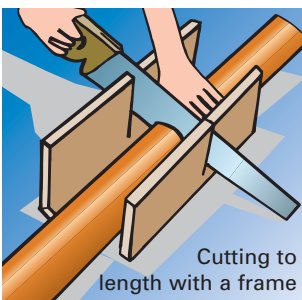
Sliding socket

2.3 Embedding in concrete

Pipes and fittings made of hard PVC may be embedded direct in concrete. However, the following instructions are to be observed:

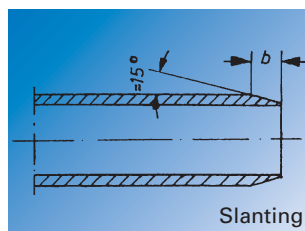
- Cover the socket gap with adhesive tape so that no grout can seep in, which may then hinder the subsequent functioning of the sliding socket.
- Protect the pipes against uplifting. The intervals between fixing points are to be carried out in such a manner that unduly substantial sagging can occur (formation of water traps).
- Take into consideration any thermal changes in length, both on instalment and also in use (plastic pipes which have been cemented in react in the same manner as those which are not covered).

2.4 Cutting to length and slanted cutting



If necessary, the pipes may be cut to length (fittings may not be shortened since there is no guarantee that they will still be water-tight) with a suitable plastic cutter or a fine-toothed saw. By

means of guiding the saw through a cutting frame as illustrated, a right-angled cut can be achieved. For larger pipe cuttings, a cutting disc suitable for PVC can be used. The cutting edges must be trimmed. The pipe ends must be slanted at an angle of approx. 15° in accordance with the diagram, using suitable tools for slanting or a coarse file.



DN/OD	110	125	160	200	250	315	400	500	600
b mm ca.	6	6	7	9	9	12	15	18	23

3.1 Glued sockets (single sockets)

For other uses, lengths of pipes can be fitted with glued sockets. The following is to be observed:

- Removal of the sawing burr
- Cleaning any dirt off the pipe from the outside and the single socket from the inside.
- Applying the special glue to the cleaned surfaces
- Pushing the glued socket onto the pipe until it resists
- Wiping off any excessive glue

The glue will take about one hour to set. However, the pipes should only be subjected to tension (pressure testing) after 3-4 hours. The THF glue must comply with DIN 16970.

3.2 Sliding socket

- Remove any dirt from the outside of the inserting end (spigot end), from the inside of the sockets and sealing chamber (corrugation) and from the sealing ring itself with a cloth.
- Insert the sealing ring into the corrugation (should this not already have been done at the plant).
- Coat the slant of the inserting end evenly with a lubricant. Do not use any oils or greases!
- Push the inserting end into the sliding socket until it resists and make a marking on the edge of the socket with a pencil or a felt-tip pen.

Finally the pipe end must be pulled out of the socket approx. 3mm per metre of installed total length, but must be pulled out at least 10mm. Installing sleeve sockets and twin sockets is carried out in the same manner.

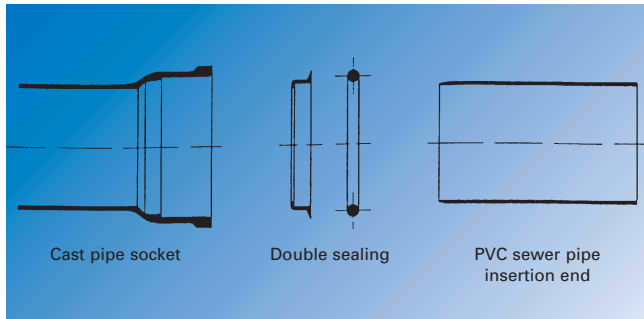
3.3 Connection to constructions

Connections to constructions (shafts, etc.) are to be carried out with joints using shaft inner linings (KGF). Sealing between the shaft lining and the sewer pipe is carried out by means of the rubber sealing ring.

4. Connection with pipes made of other materials

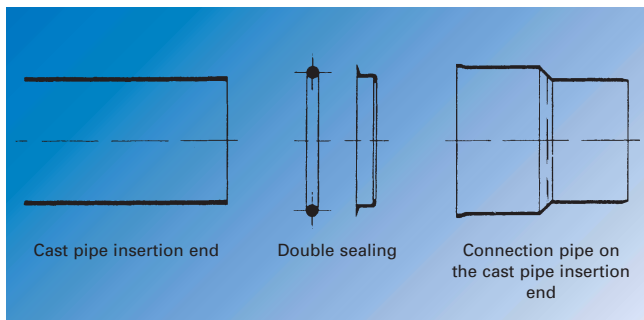
4.1.1 Connecting PVC sewer pipes and fittings to cast pipe sockets

If cast piping ends with a socket, the insertion end of the pipes or fittings made of hard PVC are connected with double sealing.



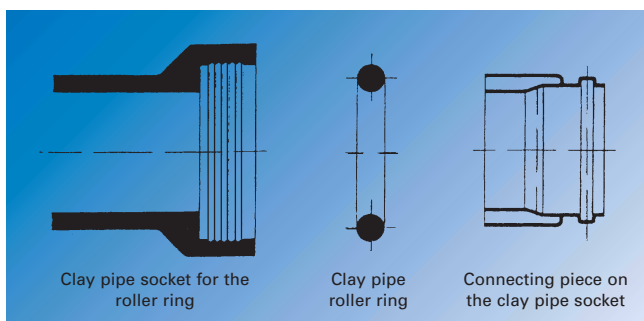
4.1.2 Connecting cast pipe insertion ends to PVC sewer pipes and fittings

If cast piping ends with an insertion end, the PVC piping is connected to the cast pipe insertion end (KGUG) with a connection piece. The connection is sealed with a double seal.



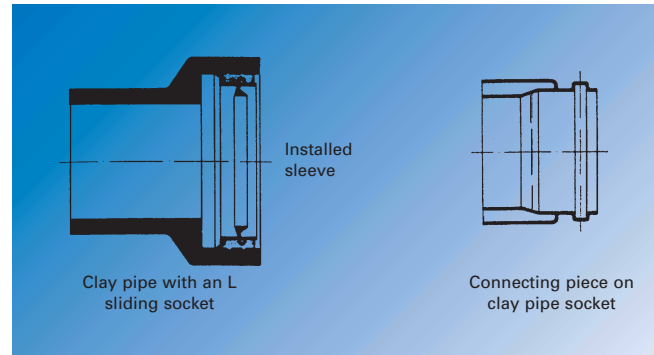
4.1.3 Connecting PVC sewer pipes and fittings to clay pipe sockets

If clay piping ends with a socket, the PVC piping is connected to the clay pipe socket (KGUSM) with a connecting piece. Sealing takes place by means of the clay pipe roller ring which is pulled onto the connecting piece and pushed into the clay socket.



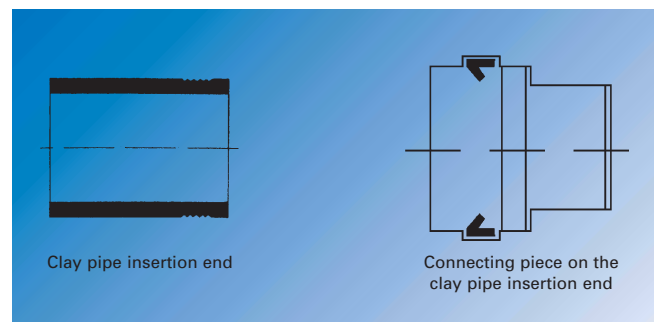
4.1.4 Connecting PVC sewer pipes and fittings to clay pipes with an L sliding socket

If clay piping ends with an L sliding socket, the PVC piping is connected to the clay pipe socket (KGUSM) with a connecting piece. The connecting piece is pushed into the sliding socket and no additional sealing is required.



4.1.5 Connecting clay pipe insertion ends to PVC sewer pipes and fittings

If clay piping ends with an insertion end, the PVC piping is connected to the clay pipe insertion end (KGUS) with a connecting piece. Sealing takes place with a KGUS sleeve.



4.2 Check of waterproofness for watertightness

Vertical pipes or suitable pressure meters are to be used in order to carry out checks. Readings are to be taken at the lowest point on the area to be tested. Non-pressure pipes are to be tested with 0.5 bar excess pressure, measured at the lowest point in the area of piping to be tested which is covered by water. Testing time is 15 minutes. The test is to be carried out on piping which has not yet been covered.

In order to secure the location, the piping can be embedded and partly covered (filling cone), with pipe connections remaining uncovered. If necessary, the piping is to be protected against floating. All openings of the section of piping to be checked, including all branches and junctions, are to be closed in such a manner that they are watertight and secure against pressure.



4.3 Filling and sealing

On both sides of the piping, stone-free, compressible soil (maximum granule size 20 mm Ø) is to be layered up to 0.30 m and compressed either manually or with the help of light machines.

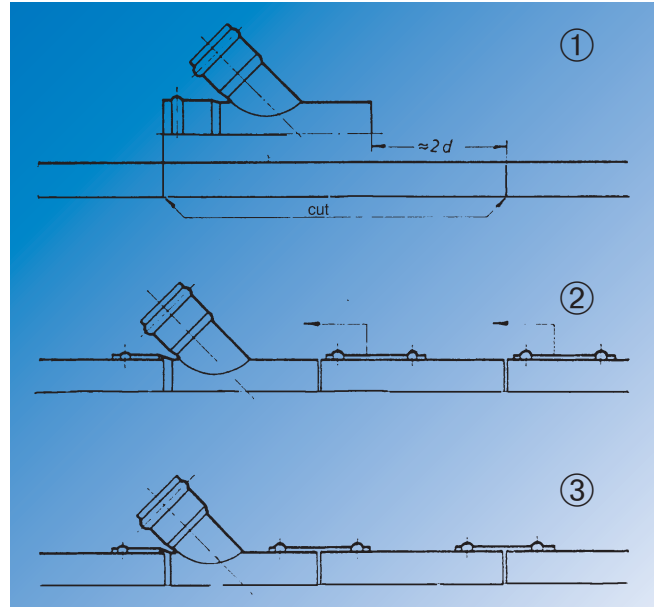
The piping may not be pushed to the side. If necessary, soil should be filled in and compressed simultaneously from both sides. The vertical position of smaller DN/OD pipes is to be secured during the embedding procedure. The degree of compaction of the soil in the region of the pipes presumed in the structural analysis is to be produced by means of adequate compression. This is to be proved on request (for example, by means of gauging the Proctor density or by means of driving bores). In exceptional cases, for example when ditches are narrow and do not permit sufficient compressing of the embedding in the supporting area, the piping can be partly or fully installed with concrete or similar materials.

Further filling in is then to take place layer-by-layer up to a height of 0.30 m over the pipe crown.

5. Subsequent connection to PVC sewer pipes

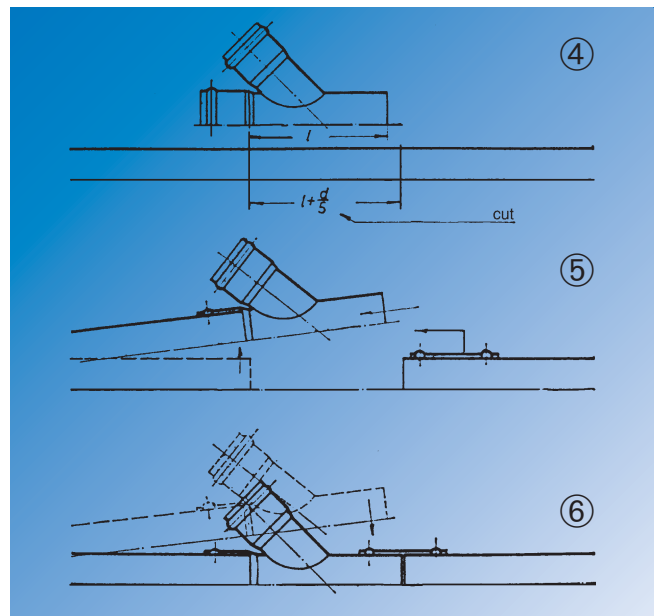
5.1 Installing a branch (procedure I)

In order to install a branch, a sufficiently long piece of pipe (length of the fittings + 2 d) is removed ①, the pipe-ends are trimmed, cut at an angle and the branch is inserted. Sleeve sockets, with which the piping is once again closed, are pushed over both the other half of the pipe and over the adjusting piece to be inserted ②+③.



5.2 Inserting a branch (procedure II)

A piece of pipe equivalent to the total length of the branch plus a length approximately equivalent to $d/5$ is cut out of the piping at hand by



means of cross section cuts ④. Both pipe ends are trimmed and slanted.

A sleeve socket is then pushed over one end and the other pipe end is cautiously levered out, the branch is pushed on ⑤, and the end of the pipe with the branch is brought back into the original position.

The connection is made by means of pushing back the sleeve socket on the cut between the pipe and the fittings spigot end ⑥.

DN/OD	110	125	160	200
≈ d/5 in mm	20	25	30	40



Magnoplast GmbH · Wilhelm-Bunsen-Straße 6 · D-49685 Emstek

phone ++49 (0) 4473 9490 0 fax ++49 (0) 4473 949058 · Internet: www.magnoplast.com · E-Mail: info@magnoplast.com