

# PE 100 PIPES FOR GAS SUPPLY NETWORKS

Some excellent characteristics of pipes and jointing elements from polyethylene (PE) are: low specific weight, excellent impact toughness, good electrical resistance, chemical resistance, ideal roughness of the surface, quick jointing etc. These are exceptional factors which prevail on installers of gas supply systems to choose the PE pipes and jointing elements for their networks.

## The pipes are manufactured from materials with the following characteristics:

MRS	10,0 MPa
SPECIFIC WEIGHT	> 950 kg/m <sup>3</sup>
LINEAR ELONGATION FACTOR	≈ 0,15 mm/mK
THERMAL CONDUCTION	≈ 0,38 WK <sup>-1</sup> m <sup>-1</sup>
ELASTICITY MODULUS	E <sub>(1min)</sub> ≥ 1100 MPa
SURFACE ELECTRICAL RESISTANCE	> 10 <sup>14</sup> Ω



## Production programme:

External pipe diameter	External pipe diameter tolerance		SDR 17.0 (up to 4 bar)				SDR 11.0 (up to 4 bars)			
			Wall thickness		Internal diameter	Pipe diameter	Wall thickness		Internal diameter	Pipe diameter
<b>d</b> (mm)	<b>d<sub>min</sub></b>	<b>d<sub>max</sub></b>	<b>e<sub>min</sub></b>	<b>e<sub>max</sub></b>	<b>d<sub>i</sub></b> (mm)	(kg/m)	<b>e<sub>min</sub></b>	<b>e<sub>max</sub></b>	<b>d<sub>i</sub></b> (mm)	(kg/m)
25	25,0	25,3	2,3	2,7	20,4	0,18	3,0	3,4	19,0	0,21
32	32,0	32,3	2,3	2,7	27,4	0,24	3,0	3,4	26,0	0,28
40	40,0	40,4	2,4	2,7	35,4	0,34	3,7	4,2	32,6	0,44
50	50,0	50,4	3,0	3,3	44,2	0,48	4,6	5,2	40,8	0,67
63	63,0	63,4	3,8	4,3	55,4	0,75	5,8	6,5	51,4	1,06
75	75,0	75,5	4,5	5,1	66,0	1,03	6,8	7,6	61,4	1,48
90	90,0	90,6	5,4	6,1	79,2	1,47	8,2	9,2	73,6	2,15
110	110,0	110,7	6,6	7,4	96,8	2,19	10,0	11,1	90,0	3,19
125	125,0	125,8	7,4	8,3	110,2	2,79	11,4	12,7	102,2	4,13
140	140,0	140,9	8,3	9,3	123,4	3,51	12,7	14,1	114,6	5,15
160	160,0	161,0	9,5	10,6	141,0	4,58	14,6	16,2	130,8	6,76
180	180,0	181,1	10,7	11,9	158,6	5,79	16,4	18,2	147,2	8,55
200	200,0	201,2	11,9	13,2	176,2	7,14	18,2	20,2	163,6	10,50
225	225,0	226,4	13,4	14,9	198,2	9,06	20,5	22,7	184,0	13,30
250	250,0	251,5	14,8	16,4	220,4	11,10	22,7	25,1	204,6	16,40

The **d<sub>i</sub>** value is informative and can be changed with respect to the external diameter tolerance **d** and wall thickness **e**.

## Markings

The pipes are marked according to the product standards on each running meter with a visible and permanent mark.

The mark contains the following mandatory information:

- manufacturer
- pipe dimension (d x e)
- standard (of the product)
- flow media
- type of material
- SDR
- date of manufacture



The pipe colour is black with horizontal orange lines **RAL 1033**.

Pipes with 20-110mm diameters are available in coils or in straight pieces of 6 and 12 meters. Pipes with diameters larger than 110mm are available only in straight pieces of 6 or 12 meters.

## Instructions for uncoiling

**With coiled pipes attention must be paid to the following:**

- PE pipes up to 63mm in diameter are generally uncoiled vertically (the coil is placed in a vertical position), where the end of the pipe must be carefully and strongly fitted.
- With pipe diameters larger than 63mm an uncoiling device must be used; special attention should be paid to uncoil the pipe in a straight line (e.g. along the trench) and that the pipe does not break. Uncoiling the pipe in the shape of a spiral is not permitted.
- Furthermore, it must be taken into account that with the pipes in coils the end of the pipe works as a spring when released. With large coils this force is especially strong and can cause damage if not handled with care.

## Welding of polyethylene pipes with jointing elements or together according to the DVS 2207 series standards

For welding of PE pipes with jointing elements or together, electro-resistance, poly-fusion and butt welding procedures can be used. One of the conditions for a quality weld is the uniform temperature of welded surfaces. Uneven temperature of pipe surfaces prepared for welding is the consequence of partial exposure to sunrays.

At temperatures lower than 5 °C the welding is performed only if the welding site is protected against the elements (a tent) and heated to the working temperature of at least 5 °C. Welding of PE pipes with jointing elements can be performed only by qualified welders. The pipeline is tested with a test pressure that is 2 bars higher than the working pressure, but should be no lower than 3 bars. The test is carried out with air or an inert gas. The test is detailed in the DVGW G469 regulation.

Damage to the external surfaces (cuts, scratches, etc.) must not exceed a depth of 10% of nominal wall thickness.

More detailed instructions for installation are available at the company headquarters.

## Ovality of PE pipes in accordance with the SIST EN 1555-2 standard

With planning and laying of a water supply system it must be taken into account that the ovality of pipes is prescribed with standards and is allowed, to a certain degree, for straight pieces of pipe and pipes in coils. The ends of the pipes must be straightened at the place of welding – ovality must be reduced by simple mechanical or hydraulic tools prior to welding.

The company is not liable for possible subsequent claims due to unprofessional installation.