

MERIFLEX PE PRESSURE PIPES – DATA SHEET

Applications

For potable water distribution, irrigation, sewage under pressure, transport of gaseous fuels and industrial applications as well as pipeline rehabilitation (slip lining and pipe bursting).

Characteristics

- Weldability - using simple butt-fusion or electro-fusion techniques giving a continuous leak-free system
- Coils or drums in long lengths reducing joins
- Welding out of the trench allowing narrow trenching
- Contouring along crooked and uneven trenches
- Outstanding resistance to subsidence and earthquake
- Low temperature resistance – pipes remain intact and undamaged even after freezing.
- Excellent corrosion resistance
- Excellent chemical resistance
- Excellent abrasion resistance
- High ring stiffness
- Low depreciation and maintenance costs (life-span of 100 years – DIN 8074)
- A wide range of fittings and accessories available

Standards

PE pressure pipes are manufactured according to the following standards:

- Water supply and drainage and sewerage: SI 4427, EN 12201, ISO 4427
- Gas distribution: SI71555, EN 1555, ISO 4437
- Renovation: DIN PAS1075

Types

- **MERIFLEX 100** : For water distribution, sewerage and general purpose.
Manufactured from finest quality PE100 High Density Polyethylene resins which meet the most stringent requirements of local and international standards.
- **SUPER MERIFLEX** : For tough conditions, manufactured from PE-RC with exceptional resistance to stress crack making them especially suitable for pipeline renovation.
- **MERIGAS** : For low pressure gas distribution to 10 bar

Specification

- Materials:

Typical material characteristics:

Characteristic	Standard	Unit	PE100
Type			HDPE
Design Stress (20°C, 50 years)	ISO 9080	MPa	8.0
Density (23 °C)	ISO 1183	kg/m ³	959
MFR (5 kg, 190 °C)	ISO 1133	g/10 min	0.45
Carbon black content	ISO 6964	%	2 – 2.5
Tensile strength at yield	ISO 6259	N/mm ²	25
Elongation	ISO 6259	%	> 600
Modulus of elasticity	ISO 527	N/mm ²	1200
Vicat softening temp. (1kg)	ISO 306	°C	127
Oxidation induction time	ISO 11357-6	min	> 20

- Colour: Water supply and sewerage - Black (Other colours and identification stripes available on application)
Gas supply - Orange, Black with yellow stripes
- Lengths: Available in coils, on drums or in various pipe lengths.

PE PRESSURE PIPES

Wall thickness

	SDR 26	SDR 21	SDR 17	SDR 13.6	SDR 11	SDR 9
PE80	PN4	PN6	PN8	PN10	PN12.5	PN16
PE100	PN6	PN8	PN10	PN12.5	PN16	PN20
OD (mm)	Wall Thickness (mm)					
16	-	-	-	-	-	2.0
20	-	-	-	-	2.0	2.3
25	-	-	-	2.0	2.3	3.0
32	-	-	2.0	2.4	3.0	3.6
40	-	2.0	2.4	3.0	3.7	4.5
50	2.0	2.4	3.0	3.7	4.6	5.6
63	2.5	3.0	3.8	4.6	5.8	7.1
75	2.9	3.6	4.5	5.6	6.8	8.4
90	3.5	4.3	5.4	6.7	8.2	10.1
110	4.2	5.3	6.6	8.1	10.0	12.3
125	4.8	6.0	7.4	9.2	11.4	14.0
140	5.4	6.7	8.3	10.3	12.7	15.7
160	6.2	7.7	9.5	11.8	14.6	17.9
180	6.9	8.6	10.7	13.3	16.4	20.1
200	7.7	9.6	11.9	14.7	18.2	22.4
225	8.6	10.8	13.4	16.6	20.5	25.2
250	9.6	11.9	14.8	18.4	22.7	27.9
280	10.7	13.4	16.6	20.6	25.4	31.3
315	12.1	15.0	18.7	23.2	28.6	35.2
355	13.6	16.9	21.1	26.1	32.2	39.7
400	15.3	19.1	23.7	29.4	36.3	44.7
450	17.2	21.5	26.7	33.1	40.9	50.3
500	19.1	23.9	29.7	36.8	45.4	55.8
560	21.4	26.7	33.2	41.2	50.8	-
630	24.1	30.0	37.4	46.3	57.2	-
710	27.2	33.9	42.1	52.2	64.5	-
800	30.6	38.1	47.4	58.8	72.6	-
900	34.4	42.9	53.3	66.2	-	-
1000	38.2	47.7	59.3	-	-	-
1200	45.9	57.2	71.1	-	-	-

Definitions

SDR : Standard Dimension Ratio is the ratio of the nominal outside diameter of a pipe to its nominal wall thickness.

PN : Nominal Pressure corresponds to the maximum continuous operating pressure in bar which can be sustained by the pipe with water at 20°C for 50 years. This pressure is calculated using the design stress of the material. The design stress is the minimum required strength of the material divided by a service coefficient of 1.25 for water supply and usually 2 for gas.

OD : Outside Diameter.

Joining Techniques

Meriflex PE pipes can be joined by butt-fusion, electro-fusion or with mechanical fittings. Plassim offers a wide range of fittings for all three technologies.

- **Butt-Fusion:** This method fuses the pipe ends together creating a continuous, leak-free polyethylene system. Because the pipe ends are melted, new bonds are created between the molecules creating joints as strong as the pipe itself. Special welding equipment is used to clean and heat the pipe ends and to bring them together under pressure to form the weld. This is the preferred method for pipes with diameters over 75mm.
- **Electro-Fusion:** Similar to the butt-fusion method, the pipe and fitting are fused together by heating. This method relies on an electro-weld fitting to fuse the pipe. The fitting incorporates an electrical heating element which, when energised with a controlled generator, melts the fitting and pipe in the area of the element and fuses them together. Electro-fusion fittings are available for diameters up to 630mm.
- **Mechanical Joint Compression Fittings:** This is a mechanical method for joining pipes and needs no special equipment. The fitting relies on an elastomeric seal, which is compressed between the fitting and pipe, to form the join. For diameters up to 110mm.