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WHY HDPE PIPES?

Exceptional Performance

HDPE pipes deliver a unique combination of superior performance, long-term durability, and strength. These qualities make them an ideal choice for the transportation of water and gaseous fuels, offering reliability and a long service life.

Resistance to Environmental Factors

One of the most significant advantages of HDPE pipes is their ability to withstand environmental variations. They are safe for transporting drinking water without causing side effects or health concerns. Unlike steel pipes, HDPE pipes do not suffer from corrosion, ensuring a safer and more efficient system. Additionally, their flexibility allows them to adapt to soil movements without damage, making them highly suitable for varied terrains.

A Cost-Effective Solution

HDPE pipes are a competitive option due to their lightweight design, weather resistance, and ease of handling. Their flexibility and durability make them an economical choice for installations with numerous benefits:

- Easy to handle and install due to their flexibility and lightweight nature.
- Leak-proof installations enabled by fusion-welding capabilities.
- Long-lasting performance with minimal operational costs.
- Suitable for relining existing pipelines.
- Options for on-site extrusion and alternative installation methods.
- Resistant to pH variations and free from corrosion issues.
- Neutral in taste and odor, ensuring no contamination of transported water.
- Bacteriologically neutral and chemically resistant.

HDPE pipes are an efficient, reliable, and versatile solution for a wide range of applications, providing significant advantages over traditional piping materials.

FIELDS OF APPLICATION

- 1) Drinking water: Non toxic HDPE pipes will not affect the taste,color or smell of drinking water
- 2) Gaseous Fuels: HDPE pipes shows superior resistance to most chemicals which qualify it to used fortransporting fuels at elevated pressures
- 3) Irrigation systems: HDPE pipes are ideal for agricultural irrigation ana sprinkler systems
- 4) Soil, Waste Water: HDPE pipes are used for underground drain-age systems, waste discharge systems, drainage soil.

MANUFACTURING STANDARDS

- 1) DIN 8074
Polyethylene (PE) - Pipes PE 80, PE 100 - Dimensions
- 2) DIN 8075
Polyethylene (PE) - Pipes PE 80, PE 100 - General quality requirements, testing
- 3) ISO 4427
Plastic piping systems - Polyethylene (PE) pipes and fittings for water supply
- 4) ISO 4437
Plastic piping systems for the supply of gaseous fuels - Polyethylene (PE)
- 5) AWWA C906
Polyethylene (PE) Pressure Pipe and Fittings, 4 In. through 65 In. (100 mm through 1650 mm), for Waterworks
- 6) EN 122101
Plastics piping systems for water supply, and for drainage and sewerage under pressure - Polyethylene (PE)
- 7) SASO ISO 4427
Plastics piping systems - Polyethylene (PE) pipes and fittings for water supply

Material Data Sheet

Material Data Sheet of High Density Polyethylene

Property	PE 100	PE 80	Unit	Test Method
Density (Compound)	959	956	Kg/m ³	ISO 1183
Melt Flow Rate (MFR) 190 °C / 2.16 kg	<0.1	<0.1	g/10 min	ISO 1133
Melt Flow Rate (MFR) 190 °C / 5.0 kg	0.25	0.3	g/10 min	ISO 1133
Tensile Stress at Yield 50mm/min	25	22	Mpa	ISO 527-2
Elongation at Break	>600	>600	%	ISO 527-2
Tensile Modulus 50mm/min	900	800	Mpa	ISO 527-2
Charpy Impact Notched at (0 °C)	16	14	Kj/m ²	ISO 179/1eA
Hardness, Shore D	60	59	-	ISO 868
Carbon Black Content	2 - 2.5	2 - 2.5	%	ASTM D 1603
Carbon Black Dispersion	≤ Grade 3	≤ Grade 3	-	ISO 18553
Brittleness Temperature	< - 70	< - 70	°C	ASTM D 746
ESCR (10% Lgepal), F50	>10000	>10000	h	ASTM D 1693-A
Thermal Stability (210 °C)	>20	>20	min	EN 728
Total Volatiles	≤ 350	≤ 350	mg/kg	EN 12009
Water Content	≤ 300	≤ 300	mg/kg	EN 12118
Coefficient of Linear Thermal Expansion	2.0 x 10 ⁻⁴	2.0 x 10 ⁻⁴	mm/mm/°C	ASTM D 696
Thermal Conductivity	0.41	0.41	W/km	DIN 52612

MINIMUM REQUIRED STRENGTH: MRS

Material Designation	MRS Mpa
PE 100	10.0
PE 80	8.0
PE 63	6.3

WATER QUALITY

Our HDPE pipes are suitable for drinking water. Due to the high quality of our HDPE pipes. It has no effect on water taste, odor, appearance of water and growth of aquatic micro-organisms.

UV RESISTANCE

HDPE 80 and HDPE 100 materials are compounded with special additional including UV stabilizers, which protect the pipe from degradation caused by intensive ultra violet light. For specific applications, such as

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pipework above the ground, where it is known that the pipe will be subjected to UV light, the material can be compounded with carbon black which provides additional long-term protection.

CHEMICAL RESISTANCE:

Our HDPE pipes are generally resistant to the chemicals commonly used for water treatment and disinfection. Our HDPE pipes have excellent resistance to naturally occurring chemicals found in the soil. For industrial purposes our HDPE 100 pipes have excellent resistance to different media.

Maximum Operating Temperature for PE 100 in different media:

Medium		Maximum operating temperature °C PE 100
Sulphuric Acid	30%	60
Hydrochloric Acid	20%	60
Phosphoric Acid	85%	60
Nitric Acid	30%	40
Chromic Acid	20%	20
Hydrofluoric Acid	40%	40
Formic Acid	50%	40
Caustic Soda Solution	30%	60
Acetone	Technical Grade	40
Ethanol	96%	60

DESIGN LIFETIME:

HDPE Material has a 50 year life time at 20 °C, but for example PE 100 has actual strength greater than the design strength and hence the expected resulting service lifetimes are greatly in excess of the nominal 50-year requirement when the pipe is operating within its design envelope.

Allowable Working Pressure for Pipes Made of PE 100, Conveying water

Temperature °C	Years of service	Pipe series (S)						
		20	12.5	8.3	8	6.3	5	4
		Standard dimension ratio (SDR)						
		41	26	17.6	17	13.6	11	9
		Allowable working pressure (Bar)						
10	5	5.0	7.9	11.9	12.5	15.8	19.9	25.1
	10	4.9	7.7	11.7	12.3	15.5	19.5	24.6
	25	4.8	7.6	11.5	12.0	15.2	19.1	24.1
	50	4.7	7.5	11.3	11.9	15.0	18.9	23.8
	100	4.6	7.3	11.1	11.7	14.7	18.5	23.3
20	5	4.2	6.6	10.0	10.5	13.3	16.7	21.0
	10	4.1	6.5	9.9	10.4	13.1	16.5	20.8
	25	4.0	6.4	9.7	10.1	12.8	16.1	20.3
	50	4.0	6.3	9.6	10.0	12.5	16.0	20.0
	100	3.9	6.1	9.4	9.8	12.3	15.5	19.5
30	5	3.5	5.6	8.5	8.9	11.2	14.1	17.8
	10	3.5	5.5	8.3	8.8	11.0	13.9	17.5
	25	3.4	5.4	8.2	8.6	10.9	13.7	17.3
	50	3.4	5.4	8.1	8.5	10.7	13.5	17.0
40	5	3.0	4.8	7.3	7.6	9.6	12.1	15.3
	10	3.0	4.7	7.1	7.5	9.5	11.9	15.0
	25	2.9	4.6	7.0	7.4	9.3	11.7	14.8
	50	2.9	4.6	6.9	7.3	9.1	11.5	14.5
50	5	2.6	4.2	6.3	6.6	8.3	10.5	13.3
	10	2.6	4.1	6.2	6.5	8.2	10.3	13.0

	15	2.6	4.1	6.2	6.5	8.2	10.3	13.0
60	5	2.3	3.6	5.5	5.7	7.2	9.1	11.5
70	2	2.1	3.3	5.0	5.2	6.6	8.3	10.5

Safety factor C = 1.25
Reference DIN 8074: 2011-12

Allowable Working Pressure for Pipes Made of PE80, (S) Conveying Water

Temperature °C	Years of service	Pipe series (S)										
		25	20	16	12,5	10.5	10	8.3	8	6.3	5	4
		Standar Dimension Ratio (SDR)										
		51	41	33	26	22	21	17.6	17	13.6	11	9
		Allowable Working Pressure (bar)										
10	5	3.2	4.0	5.1	6.4	7.7	8.1	9.7	10.1	12.8	16.1	20.3
	10	3.1	4.0	5.0	6.3	7.6	8.0	9.5	10.0	12.6	15.9	20.0
	25	3.1	3.9	4.9	6.1	7.4	7.8	9.3	9.8	12.3	15.5	19.5
	50	3.0	3.8	4.7	6.0	7.2	7.6	9.1	9.5	12.0	15.1	19.0
	100	2.9	3.7	4.7	5.9	7.2	7.5	8.9	9.4	11.8	14.9	18.8
20	5	2.7	3.4	4.2	5.4	6.5	6.8	8.1	8.5	10.7	13.5	17.0
	10	2.6	3.3	4.1	5.2	6.3	6.6	7.9	8.3	10.4	13.1	16.5
	25	2.5	3.2	4.1	5.1	6.2	6.5	7.7	8.1	10.3	12.9	16.3
	50	2.5	3.2	4.0	5.0	6.0	6.4	7.4	8.0	10.0	12.5	16.0
	100	2.4	3.1	3.9	4.9	5.9	6.2	7.4	7.8	9.8	12.3	15.5
30	5	2.2	2.8	3.5	4.5	5.4	5.7	6.8	7.1	9.0	11.3	14.3
	10	2.2	2.8	3.5	4.4	5.3	5.6	6.7	7.0	8.8	11.1	14.0
	25	2.1	2.7	3.4	4.3	5.2	5.5	6.5	6.9	8.7	10.9	13.8
	50	2.1	2.7	3.4	4.2	5.1	5.4	6.4	6.7	8.5	10.7	13.5
40	5	1.9	2.4	3.0	3.8	4.7	4.9	5.8	6.1	7.7	9.7	12.3
	10	1.9	2.4	3.0	3.8	4.6	4.8	5.7	6.0	7.6	9.5	12.0
	25	1.8	2.3	2.9	3.7	4.5	4.7	5.6	5.9	7.4	9.3	11.8
	50	1.8	2.3	2.9	3.6	4.4	4.6	5.5	5.7	7.2	9.1	11.5
50	5	1.6	2.1	2.6	3.3	4.0	4.2	5.0	5.2	6.6	8.3	10.5
	10	1.6	2.0	2.5	3.2	3.9	4.1	4.9	5.1	6.4	8.1	10.2
	15	1.6	2.0	2.5	3.2	3.9	4.1	4.9	5.1	6.4	8.1	10.2
60	5	1.4	1.8	2.3	2.9	3.5	3.7	4.4	4.6	5.8	7.3	9.2
70	2	1.3	1.6	2.0	2.6	3.1	3.3	3.9	4.1	5.2	6.5	8.2

Safety factor C = 1.25
Reference DIN 8074: 2011-12

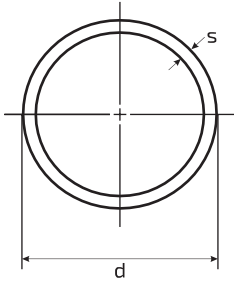
HDPE pipe length variation due to temperature change (°C)

Temperature Change (°C)	Length Variation mm/meter
5	1
10	2
15	3
20	4
25	5
30	6
35	7
40	8

mm/m/ °C 0.2 = Coefficient of thermal expansion

PRESSURE

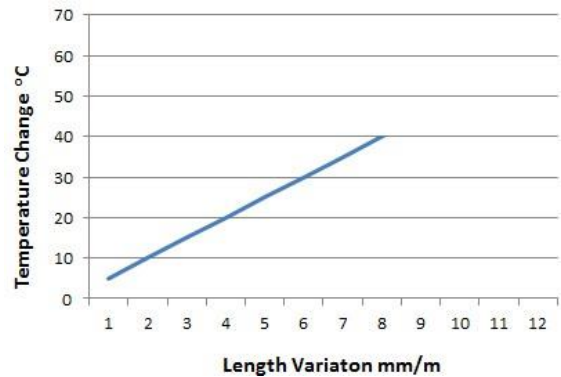
Maximum Sustained Temperature, (°C)	Multiply working pressure at (20 °C) by these factors
20	1
25	0.92
30	0.84
35	0.78
40	0.72



Maximum operating pressure (MOP) = $20 \times \text{MRS} / C \times (\text{SDR}-1)$ where C is design safety factor

STANDARD DIMENSION: SDR

Relationship between the admissible nominal pressure PN, SDR and Performance classes PE 80, PE100 (for water 20 °C, 50 years service Life and C = 1.25).



Nominal Pressure PN(Bar)	SDR PE 80	SDR PE 100
3.2	41	-
4	33	41
5	26	33
6	22	-
6.3	21	26
8	17	21
10	13.6	17
12.5	11	13.6
16	9	11
20	7.4	9
25	6	7.4

HDPE PIPES FOR GAS APPLICATIONS

PE 100 and PE 80 pipes for the transportation of GASEOUS FUELS according to ISO 4437

Nominal Outside Diameter (mm)	SDR 17.6 PE 100 PN 6 PE 80 PN 4.8		SDR 11 PE 100 PN 10 PE 80 PN 8	
	Minimum Wall Thickness (mm)	Weight (kg/m)	Minimum Wall Thickness (mm)	Weight (kg/m)
16	2.3	0.10	3.0	0.12
20	2.3	0.13	3.0	0.16
25	2.3	0.17	3.0	0.21
32	2.3	0.22	3.0	0.28
40	2.3	0.36	3.7	0.43
50	2.9	0.46	4.6	0.67
63	3.6	0.69	5.8	1.06
75	4.3	0.98	6.8	1.50
90	5.2	1.40	8.2	2.14
110	6.3	2.09	10.0	3.17
125	7.1	2.68	11.4	4.10
140	8.0	3.36	12.7	5.15
160	9.1	4.38	14.6	6.71
180	10.3	5.51	16.4	8.47
200	11.4	6.83	18.2	10.45
225	12.8	8.60	20.5	13.22
250	14.2	10.62	22.7	16.31
280	15.9	13.27	25.4	20.44
315	17.9	16.80	28.6	25.86
355	20.2	21.29	32.3	32.80
400	22.8	27.03	36.4	41.63
450	25.6	34.16	40.9	52.69
500	28.4	42.12	45.5	64.95
560	31.9	53.10	50.9	81.55
630	35.8	67.20	57.3	102.90

Material: PE 100

Minimum Required Strength: MRS = 10.0 MPa

Design Stress: $\sigma_s = 5.0$ MPa

Design Safety Factor: C = 2.0 for gas

Material: PE 80

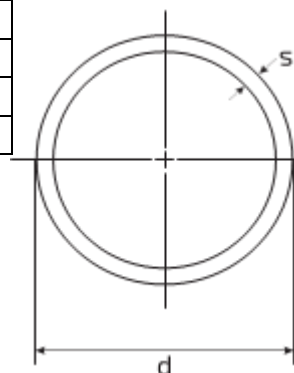
Minimum Required Strength: MRS = 8.0 MPa

Design Stress: $\sigma_s = 4.0$ MPa

Design Safety Factor: C = 2.0 for gas

Color: Black or Yellow

Length: Sizes from 16mm to 32mm are available in coils of 100, 200 and 300 up to 1500 meters. Sizes from 40mm to 125mm are available in coils of 100 meters. Larger diameters are available in straight lengths of 12 meters. Different lengths can be supplied on request.



$$PN = \frac{20 \times MRS}{C \times (SDR - 1)}$$

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HDPE PIPES FOR WATER

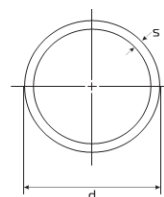
PE 100, PE 80 pressure pipes for water supply according to ISO 4427-2

	SDR 41	SDR 26	SDR 17	SDR 13.6	SDR 11	SDR 9
	S 20	S 12.5	S 8	S 6.3	S 5	S 4
	Nominal pressure (PN)					
PE 80	PN 3.2	PN 5	PN 8	PN 10	PN 12.5	PN 16
PE 100	PN 4	PN 6	PN 10	PN 12.5	PN 16	PN 20
Nominal Outside Diameter (mm)	Wall Thickness (mm)	Wall Thickness (mm)	Wall Thickness (mm)	Wall Thickness (mm)	Wall Thickness (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	-	-	2.4	3.0	3.7	4.5
50	-	2.0	3.0	3.7	4.6	5.6
63	-	2.5	3.8	4.7	5.8	7.1
75	-	2.9	4.5	5.6	6.8	8.4
90	-	3.5	5.4	6.7	8.2	10.1
110	-	4.2	6.6	8.1	10.0	12.3
125	-	4.8	7.4	9.2	11.4	14.0
140	-	5.4	8.3	10.3	12.7	15.7
160	-	6.2	9.5	11.8	14.6	17.9
180	-	6.9	10.7	13.3	16.4	20.1
200	-	7.7	11.9	14.7	18.2	22.4
225	-	8.6	13.4	16.6	20.5	25.2
250	-	9.6	14.8	18.4	22.7	27.9
280	-	10.7	16.6	20.6	25.4	31.3
315	7.7	12.1	18.7	23.2	28.6	35.2
355	3.5	13.6	21.1	26.1	32.2	39.7
400	9.8	15.3	23.7	29.4	36.3	44.7
450	11.0	17.2	26.7	33.1	40.9	50.3
500	12.3	19.1	29.7	36.8	45.4	55.8
560	13.7	21.4	33.2	41.2	50.8	62.5
630	15.4	24.1	37.4	46.3	57.2	70.3
710	17.4	27.2	42.1	52.2	64.5	79.3
800	19.6	30.6	47.4	58.8	72.6	89.3
900	22.0	34.4	53.3	66.2	81.7	-
1000	24.5	38.2	59.3	72.5	90.2	-
1200	29.4	45.9	67.9	88.2	-	-
1400	34.3	53.5	82.4	102.9	-	-
1600	39.2	61.2	94.1	117.6	-	-

Material
Minimum required strength
Design stress
Design safety factor
Color
Length

PE 100
MRS = 10.0 Mpa
gs = 8.0 Mpa
C = 1.25 for water
Black
sizes from 16mm to 32mm are available in coils of 100, 200 and 300 up to 1500 meters. Sizes from 40mm to 160mm are available in coils of 100 meters. larger diameters are available in straight lengths of 12 meters. Different lengths can be supplied on request.

PE 80
MRS = 8.0 Mpa
gs = 6.4 Mpa
C = 1.25 for water
Black

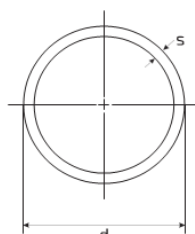


$$PN = \frac{20 \times MRS}{C \times (SDR - 1)}$$

PE 100 pressure pipes for water supply according to DIN 8074/8075

Nominal Outside Diameter (mm)	SDR 41 S 20 PN 4		SDR 26 S 12.5 PN 6.3		SDR 17 S 8 PN 10		SDR 13.6 S 6.3 PN 12.5		SDR 11 S 5 PN 16		SDR 9 S 4 PN 20	
	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m
16	-	-	-	-	-	-	-	-	-	-	2.0	0.092
20	-	-	-	-	-	-	-	-	2.0	0.118	2.3	0.134
25	-	-	-	-	-	-	2.0	0.151	2.3	0.173	3.0	0.202
32	-	-	-	-	2.0	0.198	2.4	0.235	3.0	0.282	3.6	0.331
40	-	-	1.8	0.229	2.4	0.299	3.0	0.360	3.7	0.434	4.5	0.514
50	-	-	2.0	0.317	3.0	0.458	3.7	0.555	4.6	0.673	5.6	0.796
63	1.8	0.368	2.5	0.500	3.8	0.728	4.7	0.883	5.8	1.06	7.1	1.27
75	1.9	0.462	2.9	0.683	4.5	1.03	5.6	1.25	6.8	1.48	8.4	1.78
90	2.2	0.647	3.5	0.988	5.4	1.47	6.7	1.79	8.2	2.14	10.1	2.57
110	2.7	0.952	4.2	1.45	6.6	2.19	8.1	2.64	10.0	3.18	12.3	3.82
125	3.1	1.25	4.8	1.86	7.4	2.79	9.2	3.40	11.4	4.12	14.0	4.92
140	3.5	1.56	5.4	2.35	8.3	3.50	10.3	4.26	12.7	5.13	15.7	6.18
160	4.0	2.02	6.2	3.08	9.5	4.57	11.8	5.56	14.6	6.74	17.9	8.04
180	4.4	2.51	6.9	3.83	10.7	5.77	13.3	7.05	16.4	8.51	20.1	10.2
200	4.9	3.08	7.7	4.74	11.9	7.12	14.7	8.65	18.2	10.5	22.4	12.6
225	5.5	3.90	8.6	5.96	13.4	9.03	16.6	11.0	20.5	13.3	25.2	15.9
250	6.2	4.88	9.6	7.38	14.8	11.1	18.4	13.5	22.7	16.3	27.9	19.6
280	6.9	6.04	10.7	9.20	16.6	13.9	20.6	16.9	25.4	20.5	31.3	24.6
315	7.7	7.59	12.1	11.7	18.7	17.6	23.2	21.5	28.6	25.9	35.2	31.1
355	8.7	9.65	13.6	14.8	21.1	22.4	26.1	27.2	32.2	32.9	39.7	39.5
400	9.8	12.2	15.3	18.8	23.7	28.3	29.4	34.5	36.3	41.7	44.7	50.1
450	11.0	15.4	17.2	23.7	26.7	35.8	33.1	43.7	40.9	52.8	50.3	63.4
500	12.3	19.2	19.1	29.2	29.7	44.2	36.8	53.9	45.4	65.2	55.8	78.1
560	13.7	23.9	21.4	36.6	33.2	55.4	41.2	67.6	50.8	81.7	62.5	98.0
630	15.4	30.2	24.1	46.4	37.4	70.2	46.3	85.5	57.2	103	-	-
710	17.4	38.4	27.2	59.0	42.1	89.0	52.2	109	64.5	131	-	-
800	19.6	48.7	30.6	74.7	47.4	113	58.8	138	-	-	-	-
900	22.0	31.3	34.4	94.4	53.3	143	66.1	174	-	-	-	-
1000	24.5	75.9	38.2	117	59.3	176	-	-	-	-	-	-
1200	29.4	109	45.9	168	-	-	-	-	-	-	-	-
1400	34.3	149	53.5	230	-	-	-	-	-	-	-	-
1600	39.2	194	61.2	298	-	-	-	-	-	-	-	-

Material : PE 100
Minimum required strength: : MRS = 10.0 Mpa
Design stress : $\sigma_s = 8.0$ Mpa
Design safety factor : C = 1.25 for water
Color : Black
Length : sizes from 16mm to 32mm are available in coils of 100, 200 and 300 up to 1500 meters. Sizes from 40mm to 125mm are available in coils of 100 meters. Larger diameters are available in straight lengths of 12 meters. Different lengths can be supplied on request.



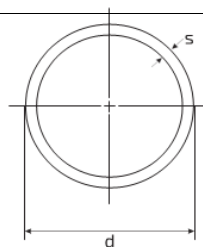
$$PN = \frac{20 \times MRS}{C \times (SDR - 1)}$$

PE 100 pressure pipes for water supply according to DIN 8074/8075

Nominal Outside Diameter (mm)	SDR 41 S 20 PN 3.2		SDR 33 S 16 PN 4		SDR 13.6 S 6.3 PN 9.9		SDR 11 S 5 PN 12.5		SDR 9 S 4 PN 15.6		SDR 7.4 S 3.2 PN 19.2	
	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m
16	-	-	-	-	-	-	-	-	2.0	0.092	2.3	0.103
20	-	-	-	-	-	-	2.0	0.118	2.3	0.134	3.0	0.164
25	-	-	-	-	2.0	0.151	2.3	0.173	3.0	0.202	3.5	0.243
32	-	-	-	-	2.4	0.235	3.0	0.282	3.6	0.331	4.4	0.390
40	-	-	-	-	3.0	0.360	3.7	0.434	4.5	0.514	5.5	0.607
50	-	-	1.8	0.290	3.7	0.555	4.6	0.673	5.6	0.796	6.9	0.945
63	1.8	0.368	2.0	0.403	4.7	0.883	5.8	1.06	7.1	1.27	8.6	1.49
75	1.9	0.462	2.3	0.557	5.6	1.25	6.8	1.48	8.4	1.78	10.3	2.12
90	2.2	0.647	2.8	0.800	6.7	1.79	8.2	2.14	10.1	2.57	12.3	3.03
110	2.7	0.952	3.4	1.19	8.1	2.64	10.0	3.18	12.3	3.82	15.1	4.54
125	3.1	1.25	3.9	1.53	9.2	3.4	11.4	4.12	14.0	4.92	17.1	5.84
140	3.5	1.56	4.3	1.09	10.3	4.26	12.7	5.13	15.7	6.18	19.2	7.33
160	4.0	2.02	4.9	2.45	11.8	5.56	14.6	6.74	17.9	8.04	21.9	9.54
180	4.4	2.51	5.5	3.10	13.3	7.05	16.4	8.51	20.1	10.2	24.6	12.1
200	4.9	3.08	6.2	3.88	14.7	8.65	18.2	10.5	22.4	12.6	27.4	14.9
225	5.5	3.90	6.9	4.82	16.6	11.0	20.5	13.3	25.2	15.9	30.8	18.8
250	6.2	4.88	7.7	5.98	18.4	13.5	22.7	16.3	27.9	19.6	34.2	23.3
280	6.9	6.04	8.6	7.47	20.6	16.9	25.4	20.5	31.3	24.6	38.3	29.2
315	7.7	7.59	9.7	9.47	23.2	21.5	28.6	25.9	35.2	31.1	43.1	36.9
355	8.7	9.65	10.9	12.0	26.1	27.2	32.2	32.9	39.7	39.5	48.5	46.8
400	9.8	12.2	12.3	15.2	29.4	34.5	36.3	41.7	44.7	50.1	54.7	59.4
450	11.0	15.4	13.8	19.2	33.1	43.7	40.9	52.8	50.3	63.4	61.5	75.2
500	12.3	19.2	15.3	23.6	36.8	53.9	45.4	65.2	55.8	78.1	68.3	92.8
560	13.7	23.9	17.2	29.7	41.2	67.6	50.8	81.7	62.5	89.0	-	-
630	15.4	30.2	19.3	37.5	46.3	85.5	57.2	103	-	-	-	-
710	17.4	38.4	21.8	47.7	52.2	109	64.5	131	-	-	-	-
800	19.6	48.7	24.5	60.4	58.8	138	-	-	-	-	-	-
900	22.0	61.3	27.6	76.4	66.1	174	-	-	-	-	-	-
1000	24.5	75.9	30.6	94.1	-	-	-	-	-	-	-	-
1200	29.4	109	36.7	135	-	-	-	-	-	-	-	-
1400	34.3	149	42.9	184	-	-	-	-	-	-	-	-
1600	39.2	194	49.0	241	-	-	-	-	-	-	-	-

Material
Minimum required strength
Design stress
Design safety factor
Color
Length

: PE 100
: MRS = 10.0 Mpa
: $\sigma_s = 6.25 \text{ Mpas}$
: C = 1.6 for water
: Black
: sizes from 16mm to 32mm are available in coils of 100, 200 and 300 up to 1500 meters. Sizes from 40mm to 125mm are available in coils of 100 meters. larger diameters are available in straight lengths of 12 meters. Different lengths can be supplied on request.

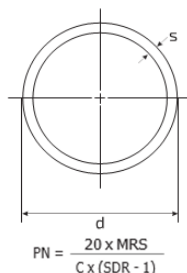


$$PN = \frac{20 \times MRS}{C \times (SDR - 1)}$$

PE 80 pressure pipes for water supply according to DIN 8074/8075

Nominal Outside Diameter (mm)	SDR 41 S 20 PN 4		SDR 33 S 16 PN 4		SDR 22 S 10.5 PN 6		SDR 13.6 S 6.3 PN 10		SDR 11 S 5 PN 12.5		SDR 9 S 4 PN 16	
	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m
16	-	-	-	-	-	-	-	-	-	-	1.8	0.084
20	-	-	-	-	-	-	1.8	0.107	1.9	0.112	2.3	0.133
25	-	-	-	-	-	-	1.9	0.144	2.3	0.171	2.8	0.200
32	-	-	-	-	-	-	2.4	0.232	2.9	0.272	3.6	0.327
40	-	-	-	-	1.9	0.238	3.0	0.356	3.7	0.430	4.5	0.509
50	-	-	1.8	0.287	2.3	0.361	3.7	0.549	4.6	0.666	5.6	0.788
63	1.8	0.364	2.0	0.399	2.9	0.563	4.7	0.873	5.8	1.05	7.1	1.26
75	1.9	0.457	2.3	0.551	3.5	0.807	5.6	1.24	6.8	1.47	8.4	1.76
90	2.2	0.643	2.8	0.791	4.1	1.14	6.7	1.77	8.2	2.12	10.1	2.54
110	2.7	0.943	3.4	1.17	5.0	1.67	8.1	2.62	10.0	3.14	12.3	3.78
125	3.1	1.23	3.9	1.51	5.7	2.16	9.2	3.37	11.4	4.08	14.0	4.87
140	3.5	1.54	4.3	1.88	6.4	2.72	10.3	4.22	12.7	5.08	15.7	6.11
160	4.0	2.0	4.9	2.42	7.3	3.54	11.8	5.50	14.6	6.67	17.9	7.96
180	4.4	2.49	5.5	3.07	8.2	4.47	13.3	6.98	16.4	8.42	20.1	10.1
200	4.9	3.05	6.2	3.84	9.1	5.57	14.7	8.56	18.2	10.4	22.4	12.4
225	5.5	3.86	6.9	4.77	10.3	7.00	16.6	10.9	20.5	13.1	25.2	15.8
250	6.2	4.83	7.7	5.92	11.4	8.59	18.4	13.4	22.7	16.2	27.9	19.4
280	6.9	5.98	8.6	7.40	12.8	10.8	20.6	16.8	25.4	20.3	31.3	24.3
315	7.7	7.52	9.7	9.37	14.4	13.6	23.2	21.2	28.4	25.6	35.2	30.8
355	8.7	9.55	10.9	11.8	16.2	17.3	26.1	26.9	32.2	32.5	39.7	39.1
400	9.8	12.1	12.3	15.1	18.2	21.9	29.4	34.1	36.3	41.3	44.7	49.6
450	11.0	15.3	13.8	19.0	20.5	27.7	33.1	43.2	40.9	52.3	50.3	62.7
500	12.3	19.0	15.3	23.4	22.8	34.2	36.8	53.3	45.4	64.5	55.8	77.3
560	13.7	23.6	17.2	29.4	25.5	42.8	41.2	66.9	50.8	80.8	62.5	97.0
630	15.4	29.9	19.3	37.1	28.7	54.1	46.3	84.6	57.2	102	-	-
710	17.4	38.0	21.8	47.2	32.3	68.7	52.2	107	64.5	130	-	-
800	19.6	48.1	24.5	59.7	36.4	87.2	58.8	136	-	-	-	-
900	22	60.9	27.6	75.6	41	110	66.1	172	-	-	-	-
1000	24.5	75.2	30.6	93.1	45.5	136	-	-	-	-	-	-
1200	29.4	108	36.7	134	54.6	196	-	-	-	-	-	-
1400	34.4	147	42.9	183	63.7	267	-	-	-	-	-	-
1600	39.2	192	49	238	-	-	-	-	-	-	-	-

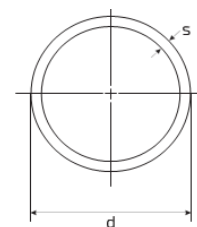
Material : PE 80
Minimum required strength : MRS = 8.0 Mpa
Design stress : $\sigma_s = 6.4 \text{ Mpa}$
Design safety factor : C = 1.25 for water
Color : Black
Length : Sizes from 16mm to 32mm are available in coils of 100, 200 and 300 up to 1500 meters. Sizes from 40mm to 125mm are available in coils of 100 meters. Larger diameters are available in straight lengths of 12 meters. Different lengths can be supplied on request.



PE 80 pressure pipes for water supply according to DIN 8074/8075

Nominal Outside Diameter (mm)	SDR 33 S 16 PN 3.1		SDR 26 S 12.5 PN 4		SDR 17.6 S 8.3 PN 6		SDR 11 S 5 PN 10		SDR 9 S 4 PN 12.5		SDR 7.4 S 3.2 PN 15.3	
	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m
16	-	-	-	-	-	-	-	-	1.8	0.084	2.2	0.099
20	-	-	-	-	-	-	1.9	0.112	2.3	0.133	2.8	0.154
25	-	-	-	-	-	-	2.3	0.171	2.8	0.200	3.5	0.240
32	-	-	-	-	1.8	0.179	2.9	0.272	3.6	0.327	4.4	0.386
40	-	-	1.8	0.227	2.3	0.285	3.7	0.430	4.5	0.509	5.5	0.600
50	1.8	0.287	2.0	0.314	2.9	0.440	4.6	0.666	5.6	0.788	6.9	0.936
63	2.0	0.399	2.5	0.494	3.6	0.688	5.8	1.05	7.1	1.26	8.6	1.47
75	2.3	0.551	2.9	0.675	4.3	0.966	6.8	1.47	8.4	1.76	10.3	2.09
90	2.8	0.791	3.5	0.978	5.1	1.39	8.2	2.12	10.1	2.54	12.3	3.0
110	3.4	1.17	4.2	1.43	6.3	2.08	10.0	3.14	12.3	3.78	15.1	4.49
125	3.9	1.51	4.8	1.84	7.1	2.66	11.4	4.08	14.0	4.87	17.1	5.77
140	4.3	1.88	5.4	2.32	8.0	3.34	12.7	5.08	15.7	6.11	19.2	7.25
160	4.9	2.42	6.2	3.04	9.1	4.35	14.6	6.67	17.9	7.96	21.9	9.44
180	5.5	3.07	6.9	3.79	10.2	5.48	16.4	8.42	20.1	10.1	24.6	11.9
200	6.2	3.84	7.7	4.69	11.4	6.79	18.2	10.4	22.4	12.4	27.4	14.8
225	6.9	4.77	8.6	5.89	12.8	8.55	20.5	13.1	25.2	15.8	30.8	18.6
250	7.7	5.92	9.6	7.30	14.2	10.6	22.7	16.2	27.9	19.4	34.2	23.0
280	8.6	7.40	10.7	9.10	15.9	13.2	25.4	20.3	31.3	24.3	38.3	28.9
315	9.7	9.37	12.1	11.6	17.9	16.7	28.6	25.6	35.2	30.8	43.1	36.5
355	10.9	11.8	13.6	14.6	20.1	21.2	32.2	32.5	39.7	39.1	48.5	46.3
400	12.3	15.1	15.3	18.6	22.7	26.9	36.3	41.3	44.7	49.6	54.7	58.8
450	13.8	19.0	17.2	23.5	25.5	34.0	40.9	52.3	50.3	62.7	61.5	74.4
500	15.3	23.4	19.1	28.9	28.4	42.0	45.4	64.5	55.8	77.3	68.3	91.8
560	17.2	29.4	21.4	36.2	31.7	52.5	50.8	80.8	62.5	97.0	-	-
630	19.3	37.1	24.1	45.9	35.7	66.5	57.2	102	-	-	-	-
710	21.8	47.2	27.2	58.4	40.2	84.4	64.5	130	-	-	-	-
800	24.5	59.7	30.6	73.9	45.3	107	-	-	-	-	-	-
900	27.6	75.6	34.4	93.4	51	136	-	-	-	-	-	-
1000	30.6	93.1	38.2	115	56.7	167	-	-	-	-	-	-
1200	36.7	134	45.9	166	68	241	-	-	-	-	-	-
1400	42.9	183	53.5	226	-	-	-	-	-	-	-	-
1600	49	238	61.2	295	-	-	-	-	-	-	-	-

Material : PE 80
Minimum required strength : MRS = 8.0 Mpa
Design stress : $\sigma_s = 5.0$ Mpa
Design safety factor : C = 1.6 for water
Color : Black
Length : sizes from 16mm to 32mm are available in coils of 100, 200 and 300 up to 1500 meters. Sizes from 40mm to 125mm are available in coils of 100 meters. Larger diameters are available in straight lengths of 12 meters. Different lengths can be supplied on request.



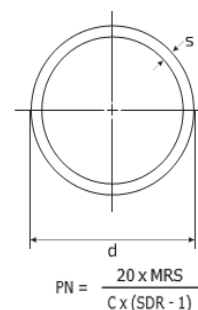
$$PN = \frac{20 \times MRS}{C \times (SDR - 1)}$$

PE 63 pressure pipes for water supply according to DIN 8074 8075

Nominal Outside Diameter (mm)	SDR 26 S 12.5 PN 4		SDR 17.6 S 8.3 PN 6		SDR 11 S 5 PN 10		SDR 7.4 S 3.2 PN 15.9	
	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m
16	-	-	-	-	-	-	2.2	0.099
20	-	-	-	-	1.9	0.112	2.8	0.154
25	-	-	-	-	2.3	0.171	3.5	0.240
32	-	-	1.8	0.179	2.9	0.272	4.4	0.386
40	1.8	0.227	2.3	0.285	3.7	0.430	5.5	0.60
50	2.0	0.314	2.9	0.440	4.6	0.666	6.9	0.936
63	2.5	0.494	3.6	0.688	5.8	1.05	8.6	1.47
75	2.9	0.675	4.3	0.976	6.8	1.47	10.3	2.09
90	3.5	0.978	5.1	1.39	8.2	2.12	12.3	3.0
110	4.2	1.43	6.3	2.08	10.0	3.14	15.1	4.49
125	4.8	1.84	7.1	2.66	11.4	4.08	17.1	5.77
140	5.4	2.32	8.0	3.34	12.7	5.08	19.2	7.25
160	6.2	3.04	9.1	4.35	14.6	6.67	21.9	9.44
180	6.9	3.79	10.2	5.48	16.4	8.42	24.6	11.9
200	7.7	4.69	11.4	6.79	18.2	10.4	27.4	14.8
225	8.6	5.89	12.8	8.55	20.5	13.1	30.8	18.6
250	9.6	7.30	14.2	10.6	22.7	16.2	34.2	23.0
280	10.7	9.10	15.9	13.2	25.4	20.3	38.3	28.9
315	12.1	11.6	17.9	16.7	28.6	25.6	43.1	36.5
355	13.6	14.6	20.1	21.2	32.2	32.5	48.5	46.3
400	15.3	18.6	22.7	26.9	36.3	41.3	54.7	58.8
450	17.2	23.5	25.5	34.0	40.9	52.3	61.5	74.4
500	19.1	28.9	28.4	42.0	45.4	64.5	68.3	91.8
560	21.4	36.2	31.7	52.5	50.8	80.8	-	-
630	24.1	45.9	35.7	66.5	57.2	102	-	-
710	27.2	58.4	40.2	84.4	64.5	130	-	-
800	30.6	73.9	45.3	107	-	-	-	-
900	34.4	93.4	51	136	-	-	-	-
1000	38.2	115	56.7	167	-	-	-	-
1200	45.9	166	68	241	-	-	-	-
1400	53.5	226	-	-	-	-	-	-
1600	61.2	295	-	-	-	-	-	-

Material : PE 63
Minimum required strength : MRS = 6.3 Mpa
Design stress : ~~qs~~ = 5.04 Mpa
Design safety factor : C = 1.25 for water
Color : Black
Length : sizes from 16mm to 32mm are available

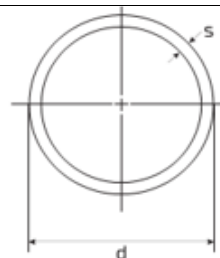
in coils of 100, 200 and 300 up to 1500 meters. Sizes from 40mm to 125mm are available in coils of 100 meters. Larger diameters are available in straight lengths of 12 meters. Different lengths can be supplied on request.



PE 63 pressure pipes for water supply according to DIN 8074/8075

Nominal Outside Diameter (mm)	SDR 21 S 10 PN 3.9		SDR 13.6 S 6.3 PN 6.2		SDR 9 S 4 PN 9.8		SDR 6 S 2.5 PN 15.7	
	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m
16	-	-	-	-	1.8	0.084	2.7	0.115
20	-	-	1.8	0.107	2.3	0.133	3.4	0.180
25	-	-	1.9	0.144	2.8	0.200	4.2	0.278
32	-	-	2.4	0.232	3.6	0.327	5.4	0.454
40	1.9	0.239	3.0	0.356	4.5	0.509	6.7	0.701
50	2.4	0.374	3.7	0.549	5.6	0.788	8.3	1.09
63	3.0	0.580	4.7	0.873	7.1	1.26	10.5	1.73
75	3.6	0.828	5.6	1.24	8.4	1.76	12.5	2.44
90	4.3	1.18	6.7	1.77	10.1	2.54	15.0	3.51
110	5.3	1.77	8.1	2.62	12.3	3.78	18.3	5.24
125	6.0	2.27	9.2	3.37	14.0	4.87	20.8	6.75
140	6.7	2.83	10.3	4.22	15.7	6.11	23.3	8.47
160	7.7	3.72	11.8	5.50	17.9	7.96	26.6	11.0
180	8.6	4.67	13.3	6.98	20.1	10.1	29.9	14.0
200	9.6	5.78	14.7	8.56	22.4	12.4	33.2	17.2
225	10.8	7.30	16.6	10.9	25.2	15.8	37.4	21.8
250	11.9	8.93	18.4	13.4	27.9	19.4	41.6	27.0
280	13.4	11.3	20.6	16.8	31.3	24.3	46.5	33.8
315	15.0	14.2	23.2	21.2	35.2	30.8	52.3	42.7
355	16.9	18.0	26.1	26.9	39.7	39.1	59.0	54.3
400	19.1	22.9	29.4	34.1	44.7	49.6	66.5	68.9
450	21.5	28.9	33.1	43.2	50.3	62.7	-	-
500	23.9	35.7	36.8	53.3	55.8	77.3	-	-
560	26.7	44.7	41.2	66.9	62.5	97.0	-	-
630	30.0	56.4	46.3	84.6	-	-	-	-
710	33.9	71.8	52.2	107	-	-	-	-
800	38.1	91.1	58.8	136	-	-	-	-
900	42.9	115	66.1	172	-	-	-	-
1000	47.7	142	-	-	-	-	-	-
1200	57.2	205	-	-	-	-	-	-
1400	66.7	278	-	-	-	-	-	-
1600	-	-	-	-	-	-	-	-

Material : PE 63
Minimum required strength : MRS = 6.3 Mpa
Design stress : $\sigma_s = 3.94 \text{ Mpa}$
Design safety factor : C = 1.6 for water
Color : Black
Length : sizes from 16mm to 32mm are available in coils of 100, 200 and 300 up to 1500 meters. Sizes from 40mm to 125mm are available in coils of 100 meters. Larger diameters are available in straight lengths of 12 meters. Different lengths can be supplied on request.



$$PN = \frac{20 \times MRS}{C \times (SDR - 1)}$$

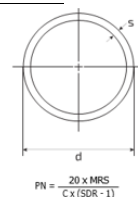
HDPE PIPES FOR IRRIGATION

PE 80 pressure pipes irrigation systems according to DIN 8074/8075

Nominal Outside Diameter (mm)	SDR 41 S 20 PN 4		SDR 33 S 16 PN 4		SDR 22 S 10.5 PN 6		SDR 13.6 S 6.3 PN 10		SDR 11 S 5 PN 12.5		SDR 9 S 4 PN 16	
	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m
16	-	-	-	-	-	-	-	-	-	-	1.8	0.084
20	-	-	-	-	-	-	1.8	0.107	1.9	0.112	2.3	0.133
25	-	-	-	-	-	-	1.9	0.144	2.3	0.171	2.8	0.200
32	-	-	-	-	-	-	2.4	0.232	2.9	0.272	3.6	0.327
40	-	-	-	-	1.9	0.238	3.0	0.356	3.7	0.430	4.5	0.509
50	-	-	1.8	0.287	2.3	0.361	3.7	0.549	4.6	0.666	5.6	0.788
63	1.8	0.364	2.0	0.399	2.9	0.563	4.7	0.873	5.8	1.05	7.1	1.26
75	1.9	0.457	2.3	0.551	3.5	0.807	5.6	1.24	6.8	1.47	8.4	1.76
90	2.2	0.643	2.8	0.791	4.1	1.14	6.7	1.77	8.2	2.12	10.1	2.54
110	2.7	0.943	3.4	1.17	5.0	1.67	8.1	2.62	10.0	3.14	12.3	3.78
125	3.1	1.23	3.9	1.51	5.7	2.16	9.2	3.37	11.4	4.08	14.0	4.87
140	3.5	1.54	4.3	1.88	6.4	2.72	10.3	4.22	12.7	5.08	15.7	6.11
160	4.0	2.0	4.9	2.42	7.3	3.54	11.8	5.50	14.6	6.67	17.9	7.96
180	4.4	2.49	5.5	3.07	8.2	4.47	13.3	6.98	16.4	8.42	20.1	10.1
200	4.9	3.05	6.2	3.84	9.1	5.57	14.7	8.56	18.2	10.4	22.4	12.4
225	5.5	3.86	6.9	4.77	10.3	7.00	16.6	10.9	20.5	13.1	25.2	15.8
250	6.2	4.83	7.7	5.92	11.4	8.59	18.4	13.4	22.7	16.2	27.9	19.4
280	6.9	5.98	8.6	7.40	12.8	10.8	20.6	16.8	25.4	20.3	31.3	24.3
315	7.7	7.52	9.7	9.37	14.4	13.6	23.2	21.2	28.4	25.6	35.2	30.8
355	8.7	9.55	10.9	11.8	16.2	17.3	26.1	26.9	32.2	32.5	39.7	39.1
400	9.8	12.1	12.3	15.1	18.2	21.9	29.4	34.1	36.3	41.3	44.7	49.6
450	11.0	15.3	13.8	19.0	20.5	27.7	33.1	43.2	40.9	52.3	50.3	62.7
500	12.3	19.0	15.3	23.4	22.8	34.2	36.8	53.3	45.4	64.5	55.8	77.3
560	13.7	23.6	17.2	29.4	25.5	42.8	41.2	66.9	50.8	80.8	62.5	97.0
630	15.4	29.9	19.3	37.1	28.7	54.1	46.3	84.6	57.2	102	-	-
710	17.4	38.0	21.8	47.2	32.3	68.7	52.2	107	64.5	130	-	-
800	19.6	48.1	24.5	59.7	36.4	87.2	58.8	136	-	-	-	-
900	22	60.9	27.6	75.6	41	110	66.1	172	-	-	-	-
1000	24.5	75.2	30.6	93.1	45.5	136	-	-	-	-	-	-
1200	29.4	108	36.7	134	54.6	196	-	-	-	-	-	-
1400	34.4	147	42.9	183	63.7	267	-	-	-	-	-	-
1600	39.2	192	49	238	-	-	-	-	-	-	-	-

Material
Minimum required strength
Design stress
Design safety factor
Color
Length

: PE 80
: MRS = 8.0 Mpa
: $\sigma_s = 6.4 \text{ Mpa}$
: C = 1.25 for water
: Black
: Sizes from 16mm to 32mm are available in coils of 100, 200 and 300 up to 1500 meters. Sizes from 40mm to 125mm are available in coils of 100 meters. Larger diameters are available in straight lengths of 12 meters. Different lengths can be supplied on request.



HDPE for irrigation systems according to BS 1972

Nominal Size Inch	Outside diameter mm		Wall Thickness mm					
			Class B 6.1 kgf/cm ²		Class C 9.1 kgf/cm ²		Class D 12.2 kgf/cm ²	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1/2"	21.2	21.5	-	-	2.7	3.0	3.4	3.7
3/4"	26.6	26.9	2.3	2.6	3.4	3.7	4.3	4.7
1"	33.4	33.7	3.0	3.3	4.2	4.6	5.4	5.9
1 1/4"	42.1	42.5	3.7	4.1	5.3	5.8	6.8	7.5
1 1/2"	48.1	48.5	4.3	4.7	6.1	6.7	7.8	8.6
2"	60.1	60.6	5.3	5.8	7.6	8.4	-	-
3"	88.6	89.3	7.8	8.6	11.2	12.3	-	-
4"	113.9	114.7	10.0	11.0	-	-	-	-

Material : LDPE

Color: Black

Length: sizes from 1/2" to 1" are available in coils of 100, 200 and 300 meters. Sizes from 1 1/4" to 4" are available in coils of 100 meters. Different lengths can be supplied on request.

HDPE for irrigation systems according to BS 3284

Nominal Size Inch	Outside diameter mm		Wall Thickness mm			
			Class C 9.1 kgf/cm ²		Class D 12.2 kgf/cm ²	
	Min.	Max.	Min.	Max.	Min.	Max.
1/2"	21.2	21.5	1.8	2.0	2.3	2.6
3/4"	26.6	26.9	2.3	2.6	2.9	3.2
1"	33.4	33.7	2.8	3.1	3.7	4.1
1 1/4"	42.1	42.5	3.6	4.0	4.6	5.1
1 1/2"	48.1	48.5	4.1	4.5	5.3	5.8
2"	60.1	60.6	5.1	5.6	6.6	7.3
3"	88.6	89.3	7.5	8.2	9.7	10.7
4"	113.9	114.7	9.6	10.6	-	-

Material : HDPE

Color: Black

Length: sizes from 1/2" to 1" are available in coils of 100, 200 and 300 meters. Sizes from 1 1/4" to 4" are available in coils of 100 meters. Different lengths can be supplied on request.