

MAJOR ADVANTAGES OF HDPE (PE 100) PIPES

- ▶ RESISTANCE TO CORROSION
- ▶ NORMALLY CHEMICALLY INERT
- ▶ CAN BE WELD JOINT BY MEANS OF THERMAL FUSION METHOD
- ▶ VERY SMOOTH, LIGHT, DURABLE LIFE SPAN UP TO 50 YEARS
- ▶ NON POLLUTING, NON TOXIC AND RESISTANCE TO UV ATTACK
- ▶ ABSORB SURGE AND DOES NOT SUBJECT FOR THE FATIGUE
- ▶ HIGHLY RESISTANCE TO ABRASION
- ▶ FLEXIBLE IN NATURE
- ▶ NARROW TRENCH REQUIRED TO INSTALLATION

FIELD OF APPLICATION

- ▶ POTABLE WATER
- ▶ IRRIGATION
- ▶ SEWAGE AND STORM WATER
- ▶ INDUSTRIAL PIPING
- ▶ DESALINATION
- ▶ PETROCHEMICAL
- ▶ NUCLEAR
- ▶ GAS DISTRIBUTION
- ▶ CRUDE OIL FLOW LINES & LINERS
- ▶ DREDGING AND SLURRY PIPE LINE

GENERAL PROPERTIES OF HDPE (PE 100) PIPES

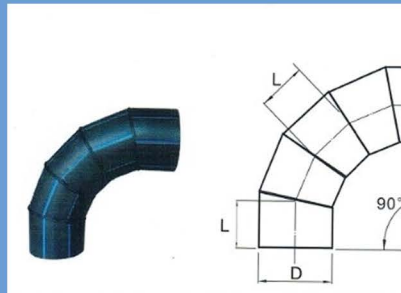
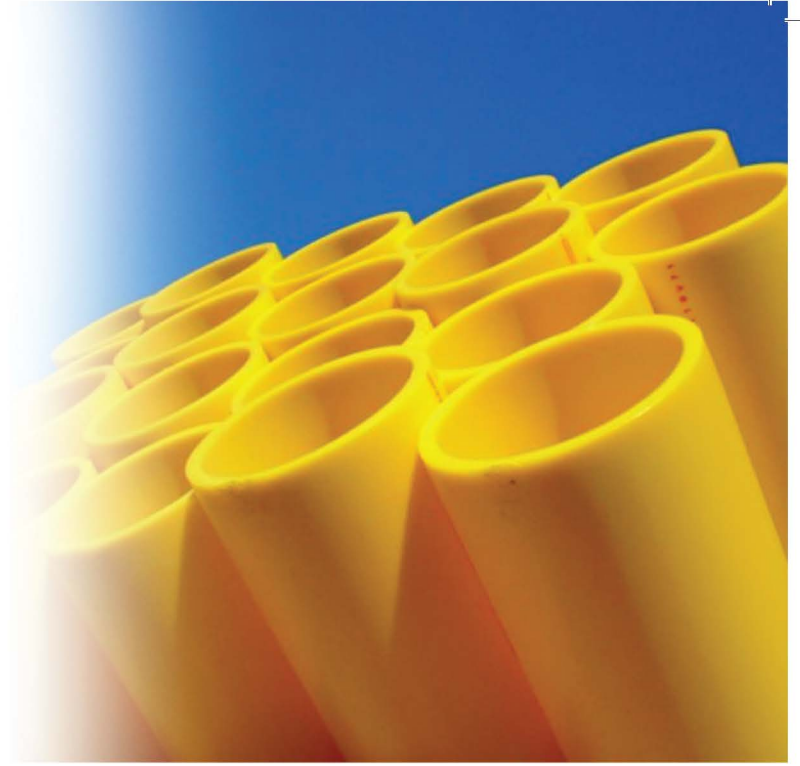
GENERAL PROPERTIES		
Density @23 °c	gm/cc	0.940-0.960
Melt flow index 190°c-5 kg	gm/10 min	0.23
Carbon black content	%	2.5±0.5
Carbon black dispersion	-	Satisfactory
Environmental stress cracking resistance @ 50°	-	No crack on the tested specimen
Oxygen induction time (OIT) 210°C	min	>20

MECHANICAL PROPERTIES		
Tensile strength at yield	Mpa	23
Tensile modulus	Mpa	900
Tensile Elongation at yield	%	9
Charpy impact strength (notched)@23°c	kJ/m ²	26
Charpy impact strength (notched)@-30°c	kJ/m ²	13
Hardness (shore D)	-	63

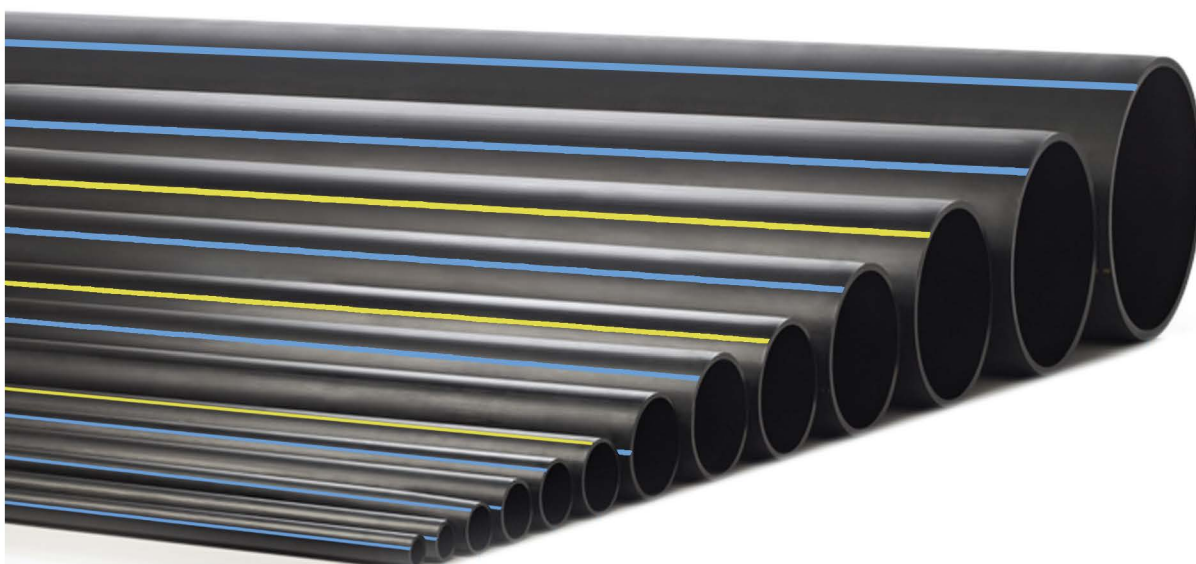
THERMAL PROPERTIES		
Thermal Conductivity (20°C)	W/mK	0.4
Thermal Conductivity (150°C)	W/mK	0.2
Brittleness temperature	°c	<-70
Heat deflection temperature @ 0.46Mpa	°c	85
Heat deflection temperature @ 1.8 Mpa	°c	60
Vicat softening point @50N (VST/B)	°c	74

Higher degree of Precision with automation

Qplast adheres the modern technics for manufacturing HDPE and MDPE pipes for Potable Water and Gas supply. Also Qplast has a well trained team for fabrication of these pipes (Elbow 45°, Elbow 90°, TEE 90°, Y-Branch) as per client requirement.



D	L	H	L
500	500	1055	350
560	560	1145	380
630	630	1326	440
710	710	1447	480
800	800	1507	500



Nominal Outside Diameter mm	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
16	-	-	-	-	-	-	-	-	1.8	0.084
20	-	-	-	-	1.8	0.107	1.9	0.112	2.3	0.133
25	-	-	1.8	0.137	1.9	0.144	2.3	0.171	2.8	0.200
32	-	-	1.9	0.187	2.4	0.232	2.9	0.272	3.6	0.327
40	1.8	0.227	2.4	0.295	3.0	0.356	3.7	0.430	4.5	0.509
50	2.0	0.314	3.0	0.453	3.7	0.549	4.6	0.666	5.6	0.788
63	2.5	0.494	3.8	0.721	4.7	0.873	5.8	1.05	7.1	1.26
75	2.9	0.675	4.5	1.02	5.6	1.24	6.8	1.47	8.4	1.76
90	3.5	0.978	5.4	1.46	6.7	1.77	8.2	2.12	10.1	2.54
110	4.2	1.43	6.6	2.17	8.1	2.62	10.0	3.14	12.3	3.78
125	4.8	1.84	7.4	2.76	9.2	3.37	11.4	4.08	14.0	4.87
140	5.4	2.32	8.3	3.46	10.3	4.22	12.7	5.08	15.7	6.11
160	6.2	3.04	9.5	4.52	11.8	5.50	14.6	6.67	17.9	7.96
180	6.9	3.79	10.7	5.71	13.3	6.98	16.4	8.42	20.1	10.1
200	7.7	4.69	11.9	7.05	14.7	8.56	18.2	10.4	22.4	12.4
225	8.6	5.89	13.4	8.93	16.6	10.9	20.5	13.1	25.2	15.8
250	9.6	7.30	14.8	11.0	18.4	13.4	22.7	16.2	27.9	19.4
280	10.7	9.10	16.6	13.7	20.6	16.8	25.4	20.3	31.3	24.3
315	12.1	11.6	18.7	17.4	23.2	21.2	28.6	25.6	35.2	30.8
355	13.6	14.6	21.1	22.1	26.1	26.9	32.2	32.5	39.7	39.1
400	15.3	18.6	23.7	28.0	29.4	34.1	36.3	41.3	44.7	49.6
450	17.2	23.5	26.7	35.4	33.1	43.2	40.9	52.3	50.3	62.7
500	19.1	28.9	29.7	43.8	36.8	53.3	45.4	64.5	55.8	77.3
560	21.4	36.2	33.2	54.8	41.2	66.9	50.8	80.8	62.5	97.0
630	24.1	45.9	37.4	69.4	46.3	84.6	57.2	102	-	-
710	27.2	58.4	42.1	88.1	52.2	107	64.5	130	-	-
800	30.6	73.9	47.4	112	58.8	136	-	-	-	-

Material : HDPE(PE 100)

Colour : black with blue stripes

Length : 6mtr or 12mtr

smaller diameter ≤110mm would be available in coil form

SDR : Standard Dimension Ratio (DN/e)

e : Wall thickness

PN : Nominal pressure rating (bar)

DN : outside diameter of pipe

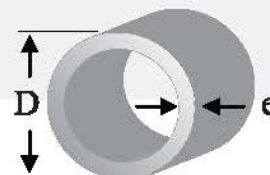
DESIGN FEATURES

Minimum required strength (MRS) : 10.0Mpa

Design stress : $\sigma_s = 8.0\text{Mpa}$,

Design safety factor : $c = 1.25$

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



HDPE (PE 100) PRESSURE PIPES FOR WATER SUPPLY - ISO 4427, DESIGN STRESS 8.0 Mpa



SIZE DN	WALL SERIES											
	S-12.5 (SDR 26)			S-8 (SDR 17)			S-5 (SDR 11)			S-4 (SDR 9)		
	Nominal Pressure											
	PN 6.3			PN 10			PN 16			PN 20		
mm	e mm	di mm	Kg/m	e mm	di mm	Kg/m	e mm	di mm	Kg/m	e mm	di mm	Kg/m
16	-	-	-	-	-	-	-	-	-	2.00	12.00	0.10
20	-	-	-	-	-	-	2.00	16.00	0.12	2.30	15.40	0.14
25	-	-	-	-	-	-	2.30	20.40	0.18	3.00	19.00	0.22
32	-	-	-	2.00	28.00	0.20	3.00	26.20	0.29	3.60	24.80	0.34
40	-	-	-	2.40	35.20	0.31	3.70	32.60	0.45	4.50	31.00	0.53
50	2.00	46.0	0.32	3.00	44.00	0.47	4.60	40.80	0.69	5.60	38.80	0.82
63	2.50	58.0	0.48	3.80	55.40	0.75	5.80	51.40	1.09	7.10	48.80	1.30
75	2.90	69.2	0.69	4.50	66.00	1.05	6.80	61.40	1.53	8.40	58.20	1.83
90	3.50	83.0	0.99	5.40	79.20	1.52	8.20	73.60	2.20	10.10	69.80	2.64
110	4.20	101.6	1.45	6.60	96.80	2.24	10.0	90.00	3.26	12.30	85.40	3.91
125	4.80	115.4	1.87	7.40	110.2	2.87	11.0	102.2	4.23	14.00	97.00	5.05
140	5.40	129.2	2.36	8.30	123.4	3.59	12.70	114.6	5.26	15.70	108.6	6.34
160	6.20	147.6	3.09	9.50	141.0	4.69	14.60	130.8	6.91	17.90	124.2	8.25
180	6.90	166.2	3.85	10.70	158.6	5.92	16.40	147.2	8.73	20.10	139.8	10.40
200	7.70	184.6	4.77	11.90	176.2	7.31	18.20	163.6	10.80	22.40	155.2	12.90
225	8.60	207.8	5.99	13.40	198.2	9.28	20.50	184.4	13.60	25.20	174.6	16.30
250	9.60	230.8	7.41	14.80	220.4	11.40	22.70	204.6	16.70	17.90	194.2	20.10
280	10.70	258.6	9.24	16.60	246.8	14.30	25.40	229.2	21.00	31.30	217.4	25.10
315	12.10	290.8	11.80	18.70	277.6	18.00	28.60	257.8	26.60	35.20	244.6	31.70
355	13.60	327.8	14.90	21.20	312.8	23.00	32.20	290.6	33.70	39.70	275.6	40.30
400	15.30	369.4	18.80	23.70	352.6	29.00	36.30	327.4	42.80	44.70	310.6	51.20
450	17.20	415.6	24.30	26.40	396.6	36.80	40.90	368.2	54.30	50.30	349.4	64.70
500	19.10	461.8	30.00	29.70	440.6	45.30	45.40	409.2	66.90	55.80	388.4	79.90
560	21.40	517.2	37.70	33.20	493.6	56.90	50.80	458.4	83.80	62.50	435.0	97.00
630	24.10	581.8	47.70	37.40	555.2	71.90	57.20	515.9	106.90	70.50	489.0	126.00
710	27.20	655.6	60.50	42.10	625.8	91.40	64.50	581.0	133.9	-	-	-
800	30.60	738.8	76.70	47.40	705.2	116.0	72.60	654.8	170.1	-	-	-

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smaller diameter ≤110mm would be available in coil form

DESIGN FEATURES

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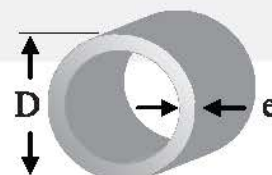
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e : Wall thickness

PN : Nominal pressure rating (bar)

DN : outside diameter of pipe

di : Inside diameter of pipe



SIZE DN	WALL SERIES		
	S-8 (SDR 17)		
	Nominal Pressure		
	PN 10		
mm	e mm	di mm	Kg/m
50	3.00	44.00	0.47
110	6.60	96.80	2.24

Material : PE 100
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