

HIGH DENSITY POLYETHYLENE (HDPE)

PRODUCT FEATURES &
INSTALLATION CATALOGUE



AN INTRODUCTION TO BBB™ HIGH DENSITY POLY ETHYLENE (HDPE)

Bina Plastic High Density Poly Ethylene (HDPE) is a versatile material, Once formed into a pipe, HDPE offers a smooth surface which provides excellent flow characteristics and has excellent resistance against natural chemical substances.

HDPE pipes is relatively lightweight allowing easier and less costly transportation and installation costs. Since it is not a brittle material, it can be installed easily with bend over uneven terrain in continuous lengths without additional welds or couplings because of its flexibility and availability in longer lengths, HDPE Pipe are often installed in 'trenchless' construction by directional drilling.

GOODS APPLICATION:

- ▶ Water reticulation
- ▶ Industrial application
- ▶ Irrigation system

FEATURE AND BENEFITS:

- ▶ Good sagging resistance
- ▶ Excellent thermal stability
- ▶ Excellent absorb water hammering
- ▶ High resistance to slow crack growth
- ▶ Resistance to rapid crack propagation



Without altering the advantages and properties of the original HDPE Pipes provide extremely high ring stiffness and flexibility while reduce in pipe weight compared to normal rigid pipes.

OUR PRODUCTS CERTIFIED BY:



BBB™ PLASTIC PIPING SOLUTIONS

All drawing and size are based on drawing from the BINA PLASTIC INDUSTRIES SDN. BHD.
The designs, materials and specifications shown are subject to change without notice due to our continuing program of products development.



UV RESISTANCE

FLEXIBILITY

THERMAL STABILITY

High Density Poly Ethylene (HDPE) PE100 and PE80 is a black color, bimodal technology, high density polyethylene compound classified as a **MRS 10.0 material (PE100)** and **MRS 8.0 material (PE80)** providing superior in mechanical properties and processability.

HDPE also shows excellent resistance to rapid crack propagation and slow crack growth. In addition, It includes a good dispersion of carbon black pigment and anti-oxidant to ensure excellent long term in **UV Resistance, Flexibility and Thermal Stability**. Coefficients for HDPE $140.0 \times 10^{-6} \text{ m/m } ^\circ\text{C}$.

STANDARD LENGTH OF PIPES

Size	Length
$\geq 20 \leq 110\text{mm}$	6 Meter and 100 Meter/Coil
$\geq 110 \leq 630\text{mm}$	6 and 12 Meter



◀ **Length Type**
 $\geq 20\text{mm}$ to $\leq 630\text{mm}$.

▶ **Coil Type**
 ≥ 20 to $\leq 110\text{mm}$

Specification of HIGH DENSITY POLYETHYLENE (HDPE) PIPE PE80

Pipe Size mm	Outside Dimension (OD) mm		SDR 13.6			SDR 11			SDR 9		
			PN10			PN12.5			PN16		
			e min	e max	Wt. kg/m	e min	e max	Wt. kg/m	e min	e max	Wt. kg/m
20	20.0	20.3	-	-	-	2.0	2.3	0.117	2.3	2.7	0.131
25	25.0	25.3	2.0	2.3	0.169	2.3	2.7	0.169	3.0	3.4	0.198
32	32.0	32.3	2.4	2.8	0.229	3.0	3.4	0.280	3.6	4.1	0.325
40	40.0	40.4	3.0	3.5	0.358	3.7	4.2	0.427	4.5	5.1	0.507
50	50.0	50.4	3.7	4.2	0.546	4.6	5.2	0.663	5.6	6.3	0.786
63	63.0	63.4	4.7	5.3	0.870	5.8	6.5	1.05	7.1	8.0	1.26
75	75.0	75.5	5.6	6.3	1.21	6.8	7.6	1.47	8.4	9.4	1.77
90	90.0	90.6	6.7	7.5	1.74	8.2	9.2	2.12	10.1	11.3	2.55
110	110.0	110.7	8.1	9.1	2.62	10.0	11.1	3.16	12.3	13.7	3.78
125	125.0	125.8	9.2	10.3	3.37	11.4	12.7	4.08	14.0	15.6	4.89
160	160.0	161.0	11.8	13.1	5.51	14.6	16.2	6.68	17.9	19.8	8.15
180	180.0	181.1	13.3	14.8	7.00	16.4	18.2	8.62	20.1	22.3	10.3
200	200.0	201.2	14.7	16.3	8.58	18.2	20.2	10.6	22.4	24.8	12.7
225	225.0	226.4	16.6	18.4	11.1	20.5	22.7	13.5	25.2	27.9	16.1
250	250.0	251.5	18.4	20.4	13.7	22.7	25.1	16.6	27.9	30.8	19.8
280	280.0	281.7	20.6	22.8	17.2	25.4	28.1	20.8	31.3	34.6	24.9
315	315.0	316.9	23.2	25.7	21.3	28.6	31.6	25.7	35.2	38.9	30.9
355	355.0	357.2	26.1	28.9	27.0	32.2	35.6	32.7	39.7	43.8	39.3
400	400.0	402.4	29.4	32.5	34.3	36.3	40.1	41.5	44.7	49.3	49.8
450	450.0	454.1	33.1	36.6	43.4	40.9	45.1	52.5	50.3	55.5	63.0
500	500.0	504.6	36.8	40.6	53.6	45.4	50.1	64.8	55.8	61.5	77.7
560	560.0	565.0	41.2	45.5	67.2	50.8	56.0	81.2	-	-	-
630	630.0	635.7	46.3	51.1	84.9	57.2	63.1	102.9	-	-	-

Specification of HIGH DENSITY POLYETHYLENE (HDPE) PIPE PE100

Pipe Size mm	Outside Dimension (OD) mm		SDR 17			SDR 13.6			SDR 11			SDR 9		
			PN10			PN12.5			PN16			PN20		
			e min	e max	Wt. kg/m	e min	e max	Wt. kg/m	e min	e max	Wt. kg/m	e min	e max	Wt. kg/m
20	20.0	20.3	-	-	-	-	-	-	2.0	2.3	0.117	2.3	2.7	0.133
25	25.0	25.3	-	-	-	2.0	2.3	0.149	2.3	2.7	0.171	3.0	3.4	0.212
32	32.0	32.3	2.0	2.3	0.194	2.4	2.8	0.231	3.0	3.4	0.279	3.6	4.1	0.328
40	40.0	40.4	2.4	2.8	0.295	3.0	3.5	0.362	3.7	4.2	0.431	4.5	5.1	0.512
50	50.0	50.4	3.0	3.4	0.453	3.7	4.2	0.550	4.6	5.2	0.669	5.6	6.3	0.793
63	63.0	63.4	3.8	4.3	0.722	4.7	5.3	0.877	5.8	6.5	1.057	7.1	8.0	1.27
75	75.0	75.5	4.5	5.1	1.02	5.6	6.3	1.24	6.8	7.6	1.48	-	-	-
90	90.0	90.6	5.4	6.1	1.47	6.7	7.5	1.78	8.2	9.2	2.14	-	-	-
110	110.0	110.7	6.6	7.4	2.18	8.1	9.1	2.64	10.0	11.1	3.17	-	-	-
125	125.0	125.8	7.4	8.3	2.78	9.2	10.3	3.39	11.4	12.7	4.12	-	-	-
160	160.0	161.0	9.5	10.6	4.56	11.8	13.1	5.55	14.6	16.2	6.73	-	-	-
180	180.0	181.1	10.7	11.9	5.76	13.3	14.8	7.05	16.4	18.2	8.51	-	-	-
200	200.0	201.2	11.9	13.2	7.11	14.7	16.3	8.65	18.2	20.2	10.5	-	-	-
225	225.0	226.4	13.4	14.9	9.02	16.6	18.4	10.98	20.5	22.7	13.28	-	-	-
250	250.0	251.5	14.8	16.4	11.05	18.4	20.4	13.52	22.7	25.1	16.33	-	-	-
280	280.0	281.7	16.6	18.4	13.89	20.6	22.8	16.94	25.4	28.1	20.48	-	-	-
315	315.0	316.9	18.7	20.7	17.58	23.2	25.7	21.47	28.6	31.6	25.92	-	-	-
355	355.0	357.2	21.1	23.4	22.38	26.1	28.9	27.23	32.2	35.6	32.91	-	-	-
400	400.0	402.4	23.7	26.2	28.28	29.4	32.5	34.52	36.3	40.1	41.78	-	-	-
450	450.0	454.1	26.7	29.5	35.83	33.1	36.6	43.73	40.9	45.1	52.9	-	-	-
500	500.0	504.6	27.7	32.8	44.28	36.8	40.6	53.97	45.4	50.1	65.29	-	-	-
560	560.0	565.0	33.2	36.7	55.47	41.2	45.5	67.71	50.8	56.0	81.79	-	-	-
630	630.0	635.7	37.4	41.3	70.26	46.3	51.1	85.58	57.2	63.1	103.63	-	-	-



PE pipe or fittings are joined to each other by heat fusion or with mechanical fittings. PE pipe may be joined to other pipe materials by means of compression fittings, flanges, or other qualified types of manufactured transition fittings. There are many types and styles of fittings available from which the user may choose. Each offers its particular advantages and limitations for each joining situation the user may encounter.



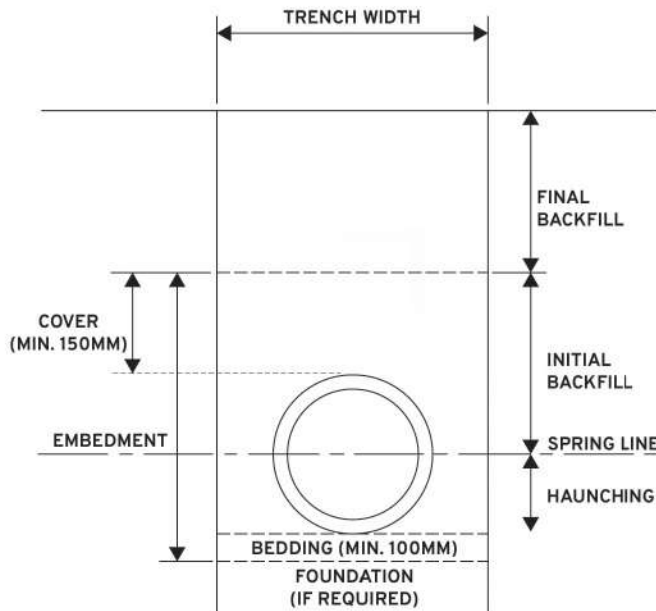
**MECHANICAL /
COMPRESSION JOINT**

**BUTT
FUSION JOINT**

**ELECTRO
FUSION JOINT**

**WELDING
FUSION JOINT**

CONVENTIONALLY BURIED PIPELINES



The dimensions of a trench line opening are normally governed by the pipe diameter, method of jointing and site conditions. Normal minimum depth of cover for mains should be 1 meter from ground level to the crown of the pipe.

Trench width should not normally be less than the outside diameter of the pipe plus 250mm to allow for adequate compaction of side fill unless specialised narrow trenching techniques are used and/or especially free flowing and easily compacted side materials are employed (see advice on material selection below).

Considerable savings in the costs of imported backfill, reinstatement and waste spoil disposal can be made where needed if trench width is minimized. In many instances it may be acceptable to lay PE pipe directly on the bottom of the trench - especially where the soil is uniform, and there are no large flints, stones, or other large hard objects present. In rocky ground, the trench should be cut to a depth in isolation which will allow for the necessary thickness of selected bedding material below the bottom of the pipe.

Where the finished top surface will subsequently be trafficked, and spoil from the excavation is unlikely to give the degree of ground stability required, (even after a degree of grading and compaction) granular material should be imported. Gravel or broken stone graded between 5 & 10mm in size provides suitable bedding, since it needs little compaction. Coarse sand, a sand and gravel mix, or gravel smaller than 20mm are also all acceptable straight from the quarry. The best granular material available from most modern quarries. This has a maximum particle size of 12mm and very few fines and allows for trench widths only 50-100mm greater than the pipe irrespective of the excavation method. After lowering the pipe into position, the trench can be backfilled and the layers easily consolidated.