

POLYPIPE

Rural & Irrigation Systems





Benefits of Poly Pipe

- ✓ Long lengths
- ✓ Cost effectiveness
- ✓ Easy installation
- ✓ Flexibility & resilience
- ✓ Chemical resistance
- ✓ Corrosion resistance
- ✓ Abrasion resistance
- ✓ High flow capacity
- ✓ Weathering resistance
- ✓ Durability
- ✓ High impact resistance

About Poly Pipe Pty Ltd

Located in the Hunter Valley, NSW, Australia, Poly Pipe Pty Ltd (Poly Pipe) has an ultra modern extrusion, high tech manufacturing facility.

It supplies Polyethylene (PE) pipe and related products that comply with all relevant Australian statutory and regulatory requirements.

In addition Poly Pipe adheres and advances safe work practices, effective environmental policies and quality practices in everything that it does.

As a member of a worldwide technology group with Australia-wide manufacturing facilities, Poly Pipe was established on the knowledge, experience, and reputation of its associated companies, some of which include Pipemakers and Metroll.

Its national and international customers are found in the mining, rural and irrigation, water and civil, telecommunication, sewerage and drainage industries.

Industry Applications

- ✓ Telecommunications
- ✓ Electrical
- ✓ Mining
- ✓ Water
- ✓ Gas
- ✓ Air
- ✓ Irrigation
- ✓ Sewerage & Drainage
- ✓ Civil Applications

Features

- ✓ Material Grade: PE 100
- ✓ Standard length from 50m coils
- ✓ Colour Jacket: Black
- ✓ Colour Stripe: Green or as specified
- ✓ Rural $\frac{3}{4}$ - 2 inches in bore
- ✓ Metric coils & straights 16 - 800 or 16 - 125
- ✓ Flood pipe (metric PN4) 160 - 800ø

Product Information

Polyethylene (PE) pipe has a proven track record of high reliability across a wide range of industries and applications. PE provides long maintenance free life with low whole of life costs, compared to many other materials.

Poly Pipe manufactures pipe for the rural and irrigation markets. All products are made to the highest quality from premium PE100 material.

Rural - Imperial PE is available in ¾ to 2 inch nominal sizes.

All metric coil is manufactured to AS/NZS 4130:2009, available in blue stripe from 16mm to 160mm with the most common PN ratings available ex-stock.

Other colours also available, an example of this would be metric coil with a green stripe.

Poly Pipe can also manufacture black pipe with a full co-extruded colour if required.

Flood Pipe is manufactured to AS/NZS 4130:2009 dimensions in various sizes and lengths, up to a maximum of 800mm outside diameter and 20 metres in length.

Application

Rural pipe is intended for use under conditions where the maximum operating pressure does not exceed 600 kPa at 20°C.

Metric pipe is used for numerous applications, some of which include domestic water supply, mine services and irrigation.

Flood pipe is intended for use under flow conditions where the maximum operating pressure does not exceed 250 kPa at 20°C. Flood pipe should not be used where sub atmospheric service pressures less than minus 12 kPa.

PE pipe can be joined using compression fittings, electrofusion systems or butt-welding.



Expansion & Contraction

PE pipe expands and contracts by approximately 250mm for every 100m of pipe over a 10°C change in pipe temperature. For below ground installations, no allowance for expansion is required provided the connection system are stabilised to service temperature before backfilling. For above ground installations, thermal contraction should be allowed for by 'snaking' the pipe.

Design Life

Metric PE pipe is manufactured in accordance to Australian Standard AS/NZS 4130:2009 - Polyethylene (PE) pipes for pressure applications.

By convention, plastics pipe systems are often designed on the basis of 50 year extrapolated test data. This is established international practice but is not intended to imply the service life of pressure pipe is limited to 50 years.

For correctly manufactured and installed systems, the actual life cannot be predicted, but is expected to be well in excess of 100 years before major rehabilitation is required.

Installation

PE pipe offers many cost saving advantages in both above ground and below ground installations. Whilst it is robust and resistant to site damage, normal care and sensible handling practices are necessary to ensure trouble free operations.

PE pipe should be handled, stored and installed in accordance with Australian Standard AS/NZS 2033:2008 - Installation of polyethylene pipe systems. Local Authority regulations and specifications should also be adhered to.



Technical Data

Flood Pipe

Pipes are manufactured to the dimensions and dimensional tolerances of Series 1 SDR 41 pipe complying with Table 2 of AS/NZS 4130:2009. Standard pipe lengths are 12.0m to 20.0m.

Pressure Unit Conversion

PN	kPa	m	bar	psi
4.0	400	40	4.0	58
6.3	630	63	6.3	90
8.0	800	80	8.0	116
10.0	1000	100	10.0	145
12.5	1250	125	12.5	181
16.0	1600	160	16.0	229
20.0	2000	200	20.0	290

Dimensions - Rural Class B

Nominal Bore	PN	Min Wall (mm)	Mean ID (mm)	Coil OD (mm)	Coil ID (mm)	Coil Width (mm)	STD Coil Length (m)	Weight per Coil (Kg)
19 (¾")	6	1.4	19.1	1000	550	200	200	19.2
25 (1")	6	1.5	25.4	1300	900	300	200	26.8
32 (1¼")	6	1.9	31.7	1400	1000	250	150	31.2
32 (1¼")	6	1.9	31.7	1600	1000	300	300	62.3
40 (1½")	6	2.2	38.1	1730	1200	280	150	42.9
40 (1½")	6	2.2	38.1	1900	1200	400	300	85.7
50 (2")	6	3.0	50.9	1960	1500	300	100	52.0
50 (2")	6	3.0	50.9	2180	1500	400	200	104.0

Metric Coil Dimensions to AS/NZS 4130:2009

SDR	21							17						
	8							10						
PN for PE100	Min Wall (mm)	Mean ID (mm)	Coil OD (mm)	Coil ID (mm)	Coil Width (mm)	STD Coil Length (m)	Weight per coil (Kg)	Min Wall (mm)	Mean ID (mm)	Coil OD (mm)	Coil ID (mm)	Coil Width (mm)	STD Coil Length (m)	Weight per coil (Kg)
16														
20														
25								1.6	21.4	1200	550	300	200	24.8
32	1.6	28.4	1410	1000	300	150	24.3	1.9	28.1	1410	1000	300	200	37.2
40	1.9	35.8	1500	1000	300	150	35.3	2.4	35.0	1500	1000	300	150	44.2
50	2.4	45.1	1900	1300	300	150	56.0	3.0	43.9	1900	1300	300	150	68.0
63	3.0	56.9	2300	1800	300	100	57.9	3.8	55.2	2200	1600	300	100	72.3
75	3.6	67.7	2500	1900	330	100	82.9	4.5	65.8	2500	1900	330	100	102.0
90	4.3	81.3	3000	2200	360	100	118.9	5.4	79.0	3000	2200	360	100	146.7
110								6.6	96.5	3000	2100	450	100	218.2

Please Note: ALL dimensions and weights are approximate and are subject to change without notice. SDR 41 (PN 4) custom coils available upon request. Please contact the Poly Pipe sales office for more information.

Pipe Bending Radius (m) 20mm - 800mm

DN	PE100	PE80
20	0.6	0.4
25	0.8	0.5
32	1.0	0.6
40	1.3	0.8
50	1.6	1.0
63	2.1	1.3
75	2.4	1.5
90	2.9	1.8
110	3.6	2.2
125	4.1	2.5
140	4.6	2.8
160	5.2	3.2
200	6.6	4.0
225	7.4	4.5
250	8.2	5.0
280	9.2	5.6
315	10.4	6.3
355	11.7	7.1
400	13.2	8.0
450	14.8	9.0
500	16.5	10.0
560	18.5	11.2
630	20.8	12.6
710	23.4	14.2
800	26.4	16.0

Pipe Capacity of Poly Pipe Trucks-PE100

Pipe Outside Diameter (mm)	No. of Pipes
1½" (150m)	42
2" (100m)	42
2" (200m)	25
63 (100m)	35
75 (100m)	25
90 (100m)	24
110 (100m)	20
110	300
125	224
140	195
160	132
180	120
200	100
225	81
250	64
280	56
315	42
355	42
400	30
450	25
500	20
560	15
630	12
710	9
800	6

Guide Only: Weight restrictions may apply. Maximum weight for all trailers is 19T. Special trailers may carry more. Contact the Poly Pipe sales office for clarification.

13.6							11						
12.5							16						
Min Wall (mm)	Mean ID (mm)	Coil OD (mm)	Coil ID (mm)	Coil Width (mm)	STD Coil Length (m)	Weight per coil (Kg)	Min Wall (mm)	Mean ID (mm)	Coil OD (mm)	Coil ID (mm)	Coil Width (mm)	STD Coil Length (m)	Weight per coil (Kg)
							1.6	12.7	970	550	170	300	22.8
1.6	16.7	870	550	250	200	19.4	1.9	16.1	870	550	250	200	22.4
1.9	21.1	950	550	300	200	28.5	2.3	20.2	950	550	300	200	34.1
2.4	27.0	1200	700	300	200	46.3	2.9	26.0	1200	700	300	200	54.2
3.0	33.8	1500	1000	300	150	53.5	3.7	32.3	1500	1000	300	150	64.7
3.7	42.4	1750	1050	300	150	82.6	4.6	40.4	1750	1050	300	150	100.4
4.7	53.3	1950	1300	300	100	87.8	5.8	51.0	1950	1300	300	100	105.8
5.5	63.7	2500	1900	330	100	122.4	6.8	61.0	2500	1900	330	100	147.8
6.6	76.5	2650	1900	400	100	175.9	8.2	73.1	2650	1900	400	100	214.2
8.1	93.3	2880	2000	450	100	263.9	10.0	89.4	2880	2000	450	100	317.5

Maximum Allowable Operating Pressure - PE100 (Black)

Temp (°C)	Design Life (yrs)	Design Factor	PN 4	PN 6.3	PN 8	PN 10	PN 12.5	PN 16	PN 20	PN 25
			SDR 41	SDR 26	SDR 21	SDR 17	SDR 13.6	SDR 11	SDR 9	SDR 7.4
20	100	1.0	40	64	80	100	127	160	200	250
25	100	1.1	36	58	73	91	115	145	182	227
30	100	1.1	36	58	73	91	115	145	182	227
35	50	1.2	33	53	67	83	106	133	167	208
40	50	1.2	33	53	67	83	106	133	167	208
45	35	1.3	31	49	62	77	99	123	154	192
50	22	1.4	29	46	57	71	91	114	143	179
55	15	1.4	29	46	57	71	91	114	143	179
60	7	1.5	27	43	53	67	85	107	133	167
80	1	2.0	20	32	40	50	63	80	100	125

The design life periods may be considered to be the minimum potential service lives and represent the maximum extrapolated periods permitted by the ISO 9080:2003 extrapolation rules given the available test data.

Comparison of SDR & Pressure Ratings (PN)

SDR	41	33	26	21	17	13.6	11	9	7.4
PE80	PN 3.2	PN 4	-	PN 6.3	PN 8	PN 10	PN 12.5	PN 16	PN 20
PE100	PN 4	-	PN 6.3	PN 8	PN 10	PN 12.5	PN 16	PN 20	PN 25

SDR: Nominal ratio of outside diameter to wall thickness.

PN: Pressure rating at 20DC (MPa multiplied by 10).

PE Classification: Long term rupture stress at 20DC (MPa multiplied by 10) to which the minimum safety factor of 1.25 is applied in order to obtain the 20DC design hoop stress.

Standard Pipe Colour Chart

Colour	Common Use
Blue	Water
Orange	Electrical Conduit
Yellow	Gas - PE100
Light Yellow	Gas - PE80
Red	Fire Service Water
Green	Imperial Rural/Raw Water
Purple	Recycled/Reclaimed Water
Grey	SewerFlex
Cream	Pressure Sewer
White	Communications Conduit

Poly Pipe aims to meet its commitment to quality through continuous improvement programs, use of latest technology, close co-operation with key suppliers, commitment to staff development and regular customer feedback.

The Poly Pipe manufacturing plant has Quality Assurance Certification to ISO 9001:2008. All Pressure Pipes, including Gas, have the WaterMark and Standards Certification.

External Agencies carry out regular audits to provide third party accreditation to the Poly Pipe Quality Management System and verify its ongoing compliance with this Standard.

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