PE3R Polyethylene Pipe

Recycle → Reuse → Renew



APPLICATIONS

Pipeline Plastics PE3R™ – Recycle, **R**euse, **R**enew- PE Pipe is Manufactured from tough polyethylene material with post-industrial recycle (PIR) PE material to provide an environmentally sustainable piping solution. PE3R™ PE Pipe is a cost-effective solution for the transport of non-potable water for agriculture, mining, dredging or other industrial applications. It is able to withstand the rigors of a mining, slurry, or dredging environment while being moved from location to location. Our PE3R™ PE Pipe will provide the increased level of service that PE pipe is known for in these harsh operating environments, but with enhanced abrasion resistance due to its increased toughness. It can be installed and operated below ground or above ground with UV protection in excess of 20 years.

CONFORMANCE

- Standard IPS OD Dimensions and Diameter Ratio (DR)
- Color & UV Stabilizer: Black with 2% min Carbon Black per ASTM D3350
- Heat Fusion Joining as per ASTM F2620 and PPI TR-33/TR-41
- Installation as per Plastic Pipe Institute PE Handbook, 2nd edition

Physical Properties	Nominal Value*	Test Method	Physical Properties	Nominal Value*	Test Method
Density (natural)	0.946 g/cm3	ASTM D1505	Elongation @ Break	>400%	ASTM D638
Melt Index (MI) 190°C/2.16kg	0.12 g/10 min	ASTM D1238	Flexural Modulus	100,000 psi	ASTM D790
High Load Melt Index (190°C/21.6kg)	8-18 g/10 min	ASTM D1238	Brittleness Temperature	<-130°F	ASTM D746
PENT	>500 hours	ASTM F1473	Hardness	62 Shore D	ASTM D2240
Tensile Stress @ Yield	3000 psi	ASTM D638	Vicat Softening Temperature	248°F	ASTM D1525
Tensile Stress @ Break	3,800 psi	ASTM D638	Thermal Expansion	1.0 x 10-4 in/in/°F	ASTM D696

*Nominal values are typical results and are not guaranteed or intended to be used as a product specification.

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FEATURES AND BENEFITS OF PLP PolyR3

- Outstanding abrasion resistance for use on slurry and other abrasive applications.
- Heat fused leak-free joints for the entire life-cycle
- Immune to corrosion & scale build up that can reduce flow capacities
- High fluid flow coefficient C=150 over the life of the piping system
- Surge capability 1.5x rated working pressure at temperature.
- Available with or without color coded stripes

JOINING

PE3R™ PE Pipe can be joined by heat fusion using the industry accepted ASTM F2620 procedure for butt-fusion and saddle fusion. Electro-fusion as well as many types of mechanical couplings and tapping tees designed for use on HDPE pipe can also be used. Always follow the fitting manufacturer installation procedure.

DESIGN, INSTALLATION AND LEAK TESTING

Pipeline Plastics recommends following the practices and guidance of AWWA M55 and the Plastics Pipe Institute (PPI) Handbook of Polyethylene Pipe, second edition available on the PPI website, www.plasticpipe.org.

Leak testing can be performed up to 1.5x the maximum pressure rating of the piping system. Leak testing should be performed according to ASTM F2164, “Standard Practice for Field Leak Testing of Polyethylene (PE) and Crosslinked Polyethylene (PEX) Pressure Piping Systems Using Hydrostatic Pressure.” Appropriate safety considerations should always be followed.

TEMPERATURE SERVICE FACTORS

Standard working pressure rating are at 73°F. If operating conditions are above this standard design temperature, then a Temperature Service Factor must be applied to adjust the maximum working pressure rating of the pipe. Use the factors in the table below to multiply by the standard pressure rating to determine the de-rated MOP at elevated service temperatures. See the Chapter 3, Plastics Pipe Institute (PPI) Handbook of Polyethylene Pipe, second edition available on the PPI website for additional information.

Temperature Service Factor, S_T						
Service T emperature, °F (°C)	<80 (27)	90 (32)	110 (43)	130 (54	140 (60)	>140 (60)
S_T	1.0	0.9	0.8	0.7	0.6	call

PE3R™ – Sizes, Weights, and Pressure Ratings

IPS		DR	7	9	11	13.5	17	21	26	32.5
Size	OD (in)	PR[A]	250 psi	200 psi	160 psi	125 psi	100 psi	80 psi	63 psi	50 psi
2"	2.375	*Min Wall (in)*	0.339	0.264	0.216					
		ID[B] (in)	1.656	1.816	1.917					
		Wt. (lb/ft)[C]	0.948	0.767	0.643					
3"	3.500	*Min Wall (in)*	0.500	0.389	0.318					
		ID[B] (in)	2.440	2.676	2.825					
		Wt. (lb/ft)[C]	2.058	1.663	1.394					
4"	4.500	*Min Wall (in)*	0.643	0.500	0.409	0.333				
		ID[C] (in)	3.137	3.440	3.633	3.793				
		Wt. (lb/ft)[C]	3.400	2.751	2.307	1.914				
6"	6.625	*Min Wall (in)*	0.946	0.736	0.602	0.491	0.390			
		ID[B] (in)	4.619	5.064	5.348	5.585	5.799			
		Wt. (lb/ft)[C]	7.373	5.961	4.994	4.151	3.354			
8"	8.625	*Min Wall (in)*	1.232	0.958	0.784	0.639	0.507	0.411	0.332	0.265
		ID[B] (in)	6.013	6.593	6.963	7.271	7.549	7.754	7.922	8.062
		Wt. (lb/ft)[C]	12.50	10.11	8.468	7.035	5.689	4.658	3.808	3.066
10"	10.75	*Min Wall (in)*	1.536	1.194	0.977	0.796	0.632	0.512	0.413	0.331
		ID[B] (in)	7.494	8.218	8.678	9.062	9.409	9.665	9.873	10.05
		Wt. (lb/ft)[C]	19.42	15.70	13.16	10.93	8.830	7.247	5.905	4.772
12"	12.75	*Min Wall (in)*	1.821	1.417	1.159	0.944	0.750	0.607	0.490	0.392
		ID[B] (in)	8.889	9.747	10.29	10.75	11.16	11.46	11.71	11.92
		Wt. (lb/ft)[C]	27.32	22.09	18.51	15.38	12.43	10.19	8.315	6.709
14"	14.00	*Min Wall (in)*	2.000	1.556	1.273	1.037	0.824	0.667	0.538	0.431
		ID[B] (in)	9.760	10.70	11.30	11.80	12.25	12.59	12.86	13.09
		Wt. (lb/ft)[C]	32.93	26.63	22.31	18.54	14.98	12.29	10.03	8.092
16"	16.00	*Min Wall (in)*	2.286	1.778	1.455	1.185	0.941	0.762	0.615	0.492
		ID[B] (in)	11.15	12.23	12.92	13.49	14.00	14.38	14.70	14.96
		Wt. (lb/ft)[C]	43.01	34.77	29.15	24.21	19.58	16.05	13.08	10.56
18"	18.00	*Min Wall (in)*	2.571	2.000	1.636	1.333	1.059	0.857	0.692	0.554
		ID[B] (in)	12.55	13.76	14.53	15.17	15.76	16.18	16.53	16.83
		Wt. (lb/ft)[C]	54.44	44.02	36.90	30.64	24.76	20.31	16.57	13.36
20"	20.00	*Min Wall (in)*	2.857	2.222	1.818	1.481	1.176	0.952	0.769	0.615
		ID[B] (in)	13.94	15.29	16.15	16.86	17.51	17.98	18.37	18.70
		Wt. (lb/ft)[C]	67.21	54.35	45.54	37.83	30.58	25.08	20.44	16.49
22"	22.00	*Min Wall (in)*	3.143	2.444	2.000	1.630	1.294	1.048	0.846	0.677
		ID[B] (in)	15.34	16.82	17.76	18.55	19.26	19.78	20.21	20.56
		Wt. (lb/ft)[C]	81.31	65.75	55.10	45.78	37.00	30.32	24.75	19.98
24"	24.00	*Min Wall (in)*	3.429	2.667	2.182	1.778	1.412	1.143	0.923	0.738
		ID[B] (in)	16.73	18.35	19.37	20.23	21.01	21.58	22.04	22.43
		Wt. (lb/ft)[C]	96.77	78.26	65.59	54.48	44.02	36.08	29.44	23.77
26"	26.00	*Min Wall (in)*		2.889	2.364	1.926	1.529	1.238	1.000	0.800
		ID[B] (in)		19.88	20.99	21.92	22.76	23.38	23.88	24.30
		Wt. (lb/ft)[C]		91.83	76.95	63.94	51.67	42.35	34.57	27.89
28"	28.00	*Min Wall (in)*		3.111	2.545	2.074	1.647	1.333	1.077	0.862
		ID[B] (in)		21.40	22.60	23.60	24.51	25.17	25.72	26.17
		Wt. (lb/ft)[C]		106.52	89.25	74.18	59.93	49.12	40.10	32.33
30"	30.00	*Min Wall (in)*		3.333	2.727	2.222	1.765	1.429	1.154	0.923
		ID[B] (in)		22.93	24.22	25.29	26.26	26.97	27.55	28.04
		Wt. (lb/ft)[C]		122.26	102.47	85.16	68.81	56.39	46.02	37.11
32"	32.00	*Min Wall (in)*			2.909	2.370	1.882	1.524	1.231	0.985
		ID[B] (in)			25.83	26.97	28.01	28.77	29.39	29.91
		Wt. (lb/ft)[C]			116.60	96.89	78.27	64.16	52.37	42.26
34"	34.00	*Min Wall (in)*			3.091	2.519	2.000	1.619	1.308	1.046
		ID[B] (in)			27.45	28.66	29.76	30.57	31.23	31.78
		Wt. (lb/ft)[C]			131.60	109.37	88.37	72.43	59.10	47.69
36"	36.00	*Min Wall (in)*			3.273	2.667	2.118	1.714	1.385	1.108
		ID[B] (in)			29.06	30.35	31.51	32.37	33.06	33.65
		Wt. (lb/ft)[C]			147.55	122.62	99.08	81.21	66.28	53.46