

PolyPipe[®] for GAS DISTRIBUTION



POLYTOUGH 1™

Bimodal MDPE for the Safest and Most Durable Gas Distribution System.

FEATURES:

- **NO REWORK!** ALL PolyPipe Gas Distribution pipes are manufactured with 100% virgin material.
- Available with BARCODES per ASTM F2837 for DIMP compliance.
- POLYTOUGH1 (PE2708) Manufactured from Dow® Continuum™ DGDA 2420 bimodal resin
- Outstanding resistance to Slow Crack Growth (SCG) and Rapid Crack Propagation (RCP)
- High Performance Resin for Demanding Applications
- Manufactured in accordance with ASTM D2513
- Meets ASTM D3350 material grades PE2406/PE2708

SAMPLE PRINTLINE:

4" IPS SDR 11.5 - DURA-LINE POLYPIPE® POLYTOUGH1™ GDY20 GAS - PE2406/PE2708 - CEE - ASTM D2513 - Resin/Plant/Date Codes

APPLICATION:

Natural Gas Distribution

SIZE RANGE:

1/2" - 1" CTS & 1/2" - 12" IPS. Contact Dura-Line for additional sizes.

COLOR/STRIPE:

Solid Yellow



POLYTOUGH1™ is a high performance medium density gas distribution pipe that provides the highest resistance to **Slow Crack Growth (SCG)** and **Rapid Crack Propagation (RCP)** currently available in the industry. These unique properties bring enhanced integrity for gas distribution systems.

PolyPipe[®] for GAS DISTRIBUTION



Medium Density PolyPipe for Gas Distribution is manufactured using either bimodal MDPE resin with enhanced performance properties or conventional unimodal MDPE resins.

TYPICAL PHYSICAL PROPERTIES

PROPERTY	ASTM TEST METHOD	*NOMINAL VALUES	
		Bi-Modal POLYTough1-PE2708	Uni-Modal PE2708
Density, Natural	D1505	0.940 gm/cc	0.940 gm/cc
Density, Yellow	D1505	0.943 gm/cc	0.943 gm/cc
Melt Index (190°C/2.16 kg)	D1238	>0.15 gm/10 min.	0.20 gm/10 min.
Flow Rate (190°C/21.6 kg)	D1238	9.5 gm/10 min.	20 gm/10 min.
Tensile Strength @ Yield	D638	2,800 psi	2,800 psi
Ultimate Elongation	D638	>800%	>800%
Flexural Modulus – 2% Secant	D790	100,000 psi	100,000 psi
PENT	F1473	>15,000 hrs.	>1000 hrs.
Brittleness Temperature	D746	<-180°F	<-180°F
Hardness, Shore D	D2240	64	--
Vicat Softening Temperature	D1525	248°F	248°F
Izod Impact Strength (Notched)	D256	10 ft – lbf/in	10 ft – lbf/in
Volume Resistivity	D991	--	--
Thermal Expansion Coefficient	D696	1.0x10-4 in/in/°F	1.0x10-4 in/in/°F
Rapid Crack Propagation (RCP)			
Resistance to Rapid Crack Propagation, Full Scale, Pc @ 32°F (0°C)	ISO 13478	>560 psi	90 psi
Resistance to Rapid Crack Propagation, S-4 Pc @ 32°F (0°C)	ISO 13477	>145 psi	15 psi
Resistance to Rapid Crack Propagation, S-4 Tc @ 5bar	ISO 13477	<28°F	60°F
CELL CLASSIFICATION:	D3350	234373E	234373E
MATERIAL CLASSIFICATION:	D1248	Type II, Class B, Category 5	
PPI HYDROSTATIC DESIGN BASIS: (As listed in PPI TR-4)	D2837	1,250 psi @ 73.4°F 1,000 psi @ 140°F	1,250 psi @ 73.4°F 1,000 psi @ 140°F

*Nominal values are intended to be guides only, and not as specification limit.

*Some of the data listed above was determined from compression molded test specimens: therefore may deviate from pipe specimens.

PE2406/PE2708

GAS PIPE DATA AND PRESSURE RATINGS – CTS & IPS

NOMINAL PIPE SIZE, INCHES	DR	DESIGN PRESSURE RATING* FOR NATURAL GAS, PSIG @ 73°F	DIMENSIONS		STANDARD LENGTH, FT	WEIGHT LBS/FT
			Average OD, inches	Min. Wall Thickness, inches		
CTS ½		100	0.625	0.090 ¹	1,000	0.065
1		69	1.125	0.090	500	0.126
1		77	1.125	0.099	500	0.139
IPS ½	9.3	96	0.840	0.090	500	0.092
¾	11 ¹	80	1.050	0.095	500	0.123
1	11 ¹	80	1.315	0.120	500	0.193
1 ¼	10 ¹	88	1.660	0.166	500	0.335
1 ¼	11 ¹	80	1.660	0.151	500	0.308
1 ½	11 ¹	80	1.900	0.173	500	0.404
2	11 ¹	80	2.375	0.216	250	0.631
2	11 ¹	80	2.375	0.216	500	0.631
2	11 ¹	80	2.375	0.216	1,500	0.631
3	11	80	3.500	0.318	500	1.370
3	11.5 ¹	76	3.500	0.304	500	1.317
3	11 ¹	80	3.500	0.318	40	1.370
3	11.5 ¹	76	3.500	0.304	40	1.317
4	11 ¹	80	4.500	0.409	40	2.265
4	11.5 ¹	76	4.500	0.391	40	2.176
4	13.5 ¹	64	4.500	0.333	40	1.882
6	11	80	6.625	0.602	40	4.909
6	11.5 ¹	76	6.625	0.576	40	4.717
6	13.5 ¹	64	6.625	0.491	40	4.079
8	11	80	8.625	0.784	40	8.320
8	11.5 ¹	76	8.625	0.750	40	7.995
8	13.5 ¹	64	8.625	0.639	40	6.913
10	11	80	10.750	0.977	40	12.924
10	11.5	76	10.750	0.935	40	12.419
10	13.5	64	10.750	0.796	40	10.739
12	11	80	12.750	1.159	40	18.180
12	11.5	76	12.750	1.109	40	17.471
12	13.5	64	12.750	0.944	40	15.106

* Ratings are in accordance with DOT CFR 49, Part 192, §192.121 and §192.123.

* Effective July 14, 2004, the maximum design pressure was amended to 125 psig (reference §192.123a) when designed in accordance with §192.121 for nominal pipe sizes up through 12" IPS (§192.123e.3).

NOTES:

- ¹ Products tested and certified by IAPMO.
- Some sizes are special order. Call for availability on sizes or DR's not shown.
- The above weights are calculated per PPI TR-7, using a density of 0.943 gm/cc.