



Bimodal MDPE for the Safest and Most Durable Gas Distribution System

- PolyTough1 (PE2708) Manufactured from Dow® Continuum™ DGDA 2420 bimodal resin
- BARCODE printline per ASTM F2897 for DIMP compliance and in accordance with 49 CFR Part 192 (Amdt. 192-124)
- 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 grade PE2708
- Industry leader in adoption of rework-free (7/2012)

SAMPLE PRINTLINE

4" IPS DR 11.5 - POLYPIPE® POLYTOUGH1™ GDY20 GAS - PE2708 - CEE - ASTM D2513 - D##J##NR - 3EA - 22JAN19 - COIL XX ###FT

APPLICATION

Natural Gas Distribution

SIZE RANGE

1/2" - 1-1/4" CTS & 1/2" - 16" IPS. Contact PolyPipe 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.



Medium Density PolyPipe for Gas Distribution is manufactured using Dow® Continuum™ DGDA 2420 bimodal resin with enhanced performance properties for the highest performance and resistance to RCP (Rapid Crack Propagation) and SCG (Slow Crack Growth).

TYPICAL PHYSICAL PROPERTIES

PROPERTY	ASTM TEST METHOD	*NOMINAL VALUES	
		Bi-Modal PolyTough1™ - PE2708	Uni-Modal PE2708
Density, Natural	D1505	0.940 gm/cc	0.939 gm/cc
Density, Yellow	D1505	0.941 gm/cc	0.940 gm/cc
Melt Index (190°C/2.16 kg)	D1238	<0.25 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	90,000 psi	90,000 psi
PENT	F1473	>15,000 hrs.	>500 hrs.
Brittleness Temperature	D746	<-103° 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	7 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	121 psi
Resistance to Rapid Crack Propagation, S-4 Pc @ 32° F (0° C)	ISO 13477	>145 psi	33 psi
Resistance to Rapid Crack Propagation, S-4 Tc @ 5bar	ISO 13477	<28° F	>32° F
CELL CLASSIFICATION:	D3350	277373E	234373E
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.

PE 2708 GAS PIPE DATA AND PRESSURE RATINGS – CTS &

NOMINAL PIPE SIZE, INCHES	DR	DESIGN PRESSURE RATING* FOR NATURAL GAS, PSIG @ 73°F	DIMENSIONS		STANDARD LENGTH, FT	WEIGHT LBS PER 100 FT
			Average OD, inches	Min. Wall Thickness, inches		
CTS						
1/2	–	125	0.625	0.090	250, 500, 1000	6.5
1	–	87	1.13	0.090	250, 500, 1000	13
1	–	77**	1.13	0.099	250, 500, 1000	14
1 1/4	–	70	1.38	0.090	250, 500	16
IPS						
1/2	9.3	123	0.84	0.09	500	9
3/4	11	100	1.05	0.10	500	12
1	11	100	1.32	0.12	500	19
1 1/4	10	111	1.66	0.17	500	34
1 1/4	11	100	1.66	0.15	500	31
1 1/2	11	100	1.90	0.17	500	40
2	11	100	2.38	0.22	250	63
2	11	100	2.38	0.22	500	63
2	11	100	2.38	0.22	1500	63
3	11	100	3.50	0.32	500	137
3	11.5	95	3.50	0.30	500	131
3	11	100	3.50	0.32	40	137
3	11.5	95	3.50	0.30	40	131
4	11	100	4.50	0.41	40	226
4	11.5	95	4.50	0.39	40	217
4	13.5	80	4.50	0.33	40	188
6	11	100	6.63	0.60	40	491
6	11.5	95	6.63	0.58	40	471
6	13.5	80	6.63	0.49	40	408
8	11	100	8.63	0.78	40	832
8	11.5	95	8.63	0.75	40	799
8	13.5	80	8.63	0.64	40	690
10	11	100	10.75	0.98	40	1292
10	11.5	95	10.75	0.94	40	1242
10	13.5	80	10.75	0.80	40	1072
12	11	100	12.75	1.16	40	1818
12	11.5	95	12.75	1.11	40	1747
12	13.5	80	12.75	0.94	40	1508
16	11	100	16.00	1.46	40	2864

* 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).

* Effective January 22, 2019, the Pipeline Safety Plastic Pipe Rule, 49 CFR Part 192 – Docket No. PHMSA-2014-0098: Amdt. No. 192-124, RIN 2137-AE93 was published to the Federal Register on 11/20/18 with an effective date of 1/22/19. This rule includes an increase in the Design Factor from 0.32 to 0.40 for all pipes meeting the minimum wall thickness requirements in 192.121. This section also limits design pressure to 125psig for pipe sizes ≤12" IPS and 100psig for pipe sizes >12" IPS.

** This size does not meet the minimum wall requirements for a Design Factor of 0.40, uses a DF of 0.32.

NOTES:

- 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.