

Yellow Medium Density Polyethylene (MDPE) for natural gas distribution is available in traditional uni-modal resins and new High Performance bi-modal resins for demanding applications.

➤ Other dimensional standards or custom requirements available.

TYPICAL PHYSICAL PROPERTIES					
PROPERTY	ASTM TEST METHOD	*NOMINAL VALUES			
		Bi-Modal PE2708		Uni-Modal PE2708	
		SI UNITS	ENGLISH UNITS	SI UNITS	ENGLISH UNITS
Density, Natural	D1505	0.941 gm/cc	--	0.940 gm/cc	--
Density, Yellow	D1505	0.944 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 @ Ultimate	D638	31.0 MPa	4,500 psi	31.0 MPa	4,500 psi
Tensile Strength @ Yield	D638	19.3 MPa	2,800 psi	19.3 MPa	2,800 psi
Ultimate Elongation	D638	>800%	>800%	>800%	>800%
Flexural Modulus	D790	>690 MPa	>100,000 psi	690 MPa	100,000 psi
2% Secant					
Environmental Stress Crack Resistance (ESCR)					
F ₀ , Condition B	D1693	>10,000 hrs.	>10,000 hrs.	>10,000 hrs.	>10,000 hrs.
F ₀ , Condition C		>10,000 hrs.	>10,000 hrs.	>10,000 hrs.	>10,000 hrs.
PENT	F1473	>15,000 hrs.	>15,000 hrs.	>1000 hrs.	>1000 hrs.
Brittleness Temperature	D746	<-117°C	<-180°F	<-117°C	<-180°F
Hardness, Shore D	D2240	64	64	64	64
Vicat Softening Temperature	D1525	120°C	248°F	120°C	248°F
Izod Impact Strength (Notched)	D256	0.53 KJ/m	10 ft – lb _f /in	0.53 KJ/m	10 ft – lb _f /in
Volume Resistivity	D991	>10 ¹⁵ ohm-cm	--	>10 ¹⁵ ohm-cm	--
Thermal Expansion Coefficient	D696	2x10 ⁻⁴ cm/cm/°C	1.0x10 ⁻⁴ in/in/°F	2x10 ⁻⁴ cm/cm/°C	1.0x10 ⁻⁴ in/in/°F
Rapid Crack Propagation (RCP)					
S4 Critical Pressure @ 32°F (0°C)	ISO 13477	10 bar	145 psig	1 bar	15 psig
Full Scale Critical Pressure @ 0°C	ISO 13478	38.6 bar	560 psig	6.2 bar	90 psig
Critical Temperature @ 5 bar (75 psig)	ISO 13477	-2°C	28°F	15°C	60°F
CELL CLASSIFICATION:	D3350	234373E	Grade PE27	234373E	Grade PE27
MATERIAL CLASSIFICATION:	D1248	Type II	Class B	Type II	Class B
		Category 5		Category 5	
PPI HYDROSTATIC DESIGN BASIS:	D2837	8.6 MPa @ 23°C	1,250 psi @ 73.4°F	8.6 MPa @ 23°C	1,250 psi @ 73.4°F
(As listed in PPI TR-4)		6.9 MPa @ 60°C	1,000 psi @ 140°F	6.9 MPa @ 60°C	1,000 psi @ 140°F

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

PolyPipe, Inc.
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PolyPipe® GDY20 PE2406/PE2708
Gas Pipe Data and Pressure Ratings – CTS & IPS



Nominal Pipe Size	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 ^{1,2}	1,000	0.065
1"		69	1.125	0.090	500	0.126
1"		77	1.125	0.099 ²	500	0.139
IPS						
½"	9.3	96	0.840	0.090	500	0.092
¾"	11 ^{1,2}	80	1.050	0.095	500	0.123
1"	11 ^{1,2}	80	1.315	0.120	500	0.193
1 ¼"	10 ¹	88	1.660	0.166	500	0.335
1 ¼"	11 ²	80	1.660	0.151	500	0.308
1 ½"	11 ^{1,2}	80	1.900	0.173	500	0.404
2"	11 ^{1,2}	80	2.375	0.216	250	0.631
2"	11 ^{1,2}	80	2.375	0.216	500	0.631
2"	11 ^{1,2}	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 ²	80	3.500	0.318	40	1.370
3"	11.5 ¹	76	3.500	0.304	40	1.317
4"	11 ²	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:
- All products are manufactured in accordance with ASTM D2513.
 - ¹Products tested and certified by IAPMO.
 - ²Products tested and certified by CSA.
 - 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.

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PolyPipe® is an active member of the Plastics Pipe Institute, AWWA, AGA and ASTM.

