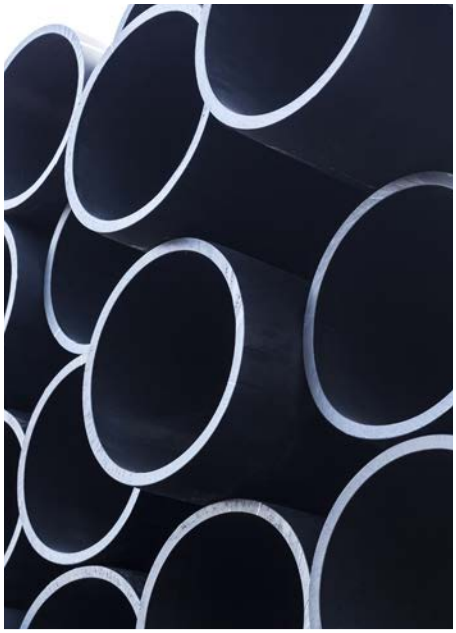
SOVEREIGN PIPE TECHNOLOGIES

DABYANABO
GAS ASTM D2513 PIPE



DABYANABO *(dah-bee-ah-nah-bow)*
Means gas in the Potawatomi language.

APPLICATIONS

Dabynabo Gas ASTM D2513 pipe is a PE 4710 high-performance bimodal HDPE pipe designed for the transmission and distribution of natural gas, liquefied petroleum gas, and other fuel gases. It is used for both direct burial and reliner applications. HDPE's toughness and rapid crack resistance make it ideal for this application

CONFORMANCE

- ASTM D2513 Standard Specification for Polyethylene (PE) Gas Pressure Pipe, Tubing, and Fittings
- Cell Classification PE445574C per ASTM D3350
- Plastics Pipe Institute (PPI) TR-4 Listing as PE4710
- Hydrostatic Design Basis 1,600 psi @ 73°F (23°C) and 1,000 psi @ 140°F per ASTM D2837
- Color & UV Stabilizer: (C) Black with 2% min Carbon Black per ASTM D3350
- Heat fusion procedure according to ASTM F2620, and PPI TR-33 and TR-41
- Install following the PPI Handbook of Polyethylene Pipe, 2nd Ed.
- 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.

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Dabynabo Gas ASTM D2513 Pipe
Technical Data

IPS		PR	335	250	200	160	125
Size	OD (in)	DR	7	9	11	13.5	17
2″	2.375	*Min Wall (in)*	0.339	0.264	0.216	0.216	0.140
		ID[c] (in)	1.656	1.816	1.917	1.917	2.079
		Lb / Ft[d]	0.948	0.767	0.643	0.532	0.431
3″	3.5	*Min Wall (in)*	0.500	0.389	0.318	0.259	0.259
		ID[c] (in)	2.440	2.676	2.825	2.950	2.950
		Lb / Ft[d]	2.058	1.663	1.394	1.159	0.936
4″	4.5	*Min Wall (in)*	0.643	0.500	0.409	0.333	0.265
		ID[c] (in)	3.137	3.440	3.633	3.793	3.939
		Lb / Ft[d]	3.402	2.751	2.307	1.914	1.548
6″	6.625	*Min Wall (in)*	0.946	0.736	0.602	0.491	0.390
		ID[c] (in)	4.619	5.065	5.348	5.585	5.799
		Lb / Ft[d]	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
		ID[c] (in)	6.013	6.594	6.960	7.270	7.550
		Lb / Ft[d]	12.498	10.108	8.468	7.035	5.689
10″	10.75	*Min Wall (in)*	1.536	1.194	0.977	0.796	0.632
		ID[c] (in)	7.494	8.219	8.680	9.060	9.410
		Lb / Ft[d]	19.417	15.699	13.158	10.931	8.834
12″	12.75	*Min Wall (in)*	1.821	1.417	1.159	0.944	0.750
		ID[c] (in)	8.889	9.746	10.290	10.750	11.160
		Lb / Ft[d]	27.315	22.089	18.513	15.377	12.427
14″	14	*Min Wall (in)*	2.000	1.556	1.273	1.037	0.824
		ID[c] (in)	9.760	10.701	11.300	11.800	12.250
		Lb / Ft[d]	32.930	26.629	22.314	18.538	14.984
16″	16	*Min Wall (in)*	2.286	1.778	1.455	1.185	0.941
		ID[c] (in)	11.154	12.231	12.920	13.490	14.000
		Lb / Ft[d]	43.012	34.772	29.149	24.213	19.576
18″	18	*Min Wall (in)*	2.571	2.000	1.636	1.333	1.059
		ID[c] (in)	12.549	13.760	14.530	15.170	15.760
		Lb / Ft[d]	54.435	44.017	36.897	30.644	24.767
20″	20	*Min Wall (in)*	2.857	2.222	1.818	1.481	1.176
		ID[c] (in)	13.943	15.289	16.150	16.860	17.510
		Lb / Ft[d]	67.211	54.351	45.535	37.832	30.575
22″	22	*Min Wall (in)*	3.143	2.444	2.000	1.630	1.294
		ID[c] (in)	15.337	16.819	17.760	18.550	19.260
		Lb / Ft[d]	81.308	65.752	55.105	45.777	37.004
24″	24	*Min Wall (in)*	3.429	2.667	2.182	1.778	1.412
		ID[c] (in)	16.731	18.346	19.370	20.230	21.010
		Lb / Ft[d]	96.767	78.261	65.586	54.478	44.018

Physical Properties	Nominal Value*	Test Method
Density	0.960 g/cm3	ASTM D1505
Melt Index (MI) 190°C/2.16kg	0.07 g/10 min	ASTM D1238
High Load Melt Index (190°C/21.6kg)	7-16 g/10 min	ASTM D1238
SCG Resistance (PENT)	500 hours	ASTM F1473
Tensile Stress @ Yield	3,500 psi	ASTM D638
Tensile Stress @ Break	5,000 psi	ASTM D638

Physical Properties	Nominal Value*	Test Method
Elongation @ Break	>500 %	ASTM D638
Flexural Modulus (2% secant)	150,000 psi	ASTM D790
Brittleness Temperature	< -103°F	ASTM D746
Hardness	62 Shore D	ASTM D2240
Vicat Softening Temperature	256°F	ASTM D1525
Thermal Expansion Coefficient	1.0 x 10-4 in/in/°F	ASTM D696

The design stresses for natural gas pipe are based on the hydrostatic design basis at 73 °F (23 °C) obtained in accordance with Test Method D2837. The test medium should be natural gas or simulated natural gas, except that water may be used where previous tests have shown that water and natural gas give essentially the same test results for the particular type of plastic. The hydrostatic design basis at 73 °F (23 °C) of PE4710 is 1600 (11.0) psi (MPa).

The design stresses for natural gas at service temperatures above 73 °F (23 °C) should be based on the hydrostatic design basis of the pipe applicable to the particular use temperature.

The design stress for PE pipe for fuel gases other than natural gas should be based on hydrostatic design basis categories that have been established with the intended gas as the pressurizing medium (see ASTM D2513 X1.7.2 for information on the effect of common LPG fuels on the long-term strength of PE pipes).

The design stresses for natural gas are obtained by multiplying the hydrostatic design basis by design factors or service factors according to the class of location as described in Chapter IV of the American National Standard Code for Pressure Piping ANSI B31.8, or, for gas operators in the United States, Subpart C of the Minimum Federal Safety Standards for Transportation of Natural and Other Gas by Pipeline, OPS 49 CFR Part 192.

For liquefied petroleum gas (LPG) applications, a maximum operating pressure of 30 psig (206 kPa) is recommended in NFPA 58 by the National Liquefied Petroleum Gas Association members. Liquefied petroleum gas has a higher condensation temperature than natural gas; this maximum pressure is recommended to ensure that plastic pipe is excessively exposed to LPG condensates.

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