

# Gas HD

## CSA B137.4

### Polyethylene Pipe & Tubing for Natural Gas & LPG

Infra Pipes Solution's high-density polyethylene gas pipe and tubing are produced with high-performance bi-modal polyethylene resins (PE 4710) that surpass industry standards, ensuring superior resistance to environmental stress cracking and exceptional long-term stress rupture durability. It is manufactured and tested to meet or exceed the national standards for gas pressure pipe and tubing, including CSA B137.4 and the regulations in Part 192 of the US Federal Gas Pipeline regulations and CSA Z662 of the Canadian Regulations.

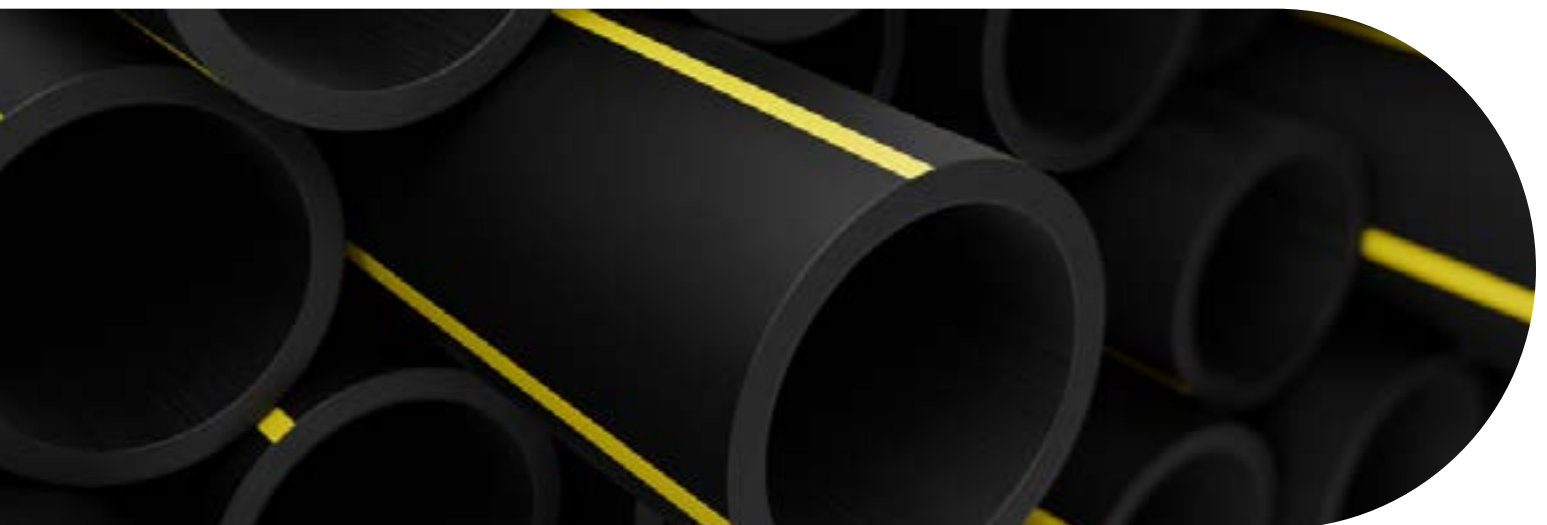
MATERIAL PROPERTIES		
Properties (PE 4710)	ASTM Test Method	Nominal Values
Density (Natural)	D1505	0.949 g/cc
Density (Black)	D1505	0.959 g/cc
Hydrostatic Design Basis (HDB) @ 23 deg C	D2837	1,600 psi
Hydrostatic Design Basis (HDB) @ 60 deg C	D2837	1,000 psi
Cell Classification	D3350	445574C
Melt Index (190°C/2.16 kg)	D1238	< 0.10 g /10 min
Flow Rate (190°C/21.6 kg)	D1238	7 – 11 g /10 min
Tensile Strength @ Yield	D638	3,500 psi
Ultimate Elongation	D638	> 600%
Flexural Modulus (2% Secant)	D790	> 130,000 psi
PENT	F1473	> 10,000 psi
Brittleness Temperature	D746	< - 180 deg F
Hardness (Shore D)	D2240	64
Vicat Softening Temperature	D1525	259 deg F
Izod Impact Strength (Notched)	D256	12 ft-lbf/in
Oxidative Resistance Classification	D3350	CC3
Oxidation Induction Time @ 210 deg C	D3895	> 20 min
Thermal Expansion Coefficient	D696	0.0001 in/in/deg F
Resistance to Rapid Crack Propagation (S-4 Pc @ 32°F)	ISO 13477	> 12 bar
Resistance to Rapid Crack Propagation (S-4 Tc @ 5bar)	ISO 13477	

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**CSA B137.4\_MD NTS PIPE DIMENSIONS**

	OD Max (mm)	OD Min (mm)	Max Wall (mm)	Min Wall (mm)	Avg Wt (lb/ft)
<b>1/4 NTS</b>	9.60	9.40	2.44	2.28	0.03
<b>3/8 NTS</b>	12.80	12.60	2.44	2.28	0.05
<b>1/2 NTS</b>	16.00	15.80	2.50	2.28	0.07
<b>3/4 NTS</b>	22.30	22.10	2.50	2.28	0.10
<b>1 NTS</b>	28.70	28.40	2.82	2.51	0.14
<b>1 1/4 NTS</b>	35.10	34.80	3.45	3.07	0.21



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### CSA 137.4\_MD IPS PIPE DIMENSIONS

	DR	OD Max (mm)	OD Min (mm)	Max Wall (mm)	Min Wall (mm)	Avg Wt (lb/ft)
<b>1/2 NPS</b>	8.80	21.40	21.20	2.71	2.43	0.10
	11.00	21.40	21.20	2.16	1.93	0.08
	13.50	21.40	21.20	1.75	1.58	0.07
<b>3/4 NPS</b>	8.80	26.80	26.60	3.38	3.03	0.15
	11.00	26.80	26.60	2.69	2.41	0.12
	13.50	26.80	26.60	2.57	2.29	0.12
<b>1 NPS</b>	8.80	33.50	33.30	4.24	3.80	0.24
	11.00	33.50	33.30	3.38	3.02	0.20
	13.50	33.50	33.30	2.77	2.46	0.16
<b>1 1/4 NPS</b>	8.80	42.30	42.00	5.36	4.79	0.38
	11.00	42.30	42.00	4.30	3.84	0.31
	13.50	42.30	42.00	3.51	3.12	0.26
<b>1 1/2 NPS</b>	8.80	48.40	48.10	6.15	5.48	0.50
	11.00	48.40	48.10	4.92	4.39	0.41
	13.50	48.40	48.10	4.01	3.58	0.34
<b>2 NPS</b>	8.80	60.50	60.20	7.68	6.86	0.78
	11.00	60.50	60.20	6.15	5.49	0.64
	13.50	60.50	60.20	5.00	4.47	0.53
<b>2 1/2 NPS</b>	8.80	73.20	72.90	9.30	8.30	1.14
	11.00	73.20	72.90	7.42	6.63	0.94
	13.50	73.20	72.90	6.07	5.51	0.78
<b>3 NPS</b>	8.80	89.10	88.70	11.32	10.10	1.70
	11.00	89.10	88.70	9.04	8.08	1.39
	13.50	89.10	88.70	7.37	6.58	1.16
<b>4 NPS</b>	8.80	114.50	114.10	14.55	12.99	2.80
	11.00	114.50	114.10	11.63	10.39	2.30
	13.50	114.50	114.10	9.47	8.46	1.91
<b>6 NPS</b>	8.80	168.60	168.00	21.44	19.15	6.08
	11.00	168.60	168.00	17.12	15.29	4.99
	13.50	168.60	168.00	13.96	12.47	4.15

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## CSA B13

### CSA 137.4\_MD IPS PIPE DIMENSIONS

	DR	OD Max (mm)	OD Min (mm)	Max Wall (mm)	Min Wall (mm)	Avg Wt (lb/ft)
<b>8 NPS</b>	8.80	219.40	218.70	27.89	24.90	10.30
	11.00	219.40	218.70	22.33	19.94	8.48
	13.50	219.40	218.70	18.19	16.23	7.04
<b>10 NPS</b>	8.80	273.40	272.60	34.69	30.98	15.98
	11.00	273.40	272.60	27.81	27.81	13.16
	13.50	273.40	272.60	22.68	20.24	10.94
<b>12 IPS</b>	8.80	324.20	323.40	41.15	36.75	22.48
	11.00	324.20	323.40	32.99	29.46	18.51
	13.50	324.20	323.40	26.87	24.00	15.38



## Pressure Ratings for PE 4710 Gas Pipe & Tubing

**For Natural Gas** - Design pressures and pressure limitations are defined in Part 192, Title 40 of the Code of Federal Regulations for the Department of Transportation of Natural and Other Gas Pipeline-Department of Transportation, Office of Pipeline Safety.

**For LPG Service** - Use Recommendation for Polyethylene Piping Systems for LPG and its major components, propane and butane gas, is published by the Plastic Pipe Institute (Technical Report PPI-TR22).

**CAUTION:** Polyethylene pipe or tubing should be used only in buried, underground applications. This product should never be used in aboveground applications where it is continuously exposed to Ultraviolet light.