



HDPE PIPE SUPPLY · FUSION EQUIPMENT · LOGISTICS COORDINATION

TECHNICAL PRODUCT SHEET

# PE4710 HDPE Pipe

## Industrial & Energy Applications

High-density polyethylene pipe for demanding industrial and energy applications. The PE4710 compound offers strong corrosion resistance, flexibility and long-term pressure performance when properly designed, installed and operated.

COMPOUND	PE4710 · HDS 1,600 psi at 73°F
STANDARDS	ASTM F2619 · API 15LE · ASTM D3350 · PPI TR-4
SIZE RANGE	1¼–24" IPS · DR 7–17
AVAILABILITY	Confirmed quotes · documentation per RFQ



HDPE PIPE — STOCK LENGTHS

# Applications & Performance

Where PE4710 HDPE is specified across the industrial and energy sectors, and why.

## INDUSTRIAL & ENERGY APPLICATIONS

### Oil & Gas Gathering

- Produced water and brine transfer lines
- Gas gathering and distribution systems
- Crude oil transport pipelines
- Well pad flowlines and headers

### Chemical & Industrial

- Chemical transfer and process piping
- Acid and caustic solution distribution
- Industrial cooling water systems
- Plant utility and fire water mains

### Mining & Slurry

- Slurry transport and tailings lines
- Process water and reclaim systems
- Mine dewatering infrastructure
- Concentrate pipeline systems

### Energy Infrastructure

- Power plant cooling water supply
- Geothermal fluid transfer lines
- Landfill leachate and gas collection
- Secondary containment systems

## WHY PE4710 HDPE

### Long Service-Life Potential

Engineered for long-term hydrostatic strength with minimal maintenance — long service-life potential when properly designed, installed and operated.

### Chemical Resistance

Resistant to a broad range of aggressive chemicals, acids and hydrocarbons found in industrial environments.

### No Corrosion or Scaling

Smooth bore maintains flow efficiency and eliminates cathodic protection and corrosion-inhibitor costs.

### Flexible & Impact Resistant

Accommodates ground movement, seismic activity and freeze-thaw cycles without brittle fracture.

### Heat Fusion Joints

Butt fusion and electrofusion form monolithic, leak-free joints as strong as the pipe itself.

#### CONFORMANCE STANDARDS REFERENCED

- ASTM F2619** — PE pipe for oil & gas applications
- ASTM D3350** — PE materials cell classification
- ASTM D2837** — Obtaining hydrostatic design basis
- ASTM F2164** — Field leak testing of PE pressure piping

- API 15LE** — Polyethylene line pipe for oil & gas
- PPI TR-4** — Hydrostatic design basis listings
- ASTM F2620** — Heat fusion joining of PE pipe
- ASTM D1505** — Density of plastics

# Physical Properties & Technical Data

PE4710 high-density polyethylene — nominal reference values; confirm per RFQ.

<b>COMPOUND</b>  <b>PE4710</b> High-density polyethylene	<b>CELL CLASSIFICATION</b>  <b>PE445574C</b> per ASTM D3350	<b>HDS (73°F)</b>  <b>1,600 psi</b> Hydrostatic design stress	<b>COLOR</b>  <b>Black</b> UV stabilized	<b>DENSITY</b>  <b>0.960</b> g/cm <sup>3</sup>
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## PHYSICAL & MECHANICAL PROPERTIES

PROPERTY	VALUE	TEST METHOD
Density	0.960 g/cm <sup>3</sup>	ASTM D1505
Melt Index (MI) 190°C / 2.16 kg	0.07 g/10 min	ASTM D1238
High Load Melt Index 190°C / 21.6 kg	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
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 × 10 <sup>-4</sup> in/in/°F	ASTM D696

## HYDROSTATIC DESIGN STRESS VS. TEMPERATURE

TEMP	HDS	DERATE	EFF. HDS
73°F (23°C)	1,600	1.000	1,600
100°F (38°C)	1,600	0.800	1,280
120°F (49°C)	1,600	0.630	1,008
140°F (60°C)	1,600	0.500	800

Derate factors per PPI TR-9. Consult engineer for specific service

## PRESSURE RATING BY DR (73°F)

DR	PRESS. (PSI)	WALL BASIS
DR 7	533	Thickest
DR 9	400	
DR 11	320	
DR 13.5	254	
DR 17	200	Thinnest

# IPS Pipe Size Table

DR 7 – DR 17

All dimensions in inches · Wall = minimum wall · Avg ID and Wt/Ft (lb/ft) are nominal / average · DR = OD ÷ Wall (lower DR = thicker wall = higher pressure rating).

Size	OD	DR 7			DR 9			DR 11			DR 13.5			DR 17		
		WALL	AVG ID	WT/FT	WALL	AVG ID	WT/FT	WALL	AVG ID	WT/FT	WALL	AVG ID	WT/FT	WALL	AVG ID	WT/FT
1¼"	1.660	.237	1.186	.44	.184	1.291	.36	.151	1.358	.30	.123	1.414	.25	.098	1.465	.20
1½"	1.900	.271	1.357	.58	.211	1.478	.47	.173	1.555	.39	.141	1.619	.32	.112	1.676	.26
2"	2.375	.339	1.696	.90	.264	1.847	.73	.216	1.943	.61	.176	2.023	.51	.140	2.096	.41
3"	3.500	.500	2.500	1.96	.389	2.722	1.58	.318	2.864	1.32	.259	2.981	1.10	.206	3.088	.89
4"	4.500	.643	3.214	3.24	.500	3.500	2.61	.409	3.682	2.19	.333	3.833	1.82	.265	3.971	1.47
6"	6.625	.946	4.732	7.03	.736	5.153	5.67	.602	5.420	4.74	.491	5.644	3.94	.390	5.846	3.18
8"	8.625	1.232	6.161	11.91	.958	6.708	9.61	.784	7.057	8.04	.639	7.347	6.67	.507	7.610	5.38
10"	10.750	1.536	7.679	18.50	1.194	8.361	14.92	.977	8.795	12.49	.796	9.157	10.36	.632	9.485	8.37
12"	12.750	1.821	9.107	26.03	1.417	9.917	20.99	1.159	10.432	17.57	.944	10.861	14.58	.750	11.250	11.77
16"	16.000	2.286	11.429	40.99	1.778	12.444	33.06	1.455	13.091	27.66	1.185	13.630	22.96	.941	14.118	18.53
18"	18.000	2.571	12.857	51.87	2.000	14.000	41.84	1.636	14.727	35.01	1.333	15.333	29.05	1.059	15.882	23.45
20"	20.000	2.857	14.286	64.04	2.222	15.556	51.65	1.818	16.364	43.22	1.481	17.037	35.87	1.176	17.647	28.95
24"	24.000	3.429	17.143	92.22	2.667	18.667	74.38	2.182	19.636	62.24	1.778	20.444	51.65	1.412	21.176	41.69

**ALLOWABLE WORKING PRESSURE (73°F)** AWP = (2 × HDS) ÷ (DR – 1), HDS = 1,600 psi for PE4710 · **DR 7** 533 · **DR 9** 400 · **DR 11** 320 · **DR 13.5** 254 · **DR 17** 200 psi · derate per PPI TR-9; confirm per RFQ.

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