



MISHKWEZE (*mish-kway-zee*)

Means power in the Potawatomi language.

APPLICATIONS

Mishkweze Energy Services Line Pipe is a PE 4710 high performance bimodal high density polyethylene (HDPE) pipe designed for Oil & Gas Gathering, Multi-Phase Fluids, Raw Water, Brine Water, Coal Bed Methane, Landfill Methane and Leachate. It has superior toughness and resistance to the harsh environments found in these demanding applications.

CONFORMANCE

- ASTM F2619 Standard Specification for High-Density Polyethylene (PE) Line Pipe
- API 15LE Specification for Polyethylene Line Pipe (PE)
- Cell Classification PE445574C per ASTM D3350
- Plastics Pipe Institute (PPI) TR-4 Listing as PE4710 (also meets PE3408 per D3350-02a)
- 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
- Installation is recommended to follow 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.



Mishkweze Energy Services Line Pipe **Technical Data**

Physical Properties	Nominal Value*	Test Method
Density	0.960 g/cm ³	ASTM D1505
Melt Index (MI) 190°C/2.16g	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

Nominal Pipe Sizes		DR 7			DR 9			DR 11			DR 13.5			DR 17		
IPS Size	Nominal OD (in)	Min Wall	ID (avg)	Wt/Ft	Min Wall	ID (avg)	Wt/Ft	Min Wall	ID (avg)	Wt/Ft	Min Wall	ID (avg)	Wt/Ft	Min Wall	ID (avg)	Wt/Ft
1 1/4"	1.660	0.237	1.157	0.463	0.184	1.269	0.374	0.151	1.340	0.314	0.123	1.399	0.261			
1 1/2"	1.900	0.271	1.325	0.607	0.211	1.452	0.490	0.173	1.534	0.411	0.141	1.602	0.342			
2"	2.375	0.339	1.656	0.948	0.264	1.816	0.767	0.216	1.917	0.643	0.176	2.002	0.532	0.140	2.079	0.431
3"	3.500	0.500	2.440	2.058	0.389	2.676	1.663	0.318	2.825	1.394	0.259	2.950	1.159	0.206	3.064	0.936
4"	4.500	0.643	3.137	3.402	0.500	3.440	2.751	0.409	3.633	2.307	0.333	3.793	1.914	0.265	3.939	1.548
6"	6.625	0.946	4.619	7.373	0.736	5.064	5.961	0.602	5.348	4.994	0.491	5.585	4.151	0.390	5.799	3.354
8"	8.625	1.232	6.013	12.498	0.958	6.593	10.108	0.784	6.963	8.468	0.639	7.271	7.035	0.507	7.549	5.689
10"	10.750	1.536	7.494	19.417	1.194	8.218	15.699	0.977	8.678	13.158	0.796	9.062	10.931	0.632	9.409	8.834
12"	12.750	1.821	8.889	27.315	1.417	9.747	22.089	1.159	10.290	18.513	0.944	10.750	15.377	0.750	11.160	12.427
14"	14.000	2.000	9.760	32.930	1.556	10.700	26.629	1.273	11.300	22.314	1.037	11.800	18.538	0.824	12.250	14.984
16"	16.000	2.286	11.150	43.012	1.778	12.230	34.772	1.455	12.920	29.149	1.185	13.490	24.213	0.941	14.000	19.576
18"	18.000	2.571	12.550	54.435	2.000	13.760	44.017	1.636	14.530	36.897	1.333	15.170	30.644	1.059	15.760	24.767
20"	20.000	2.857	13.940	67.211	2.222	15.290	54.351	1.818	16.150	45.535	1.481	16.860	37.832	1.176	17.510	30.575
22"	22.000	3.143	15.340	81.308	2.444	16.820	65.752	2.000	17.760	55.105	1.630	18.540	45.777	1.294	19.260	37.004
24"	24.000	3.429	16.730	96.767	2.667	18.350	78.261	2.182	19.380	65.586	1.778	20.230	54.478	1.412	21.010	44.018

* Nominal values are typical results and are not guaranteed or intended to be used as a product specification or engineering values.

** Pressure ratings are dependent upon temperature, environmental, and/or chemical considerations which may require the use of additional service factors. The listed pressure ratings are based on PE 4710 materials with 1,000 psi HDS in water environment at 73°F. See PPI TR-9, "Recommended Design Factors for Thermoplastic Pipe", and PPI Handbook of PE Pipe, Chapter 6 - Design of PE Piping Systems for additional guidance.

Maximum design temperature is 140°F. Federal design requirements will take precedence for regulated piping systems.