

Typical Physical Properties for WL Plastics PE4710/PE100 Pipe Compound

- WL Plastics PE4710/PE100 pipe is manufactured from pressure rated PE4710/PE100 polyethylene compounds that meet or exceed ASTM D3350 requirements and Cell Classification PE445586C. WL Plastics PE4710/PE100 compound meets or exceed ASTM D3350 requirements and Cell Classification PE345464C and material code designation PE3608/PE80.
- WL Plastics PE4710/PE100 polyethylene pipe compounds are Listed by PPI in TR-4 and are stress rated for pressure pipe with PPI HDS ratings for water at 73°F (23°C), PPI MRS ratings for water at 68°F (20°C) and PPI HDB ratings at 73°F (23°C) and 140°F (60°C).
- WL Plastics PE4710/PE100 exceeds PPI TR-3 and ASTM D3350 slow crack growth (SCG) resistance requirements per ASTM F1473 (PENT). WL Plastics PE4710/PE100 ductility is substantiated with greater than 438,300 hours (50 years) at 73°F (23°C) before the onset of SCG.
- For potable water service, WL Plastics PE4710/PE100 black polyethylene compounds are certified to NSF-61

Physical Property	Test Method	Typical Value ⁽¹⁾
Cell classification (black compound)	ASTM D3350	PE445586C
Oxidative Resistance Classification	ASTM D3350	CC3
Melt Index (190/2.16)	ASTM D1238	0.1 g/10 min
High Load Melt Index ⁽²⁾ (190/21.6)	ASTM D1238	6 – 12 g/10 min
Density with 2% minimum carbon black (73°F/23°C)	ASTM D792	0.960 g/cm ³
Tensile strength at yield (2 in/min; 73°F/23°C)	ASTM D638	3500 < 4000 psi
Tensile elongation (2 in/min; 73°F/23°C)	ASTM D638	>400%
Flexural modulus (73°F/23°C)	ASTM D790	>135,000 psi
SCG Resistance, PENT (80°C, 2.4 MPa)	ASTM F1473	> 5000 h
Thermal stability	ASTM D3350	>428°F (> 220°C)
Brittleness temperature	ASTM D746	<-103°F (<-75°C)
Thermal expansion coefficient	ASTM D696	8 x 10 ⁻⁵ in/in/°F
MRS ⁽³⁾ at 68°F (20°C)	ISO 9080 & ISO 12162	1450 psi (10MPa)
HDB ⁽³⁾ at 73°F (23°C)	ASTM D2837/PPI TR-3	1600 psi (11.0 MPa)
HDB ⁽³⁾ at 140°F (60°C)	ASTM D2837/PPI TR-3	1000 psi (6.9 MPa)
HDS ⁽³⁾ for water at 73°F (23°C)	ASTM D2837/PPI TR-3	1000 psi (6.9 MPa)
HDS for water at 140°F (60°C)	ASTM D2837/PPI TR-3	630 psi (4.3 MPa)
RCP Resistance, Critical Pressure at 32°F (0°C)	ISO 13477	>174 psi (>1.2 MPa) ⁽⁴⁾
RCP Resistance, Critical Temp. at 72.5 psi (0.5 MPa)	ISO 13477	<2°F (<-17°C) ⁽⁴⁾

Contact WL Plastics Customer Service for availability. (1) Typical values determined from laboratory tests of samples of compounds (resins) prepared as plaque specimens in accordance with industry standard test methods. Values determined on samples prepared from pipe may vary. The typical values presented herein are for PE4710/PE100 polyethylene pipe compounds (resins) but do not constitute engineering properties for pipe. (2) Overall range of HLMV values for all compounds from all WL Plastics compound suppliers; HLMV variation for an individual compound will be well within the overall range. (3) Listed HDB, HDS and MRS ratings in accordance with ASTM D 2837/PPI TR-3 and ISO 9080/ISO12162 are published in PPI TR-4 by the compound manufacturer (independent listing) and by WL Plastics (dependent listing). WL Plastics dependent listing compounds are identified by a compound code for the supplier: D (Dow); E (Lyondell Basell); S (Ineos).

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