

Properties Comparisons between UHMWPE Pipe and Other Pipes

Item	Test Method	Unit	UHMWPE Pipe	HDPE Pipe	PA66 Pipe	PVC Pipe	Steel Pipe
Viscosity-average Molecular Weight	ISO1628-3	10 ⁴ g/mol	500-1050	<50	—	—	—
Approx Melting Temperature	ISO11357.3	°C	136	129	255	160	1410
Water Absorption	ISO62-1999	%	<0.01	<0.01	3.8	0.5	—
Coefficient of Linear Thermal Expansion	ISO11359-2	10 ⁻⁴ /°C	1.5	1.2	0.8	0.9	0.17
Density	ISO1183-1-2004	g/cm ³	0.935-0.945	>0.940	1.13-1.15	1.4	7.8
(0.45MPa) Heat Deformation Temp at 0.45Mpa	ISO75	°C	85	71	182-224	≥54	1230
Tensile Strength	ISO527	MPa	>39	<25	61	40	550
Yield Strength	ISO527	MPa	≥22	20	—	19	≥245
Tensile Elongation	ISO527	%	≥250	≥350	60-300	60	20
Gap Beam Impact Strength	ISO179	KJ/m ²	No fracture	<27	5.9-10.8	<10	No fracture
Rockwell Hardness	ISO2039-2	R	40	33	85-120	118	45(C)
Friction Coefficient	ISO8295	—	0.05-0.11	0.28	0.37	0.4-0.6	0.58
Mortar Wear Index	—	—	1	10	5	10	7
Scaling	—	—	No Scaling	Slight	Slight	Slight	Heavy
Corrosion Resistance	—	—	Excellent	Common	Common	Common	Bad