



Material Physical Property Information on Expanded Polyethylene (EPP) vs Crosslinked PE (XLPE)

Physical Properties	Test Method	Units	Expanded Polyethylene (EPP)				Crosslinked PE (XLPE)			
Density (Grade)	ASTM-D3575	pcf	1.3	1.9	2.8	3.7	2.0	3.0	4.0	6.0
Density	ASTM-D3575	g/l	20	30	45	60	32	48	64	96
Compressive Strength @ 25%	ASTM-D3575	psi	15	24	33	49	9	12	14	33
Compressive Strength @ 50%		psi	20	28	46	68	17	21	25	46
Compressive Strength @ 75%		psi	45	64	103	145	n/a	n/a	n/a	n/a
Tensile Strength	ASTM-D3575	psi	38	56	63	79	40	70	85	125
Tensile Elongation	ASTM-D3575	%	20	18	20	17	225	240	250	250
Tear Strength	ASTM-D3575	lbs/in	10	13	18	21	10	15	18	32
Compressive Set @ 25%	ASTM-D3575	%	8	7	10	9	n/a	n/a	n/a	n/a
Compressive Set @ 50%	ASTM D3575	%	14	12	12	11	<20	<15	<12	<10
Buoyancy	ASTM-D3575	lbs/ft ³	61	60	59	57	n/a	n/a	n/a	n/a
Thermal Conductivity	ASTM-C177	(K) BTU-in/ft ² -hr-°F	0.25	0.25	0.26	0.26	n/a	n/a	n/a	n/a
Thermal Resistance	ASTM-C177	(R) @70°F	4.0	4.0	3.9	3.8	n/a	n/a	n/a	n/a
Coeff. of Lin. Thermal Expansion in/in/°F x 10-5 68°F to -40°F 68°F to 176°F	ASTM-D696	in/in/°F x 10 ⁻⁵	3.9	3.3	3.1	2.4	n/a	n/a	n/a	n/a
			6.2	5.8	5.6	5.0				
Service Temperature	ASTM-D3575	°F (Min.)	- 40	- 40	- 40	- 40	- 40	- 40	- 40	- 40
		°F (Max.)	212	212	212	212	200	200	200	200
Water Absorption (7 Day)	ASTM-D1667	% (vol)/lb/ft ²	<5.0/< 0.01	<5.0/< 0.01	<5.0/< 0.01	<5.0/< 0.01	0.001	0.001	0.001	0.001
Compressive Creep	ASTM-D3575	1000hr, % (psi)	2.8 (1)	3.0 (1)	3.3 (1)	3.5 (1.5)	n/a	n/a	n/a	n/a
Flammability	FMVSS-302	Pass/Fail	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Chemical Resistance	Various	1 hr exposure (solvents, acids, and alkalines)	Pass	Pass	Pass	Pass	n/a	n/a	n/a	n/a
Fuel Immersion Coast Guard/SOLAS	Fuel B per 33 CFR §183.114	<5% (chg in vol)	Complies	Complies	Complies	Complies	n/a	n/a	n/a	n/a
Melt Reprocess	n/a	n/a	Yes	Yes	Yes	Yes	No	No	No	No