

Iten Industries

Politen® ESP220 Performance Values

<u>Properties</u>	<u>Test Condition</u>	<u>ASTM</u>	<u>Values</u>	<u>Values</u>	<u>Values</u>	<u>Values</u>	<u>Values</u>
Thickness			.031 inches	.062 inches	.125 inches	.187 inches	.500 inches
Tensile Strength:	Lengthwise	D638	10,900 psi	16,300 psi	16,400 psi	16,500 psi	
	Crosswise		8,300 psi	10,600 psi	14,400 psi	13,500 psi	
Flexural Strength:	Condition A Lengthwise	D790	36,600 psi	38,600 psi	32,200 psi	27,700 psi	30,100 psi
	Condition A Crosswise		22,400 psi	30,400 psi	30,500 psi	26,800 psi	25,800 psi
	D48/50 Lengthwise		27,600 psi	30,400 psi	29,400 psi	27,100 psi	26,400 psi
	D48/50 Crosswise		19,900 psi	24,600 psi	27,400 psi	26,500 psi	24,100 psi
Compressive Strength:	Lengthwise	D695	n.a.	11,800 psi	26,500 psi	22,400 psi	30,100 psi
	Crosswise		n.a.	10,500psi	22,000 psi	21,600 psi	25,800 psi
	Flatwise		n.a.	n.a.	45,000+ psi	45,000+ psi	32,500 psi
Izod Impact (notched):	Condition A Lengthwise	D256	n.a.	20.2 ft.lb./in.	18.6 ft.lb./in.	21.0 ft.lb./in.	22.1 ft.lb./in.
	Condition A Crosswise		n.a.	14.9 ft.lb./in.	16.5 ft.lb./in.	17.6 ft.lb./in.	20.4 ft.lb./in.
	D48/50 Lengthwise		n.a.	18.2 ft.lb./in.	16.8 ft.lb./in.	18.8 ft.lb./in.	20.7 ft.lb./in.
	D48/50 Crosswise		n.a.	14.3 ft.lb./in.	15.4 ft.lb./in.	16.7 ft.lb./in.	19.5 ft.lb./in.
	E48/50 Lengthwise		n.a.	22.3 ft.lb./in.	19.1 ft.lb./in.	22.1 ft.lb./in.	22.5 ft.lb./in.
	E48/50 Crosswise		n.a.	14.2 ft.lb./in.	18.2 ft.lb./in.	20.9 ft.lb./in.	19.9 ft.lb./in.
Shear Strength:	Condition A E24/250	D739	11,100 psi	14,200 psi	14,900 psi	15,300 psi	14,200 psi
						18,600 psi	
Water Absorption		D570	.54% of weight	.37% of weight	.27% of weight	.21% of weight	.11% of weight
Specific Gravity		D792	1.74	1.81	1.71	1.71	1.73
U.L. Subject 94		UL94	94HB	94HB	94HB	94HB	94HB
Dielectric Strength	In Air	D149	592 Vpm				
	In Oil			564 Vpm	440 Vpm	307 Vpm	
Dielectric Breakdown:	Condition A	D149	52 kV	57 kV	63 kV	62 kV	44 kV
	D48/50		12 kV	14 kV	13 kV	17 kV	33 kV
Arc Resistance:	Condition A	D495	127 seconds	136 seconds	136 seconds	144 seconds	146 seconds
	D48/50		131 seconds	131 seconds	132 seconds	132 seconds	136 seconds
Permittivity, 1MHz:	Condition A	D150	3.31	4.08	4.02	4.19	
	D24/23		5.01	5.04	4.40	4.54	
Dissipation Factor, 1MHz:	Condition A	D150	.025	.031	.020	.024	
	D24/23		.088	.070	.048	.048	
Permittivity, 1KHz:	Condition A	D150	3.90	4.95	4.70	4.97	
	D24/23		7.44	7.10	6.00	6.59	
Dissipation Factor, 1KHz:	Condition A	D150	.046	.053	.049	.059	
	D24/23		.134	.125	.154	.232	
Permittivity, 60 Hz:	Condition A	D257	4.27	5.47	5.18	5.47	
	D24/23		11.1	9.34	8.33	12.36	
Dissipation Factor, 60 Hz:	Condition A	D257	.055	.059	.053	.050	
	D24/23		.268	.303	.376	.530	
U.L. Temperature Index:	Electrical		210° C	210° C	210° C	210° C	210° C
	Mechanical		210° C	210° C	210° C	210° C	210° C
Thermal Conductivity			2.0 Btu-in/hour- square foot-°F				
Coefficient of Thermal Expansion			.7 in/in/°C-10 ⁻⁵ .				
Halogen Content			0%	0%	0%	0%	0%

ESP220 was formerly know as ESP

Dimensional changes of .187" thick material after 24 hours in an oven at 250° C are as follows:

Weight 2.07% Thickness .54% Length .09% Width .08%

Standard Sheet sizes are 36" x 72", 48" x 72", & 49" x 97"

Ashtabula, Ohio 44004 440-997-6134 Fax 440-992-3614

All values are average test results from typical production material. No warranty is implied or guaranteed and testing is recommended for each application.

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