

# Plexite® Product Specs

## Acrylic Physical Properties

Property <sup>(a)</sup>	ASTM Method	Typical Value (.236" Thickness) <sup>(b)</sup>	
<b>Mechanical</b>			
Specific Gravity	D 792	1.19	
Tensile Strength	D 638	10,000 psi	(69 M Pa)
Elongation, Rupture		4.2%	
Modulus of Elasticity		400,000 psi	(2800 M Pa)
Flexural Strength (Rupture)	D 790	16,500 psi	(114 M Pa)
Modulus of Elasticity		475,000 psi	(3300 M Pa)
Compressive Strength (Yield)	D 695	18,000 psi	(124 M Pa)
Modulus of Elasticity		430,000 psi	(2960 M Pa)
Shear Strength	D732	9,000 psi	(124 M Pa)
Impact Strength		0.4 ft. lbs/in of notch	
Izod Milled Notch	D 256	(21.6 J/m of notch)	
Rockwell Hardness	D785	M-94	
Barcol Hardness	D 2583	49	
Residual Shrinkage <sup>(c)</sup> (Internal Strain)	D 702	2%	
<b>Optical (Clear Material)</b>			
Refractive Index	D 542	1.49	
Light Transmission, Total	D 1003	92%	
UV Transmission		0 at 320 nanometers	
Haze		Less than 1%	
<b>Thermal</b>			
Forming Temperature	—	340-380°F (170-190°C)	
Deflection Temperature under load, 264 psi	D 648	210°F (99°C)	
Vicat Softening Point	D 1525	239°F (115°C)	
Maximum Recommended Continuous Service Temperature	—	180°F <sup>(d)</sup> (82°C)	
Coefficient of Linear Thermal Expansion	D 696	0.000040 in./in.-°F (0.000072 m/m-°C)	
Coefficient of Thermal Conductivity (k-Factor)	Cenco-Fitch	1.3 BTU/(Hr) (Sq. Ft.) (°F/in.) (0.19 w/m-k)	
Flammability (Burning Rate 3mm thickness)	D635	1.2 in./min. (30.5 mm/min.)	
Self-Ignition Temperature	D 1929	910°F (490°C)	
Specific Heat @ 77°F	—	0.35 BTU/(lb.) (°F) (1470 J/Kg-k)	
Smoke Density Rating (3mm thickness)	D 2843	11.4%	
<b>Electrical</b>			
Dielectric Strength		430 volts/mil (17 KV/mm)	
Short Time (0.125"-thickness)	D 149		
Dielectric Constant			
60 Hertz	D 150	3.5	
1,000 Hertz		3.2	
1,000,000 Hertz		2.7	
Dissipation Factor			
60 Hertz	D 150	0.06	
1,000 Hertz		0.04	
1,000,000 Hertz		0.02	
Volume Resistivity	D 257	1.6 x 10 <sup>16</sup> ohm-cm	
Surface Resistivity	D 257	1.9 x 10 <sup>16</sup> ohms	
<b>Water Absorption</b>			
24 hrs @ 73°F	D 570	0.2%	
Weight Gain during Immersion		0.2%	
Soluble Matter Lost		0.0%	
Water Absorbed		0.2%	
Dimensional Change during Immersion		0.2%	
<b>Long Term Water Absorption</b>			
Weight Gain during Immersion	D 570		
7 days		0.5%	
14 days		0.6%	
21 days		0.8%	
35 days		1.0%	
48 days		1.1%	
<b>Odor</b>	—	None	
<b>Taste</b>	—	None	

- Notes: (a) Typical values; should not be used for specification purposes  
(b) Values shown are for 6mm thickness unless noted otherwise. Some values will change with thickness.  
(c) Difference in length and width, as measured at room temperature, before and after heating above 300°F.  
(d) It is recommended that temperatures not exceed 180°F for continuous service, or 200°F for short, intermittent use.