PRODUCT DATA SHEET

Fusion Polycarbonate

PRODUCT DETAILS

Fusion Polycarbonate comes in two size thicknesses: 0.060 inches and 0.125 inches.

The technical details for the Polycarbonate are stated below:

Property	Test Method	Units	Values
PHYSICAL			
Specific Gravity	ASTM D 792	–	1.2
Refractive Index	ASTM D 542	–	1.586
Light Transmission, Clear @ 0.118″	ASTM D 1003	%	86
Light Transmission, I30 Gray @ 0.118″	ASTM D 1003	%	50
Light Transmission, K09 Bronze @ 0.118″	ASTM D 1003	%	50
Light Transmission, I35 Dark Gray @ 0.118″	ASTM D 1003	%	18
Water Absorption, 24 hours	ASTM D 570	%	0.15
Poisson's Ratio	ASTM E 132	–	0.38
MECHANICAL			
Tensile Strength, Ultimate	ASTM D 638	psi	9,500
Tensile Strength, Yield	ASTM D 638	psi	9,000
Tensile Modulus	ASTM D 638	psi	340,000
Elongation	ASTM D 638	%	110
Flexural Strength	ASTM D 790	psi	13,500
Flexural Modulus	ASTM D 790	psi	345,000
Compressive Strength	ASTM D 695	psi	12,500
Compressive Modulus	ASTM D 695	psi	345,000
Izod Impact Strength, Notched @ 0.125″	ASTM D 256	ft·lbs/in	18
Izod Impact Strength, Unnotched @ 0.125″	ASTM D 256	ft·lbs/in	60 (no failure)
Instrumented Impact @ 0.125″	ASTM D 3763	ft·lbs	>46
Shear Strength, Ultimate	ASTM D 732	psi	10,000
Shear Strength, Yield	ASTM D 732	psi	6,000
Shear Modulus	ASTM D 732	psi	114,000
Rockwell Hardness	ASTM D 785	–	M70 / R118
THERMAL			
Coefficient of Thermal Expansion	ASTM D 696	in/in/°F	3.75 x 10-5
Coefficient of Thermal Conductivity	ASTM C 177	BTU·in/hr·ft2·°F	1.35
Heat Deflection Temperature @ 264 psi	ASTM D 648	°F	270
Heat Deflection Temperature @ 66 psi	ASTM D 648	°F	280
Brittleness Temperature	ASTM D 746	°F	-200
Shading Coefficient, clear @ 0.236″	NFRC 100-2010	–	0.97
Shading Coefficient, Gray or Bronze @ 0.236″	NFRC 100-2010	–	0.77
U factor @ 0.236″ (summer, winter)	NFRC 100-2010	BTU/hr·ft2·°F	0.85, 0.92

U factor @ 0.375″ (summer, winter)	NFRC 100-2010	BTU/hr·ft2·°F	0.78, 0.85
ELECTRICAL			
Dielectric Constant @ 10 Hz	ASTM D 150	–	2.96
Dielectric Constant @ 60 Hz	ASTM D 150	–	3.17
Volume Resistivity	ASTM D 257	Ohm·cm	8.2 x 1016
Dissipation Factor @ 60 Hz	ASTM D 150	–	0.0009
Arc Resistance			
Stainless Steel Strip electrode	ASTM D 495	Seconds	10
Tungsten Electrodes	ASTM D 495	Seconds	120
Dielectric Strength, in air @ 0.125″	ASTM D 149	V/mil	380
FLAMMABILITY			
Horizontal Burn, AEB	ASTM D 635	in	<1
Ignition Temperature, Self	ASTM D 1929	°F	1040
Ignition Temperature, Flash	ASTM D 1929	°F	824
Flame Class @ 0.060″	UL 94	–	V-2
Flame Class @ 0.220″	UL 94	–	V-0

When Polycarbonate and print is protected by a vinyl opaque backer, these are the technical details:

Property	**Typical Values**	**Test Method**
Thickness, inches (□m)		
Face plus adhesive	0.0055 (144)	
Face, adhesive & liner	0.0120 (305)	
Quick Tack lb. /in² (N/25mm) Stainless Steel	3.5 (15.3)	MACtac CTM-25
Peel Adhesion lb./in. (N/25 mm) Stainless Steel		PSTC-1
30 min.	4.4 (19)	
24 hrs.	6.0 (26)	
24 hrs. Heat Aged 158°F	7.2 (32)	
72 hrs. Aluminum	7.0 (31)	
72 hrs. Powder coated Paint	8.8 (39)	
72 hrs.	4.5 (20)	
Dimensional Stability, inches (mm)		MACtac CTM-21
48 hours @ 158°F		(Method D)
MD	0.06 (1.5)	Bonded to aluminum
CD	0.04 (1.02)	
Tensile, lb. /in.(N/15 mm)		ASTM D-882
MD	8.0 (21)	
CD	6.0 (16)	
Elongation, %		
MD	150	
CD	80	

When acrylic and print is protected by clear coated backer, these are the technical details:

Attributes	
Print odor	Odorless
Special ventilation required	None
Cleaning fluids: health hazards labels	Cautionary statement only: Contact with skin and eyes may result in irritation. No "R" phrases.
Ink health hazards labels – general handling	Cautionary statement only: Contact with skin and eyes may result in irritation. No "R" phrases.
Flammability/ combustibility	FP > 93.3C
HAPs free (inks and maintenance fluids)	None according to EPA Method 311
VOCs: inks, pre-and post-treatments	231 g/L – 294 g/L
VOCs: Maintenance fluids	241 g/L

DISCLAIMER:

All listed technical data are typical values intended for your guidance. Final testing and fitness for use are determined by the end customer and intended use. ATI Laminates encourages customers to conduct their own test to determine physical properties.