FPU 50

Limited Availability

FPU 50 is an impact, abrasion and fatigue resistant semi-rigid material that is a good choice for parts that must withstand repetitive stresses such as living hinges or friction fits.

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CarbonResin FPU 50

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TECHNICAL DATA SHEET, LAST UPDATED 08/14/2017

Tensile Properties ASTM D638, Type V, 10 mm/min	Metric	U.S.
Tensile Modulus	860 ± 110 MPa	125 ± 16 ksi
Ultimate Tensile Strength	29 ± 1 MPa	4.2 ± 0.2 ksi
Tensile Strength at Yield	20 ± 1 MPa	2.9 ± 0.2 ksi
Elongation at Yield	7 ± 1 %	
Elongation at Break	280 ± 15 %	

Flexural Properties ASTM D790-B	Metric	U.S.
Flexural Stress at 5 % Strain, no yielding	32 ± 1 MPa	4.6 ± 0.2 ksi
Flexural Modulus (chord, 0.5-1 % strain)	831 ± 36 MPa	121 ± 5 ksi

Impact Properties	Metric	U.S.
Notched Izod (Machined), 23 °C, ASTM D256	40 ± 5 J/m	0.75 ± 0.09 ft-lb/in
Notched Izod (Machined), -30 °C, ASTM D256	30 ± 6 J/m	0.56 ± 0.11 ft-lb/in
Unnotched Izod, ASTM D4812	No Break	

Thermal Properties	Metric	U.S.
Heat Deflection Temperature @ 0.455 MPa/66 psi, ASTM D648	78 °C	172 °F
Heat Deflection Temperature @ 1.82 MPa/264 psi, ASTM D648	52 °C	126 °F
Coefficient of Thermal Expansion (-40, 40 °C), ASTM E831	129 ppm/°C	72 ppm/°F
Heat Capacity, 23 °C, ASTM E1269	1.48 J/g-°C	0.353 BTU/lb-°F
Thermal Conductivity, ASTM C518	0.138 W/m-K	0.0799 BTU/hr-ft-°F

Electrical Properties	Metric
Dielectric Strength, ASTM D149	13.0 kV/mm
Dielectric Constant, 1 kHz, ASTM D150	3.21
Dissipation Factor, 1 kHz, ASTM D150	0.0131
Volume Resistivity, ASTM D257	1.87E+13 ohm-cm

General Properties	Metric
Hardness, ASTM D2240	71, Shore D
Density, ASTM D792	1.053 g/cm^3
Density (liquid resin)	1.06 g/cm^3
Water Absorption, 23 °C, 24 hours, ASTM D570	0.42 %
Water Absorption, 23 °C, long term, ASTM D570	0.75 %

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