

FPU 230

FPU 230 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.

NOTES—Test specimens were prepared using Carbon M1 printer and a Type B cassette. Print parameters were generated using software v.0.42.0. Tensile data were generated using printed Type V samples (per ASTM D638). All other test specimens were printed following standard ASTM test geometries. All test specimens were printed, cleaned, and post-processed per instructions provided in the Carbon User Manual. Liquid property measurements were carried out using fully mixed resins. Results provided herein are representative of these processes and may vary if these established protocols are not followed.

Tensile Properties—ASTM D638

	METRIC	IMPERIAL
Ultimate Tensile Strength	23 - 28 MPa	3300 - 4060 psi
Tensile Strength at Yield	14 - 16 MPa	2030 - 2320 psi
Modulus	600 - 850 MPa	87 - 123 ksi
Elongation-at-Break	200 - 250%	200 - 250%

Flexural Properties —ASTM D790

	METRIC	IMPERIAL
Flexural Strength	20 - 24 MPa	2900 - 3500 psi
Flexural Modulus	800 - 900 MPa	116 - 130 ksi

Impact Properties—ASTM D256, ASTM D4812

IMPACT STRENGTH	IMPACT STRENGTH		IMPACT ENERGY	
	METRIC	IMPERIAL	METRIC	IMPERIAL
Machined Izod notch	35 - 39 J/m	0.65 - 0.73 ft-lb/in.	2.7 - 2.9 kJ/m ²	0.25 - 0.27 ft-lb/in ²
Printed Izod notch	40 - 60 J/m	0.75 - 1.1 ft-lb/in.	3.9 - 5.4 kJ/m ²	0.36 - 0.49 ft-lb/in ²
Izod Unnotched	1470 - 1670 J/m	27 - 31 ft-lb/in.	71 - 80 kJ/m ²	6.5 - 7.2 ft-lb/in ²

Carbon Resin

FPU 230—VERSION 1

TECHNICAL DATA SHEET 4/3/16 V3.2

Thermal Properties

	METRIC	IMPERIAL
Heat Deflection Temperature @ 0.45 MPa/66 psi (ASTM D648)	52 °C	125 °F
Heat Deflection Temperature @ 1.82 MPa/264 psi (ASTM D648)	38 °C	100 °F
T _g (DMA, E')	60 °C	140 °F
T _g (DMA, tan(d))	98 °C	208 °F
Coefficient of Thermal Expansion (ASTM E228)	157 - 167 ppm/°C	

Liquid Properties

Viscosity (@25°C, cP)	1800 - 2000
Liquid Density (g/mL, @25°C)	1.00 - 1.02