

CE 220

CE 220 is a high performance material with excellent strength, stiffness and thermal stability that is a good choice for use at elevated temperatures.

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	90 - 110 MPa	13 - 15.9 ksi
Tensile Strength at Yield	90 - 110 MPa	13 - 15.9 ksi
Modulus	3800 - 4500 MPa	550 - 652 ksi
Elongation-at-Break	2.5 - 4 %	2.5 - 4 %

Flexural Properties —ASTM D790

	METRIC	IMPERIAL
Flexural Strength	140 - 160 MPa	20 - 23 ksi
Flexural Modulus	3800 - 4200 MPa	550 - 610 ksi

Impact Properties—ASTM D256, ASTM D4812

IMPACT STRENGTH	IMPACT STRENGTH		IMPACT ENERGY	
	METRIC	IMPERIAL	METRIC	IMPERIAL
Machined Izod notch	22- 25 J/m	0.41 - 0.47 ft-lb/in.	2.1 - 2.4 kJ/m ²	0.10 - 0.11 ft-lb/in ²
Izod Unnotched	280 - 350 J/m	5.2 - 6.5 ft-lb/in.	27 - 34 kJ/m ²	1.6 - 2.0 ft-lb/in ²

Carbon Resin

CE 220 – VERSION 1

TECHNICAL DATA SHEET 4/3/16 V3.2

Thermal Properties

	METRIC	IMPERIAL
Heat Deflection Temperature @ 0.45 MPa/66 psi (ASTM D648)	219 °C	426 °F
Heat Deflection Temperature @ 1.82 MPa/264 psi (ASTM D648)	191 °C	375 °F
T _g (DMA, E')	175 °C	347 °F
T _g (DMA, tan(d))	220 °C	428 °F
Coefficient of Thermal Expansion (ASTM E228)	58 - 62 ppm/°C	

Liquid Properties

Viscosity (@25°C, cP)	450 - 500
Liquid Density (g/mL, @25°C)	1.10 - 1.14