

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.

Tensile Properties —ASTM D638-Type V, 1 mm/min	Metric	U.S.
Tensile Modulus	4.20 ± 0.30 GPa	600 ± 50 ksi
Ultimate Tensile Strength	100 ± 10 MPa	14 ± 2 ksi
Elongation at Break	3 ± 1 %	3 ± 1 %

Flexural Properties —ASTM D790, 0.01 mm/mm-min	Metric	U.S.
Flexural Strength	150 ± 10 MPa	22 ± 2 ksi
Flexural Modulus	4.00 ± 0.20 GPa	580 ± 30 ksi

Impact Properties	Metric	U.S.
Notched Izod (machined), ASTM D256	24 ± 2 J/m	0.45 ± 0.04 ft-lb/in.
Unnotched Izod, ASTM D4812	315 ± 40 J/m	5.9 ± 0.7 ft-lb/in.

Thermal Properties	Metric	U.S.
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
Coefficient of Thermal Expansion, ASTM E228	60 ppm/°C	33 ppm/°F
T _g (DMA, E')	175 °C	347 °F
T _g (DMA, tan(d))	220 °C	428 °F

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.