

Carbon Rod

Minimum Properties

Tensile Strength
Tensile Modulus
Compressive Strength
Compressive Modulus
Fiber Volume
Ultimate Tensile Strain
Diameter Tolerance
Glass Transition Temperature
Matrix Material

Carbon Rods < .156"

Standard Modulus

320 ksi / 2.34 GPa
19.5 msi / 134 GPa
270 ksi / 1.90 GPa
19.0 msi / 131 GPa
65%
1.30%
+/-5%
100° C
Bis F Epoxy

Intermediate Modulus

400 ksi / 3.10 GPa
24.5 msi / 169 GPa
340 ksi / 2.65 GPa
24.0 msi / 165 GPa
65%
1.40%
+/-5%
100° C
Bis F Epoxy

Stock Products

Standard Modulus
Standard Modulus
Standard Modulus
Standard Modulus
Standard Modulus
Standard Modulus
Standard Modulus
Standard Modulus

Diameter

(inch / mm)

.019 / 0.48
.027 / 0.69
.037 / 0.94
.052 / 1.32
.063 / 1.60
.098 / 2.49
.125 / 3.18
.156 / 3.96

Weight

(lbs/1000 ft. / grams/meter)

0.37 / .55
0.37 / .55
0.74 / 1.10
1.48 / 2.20
2.22 / 3.30
5.19 / 7.72
8.90 / 13.24
13.34 / 19.85

Minimum Properties

Tensile Strength
Tensile Modulus
Ultimate Shear Strength
Ultimate Tensile Strain
Flexural Strength
Flexural Modulus
Fiber Volume
Thermal Expansion Coefficient
Density
Diameter Tolerance
Glass Transition Temperature
Matrix Material

Carbon Rods > .156"

250 ksi / 1.72 GPa
20.0 msi / 138 GPa
6.0 ksi / 41.3 Mpa
1.50%
265 ksi / 1.83 GPa
19.0 msi / 131 GPa
62%
-0.1 ppm/cm³ / -0.2 ppm/°C
.054 lbs/in³ / 1.5 g/cm³
+.000 / -.005"
100° C
Bisphenol Epoxy Vinyl Ester

Carbon tube

Minimum Properties

Tensile Strength	240 ksi / 1.65 GPa
Tensile Modulus	19.5 msi / 134 GPa
Ultimate Shear Strength	6.0 ksi / 41.3 Mpa
Ultimate Tensile Strain	1.40%
Flexural Strength	200 ksi / 1.37 GPa
Flexural Modulus	18.5 msi / 127 GPa
Fiber Volume	60%
Thermal Expansion Coefficient	-0.1 ppm/cm ³ / -0.2 ppm/°C
Density	.054 lbs/in ³ / 1.5 g/cm ³
Diameter Tolerance	+.000/- .005"
Glass Transition Temperature	100° C
Matrix Material	Bisphenol Epoxy Vinyl Ester

Glass fiber rods

Minimum Properties

Tensile Strength	120 ksi / 0.83 GPa
Tensile Modulus	6 msi / 37.9 GPa
Ultimate Shear Strength	4.0 ksi / 28 Mpa
Ultimate Tensile Strain	2.50%
Flexural Strength	120 ksi / 0.83 Gpa
Flexural Modulus	6 msi / 37.9 GPa
Fiber Volume	55%
Thermal Expansion Coefficient	3.2 ppm/cm ³ / 5.9 ppm/°C
Density	.072 lbs/in ³ / 2.00 g/cm ³
Diameter Tolerance	+.005/- .005"
Glass Transition Temperature	77° C
Matrix Material	Polyester

Rods