THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT

Standard Modulus Carbon Fiber (T700S)

Standard modulus carbon sits near 230 GPa (33.4 Msi) at 4,900 MPa (711 ksi): about three times the stiffness of glass and a quarter the density of steel.

Toray T700S fiber properties

Property	English	Metric	Method
Tensile strength	711 ksi	4,900 MPa	TY-030B-01
Tensile modulus	33.4 Msi	230 GPa	TY-030B-01
Strain at failure	2.1%	2.1%	TY-030B-01
Density	0.065 lb/in³ (converted)	1.80 g/cm³	TY-030B-02
Filament diameter	0.00028 in (converted)	7 µm	—
Yield, 12K tow	0.00054 lb/in (converted)	800 g/1000 m	TY-030B-03
CTE, axial	-0.38×10^{-6} /°C	-0.38×10^{-6} /°C	—

Same fiber in an epoxy laminate (unidirectional, 60% fiber volume)

Property	English	Metric
Tensile strength	415 ksi	2,860 MPa
Tensile modulus	19 Msi	134 GPa
Compressive strength	210 ksi	1,450 MPa
Flexural strength	245 ksi	1,690 MPa
Interlaminar shear (ILSS)	13 ksi	86.9 MPa
90° tensile strength	12 ksi	81 MPa

Key points

- **Fiber data are not laminate allowables.** The repair uses the fabric, resin and ply schedule in the SRM.
- **Lot averages.** Toray says the data are not for specification.
- **Not for aluminium contact.** Carbon is cathodic: isolate it per the SRM.

SOURCES · Toray Composite Materials America, TORAYCA T700S Standard Modulus Carbon Fiber Data Sheet · FAA-H-8083-31B, AMT Handbook — Airframe, Volume 1, Chapter 7

SCAN · OPEN THIS GUIDE
theaviationpoint.com/materials/composites/carbon-fiber-standard-modulus/

Educational reference only, not approved data. Always consult the applicable SRM, AMM, or AC 43.13-1B and your certifying authority.