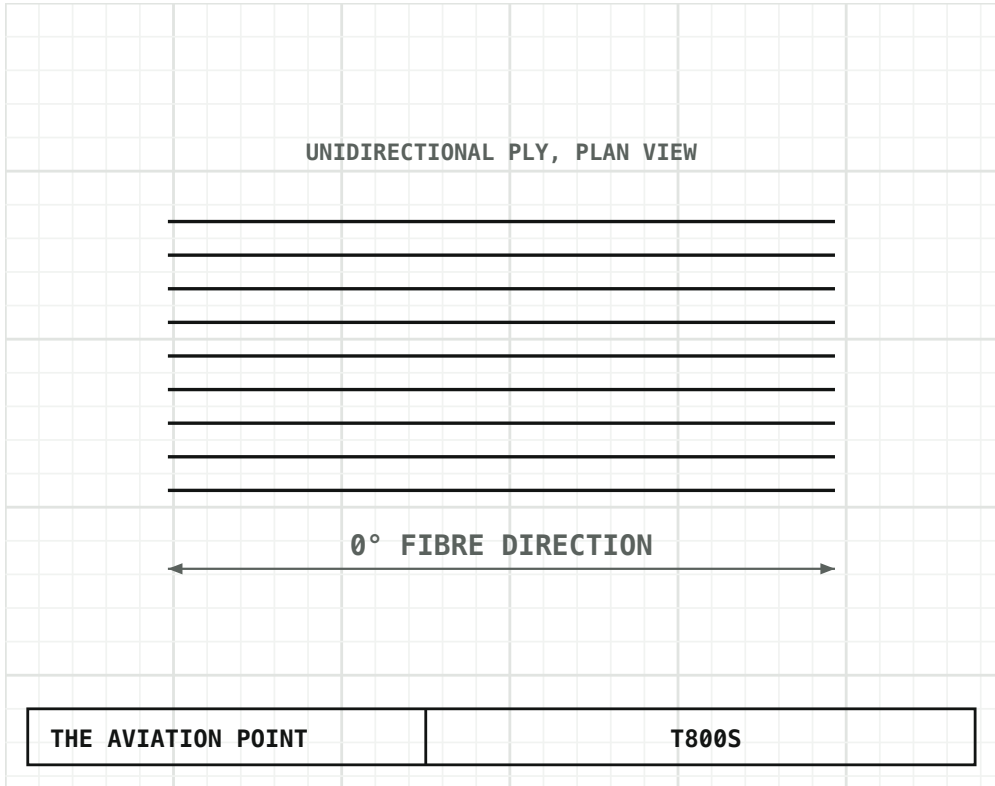
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Toray T800S — intermediate modulus carbon fiber

Intermediate modulus carbon is stiffer and stronger than standard: T800S is 5,880 MPa (853 ksi) and 294 GPa (42.7 Msi), 20% stronger and 28% stiffer than T700S, at the same density.



Schematic

Designation

Item	Value
Designation	Toray T800S
Class	Composites
Type	intermediate modulus carbon fiber

T800S against T700S (Toray data sheets)

Property	T700S standard modulus	T800S intermediate modulus
Tensile strength	711 ksi (4,900 MPa)	853 ksi (5,880 MPa)
Tensile modulus	33.4 Msi (230 GPa)	42.7 Msi (294 GPa)
Strain at failure	2.1%	2.0%
Density	1.80 g/cm³	1.80 g/cm³
Filament diameter	7 µm	5 µm
Yield, 12K tow	800 g/1000 m	515 g/1000 m
Laminate tensile strength (60% Vf)	415 ksi (2,860 MPa)	477 ksi (3,290 MPa)
Laminate tensile modulus (60% Vf)	19 Msi (134 GPa)	24 Msi (163 GPa)
Laminate compressive strength	210 ksi (1,450 MPa)	216 ksi (1,490 MPa)
ILSS	13 ksi (86.9 MPa)	13 ksi (87.9 MPa)

Toray sheets: T700S Rev. 11/24/2025, T800S Rev. 04/13/2018. Laminates normalised to 60% fiber volume, epoxy cured at 130 °C (the T800S sheet names #2592 epoxy). The strength gain in the fiber shows up as 15% in tensile but only 3% in compression of the laminate.

Notes

- **Lot averages, not allowables.**
- **Not interchangeable with standard modulus** in a repair without approved data.

SOURCES · Toray Composite Materials America, TORAYCA T800S Intermediate Modulus Carbon Fiber Data Sheet · Toray Composite Materials America, TORAYCA T700S Standard Modulus Carbon Fiber Data Sheet · FAA-H-8083-31B, AMT Handbook — Airframe, Volume 1, Chapter 7

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