

Property	Specification / Typical Value	Test Standard / Notes
Product Name	Carbon Fiber Film	Ultra- thin prepreg or dry film
Fiber Type	1K / 3K / 6K PAN- based carbon fiber	Toray®, Mitsubishi®, Hexcel®
Film Construction	Unidirectional (0°) / Biaxial ($\pm 45^\circ$) / Multiaxial	Select per strength/toughness requirements
Resin System	Epoxy / Vinyl Ester / Polyester	Pre- impregnated or dry prepreg
Thickness Range	0.02 mm - 0.15 mm	Typical: 0.03, 0.05, 0.08 mm
Width	50 mm - 1500 mm	Custom roll widths available
Length per Roll	5 m - 100 m	Standard: 10m, 25m, 50m
Fiber Volume Fraction	$\geq 60\%$	ASTMD3171
Areal Weight	50 - 200 g/m ²	Depends on fiber count & resin content
Tensile Strength (0°)	$\geq 2,500$ MPa	ASTMD3039 (dry)
Tensile Modulus (0°)	≥ 200 GPa	ASTMD3039
Elongation at Break	1.0 - 1.5 %	ASTMD3039
Flexural Strength	$\geq 1,500$ MPa	ASTMD7264
Thermal Conductivity (in- plane)	8 - 12 W/m • K	ASTME1530
Operating Temperature	-50 ° C to +120 ° C	Continuous; short- term up to 150 ° C
Glass Transition Temperature	120 - 180 ° C	Per resin system
Coefficient of Thermal Expansion	$\approx 0 \times 10^{-6} / ^\circ \text{C}$ (in- plane)	ASTME228
Electrical Conductivity	Conductive (in- plane) / Insulating (through- thickness)	EMI shielding options
Adhesive Backing (Optional)	Acrylic / Silicone PSA	Peel strength: ≥ 2 N/25 mm (ASTMD3330)
Flame Retardant Option	UL94 V- 0 resin available	For aerospace and electronics
Moisture Absorption	< 0.1 % (24h immersion)	ASTMD570
Surface Finish	Glossy / Matte	UV- resistant clear coat optional
Packaging	Core- wrapped rolls, vacuum- sealed	Prevents moisture ingress

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Certifications	ISO 9001, RoHS, REACH, MSDS, ASTM compliance	Third- party test reports on request
Typical Applications	Flexible PCBs, EMI shields, heat spreaders, sensor substrates, flexible composites	High- performance thin laminate needs