

M50J DATA SHEET

MJ type high modulus fiber with enhanced tensile and compressive strength over M series fibers. Mainly used for premium sporting goods, aerospace, and industrial applications.

FIBER PROPERTIES

		English	Metric	Test Method
Tensile Strength		597 ksi	4,120 MPa	TY-030B-01
Tensile Modulus		69.0 Msi	475 GPa	TY-030B-01
Strain		0.8 %	0.8 %	TY-030B-01
Density		0.068 lbs/in ³	1.88 g/cm ³	TY-030B-02
Filament Diameter		2.0E-04 in.	5 μm	
Yield	3K	13,665 ft/lbs	109 g/1000m	TY-030B-03
	6K	6,833 ft/lbs	218 g/1000m	TY-030B-03
Sizing Type & Amount	50B		1.0 %	TY-030B-05
	Twist	Untwisted		

FUNCTIONAL PROPERTIES

CTE	-1.0 $\alpha \cdot 10^{-6}/^{\circ}\text{C}$
Specific Heat	0.17 Cal/g $\cdot^{\circ}\text{C}$
Thermal Conductivity	0.234 Cal/cm $\cdot\text{s}\cdot^{\circ}\text{C}$
Electric Resistivity	0.9 x 10 ⁻³ Ω $\cdot\text{cm}$
Chemical Composition: Carbon	>99 %
	Na + K

COMPOSITE PROPERTIES *

Tensile Strength	290 ksi	2,010 MPa	ASTM D-3039
Tensile Modulus	42.0 Msi	295 GPa	ASTM D-3039
Tensile Strain	0.7 %	0.7 %	ASTM D-3039
Compressive Strength	140 ksi	980 MPa	ASTM D-695
Flexural Strength	180 ksi	1,270 MPa	ASTM D-790
Flexural Modulus	35.0 Msi	240 GPa	ASTM D-790
ILSS	11.5 ksi	8 kgf/mm ²	ASTM D-2344
90° Tensile Strength	6.0 ksi	40 MPa	ASTM D-3039

* Toray 250°F Epoxy Resin. Normalized to 60% fiber volume.

M50J

COMPOSITE PROPERTIES * *

Tensile Strength	285 ksi	1,960 MPa	ASTM D-3039
Tensile Modulus	38.0 Msi	260 GPa	ASTM D-3039
Tensile Strain	0.7 %	0.7 %	ASTM D-3039
Compressive Strength	130 ksi	880 MPa	ASTM D-695
Compressive Modulus	35.5 Msi	245 GPa	ASTM D-695
In-Plane Shear Strength	8.5 ksi	59 MPa	ASTM D-3518
ILSS	11.5 ksi	8.0 kgf/mm ²	ASTM D-2344
90° Tensile Strength	6.5 ksi	45 MPa	ASTM D-3039

** Toray Semi-Toughened 350°F Epoxy Resin. Normalized to 60% fiber volume.

See Section 4 for Safety & Handling information. The above properties do not constitute any warranty or guarantee of values.

These values are for material selection purposes only. For applications requiring guaranteed values, contact our sales and technical team to establish a material specification document.

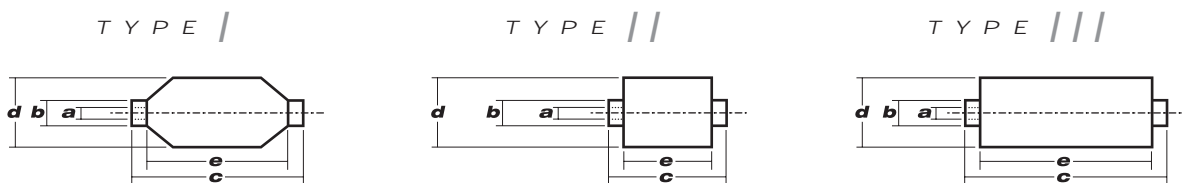
PACKAGING

The table below summarizes the tow sizes, twists, sizing types, and packaging available for standard material. Other bobbin sizes may be available on a limited basis.

Tow Sizes	Twist ¹	Sizing	Bobbin Net Weight (kg)	Bobbin Type ²	Bobbin Size (mm)					Spools per Case	Case Net Weight (kg)
					a	b	c	d	e		
3K	B	50B	0.5	//	76	82	192	107	156	20	10
6K	B	50B	1.0	//	76	82	192	126	156	16	16

¹ **Twist** A: Twisted yarn B: Untwisted yarn made from a twisted yarn through an untwisting process C: Never twisted yarn

² **Bobbin Type** See Diagram below



TORAY CARBON FIBERS AMERICA, INC.

6 Hutton Centre Drive, Suite #1270, Santa Ana, CA 92707 TEL: (714) 431-2320 FAX: (714) 424-0750

Sales@Toraycfa.com Technical@Toraycfa.com www.torayusa.com