

M46J 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		611 ksi	4,210 MPa	TY-030B-01
Tensile Modulus		63.3 Msi	436 GPa	TY-030B-01
Strain		1.0 %	1.0 %	TY-030B-01
Density		0.066 lbs/in ³	1.84 g/cm ³	TY-030B-02
Filament Diameter		2.0E-04 in.	5 μm	
Yield	6K	6,679 ft/lbs	223 g/1000m	TY-030B-03
	12K	3,347 ft/lbs	445 g/1000m	TY-030B-03
Sizing Type & Amount	50A, 50B		1.0 %	TY-030B-05
	Twist	Twisted, Untwisted		

FUNCTIONAL PROPERTIES

CTE	-0.9 α·10 ⁻⁶ /°C
Specific Heat	0.17 Cal/g·°C
Thermal Conductivity	0.202 Cal/cm·s·°C
Electric Resistivity	0.9 x 10 ⁻³ Ω·cm
Chemical Composition: Carbon	>99 %
	Na + K

COMPOSITE PROPERTIES *

Tensile Strength	320 ksi	2,210 MPa	ASTM D-3039
Tensile Modulus	38.5 Msi	265 GPa	ASTM D-3039
Tensile Strain	0.8 %	0.8 %	ASTM D-3039
Compressive Strength	155 ksi	1,080 MPa	ASTM D-695
Flexural Strength	210 ksi	1,420 MPa	ASTM D-790
Flexural Modulus	32.0 Msi	220 GPa	ASTM D-790
ILSS	11.5 ksi	8 kgf/mm ²	ASTM D-2344
90° Tensile Strength	7.0 ksi	47 MPa	ASTM D-3039

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

M46J

COMPOSITE PROPERTIES * *

Tensile Strength	315 ksi	2,160 MPa	ASTM D-3039
Tensile Modulus	35.5 Msi	245 GPa	ASTM D-3039
Tensile Strain	0.8 %	0.8 %	ASTM D-3039
Compressive Strength	145 ksi	980 MPa	ASTM D-695
Compressive Modulus	33.0 Msi	225 GPa	ASTM D-695
In-Plane Shear Strength	8.5 ksi	59 MPa	ASTM D-3518
ILSS	12.0 ksi	8.5 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.

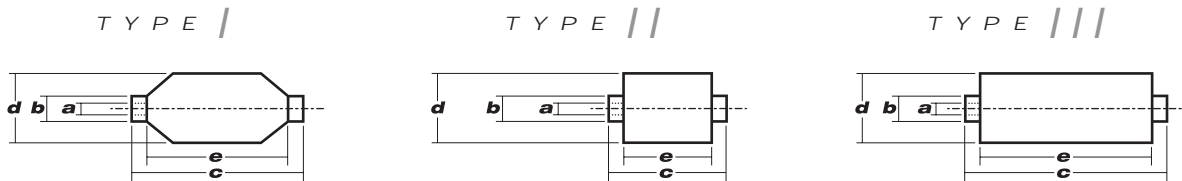
PACKAGING

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		
6K	A	50A	1.0	//	76	82	192	126	156	16	16
	B	50B	1.0	//	76	82	192	126	156	16	16
12K	B	50B	2.0	//	76	82	192	157	156	12	24

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



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