

M40 DATA SHEET

Baseline material for high modulus fibers with a 25 year production history.

FIBER PROPERTIES

		English	Metric	Test Method
Tensile Strength		398 ksi	2,740 MPa	TY-030B-01
Tensile Modulus		56.9 Msi	392 GPa	TY-030B-01
Strain		0.7 %	0.7 %	TY-030B-01
Density		0.065 lbs/in ³	1.81 g/cm ³	TY-030B-02
Filament Diameter		2.8E-04 in.	7 μm	
Yield	1K	24,418 ft/lbs	61 g/1000m	TY-030B-03
	3K	8,184 ft/lbs	182 g/1000m	TY-030B-03
	6K	4,092 ft/lbs	364 g/1000m	TY-030B-03
	12K	2,046 ft/lbs	728 g/1000m	TY-030B-03
Sizing Type	40A, 40B		1.0 %	TY-030B-05
& Amount	50A, 50B		1.0 %	TY-030B-05
	Twist	Twisted, Untwisted		

FUNCTIONAL PROPERTIES

CTE	---	$\alpha \cdot 10^{-6}/^{\circ}\text{C}$
Specific Heat	---	Cal/g $\cdot^{\circ}\text{C}$
Thermal Conductivity	---	Cal/cm $\cdot\text{s}\cdot^{\circ}\text{C}$
Electric Resistivity		$0.8 \times 10^{-3} \Omega\cdot\text{cm}$
Chemical Composition: Carbon		>99 %
Na + K		<50 ppm

COMPOSITE PROPERTIES *

Tensile Strength	210 ksi	1,470 MPa	ASTM D-3039
Tensile Modulus	35.0 Msi	240 GPa	ASTM D-3039
Tensile Strain	0.6 %	0.6 %	ASTM D-3039
Compressive Strength	150 ksi	1,030 MPa	ASTM D-695
Flexural Strength	185 ksi	1,270 MPa	ASTM D-790
Flexural Modulus	29.0 Msi	200 GPa	ASTM D-790
ILSS	11.5 ksi	8 kgf/mm ²	ASTM D-2344
90° Tensile Strength	7.0 ksi	48 MPa	ASTM D-3039

* Toray 250°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.

M40

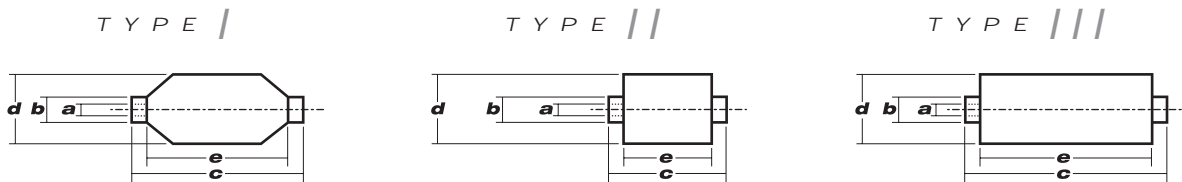
PACKAGING

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		
1K	A	50A	0.15	//	76	82	192	91	156	24	3.6
3K	A	40A	1.0	//	76	82	192	126	156	16	16
	B	40B	1.0	//	76	82	192	126	156	16	16
6K	B	50B	1.5	//	76	82	192	143	156	12	18
12K	A	50A	4.0	///	76.5	82.5	280	173	252	6	24
	B	50B	4.0	///	76.5	82.5	280	173	252	6	24

¹ **Twist** A: Twisted yarn B: Untwisted yarn made from a twisted yarn through an untwisting process

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