

TENAX[®] - J HMA35 H13 12K 750tex

HMA35 is a high modulus, aerospace grade carbon fiber manufactured in Japan for use as reinforcements in high performance composites. These fibers are produced from poly-acrylonitrile (PAN) precursor and are surface treated to promote adhesion to organic matrix polymers. Sizing materials are designed to aid in handling.

Typical Fiber Properties	Inch-Pound	SI
Tensile strength	465 ksi	3206 MPa
Tensile modulus*	51.2 Msi	353 GPa
Elongation*		0.91%
Density	0.064 lb/in ³	1.78 g/cc
Linear density (with sizing)	648 yd/lb	765 tex (g/km)
Sizing level w/w		1.40%
<u>Yarn / Tow Characteristics</u>		
Filament Diameter		5.0 x 10 ⁻⁶ m
Twist		Never Twisted
Equivalent Yarn Cross Section		3.65 x 10 ⁻⁴ in ² (0.236 mm ²) Nominal

* Toho Tenax Impregnated Strand Test Method. Based on JIS R7601

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RECOMMENDED STORAGE AND SHELF LIFE

A. HMA Carbon Fiber Properties

Filament tensile strength, modulus of elasticity, coefficient of expansion, electric and thermal conductivities and yield are inherent properties of the IMS fiber and have indefinite shelf life.

B. HMA Carbon Fiber Processing

Typically, the original processing characteristics of H13 (EP01) sized yarn will be essentially constant for at least one year from date of delivery. The product should be stored indoors. The recommended storage conditions are 40°F-77°F (5°C-25°C) and less than 50 percent RH. Direct exposure to sunlight or rain should be avoided. The shrink wrap should not be removed until immediately prior to use.

If the roving is stored at high temperatures and/or high humidity conditions, it may become difficult to process. Roving that stiffens during storage should still be useable. However, a thorough evaluation of the processing characteristics (e.g., resin wet out, spreadability) relative to the customer's operation is strongly recommended.

STANDARD PACKAGING AND SPOOL BUILD

Spool designation	"A"		"B"		"Z"	
	Inch-Pound	Metric	Inch-Pound	Metric	Inch-Pound	Metric
Net Weight	2.2 lb	(1 kg)	4.41 lb	(2 kg)	< 2.2 lb	(< 1 kg)
Tube Length	11.0 in	(27.9 cm)	11.0 in	(27.9 cm)	11.0 in	(27.9 cm)
Tube I.D.	3.0 in	(7.6 cm)	3.0 in	(7.6 cm)	3.0 in	(7.6 cm)
Tube weight	6.0 oz	(170g)	6.0 oz	(170g)	6.0 oz	(170g)
Stroke	10.0 in	(25.4 cm)	10.0 in	(25.4 cm)	10.0 in	(25.4 cm)
Outside dia. (OD)	4.75 ± 0.2 in	(12.1±0.5 cm)	5.0 ± 0.25 in	(12.7±0.6 cm)	Varies	
Pallet Type	Carton		Carton		Carton	
Nominal length	5208 yd (6K) 2603 yd (12K)	(4762 m) (2380 m)	10,416 yd (6K) 5208 yd (12K)	(9524 m) (4762 m)	Non-metered	
No. spools per carton	20		12		Varies	
Carton weight	44.1 lb	20 kg	52.9 lb	24 kg	Varies	
Carton dimensions (LxWxH)	24.8 x 20.1 x 11.6 in	63 x 51 x 29.5 cm	same		Same	
Pallet dimensions (LxWxH)	40.6 x 50.8 x 41.5 in	103x129x105 cm	same		Same	
Approx. Pallet weight	529 lb	240 kg	635 lb	288 kg	Varies	

Notes:

- "B" spool is standard for HMA35 12K, "Z" spool is un-metered. Other spool sizes may be available to special order. Please consult your sales representative.
- 12-14 cartons per pallet. Height of pallet included in dimensions. The pallet size may be changed without notice.

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