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INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE MATERIAL SPECIFICATION

AMS 3892/4A

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TOW OR YARN, CARBON (GRAPHITE) FIBERS
For Structural Composites
GF 300 (2070) Tensile Strength, 75 (517) Tensile Modulus

1. SCOPE:

1.1 Form: This specification covers one type of continuous multifilament carbon (graphite) fibers in the form of a tow or yarn (when twisted). The weight per unit length of the tow or yarn is governed by the filament count which is identified by the supplier's grade or material designation.

1.2 Classification: Carbon (graphite) fiber, derived from a pitch precursor, with typical 300,000 psi (2070 MPa) tensile strength and 75,000,000 psi (517 GPa) tensile modulus for use in general purpose structural composites requiring very high modulus of elasticity and moderately high tensile strength.

2. APPLICABLE DOCUMENTS: See AMS 3892.

3. TECHNICAL REQUIREMENTS:

3.1 Basic Specification: The complete requirements for procuring the carbon (graphite) tow or yarn described herein shall consist of this document and the latest issue of the basic specification, AMS 3892.

3.2 Storage Life: The product shall meet the interlaminar shear strength requirements of this specification when tested at any time up to 6 months from date of receipt by purchaser provided it has been stored at room temperature in the original closed container.

3.3 Properties: Shall be as follows; the requirements of 3.3.1, 3.3.2, and 3.3.3 apply to the average of the number of determinations indicated in the basic specification but no individual value shall be less than 90% of the specified minimum average unless due to an obvious testing problem, in which case a substitute specimen may be tested:

3.3.1 Tensile Strength, min 250,000 psi (1725 MPa)

3.3.2 Modulus of Elasticity, min 75,000,000 psi (517,000 MPa)

REAFFIRMED

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3.3.3 Ø	Interlaminar Shear Strength, min (See 8.1)	7,000 psi (48.3 MPa)	
3.3.4 Ø	Length per unit weight	Preproduction Value ±5%	
3.3.5 Ø	Fiber Finish, by weight, max	2%	
3.3.6 Ø	Density	0.071 - 0.075 lb per cu in.	(1.96 - 2.08 g/cm^3)
3.3.7 Ø	Yarn Twist (when (applicable), nominal	0.7 turns per in.	(26 turns/m)
	max	1.0 turns per in.	(38 turns/m)

4. QUALITY ASSURANCE PROVISIONS: See 3892.

5. PREPARATION FOR DELIVERY: See AMS 3892.

6. ACKNOWLEDGMENT: See AMS 3892.

7. REJECTIONS: See AMS 3892.

8. NOTES:

8.1 The interlaminar shear strength values are based on the use of a high performance epoxy resin system for the laminate, such as tetraglycidyl methylene-dianiline/diamino-diphenyl sulfone or equivalent.

8.2 For fiber volume determination, ASTM D3171, Procedure A (Nitric Acid), is recommended.