

AEROSPACE MATERIAL SPECIFICATION



AMS 3901/12B

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Superseding AMS 3901/12A

Submitted for recognition as an American National Standard

(R) Yarn, Organic Fiber (Para-Aramid), High Modulus
OY 390 (2689)/21.1 Tensile Strength, 16.5 (114)/900 Tensile Modulus
2160 (2400 d tex) Denier, 1.2% Finish

1. SCOPE:

1.1 Form:

This specification covers one type of organic fiber in the form of yarn. The product shall be formed as a multiplicity of filaments drawn together and gathered into an approximately parallel arrangement.

1.2 Classification:

Organic 2160 denier (2400 d tex) yarn with 390 ksi (2689 MPa) or 21.1 g/d tensile strength and 16.5 Msi (114 GPa) or 900 g/d tensile modulus for use in weaving requiring high tensile strength and high modulus of elasticity in tension.

2. APPLICABLE DOCUMENTS:

The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order.

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

See AMS 3901.

3. TECHNICAL REQUIREMENTS:

3.1 Basic Specification:

The complete requirements for procuring the organic yarn described herein shall consist of this document and the latest issue of the basic specification.

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3.2 Properties:

Shall be as shown in Table 1; no individual package, based on the average of three determinations, shall have less than 90% of the lot minimum values specified in 3.2.1 and 3.2.2.

TABLE 1 - Properties

Paragraph	Requirement	Requirement Dry Twisted Yarn	Requirement Impregnated Strand	Test Method
3.2.1	Tensile Strength, min	19.1 g/d	390 ksi (2689 MPa)	4.5.1 of AMS 3901
3.2.2	Modulus of Elasticity, min	790 g/d	16.5 Msi (115 GPa)	4.5.1 of AMS 3901
3.2.3	Linear Density	2160 ± 75 denier (2400 ± 85 d tex)	2160 ± 75 denier (2400 ± 85 d tex)	4.5.2 of AMS 3901
3.2.4	Fiber Finish, by weight	1.2% ± 0.6	1.2% ± 0.6	4.5.3 of AMS 3901
3.2.5	Fiber Density	0.052 pound mass per cubic inch ± 0.001 (1.44 grams/cm ³ ± 0.03)	0.052 pound mass per cubic inch ± 0.001 (1.44 grams/cm ³ ± 0.03)	

3.3 Splicing:

There shall be no knots or splices in the continuous yarn.

4. QUALITY ASSURANCE PROVISIONS:

See AMS 3901.

5. PREPARATION FOR DELIVERY:

See AMS 3901.

6. ACKNOWLEDGMENT:

See AMS 3901.

7. REJECTIONS:

See AMS 3901.