



# AEROSPACE MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.  
TWO PENNSYLVANIA PLAZA, NEW YORK, N.Y. 10001

## AMS 3901/4

Issued 6-1-74  
Revised

YARN, ORGANIC FIBER  
For Structural Composites  
OY 400,000 (2760) Tensile Strength, 17,500,000 (121) Tensile Modulus  
1420 Denier

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 1420 denier yarn with 400,000 psi (2760 MPa) tensile strength and 17,500,000 psi (121 GPa) tensile modulus for use in general purpose composites requiring high tensile strength and moderate modulus of elasticity in tension.

2. APPLICABLE DOCUMENTS: Shall be as shown in 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, AMS 3901.

3.2 Properties: Shall be as follows; the requirements of 3.2.1 and 3.2.2 apply to the average of four determinations for each property; no individual value shall be less than 90% of the average values specified:

3.2.1 Tensile Strength, min	400,000 psi (2760 MPa)
3.2.2 Modulus of Elasticity, min	17,500,000 psi (121,000 MPa)
3.2.3 Denier, nominal	1420
3.2.4 Fiber Finish, by weight, when ordered finished, max	0.5%
3.2.5 Fiber Density	0.052 lb per cu in. $\pm 0.001$ (1.45 g/cm <sup>3</sup> $\pm 0.03$ )

3.3 Splicing: Splices shall be made with methyl methacrylate, cellulose acetate, or a material compatible with the resin system to be used for impregnation. Mechanical splices may be used if strength is equivalent to chemical splice. Splices shall have a maximum of 1 in. (25 mm) overlap with the overlapping portion of the splice securely attached along its entire length. Splices shall be at least 3 ft (914 mm) apart. The number of yarn splices shall not exceed 2 x package weight in pounds (4.4 x package weight in kilograms).

4. QUALITY ASSURANCE PROVISIONS: See AMS 3901.

5. PREPARATION FOR DELIVERY: See AMS 3901.

6. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.

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