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

AEROSPACE MATERIAL SPECIFICATION

AMS 3894/7

Issued 6-1-74
Revised

GRAPHITE FIBER TAPE AND SHEET
Epoxy Resin Impregnated
G 170,000 (1172) Tensile, 40,000,000 (270) Modulus, 180 (82)

1. SCOPE:

1.1 Form: This specification covers one type of epoxy-resin-impregnated graphite fibers in the form of tape and sheet.

1.2 Application: Primarily for use in structural composites requiring very high modulus of elasticity in tension and high tensile strength at temperatures up to 82° C (180° F).

1.3 Classification: G 170,000 psi (1172 MPa) tensile strength, 40,000,000 psi (270 GPa) tensile modulus graphite fiber impregnated with epoxy resin for service at temperatures up to 82° C (180° F).

2. APPLICABLE DOCUMENTS: Shall be as shown in AMS 3894.

3. TECHNICAL REQUIREMENTS:

3.1 Basic Specification: The complete requirements for procuring the product described herein shall consist of this document and the latest issue of the basic specification, AMS 3894.

3.2 Material: The product shall be AMS 3892/4 very high modulus graphite fibers impregnated with epoxy resin formulated to meet the requirements specified herein.

3.2.1 Storage Life: The product shall meet the requirements of this specification when tested at any time up to 3 months from the date of receipt by the purchaser provided it has been stored at a maximum temperature of -18° C (0° F) in the original containers.

3.2.2 Working Life: The product shall meet the requirements of this specification when tested after exposure at a relative humidity not higher than 70% and at room temperature for a continuous period of 14 days.

3.3 Properties of Uncured Impregnated Material: The properties of the uncured product shall be as specified below. Tests shall be performed on the product after warming to above the dew point prior to sampling and in accordance with the test methods listed in the basic specification.

3.3.1	Volatile Content, % by weight, max Test temperature: 300° F ± 10 (148.9° C ± 5.6) Test time: 60 min. ± 5	To be reported
3.3.2	Total Nonfiber Content, % by weight	38 ± 3
3.3.3	Resin Flow, % by weight	10 - 30
3.3.4	Gel Time, min.	Qualification Value ± 20%
3.3.5	Tack	Shall adhere for 30 min.

3.4 Properties of Cured Laminate: The properties of cured material shall be determined on specimens cut from a test panel prepared as specified in the basic specification and tested in accordance with the methods specified therein.

3.4.1 Mechanical Properties: Shall be as specified in Table 1.

3.4.2 Density: Shall be determined on the test laminate used to determine mechanical properties; values for each test laminate shall be reported. Fiber density and cured resin density shall also be reported.

3.4.3 Void Content: Shall not be greater than 3%.

4. QUALITY ASSURANCE PROVISIONS: See AMS 3894.

5. PREPARATION FOR DELIVERY: Shall be in accordance with AMS 3894 and the following:

5.1 Exterior package marking shall indicate storage temperature of "-18°C (0°F) maximum".

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

7. REJECTIONS: Material not conforming to this specification or to authorized modifications will be subject to rejection.

8. NOTES: None.