SAE Aerospace
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AEROSPACE MATERIAL SPECIFICATION

SAE AMS 3894/12A

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Superseding AMS 3894/12

Carbon Fiber Tape and Sheet
Epoxy Resin Impregnated
G 200,000 (1379) Tensile, 18,000,000 (124) Modulus, 120 (248)

1. SCOPE:

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

1.2 Application: Primarily for use in structural composites requiring high tensile strength up to 120°C (248°F).

1.3 Classification: G 200,000 psi (1379 MPa) tensile strength, 18,000,000 psi (124 GPa) tensile modulus carbon fiber impregnated with epoxy resin for service up to 120°C (248°F).

2. APPLICABLE DOCUMENTS: See AMS 3894.

3.1 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 3892/1 high tensile strength carbon 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 6 months from date of receipt by purchaser provided it has been stored in the original unopened containers at not higher than -18°C (0°F).

3.2.2 Working Life: The product shall meet the requirements of this specification when tested after continuous exposure for up to 20 days within the relative humidity and temperature limits shown in Fig. 1.

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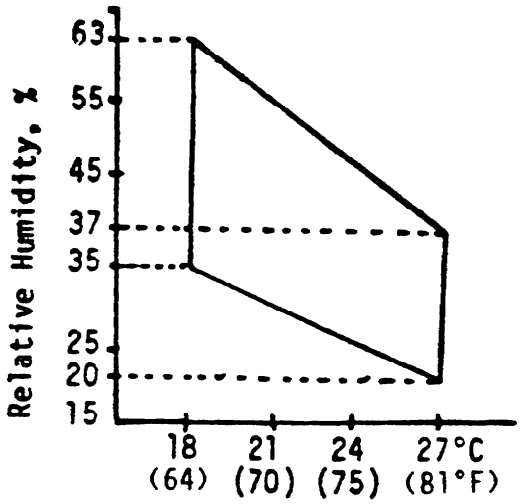

Figure 1

3.3 Properties of Uncured Impregnated Product: Shall be as follows; tests shall be performed on the product after warming to above the dew point prior to sampling and in accordance with test methods listed in the basic specification:

3.3.1	Volatile Content, % of resin weight, maximum	1.5
	Test temperature: 150°C ± 5 (302°F ± 9)	
	Test time: 15 - 60 minutes	
3.3.2	Resin Solids Content, % by weight	Preproduction Value ± 3
3.3.3	Resin Flow, % by weight	10 - 30
3.3.4	Gel Time, minimum	Preproduction Value ± 10%
3.3.5	Tack	Shall adhere for not less than 30 minutes

3.4 Properties of Cured Laminates: Shall be as follows, determined on specimens cut from a test panel prepared as specified in the basic specification and tested in accordance with test methods specified therein:

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

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 be not greater than 1%.

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: See AMS 3894.

7. REJECTIONS: See AMS 3894.

8. NOTES: See AMS 3894.