



AEROSPACE MATERIAL SPECIFICATION

AMS3894™/17

REV. B

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Superseding AMS3894/17A

Carbon Fiber Tape and Sheet
Epoxy Resin Impregnated
G 200 (1379) Tensile, 18.0 (124) Modulus, 120 (248)

RATIONALE

This document has been determined to contain basic and stable technology which is not dynamic in nature.

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Documents

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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:

These products have been used typically in structural composites requiring high tensile strength up to 120 °C (248 °F), but usage is not limited to such applications.

1.3 Classification:

G 200 ksi (1380 MPa) tensile strength, 18.0 Msi (124 GPa) tensile modulus carbon fiber impregnated with epoxy resin for service up to 120 °C (248 °F)

2. APPLICABLE DOCUMENTS:

See AMS 3894 and the following:

2.1 SAE Publications:

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

AMS 3729 Epoxy, Resin Matrix, Thermosetting, Moderate Temperature Resistant, Unfilled

AMS 3892/9 Tow, Carbon Fibers, For Structural Composites, 500 (3447) Tensile Strength, 33 (221) Tensile Modulus

ARP1610 Physical-Chemical Characterization Techniques, Epoxy Adhesive and Prepreg Resin Systems

2.2 ASTM Publications:

Available from ASTM, 1916 Race Street, Philadelphia, PA 19103-1187.

ASTM D 790 Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials

ASTM D 790M Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials (Metric)

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 3892/9 high tensile strength carbon fibers impregnated with epoxy resin formulated to meet the requirements specified herein.

3.2.1 Epoxy Resin: Shall be a thermosetting formulation meeting the requirements of AMS 3729 and capable of impregnating carbon fiber tape or sheet.

3.2.1.1 Epoxy Resin DSC: Resin in the uncured prepreg shall exhibit an exotherm peak temperature of 202 to 222 °C (396 to 432 °F) at 5 °C/minute, determined in accordance with ARP1610.

3.2.2 Storage Life: The product shall meet the requirements of this specification, when tested at any time up to six 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).

3.2.3 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 Figure 1.