



AEROSPACE MATERIAL SPECIFICATION

AMS3826™

REV. C

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Superseding AMS3826B

Cloth, Type "E" Glass
"B" Stage Polyester Resin Impregnated
1581 and 7781 Type Fabric

RATIONALE

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

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1. SCOPE:

1.1 Form:

This specification covers two styles of glass cloth impregnated with a polyester resin system, the resin being processed to a "B" stage condition. Either style of glass may be used.

1.2 Application:

These products have been used typically for laminates requiring high strength and long-term heat resistance up to 70 °C (158 °F) and fabricated by autoclave, press, or vacuum bag techniques, but usage is not limited to such applications. This product is not intended for use in applications requiring flame or fire resistance.

1.3 Safety - Hazardous Materials:

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measure to ensure the health and safety of all personnel involved.

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.

AMS 2825 Material Safety Data Sheets

AMS 3824 Cloth, Type "E" Glass, Finished for Resin Laminates

2.2 ASTM Publications:

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

ASTM D 638 Tensile Properties of Plastics

ASTM D 638M Tensile Properties of Plastics (Metric)

ASTM D 695 Compressive Properties of Rigid Plastics

ASTM D 695M Compressive Properties of Rigid Plastics (Metric)

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)

2.3 U.S. Government Publications:

Available from DODSSP, Subscription Services Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

MIL-STD-2073-1 DOD Materiel, Procedures for Development and Application of Packaging Requirements

3. TECHNICAL REQUIREMENTS:

3.1 Materials:

3.1.1 Reinforcement: Shall be either Style 1581 or 7781 "E" glass cloth in accordance with AMS 3824, treated with an appropriate finish for the resin used.

3.1.2 Resin: Shall be a polyester resin modified as necessary to meet the requirements of 3.2, 3.3, and 3.4.

3.2 Shelf Life:

The product shall have a shelf life of not less than three months from date of shipment when stored in a waterproof, heat-sealed bag maintained at not higher than 7 °C (45 °F).

3.3 Tack and Drape:

Shall be acceptable to purchaser.

3.4 Properties

The product shall conform to requirements shown in Table 1 and 3.4.5; tests shall be performed on the product supplied and in accordance with specified methods, insofar as practicable.

TABLE 1 - Properties

Paragraph	Property	Requirement	Test Method
3.4.1	Resin Solids (volatile free)	33 to 45% by weight	4.5.1
3.4.2	Volatile Content, max	4.5 % by weight	4.5.1
3.4.3	Gel Time	1 to 3 minutes	4.5.2
3.4.4	Resin Flow	6 to 14% by weight	4.5.3

3.4.5 As Cured: Specimens for tests shown in Tables 2 through 5 shall be prepared as in 4.5.4 and tested as specified. Values shall be reported for individual specimens and for the average of four specimens for each test.

3.4.5.1 Tensile Strength: Shall be as shown in Table 2, determined in accordance with ASTM D 638 or ASTM D 638M except that the specimen shown in Figure 1 of this specification shall be used.

TABLE 2 - Tensile Strength

Test Temperature	Minimum Individual ksi	Minimum Individual MPa	Minimum Average ksi	Minimum Average MPa
25 °C ± 3 (77 °F ± 5)	42.75	295	45.0	310
70 °C ± 3 (158 °F ± 5)	38.0	262	40.0	276

3.4.5.2 Compressive Strength, Dry: Shall be as shown in Table 3, determined in accordance with ASTM D 695.

TABLE 3 - Compressive Strength, , Dry

Test Temperature	Minimum Individual ksi	Minimum Individual MPa	Minimum Average ksi	Minimum Average MPa
25 °C ± 3 (77 °F ± 5)	42.75	295	45.0	310
70 °C ± 3 (158 °F ± 5)	33.25	229	35.0	241