



AEROSPACE MATERIAL

Society of Automotive Engineers, Inc. SPECIFICATION

400 COMMONWEALTH DRIVE, WARRENDALE, PA. 15096

AMS 3867/1

Issued 1-15-78
Revised

BORON FILAMENT TAPE, EPOXY-RESIN-IMPREGNATED Type B4.0 - E375

1. SCOPE:

1.1 **Form:** This specification covers one type of epoxy-resin-impregnated boron filaments 0.004 in. (0.10 mm) in diameter in the form of continuous tape supported on a glass fabric carrier.

1.2 **Application:** Primarily for use in structural composites operating at temperatures in the range -55° to +190°C (-65° to +375°F).

2. **APPLICABLE DOCUMENTS:** Shall be as shown in AMS 3867.

3. REQUIREMENTS:

3.1 **Basic Specification:** The complete requirements for procuring the tape described herein shall consist of this document and the latest issue of the basic specification, AMS 3867.

3.2 **Material:** Shall be AMS 3865, high-modulus, 4.0-mil (0.10 mm) nominal diameter boron filaments impregnated with epoxy resin formulated to meet the requirements specified herein and supported by an AMS 3824, Style 104, glass fabric carrier.

3.2.1 **Storage Life:** Tape shall meet the requirements of this specification when stored in the original unopened containers for a total storage time of 7 months at a temperature not higher than 0°F (-18°C), and, in addition, 7 days (cumulative) at 25°C ± 3 (77°F ± 5).

3.2.2 **Working Life:** Tape shall meet the requirements of this specification when tested after exposure to a relative humidity not higher than 70% and at a temperature not lower than 25°C (77°F) for a continuous period of up to 7 days.

3.3 **Properties of Uncured Impregnated Tape:** Shall be as specified below. Tests shall be performed on the tape 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 1.7%

3.3.2 Resin Solids by weight 32% ± 2

3.3.3 Resin Flow by weight 9 - 18%

Temperature: 175°C ± 5
(347°F ± 9)

Pressure: 45 psi ± 1.25
(310 kPa ± 9)

3.3.4 Gel Time, sec Qualification value ± 20%

3.3.5 Tack
Tape to Interleaf Carrier As agreed upon
Tape to Tool Shall adhere for not less than 30 min.

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- 3.3.6 Dimensions: The thickness of the uncured tape, including scrim, shall be not less than 0.0049 in. (0.124 mm) and the width shall be 3.0 in. (76 mm), unless otherwise ordered. The tape shall contain 208 - 212 filaments for each inch (25.4 mm) width of material.
- 3.4 Properties of Cured Laminate: Shall be as follows, determined on specimens cut from a test panel prepared and tested in accordance with the methods specified in AMS 3867.
- 3.4.1 Mechanical Properties: Shall be as specified in Table I.
- 3.4.1.1 Fiber Volume: Normalized strength and modulus values specified in Table I are based on 51% boron filament by volume, determined on the cured laminates used for testing.
- 3.4.1.2 Nominal Cured Thickness per Ply: Shall be 0.0052 in. \pm 0.0003 (0.132 mm \pm 0.0076)
4. QUALITY ASSURANCE PROVISIONS: See AMS 3867.
5. PREPARATION FOR DELIVERY: Shall be in accordance with AMS 3867.
6. ACKNOWLEDGMENT: See AMS 3867.
7. REJECTIONS: See AMS 3867.
8. NOTES:
- 8.1 Vendor shall inform purchaser of suitable solvents for uncured resin and the temperature to be used.

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