



AEROSPACE MATERIAL SPECIFICATION

AMS3970™/3**REV. B**

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Superseding AMS3970/3A

(R) Carbon Fiber Fabric Repair Prepreg, 120 °C (250 °F) Vacuum Curing,
Part 3 - Purchasing Specification for Carbon Prepreg

RATIONALE

AMS3970/3B is a Five-Year Review and update of this specification. The main updates are:

- Harmonization of requirements with AMS6885
- Addition of the storage life extension procedures
- Packing and marking requirements for kits
- Update of the support tube length and shipping conditions

FOREWORD

This purchasing specification (PS), AMS3970/3, belongs to the technical specification system explained in AMS3970.

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Documents

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1. SCOPE

This Purchasing Specification (PS), AMS3970/3, specifies the batch release and delivery requirements for carbon fiber fabric epoxy prepreg used for repair. This specification is applicable only when the carbon fiber fabric epoxy prepreg is used as part of the repair system defined in AMS3970 and AMS3970/1.

This specification also defines the procedure and requirements for storage life extension of materials purchased against this specification. It is only applicable for materials that are qualified against AMS3970 (refer to PRI QPL AMS3970) and shall be carried out within the responsibility of the purchaser and under control of its Quality organization.

1.1 Limitation

This specification relates to qualified carbon fiber fabric epoxy prepreg listed in the associated PRI QPL AMS3970.

2. APPLICABLE DOCUMENTS

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 1-877-606-7323 (U.S. and Canada only) or 1-724-776-4970 (outside U.S. and Canada), www.sae.org.

AMS3970	Carbon Fiber Fabric Repair Prepreg, 120°C (250°F) Vacuum Curing, Part 0 - Introduction
AMS3970/1	Carbon Fiber Fabric Repair Prepreg, 120°C (250°F) Vacuum Curing, Part 1 - General Requirements
AMS3970/2	Carbon Fiber Fabric Repair Prepreg, 120 °C (250 °F) Vacuum Curing, Part 2 - Qualification Program for Fiber, Fabric, Carbon Prepreg, Film Adhesive and Non-Structural Glass Prepreg

2.2 PRI Publications

Available from Performance Review Institute, 161 Thorn Hill Road, Warrendale, PA 15086-7527, Tel: 724-772-1616, www.p-r-i.org.

PRI QPL AMS3970, Qualified Product List of AMS3970

Individual Product Sheets (IPS) of Qualified Products, Appendix of PRI QPL AMS3970

2.3 Other Publications

See the Applicable Documents section of AMS3970/1 for reference to all other documents listed within this specification.

3. DEFINITIONS

Refer to AMS3970/1.

4. REQUIREMENTS

The prepreg to be delivered shall meet the general requirements in accordance with AMS3970/1 and the requirements of this PS and the Individual Product Sheets (IPS) of the material to be purchased.

4.1 Defects

Refer to AMS3970/1 for defect definitions and limits and 4.2.4 for defect marking.

5. RELEASE TESTING

5.1 General

Products shall be manufactured in accordance with the manufacturing schedule of qualification and revisions agreed upon by the CACRC-QPG. The relevant revision number and date of the manufacture schedule are specified in the relevant IPS of the material to be purchased.

5.2 Release Testing

Release testing shall consist of tests given in Tables 1 and 2 unless otherwise agreed between the manufacturer and the CACRC-QPG and specified in the relevant IPS. The test results shall demonstrate compliance with the technical requirements of this PS and the relevant MS and Appendix of PRI QPL AMS3970.

Release testing shall be the responsibility of the manufacturer. The test samples extracted should be representative of the entire prepreg batch delivered in accordance with this specification. See 5.8 for the number of samples required based on the size of the batch. A minimum of one unit per batch of the mechanical properties tests (see Table 2) shall be tested by an independent laboratory contracted by the manufacturer or the manufacturer's laboratory. The independent laboratory must be approved by PRI.

The purchaser reserves the right to perform any of the inspections and/or tests required by this specification and may reject any material which fails to meet the requirements. When required, the manufacturer shall inform the purchaser or their chosen agent of the planned dates for the extraction of samples and release testing in order that these operations may be witnessed.

Table 1 - Batch release for uncured prepreg - physical and physiochemical properties

No.	Property	Number of Samples Per Unit ⁽¹⁾	Test Method
1.1	Mass per Unit Area	3	AMS3970/1 and relevant IPS
1.2	Volatile Content ⁽²⁾	3	
1.3	Resin Content	3	
1.4	Mass per Unit Area Unimpregnated Fabric	3	
1.5	DSC - uncured	3	
1.6	HPLC ⁽²⁾	3	
1.7	Infrared	3	
1.8	Gel Time ⁽²⁾	3	
1.9	Viscosity (Resin Film) Dynamic 2 °C/min ⁽³⁾	3	

⁽¹⁾ Number of units to be tested is dependent on the batch size and is defined in 5.8.

⁽²⁾ Specific test parameters to be agreed at the onset of the screening and qualification program between the manufacturer and the CACRC-QPG and specified in the relevant IPS.

⁽³⁾ Test conditions to be agreed at the onset of the screening and qualification program between the manufacturer and the CACRC-QPG.

NOTE: Test results shall meet the requirements specified in the relevant IPS.