SAE Aerospace
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AEROSPACE MATERIAL SPECIFICATION

SAE AMS 2980/4A

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Superseding AMS 2980/4

Carbon Fiber Fabric and Epoxy Resin Wet Lay-Up Repair Material Purchasing Specification – Resin

RATIONALE

AMS 2980/4 is revised to include the relevant PRI documentation references and the PRI rules to manage the qualification material process through the Qualified Product Group (QPG). Some alternative test methods have been included for options.

FOREWORD

This Purchasing Specification (PS) is part of the Technical Specification system described in AMS 2980.

TABLE OF CONTENTS

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
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1. SCOPE:

This PS specifies the batch release and delivery requirements for epoxy resin systems (base resin and curing agent) used for wet lay-up repair purposes.

1.1 Limitation:

This specification relates to qualified epoxy resin systems listed in the associated PRI QPL AMS 2980.

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, 400 Commonwealth Drive, Warrendale, PA 15096-0001 or www.sae.org.

AMS 2980	Technical Specification: Carbon Fiber Fabric and Epoxy Resin Wet Lay-Up Repair Material - Part 0 - Introduction
AMS 2980/1	Technical Specification: Carbon Fiber Fabric and Epoxy Resin Wet Lay-Up Repair Material - General Requirements

2.2 ASTM Publications:

Available from ASTM, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959 or www.astm.org.

ASTM E 1252	General Techniques for Obtaining Infrared Spectra for Qualitative Analysis
ASTM D 1652	Epoxy Content of Epoxy Resins
ASTM D 2471	Gel Time and Peak Exothermic Temperature of Reacting Thermosetting Resins
ASTM D 2896	Total Base Number of Petroleum Products by Potentiometric Perchloric Acid Titration
ASTM E 203	Water Using Karl Fischer Reagent

2.3 EN Publications:

Available from CEN-comité, Europeén de Normalisation, Secrétariat Central, Rue de Stassart 36, B-1050 Bruxelles, Belgium or www.cenorm.be.

EN 6042	Organic Compounds by Infrared Spectroscopy
EN 6043	Gel Time and Viscosity of Matrix Resins

2.4 ISO Publications:

Available from ISO, Central Secretariat, 1 Rue de Varembé, Case postale 56, CH-1211 Geneve 20, Switzerland or www.iso.ch.

ISO 760	Determination of water. Karl Fisher method (general method)
ISO 2555	Brookfield RV Viscosity
ISO 3001	Epoxide Equivalent

2.5 PRI Publications:

Available from Performance Review Institute, 161 Thornhill Road, Warrendale PA 15086-7527 or www.pri-network.org.

PRI QPL AMS 2980	Qualified product list of AMS 2980

3. DEFINITIONS:

Refer to AMS 2980/1.

4. REQUIREMENTS

The resin system to be delivered shall meet the general requirements in accordance with AMS 2980/1 and the requirements in this PS and the relevant Appendix (or IPS) of PRI QPL AMS 2980 of the material to be purchased.

5. RELEASE TESTING:

5.1 Test Report:

The resin manufacturer shall test each resin batch in accordance with Table 1 and the sampling plan in paragraph 5.5. The manufacturer shall provide the purchaser with a test report certifying that the resin batch meets the requirements of Section 4.

TABLE 1 - Batch Release Tests for Resin Systems

Property	Test Method[1]	Remarks
Epoxide Equivalent	ASTM D 1652 or ISO 3001	Base resin
Amine Value	ASTM D 2896	Curing agent
IR Spectrum (qualitatively)	EN 6042 or ASTM E 1252	Base resin and curing agent
Water Content	ASTM E 203 or ASTM E 760	Base resin and curing agent[2]
Viscosity @ 25 °C	ISO 2555	Base resin and curing agent
Gel Time	EN 6043 or ASTM D2471	Blending ratio is specified in the relevant Appendix (or IPS) of PRI QPL AMS 2980

[1] Use test methods specified in the relevant Appendix (or IPS) of PRI QPL AMS 2980. Use three samples per test.
[2] If required by the relevant Appendix (or IPS) of PRI QPL AMS 2980.

The resin release test report shall contain at least the following:

a. Specification number
b. Manufacturer's resin batch number and production date
c. Manufacturer's identification
d. Test results

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.

5.2 Manufacturer Additional Inspection:

5.2.1 Conformance to Weight: The base resin and curing agent shall be inspected for conformance to paragraph 6.2g.

5.2.2 Inspection of Packaging: The manufacturer shall perform inspections as necessary to assure that the packaging, packing, preservation and shipment requirements are in accordance with Section 6.