Society of Automotive Engineers, Inc.
400 COMMONWEALTH DRIVE, WARRENDALE, PA. 15096

# AEROSPACE MATERIAL SPECIFICATION

AMS 3903/1

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Revised

## CLOTH, ORGANIC FIBER, HIGH MODULUS
Epoxy Resin Impregnated
OC Style 120, 350 (177)





1. SCOPE:

1.1 Form: This specification covers one type of epoxy-resin-impregnated organic fibers in the form of woven cloth.

1.2 Application: Primarily for use in lightweight composites requiring high strength in tension at temperatures up to 350°F (177°C).

1.3 Classification: Style 120 cloth woven from organic fibers, impregnated with epoxy resin for service at temperatures up to 350°F (177°C).

2. APPLICABLE DOCUMENTS: Shall be as shown in AMS 3903.

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 3903.

3.2 Material: The product shall be AMS 3902, Style 120 cloth impregnated with epoxy resin formulated to meet the requirements specified herein.

3.2.1 Storage Life: The product shall meet the requirements of this specification when tested at any time up to three months from the date of receipt by the purchaser, provided it has been stored at a maximum temperature of 0°F (-18°C) in the original waterproof containers.

3.2.2 Working Life: The product shall meet the requirements of this specification when tested after exposure at a relative humidity not higher than 70% and a temperature not higher than 77°F (25°C) for a continuous period of up to 14 days.

3.3 Properties of Uncured Impregnated Material: Shall be as follows; tests shall be performed on the product as-received, after warming to above the dew point prior to sampling, and in accordance with test methods listed in the basic specification:

| | | |
|---|---|---|
| 3.3.1 | Volatile Content by weight, max | 2% |
| | Test temperature: | 250°F ± 10 (121.1°C ± 5.6) |
| | Test time: | 60 min. ± 5 |
| 3.3.2 | Total Nonfiber Content by weight | 50% ± 4 |
| 3.3.3 | Resin Flow by weight | 10 - 30% |
| 3.3.4 | Gel Time | Qualification value ± 20% |
| 3.3.5 | Tack | Shall adhere for at least 30 min. |



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3.4 Properties of Cured Laminate: Shall be as follows; tests shall be performed on specimens cut from a test panel prepared as specified in the basic specification and in accordance with the methods specified therein:

3.4.1 Mechanical Properties: Shall be as specified in Table I.

3.4.2 Density: Shall be determined on the test laminate used to determine mechanical properties; values for each test laminate shall be reported. Fiber density and cured resin density shall also be reported.

3.4.3 Void Content: Shall be not greater than 3%.

4. QUALITY ASSURANCE PROVISIONS: See AMS 3903.

5. PREPARATION FOR DELIVERY: Shall be in accordance with AMS 3903 and the following:

5.1 Exterior package marking shall indicate storage temperature of "0°F (-18°C) maximum".

6. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.

7. REJECTIONS: Material not conforming to this specification or to authorized modifications will be subject to rejection.

8. NOTES: None.