



AEROSPACE MATERIAL SPECIFICATION

AMS3908™**REV. A**

Issued 1986-04
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Reaffirmed 2022-10

Superseding AMS3908

Cloth, Aramid (Para)
Plain Weave, Thermally Stable

RATIONALE

AMS3908A has been reaffirmed to comply with the SAE Five-Year Review policy.

1. SCOPE:

1.1 Form:

This specification covers a thermally stable aramid fabric in the form of cloth.

1.2 Application:

This product has been used typically for flight clothing but usage is not limited to such applications.

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 ASTM Publications:

Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM D 1424 Tear Resistance of Woven Fabrics by Falling-Pendulum (Elmendorf) Apparatus

2.2 U.S. Government Publications:

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

PPP-P-1133 Packaging of Synthetic Fiber Fabrics

FED-STD-4 Glossary of Fabric Imperfections

FED-STD-191 Textile Test Methods

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SAE WEB ADDRESS:

Full document details: SAE AMS3908A

For more information on this standard, visit
<https://www.sae.org/standards/content/AMS3908A/>

Documents

Document Sharing Hub

2.2.1 Other Documents: Available from Federal Trade Commission, Washington, DC 20580.

Textile Fiber Products Identification Act, Rules and Regulations

2.3 AATCC Publications:

Available from American Association of Textile Chemists and Colorists, P.O. Box 12215, Research Triangle Park, NC 27709-2215.

Technical Manual of the AATCC, Method 76-1262 Electrical Resistivity of Fabrics

3. TECHNICAL REQUIREMENTS:

3.1 Material:

The cloth shall be woven from thermally stable aramid fibers. The denier shall be nominally 1.3 per filament, cut to a staple length of 1-1/2 to 2 inches (38 to 51 mm); a vendor's certificate of conformance shall be acceptable for determining conformance to these requirements.

3.1.1 Yarn: Shall be two-ply for both warp and filling, determined visually.

3.2 Properties:

Cloth shall conform to the following requirements; tests shall be performed on the cloth supplied and in accordance with the specified test methods, insofar as practicable:

3.2.1 Color: Shall match Sage Green 1565. The color shall be obtained by the use of melt spun solution dyed fibers.

3.2.1.1 Sage Green 1565 is a manufacturer's identification number for that color.

3.2.1.2 Matching: The color shall match the standard sample under artificial light having a color temperature of 7500 °K and shall be a good approximation to the standard sample under incandescent lamplight at 2800 °K.

3.2.1.3 Colorfastness: The dyed and finished cloth shall show colorfastness to light and to laundering equal to or better than the standard sample when tested as specified in 3.2.5.11 and 3.2.5.12.

3.2.2 Weave: Shall be a plain weave, determined visually.

3.2.3 Width: Shall be 45 inches $\pm$ 0.25 (1143 mm $\pm$ 6.4), inclusive of salvages.

3.2.4 Nonfibrous Material: Prior to application of the antistatic finish, the cloth shall contain no more than 1.0% starch and protein including the chloroform-soluble and water-soluble material, determined in accordance with FED-STD-191, Method 2611.

- 3.2.5 Finishing: Cloth shall be desized, scoured, calendered, heat set, and given a durable antistatic finish to meet the requirements, shown in Table 1, determined in accordance with specified test methods of FED-STD-191, except as otherwise specified herein:

TABLE 1 - Requirements and Test Methods

Paragraph	Property	Requirement	Test Method
3.2.5.1	Weight, minimum	4.5 ounces/square yard (153 g/m ²)	5041
3.2.5.2	Yarns per inch (25.4 mm), minimum		5050
3.2.5.2.1	Warp	54	
3.2.5.2.2	Filling	41	
3.2.5.3	Breaking Strength, minimum		5104
3.2.5.3.1	Ravel Strip Warp	72 pounds force/inch (12,609 N/m)	
3.2.5.3.2	Ravel Strip Filling	53 pounds force/inch (9282 N/m)	
3.2.5.4	Tearing Strength, Tongue, minimum		ASTM D 1424
3.2.5.4.1	Warp and Filling	65 pounds force (289 N)	
3.2.5.5	Air Permeability at 0.5 Inch (13 mm) Water Pressure, minimum	25 cubic feet/minute/square foot (7.6 m ³ /minute/m ²)	
3.2.5.6	Flame Resistance (In warp direction only)		5903
3.2.5.6.1	Flame Time, maximum	1 second	
3.2.5.6.2	Glow Time, maximum	1.5 seconds	
3.2.5.6.3	Char Length, maximum	2.0 inches (51 mm)	
3.2.5.7	Thermal Shrinkage (In warp direction only)		4.5.1
3.2.5.7.1	Average of 5 samples, maximum	5%	
3.2.5.7.2	Individual Sample, maximum	10%	

TABLE 1 - Requirements and Test Methods (Continued)

Paragraph	Property	Requirement	Test Method
3.2.5.8	Dimensional Stability (Shrinkage) After 15 cotton launderings, maximum		5660
3.2.5.8.1	Warp	4.0%	
3.2.5.8.2	Filling	1.5%	
3.2.5.9	Antistatic Finish, average of 3 determinations to the nearest 1.0×10^{11} ohms per square		
3.2.5.9.1	Before laundering	5×10^{13} ohms/square	AATCC 76-1262
3.2.5.9.2	After cotton laundering	5×10^{13} ohms/square	5556
3.2.5.10	pH		5.0 to 8.02811

3.2.5.11 Colorfastness to Light: Shall be equal to or better than the standard sample, determined in accordance with FED-STD-191, Method 5660 except that supplier's submissions shall be compared with the standard sample after six hours and then evaluated.

3.2.5.12 Colorfastness to Laundering: Shall be equal to or better than the standard sample, determined in accordance with FED-STD-191, Method 5041.

3.2.5.13 Curling: Finished cloth shall lie flat, without distortion, and shall show no evidence of curling, determined in accordance with 4.5.2.

3.2.6 Compliance with Textile Fiber Products Identification Act: Each roll of cloth not labeled or ticketed in accordance with the Textile Fiber Products Identification Act shall be counted as a defect. A lot shall be unacceptable if two or more such defects occur.

3.3 Quality:

Cloth, as received by purchaser, shall be clean, evenly woven, and free from foreign materials and from imperfections detrimental to usage of the cloth.

3.3.1 Acceptability of each lot of cloth shall be based on imperfections as defined in FED-STD-4. The cloth shall not contain more than 50 demerit points per 100 square yards (84 m²) when examined and scored in accordance with 4.3.1.3. No two individual rolls shall contain more than 75 demerit points per 100 square yards (84 m²).