

**AEROSPACE
MATERIAL
SPECIFICATION**

SAE AMS3805

REV. B

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Superseding AMS3805A

Cloth, Duck, Aramid (META), Non-Melting

RATIONALE

This document has been determined to contain basic and stable technology which is not dynamic in nature.

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1. SCOPE:

1.1 Form:

This specification covers an aromatic nylon fabric in the form of cloth.

1.2 Application:

This product has been used typically for the manufacture of seat cushion covers, armor vest covers, and accessories, but usage is not limited to such applications.

1.3 Safety - Hazardous Materials:

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

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 and Packing of Synthetic Fiber Fabrics

FED-STD-4 Glossary of Fabric Imperfections

FED-STD-191 Textile Test Methods

DPSC Handbook 4120.1 List of Armed Services Colors for Clothing, Textiles, and Equipment

2.3 Other Publications:

Available from Federal Trade Commission, Washington, DC 20580.

Textile Fiber Products Identification Act, Rules and Regulations

3. TECHNICAL REQUIREMENTS:

3.1 Material:

The cloth shall be woven from 1.5 to 2.0 denier yarn by 1.5 to 2.0 inch (38 to 51 mm) fiber length non-melting, aromatic polyamide fibers.

3.1.1 Yarn: Shall be a two-ply polyamide yarn, smooth and free from spinning imperfections.

3.1.2 Weave: Shall be plain, 1 up and 1 down.

3.1.3 Finish: Shall be scoured, heat set, and given an antistatic finish.

3.1.4 Color: Shall match DPSC Handbook 4120.1 Color Code Sage Green 1565 and shall be produced through the use of solution dyed fibers.

3.2 Properties:

The finished cloth shall conform to the requirements shown in Table 1; tests shall be performed on the cloth supplied and in accordance with test methods in FED-STD-191, except as otherwise specified herein.

TABLE 1 - Requirements and Test Methods

Paragraph	Property	Requirement	Test Method
3.2.1	Weight, minimum	6.5 ounces per square yard (220 g/m ²)	5040 & 5041
3.2.2	Thread Count, minimum		5050
3.2.2.1	Warp	47 per inch (25.4 mm)	
3.2.2.2	Filling	47 per inch (25.4 mm)	
3.2.3	Breaking Strength, minimum		5104
3.2.3.1	Warp	150 pounds force per inch (26.3 kN/m)	
3.2.3.2	Filling	150 pounds force per inch (26.3 kN/m)	
3.2.4	Tearing Strength, minimum		ASTM D 1424
3.2.4.1	Warp	20 pounds force per inch (3.5 kN/m)	
3.2.4.2	Filling	20 pounds force per inch (3.5 kN/m)	
3.2.5	Blocking, minimum	There shall be no sticking of cloth to cloth	5872 (See 3.2.5.1)
3.2.5.1	Blocking Test:	Time of exposure shall be 24 hours ± 0.5 at 60 °C ± 1 (140 °F ± 2), using a 6-pound (2.7-kg) weight.	

3.2.6 Dimensions:

3.2.6.1 Width: Shall be as specified by purchaser.

3.2.6.2 Length of Cut: Continuous pieces shall be not less than 80 yards (73 m) in length. Pieces less than 80 yards (73 m) in length will be acceptable up to 10% of the quantity ordered, provided that no piece is less than 25 yards (23 m) in length. Not more than two pieces less than 80 yards (73 m) in length shall be included in any one roll.

3.3 Quality:

Cloth, as received by purchaser, shall be 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 fined in FED-STD-4. The cloth shall not contain more than 60 demerit points per 100 square yards (83.6 m²) when examined and scored in accordance with 4.3.1.5.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection:

The vendor of cloth shall supply all samples for vendor's tests and shall be responsible for performing all required tests. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the cloth conforms to the requirements of this specification.

4.2 Classification of Tests:

Tests for all technical requirements are acceptance tests and shall be performed on each lot of cloth.

4.2.1 For direct U.S. Military procurement, substantiating test data and, when requested, preproduction test material shall be submitted to the cognizant agency as directed by the procuring activity, contracting officer, or request for procurement.

4.3 Sampling and Testing:

Shall be as follows:

4.3.1 Yard-by-Yard (Meter-by-Meter) Examination: The sample size shall be 20 rolls selected from 20 containers or one roll from each container when the lot consists of less than 20 containers.

4.3.1.1 Individual Rolls: During the yard-by-yard (meter-by-meter) examination, each roll in the sample shall be examined for length. Any length found to be less than the minimum specified or more than 2 yards (1.8 m) less than the length marked on the ticket shall be considered an imperfection with respect to length. The lot shall be unacceptable if two or more rolls in the sample are defective in respect to length.

4.3.1.2 Total Yards (Meters) in Sample: The lot shall be unacceptable if the total of the actual lengths of rolls in the sample is less than the total of the lengths marked on the ticket.

4.3.1.3 Examination for Shade: During the examination, each roll in the sample shall be examined for shade. Any roll in the sample off shade, shaded side to side, side to center, or end to end, shall be cause for rejection of the entire lot represented by the sample.

4.3.1.4 Examination for Compliance with Textile Fiber Products Identification Act: During the examination, each roll in the sample shall be examined for conformance to the Textile Fiber Products Identification Act. Each roll not labeled in accordance with this act shall be considered as an imperfection. The lot shall be unacceptable if two or more of these imperfections occur.

- 4.3.1.5 Imperfection Demerits: Each roll in the sample shall be examined on the face side only. When the total length in the roll does not exceed 100 yards (91 m), the entire length of the roll shall be examined. When the total length of the roll exceeds 100 yards (91 m), only 100 yards (91 m) need be examined. All imperfections, as described in FED-STD-4, which are visible at normal inspection distance of 1 yard (0.9 m), shall be scored and assigned demerit points as specified in 4.3.1.5.4. No one linear yard (0.9 m) increment of cloth on the measuring machine shall be penalized more than 4 demerit points. If one roll exceeds 60 demerit points per 100 square yards (83.6 m²) a second sample may be examined for individual roll quality only. The lot shall be rejectable if any two rolls in the sample exceed 60 demerit points per 100 square yards (83.6 m²).
- 4.3.1.5.1 Only coarse yarns that exceed twice the normal yarn diameter shall be scored.
- 4.3.1.5.2 Mixed filling (shade bar) shall be scored only when resulting from wrong ply, wrong twist in the yarn, or off shade yarn.
- 4.3.1.5.3 Only knots and slubs, which exceed the limits of Figure 1 in FED-STD-4, shall be scored.
- 4.3.1.5.4 Demerit Points: Shall be assigned as shown in Table 2.

TABLE 2 - Demerit Point Scoring

Imperfections	Points
For imperfections 3 inches (76 mm) and under in any dimension	1
For imperfections over 3 to 6 inches (76 to 152 mm), inclusive, in any dimension	2
For imperfections over 6 to 9 inches (152 to 229 mm), inclusive in any dimension	3
For imperfections over 9 inches (229 mm) in any direction	4
Baggy, ridgy, or wavy cloth	4
Width less than specified	4
Uneven weaving	4

- 4.3.2 The unit of cloth for property determination shall be not less than 5 yards (4.6 m), continuous piece, full width. Sample size shall be as shown in Table 3.

TABLE 3 - Lot Size and Sample Size

Lot Size Yards		Lot Size Meters		Sample Size
Upto	800, incl	Upto	732, incl	2
	800 to 22,000, incl		732 to 20,117, incl	3
	Over 22,000		Over 20,117	5

- 4.3.3 A lot shall be all cloth produced in a single production run under the same fixed conditions and presented for vendor's inspection at one time.
- 4.3.4 When a statistical sampling plan has been agreed upon by purchaser and vendor, sampling shall be in accordance with such plan in lieu of sampling as in 4.3.1 and the report of 4.4 shall state that such plan was used.

4.4 Reports:

The vendor of cloth shall furnish with each shipment a report showing the results of tests to determine conformance to the acceptance test requirements. This report shall include the purchase order number, lot number, AMS 3805B, vendor's material designation, and quantity.

4.5 Resampling and Retesting:

If any specimen used in the above tests fails to meet the specified requirements, disposition of the cloth may be based on the results of testing three additional specimens for each original nonconforming specimen. Failure of any retest specimen to meet the specified requirements shall be cause for rejection of the cloth represented. Results of all tests shall be reported.

5. PREPARATION FOR DELIVERY:

5.1 Packaging and Identification:

Cloth shall be furnished in rolls of not more than 400 yards (366 m) in length. Short pieces shall be rolled separately and sewn together with a butted type of seam, using 10/3 cord cotton thread, with approximately nine stitches per inch (25 mm). The number of pieces in the roll shall be marked on the outer surface of the last 6 inches (152 mm) of the roll.

- 5.1.1 A lot may be packaged in small quantities and delivered under the basic lot approval provided lot identification is maintained.

- 5.1.2 Each roll shall have a label or tag legibly marked with not less than the following information and attached so as to remain in place until all cloth has been removed from the roll:

CLOTH, DUCK, ARAMID (META), NON-MELTING

AMS 3805B

WIDTH _____

WEIGHT PER YARD (METER) _____

MANUFACTURER'S IDENTIFICATION _____

PRODUCT DESIGNATION _____

QUANTITY _____

LOT NUMBER _____

ROLL NUMBER (If used) _____

DATE OF MANUFACTURE _____

- 5.1.3 Each roll shall also be labeled, ticketed, or invoiced for fiber content in accordance with the Textile Fiber Products Identification Act.

- 5.1.4 Individual rolls shall be wrapped in a suitable protective film and be packaged in an exterior shipping container such that the rolls, during shipment and storage, will be protected from exposure to moisture, weather, or any other normal hazard.

- 5.1.5 Each exterior container shall be legibly marked with not less than the following information so that the markings shall not smear or be obliterated during normal handling:

CLOTH, DUCK, ARAMID (META), NON-MELTING

AMS 3805B

PURCHASE ORDER NUMBER _____

MANUFACTURER'S IDENTIFICATION _____

PRODUCT DESIGNATION _____

DESCRIPTION _____

LOT NUMBER _____

NET WEIGHT _____

- 5.1.6 Packages of cloth shall be prepared for shipment in accordance with commercial practice and in compliance with applicable rules and regulations pertaining to the handling, packaging, and transportation of cloth to ensure carrier acceptance and safe delivery.

- 5.1.7 For direct U.S. Military procurement, packaging shall be in accordance with PPP-P-1133, Commercial Level, unless Level A is specified in the request for procurement.

6. ACKNOWLEDGMENT:

A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.