



AEROSPACE MATERIAL SPECIFICATION

AMS3833**REV. B**

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Superseding AMS3833A

Cloth, Broadcloth, Polyester/Cotton
Polyester Filament, End to End, (Durable Press)

RATIONALE

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

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Documents

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1. SCOPE:

1.1 Form: This specification covers a polyester and cotton blended broadcloth, chemically treated with a durable press finish and cured.

1.2 Application: Primarily for use in the manufacture of shirts.

2. APPLICABLE DOCUMENTS: The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

2.1 SAE Publications: Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096.

2.1.1 Aerospace Material Specifications:

AMS 2350 - Standards and Test Methods

2.2 U.S. Government Publications: Available from Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120 except as specified in 2.2.3.

2.2.1 Federal Specifications:

V-T-285 - Thread, Polyester

PPP-P-1134 - Packaging and Packing of Cotton and Cotton-Synthetic Fiber Blend Fabrics (Excluding Duck Fabrics)

2.2.2 Federal Standards:

FED-STD-4 - Glossary of Textile Imperfections

FED-STD-191 - Textile Test Methods

- 2.2.3 Other Publications: Available from the 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, Research Triangle Park, P.O. Box 886, Durham, NC 27709,

Technical Manual of the AATCC

3. TECHNICAL REQUIREMENTS:

3.1 Material:

3.1.1 Fibers:

- 3.1.1.1 Polyester Fiber: The fiber shall be polyethylene glycol terephthalate.

- 3.1.1.2 Cotton: Shall be carded and combed.

3.1.2 Yarns:

- 3.1.2.1 Warp: One warp yarn shall be 150 denier, 100% continuous filament polyester. One warp yarn shall be a blend of 65% $\pm$ 3 polyester and 35% $\pm$ 3 cotton, drawn and spun into single yarns.

- 3.1.2.2 Filling: Shall be a blend of 65% $\pm$ 3 polyester and 35 $\pm$ 3 cotton, drawn and spun into single yarns.

3.2 Cloth: Shall conform to the following:

- 3.2.1 Construction: The cloth shall be of an end to end construction with alternating warp ends of 100% continuous filament polyester yarn and a blend of 65% polyester and 35% cotton spun yarn. The finished cloth shall contain 75% $\pm$ 3 polyester fiber and not less than 22% cotton based on the dry weight of the desired specimen before treatment and finishing. The "finished cloth" is the standard sample.

- 3.2.1.1 Sulfur Content: The use of dyes and compounds containing elementary sulfur capable of oxidation to sulfuric acid is prohibited. The dyestuff shall be chosen and so applied that the dyed and finished cloth shall contain no more labile sulfur than shown by the standard sample when tested as specified in 4.5. When a standard sample is not available, the dyed and finished cloth shall show no more than a slight trace of labile sulfur as defined in FED-STD.191) Method 2020.

- 3.2.2 Width: Shall be as specified and shall be the minimum width inclusive of selvage when fly shuttle looms are used, and exclusive of selvages and fringe when shuttleless machines are used.

3.2.3 Cloth Preparation: The dyed and untreated cloth shall be scoured, singed, stabilized, and mercerized, when required, to result in a smooth and lustrous finish equal in character to that of the standard sample and to meet the requirements of this specification.

3.2.4 Treatment: The dyed cloth shall be given an approved (See 8.3) durable press treatment consisting of a suitable catalyzed resin or reactant system and hand modifiers. A wetting agent may be used to facilitate processing. Durable press resins other than those approved for use are prohibited. The cloth shall be so processed that the finished cloth shall meet the applicable requirements of this specification.

3.3 Properties: Finished cloth shall have the following properties:

3.3.1	Weight	3.7 to 4.2 oz per sq yd (125 - 140 g/m ²)
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3.3.2	Yarns per in (25.4 mm), min	
	Warp	85
	Filling	54

3.3.3	Breaking Strength, min	
	Warp	100 lb (445 N)
	Filling	80 lb (355 N)

3.3.4	Weave	Plain
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3.3.5	Tearing Strength, min	
	Warp and Filling, each	5 lb (20 N)

3.3.6 Nonfibrous Material: The starch and protein content, including chloroform-soluble and water-soluble material, of the dyed and untreated cloth shall not exceed 1.5%.

3.3.7 Shrinkage: The cloth shall be preshrunk and shall not shrink more than 2.0% in either the warp or the filling direction. The preshrinking process used shall not be identified by name or trademark either on the cloth, ticket, or package.

3.3.8 pH: The pH value of the water extract of the dyed, treated, and cured (finished) cloth shall be not less than 5.0 nor more than 8.5.

3.3.9 Seam Efficiency: The treated and finished cloth shall have a seam efficiency of not less than 85%.

- 3.3.10 Appearance: The cured cloth shall show a minimum average appearance rating per sample unit of not less than 3.0 after 5 launderings.
- 3.3.11 Color: Shall be Air Force Blue 1580 and shall match the standard sample (See 3.2.1). The cloth shall be cross (piece) dyed in such a manner that the 100% continuous filament polyester yarns are dyed solid blue and the blended polyester/cotton warp and filling yarns are white.
- 3.3.11.1 Matching: The treated and finished cloth shall match the standard sample under artificial daylight having a color temperature of $7,000^{\circ}\text{K} \pm 100$ and shall be a good approximation to the standard sample under incandescent lamp light at $2,850^{\circ}\text{Kelvin} \pm 100$.
- 3.3.11.2 Colorfastness: The finished cloth shall show fastness to combined laundering and bleaching, cracking, perspiration, and light equal to or better than the standard sample. When no standard sample has been established or designated as applicable to colorfastness, the finished cloth shall show good fastness to combined laundering and bleaching, perspiration, and light and shall show a Munsel value for cracking not lower than 8.5.
- 3.4 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.

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. Results of such tests shall be reported to the purchaser as required by 4.6. 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:
- 4.2.1 Acceptance Tests: Tests to determine conformance to the following requirements are classified as acceptance tests and shall be performed on each lot:

Requirement	Paragraph Reference
Polyester Identification	3.1.1.1
Cotton Identification	3.1.1.2
Weight of Finished Cloth	3.3.1
Yarns per in. (25.4 mm)	3.3.2
Breaking Strength of Finished Cloth	3.3.3
Weave	3.3.4
Tearing Strength of Finished Cloth	3.3.5
Quality	3.4