

MIL-C-43718C
17 June 1988

SUPERSEDING
MIL-C-43718B
27 November 1985

MILITARY SPECIFICATION

CLOTH, POLYESTER; POLYESTER AND COTTON; POLYESTER AND RAYON, FOR POCKETS

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This document covers 100 percent polyester, blended polyester and cotton, and blended polyester and rayon cloth.

* 1.2 Classification. The cloth shall be of the following classes as specified (see 6.2):

- Class 1 - Heavyweight; polyester, polyester/cotton, or polyester/rayon
- Class 2 - Lightweight; polyester/cotton

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: U.S. Army Natick Research, Development, and Engineering Center, Natick, MA 01760-5014 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 8305

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SPECIFICATIONS

FEDERAL

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

MILITARY

MIL-T-43548 - Thread, Polyester Core: Cotton-, Rayon-, or
Polyester-Covered

MIL-T-43624 - Thread, Polyester, Spun

STANDARDS

FEDERAL

FED-STD-4 - Glossary of Fabric Imperfections

FED-STD-191 - Textile Test Methods

(Copies of specifications, standards, and handbooks required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this specification to the extent specified herein. Unless otherwise specified, the issues shall be those in effect on the date of the solicitation.

Rules and Regulations Under the Textile Fiber Products Identification Act

(Copies may be obtained from the Federal Trade Commission, Correspondence Branch, Pennsylvania Avenue at Sixth Street, N.W., Washington, DC 20580-0001.)

(Copies of drawings, publications, and other Government documents required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted shall be those listed in the issue of the DODISS specified in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS shall be the issues of the nongovernment documents which are current on the date of the solicitation.

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AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)

Chromatic Transference Scale

(Copies should be obtained from the American Association of Textile Chemists and Colorists, P.O. Box 12215, Research Triangle Park, NC 27709-2215.)

(Nongovernment standards and other publications are normally available from the organizations which prepare or which distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Standard sample. The finished cloth shall be equal to or better than the standard sample with respect to all characteristics for which the standard sample is referenced (see 6.3).

* 3.2 First article. When specified in the contract or purchase order, a sample shall be subjected to first article inspection (see 4.3, 6.2, and 6.4).

3.3 Material (see 6.5).

* 3.3.1 Fibers. The fibers shall be either 100 percent staple or texturized filament polyester; staple polyester and carded cotton blend; or staple polyester and staple rayon blend when tested as specified in 4.4.3.

* 3.3.2 Yarn. The spun yarn for class 1 shall contain from 47 to 100 percent polyester and any remaining percentage cotton or rayon. When 100 percent polyester fabric is used, the yarn shall be either staple or texturized filament polyester. The spun yarn for class 2 shall contain from 47 to 68 percent polyester and the remaining percentage cotton when tested as specified in 4.4.3.

3.4 Color. Unless otherwise specified (see 6.2), the cloth shall be natural (undyed). When dyed cloth is required, it shall meet the requirements of 3.4.1 through 3.4.3.

3.4.1 Labile sulfur. The use of dyes and compounds containing elementary sulfur capable of oxidation to sulfuric acid is prohibited. The dyestuff shall be chosen and applied so that the dyed and finished cloth shall contain no more labile sulfur than shown by the standard sample when tested as specified in 4.4.3. When a standard sample is not available, the dyed and finished cloth shall show no more than slight trace of labile sulfur when tested as specified in 4.4.3.

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- * 3.4.2 Matching. The color of the finished cloth shall match the standard sample when viewed under filtered tungsten lamps that approximate artificial daylight and that have a correlated color temperature of $7500 \pm 200\text{K}$, with illumination of 100 ± 20 foot candles and shall be a good approximation to the standard sample under incandescent lamplight at $2300 \pm 200\text{K}$.
- * 3.4.3 Colorfastness. The finished cloth shall show fastness to laundering (after 3 cycles), perspiration, sublimation, and wet drycleaning, equal to or better than the standard sample or equal to or better than a rating of "good" (except for black). The finished cloth shall show fastness to crocking equal to or better than the standard sample or shall have an AATCC Chromatic Transference Scale rating of not less than 3.5 (except for black). For black, the finished cloth shall show "fair" fastness to laundering (after 3 cycles), "good" fastness to perspiration, sublimation and wet drycleaning, and shall have an AATCC Chromatic Transference Scale rating of not less than 1.0. Testing shall be as specified in 4.4.3.

3.5 Physical requirements. The physical requirements of the finished cloth shall be as specified in table I when tested as specified in 4.4.3.

TABLE I. Physical requirements

	Weight per sq yd, minimum	Yarns per inch, minimum		Breaking strength, minimum	
	Ounces	Warp	Filling	Warp Pounds	Filling Pounds
Class 1	4.3 <u>1/</u>	73 <u>1/</u>	46 <u>1/</u>	72	55
Class 2	2.9	73	46	58	44

1/ A 15 percent minus tolerance will be permitted for 100 percent polyester cloth.

3.5.1 Weave. The weave for class 1 and class 2 shall be either a two up and one down twill or a plain weave when tested as specified in 4.4.3.

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3.5.2 Width. The width of the cloth shall be as specified (see 6.2) and shall be the minimum acceptable width inclusive of selvages when fly shuttle looms or shuttleless with tuck-in selvage looms are used. For all other shuttleless looms, the width measurement shall be made between the last warp yarn on each side excluding the protruding fringe(s).

3.6 Finish. The cloth shall be desized and finished.

3.6.1 pH. The pH value of the water extract of the dyed and finished cloth shall be not less than 5.0 nor more than 8.5 when tested as specified in 4.2.3.

3.7 Nonfibrous material. The starch and protein content including chloroform-soluble and water-soluble material of the finished cloth shall not exceed 5.0 percent when tested as specified in 4.4.3.

* 3.8 Dimensional stability. The cloth shall be finished so as not to shrink nor elongate more than 3.0 percent in the warp and 3.0 percent in the filling direction when tested as specified in 4.4.3. When a preshrinking process is used, it shall not be identified by name or trademark on the cloth, ticket, or package.

3.9 Seam efficiency. The cloth shall have a seam efficiency of not less than 80 percent when tested as specified in 4.4.3.

3.10 Length and put-up. Unless otherwise specified (see 6.2), the cloth shall be furnished in continuous lengths, each not less than 50 yards. The cloth shall be put up on rolls as specified in 5.1.

3.11 Fiber identification. Each roll shall be labeled or ticketed for fiber content in accordance with the Textile Fiber Products Identification Act.

3.12 Workmanship. The finished cloth shall conform to the quality and grade of product established by this document and the occurrence of defects shall not exceed the applicable acceptable quality levels.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in this document where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

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* 4.1.1 Responsibility for compliance. All items must meet all requirements of sections 3 and 5. The inspection set forth in this document shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirement in the document shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.1.2 Certificates of compliance. When certificates of compliance are submitted, the Government reserves the right to inspect such items to determine the validity of the certification.

* 4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. First article inspection (see 4.3).
- b. Quality conformance inspection (see 4.4).

* 4.3 First article inspection. When a first article is required (see 6.2), it shall be examined for the defects specified in 4.4.2.1 through 4.4.2.3 and tested for the characteristics specified in 4.4.3. The presence of any defect or failure to pass any test shall be cause for rejection of the first article.

4.4 Quality conformance inspection.

4.4.1 Component and material inspection. In accordance with 4.1, components and materials shall be inspected in accordance with all the requirements of referenced documents unless otherwise excluded, amended, modified, or qualified in this document or applicable purchase document.

4.4.2 End item examination.

4.4.2.1 Yard-by-yard examination. Each roll in the sample shall be examined on the face side only. When the total yardage in the roll does not exceed 100 yards, the entire yardage in the roll shall be examined. When the total yardage in the roll exceeds 100 yards, only 100 yards shall be examined. All defects, as defined in section III of FED-STD-4, which are clearly noticeable at normal inspection distance (3 feet), shall be scored and assigned demerit points as listed in 4.4.2.1.1, except that only those slubs and knots which exceed the limits shown on Sears Fabric Defect Scales (see 6.6), F or 2 as applicable for slubs and D for knots shall be scored. No linear yards (increments of 1 yard on the measuring device of the inspection machine) from any one roll within the sample shall be penalized more than four points. The sample size shall be 20 rolls selected from 20 containers. The lot shall be unacceptable if the points per 100 square yards of the total

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yardage examined exceeds 30.0 points. The lot shall be unacceptable if the points per 100 square yards of two or more individual rolls exceeds 38.0 points. If one roll exceeds 45.0 points per 100 square yards, a second sample of 20 rolls shall be examined only for individual roll quality. The lot shall be unacceptable if one or more rolls in the second sample exceeds 38.0 points per 100 square yards. Point computation for lot quality and individual roll quality shall be as follows:

$$\frac{\text{Total points scored in sample} \times 3600}{\text{Contracted width of cloth (inches)} \times \text{Total yards inspected}} = \text{Points per 100 square yards}$$

4.4.2.1.1 Demerit points. Demerit points shall be assigned as follows:

- For defects 3 inches or less in any dimension - one point
- For defects exceeding 3 inches but not exceeding 6 inches in any dimension - two points
- For defects exceeding 6 inches but not exceeding 9 inches in any dimension - three points
- For defects exceeding 9 inches in any dimension - four points

The following defects, when present, shall be scored four points for each yard in which they occur:

- Width less than specified ^{1/}
- Objectionable odor
- Spot or stain
- Bias or bowed filling - distortion at any point, 2 inches or more from normal alignment
- Turned selvage that cannot be flattened by manual pressure
- Embedded crease or wrinkle
- Overall uncleanness ^{1/}

^{1/} Shall not be scored unless it occurs for more than 5 yards per roll.

4.4.2.2 Length examination. During the yard-by-yard 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 less than the length marked on the roll ticket shall be considered a length defect. The lot shall be rejected if two or more rolls in the sample are defective with respect to length or if the total of the actual lengths of rolls in the sample is less than the total of the lengths marked on the roll tickets.

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4.4.2.3 Roll identification examination. During the yard-by-yard examination, each roll in the sample shall be examined for defects listed below. The lot shall be unacceptable if two or more of the following defects are present in the sample:

Preshrinkage process identified by name or trademark on cloth or ticket Not labeled in accordance with the Rules and Regulations under the Textile Fiber Products Identification Act

* 4.4.3 End item testing. The cloth shall be tested for the characteristics listed in table II. The methods of testing specified in FED-STD-191 wherever applicable and as listed in table II shall be followed. All test reports shall contain the individual values utilized in expressing the final result. The sample unit shall be 5 continuous yards full width of the finished cloth. The lot shall be unacceptable if any sample unit fails to meet any requirement specified. The sample size shall be as follows:

<u>Lot size (yards)</u>	<u>Sample size (sample units)</u>
800 or less	2
801 up to and including 22,000	3
22,001 and over	5

TABLE II. End item tests

<u>Characteristic</u>	<u>Requirement paragraph</u>	<u>Test method</u>
Polyester identification	3.3.1	1600 1/
Cotton identification	3.3.1	1200 1/
Rayon identification	3.3.1	1500 1/
Fiber content	3.3.2	2535 1/
Labile sulfur	3.4.1	2020
Colorfastness to:		
Laundering after 3 cycles	3.4.3	5610 2/ 3/
Perspiration	3.4.3	5680
Sublimation	3.4.3	5642 4/
Wet-dry cleaning	3.4.3	5622
Crocking	3.4.3	5651
Weight	3.5	5041
Yarns per inch	3.5	5050
Breaking strength	3.5	5100
Weave	3.5.1	Visual 5/
pH	3.6.1	2811
Nonfibrous material	3.7	2611

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TABLE II. End item tests (cont'd)

Characteristic	Requirement paragraph	Test method
Dimensional stability	3.8	5552
Seam efficiency	3.9	5110 <u>6/</u>

- 1/ Unless otherwise specified, a certificate of compliance shall be submitted and will be acceptable for the stated requirement.
- 2/ The specimens must be dried after each of the 3 laundering cycles.
- 3/ On the color transfer cloth evaluation, for polyester and cotton, only the stain on the nylon and cotton fibers of the color transfer cloth shall be evaluated. For polyester and rayon, only the stain on the nylon and acetate fibers of the color transfer cloth shall be evaluated. For 100 percent polyester, only the stain on the nylon fibers of the color transfer cloth shall be evaluated.
- 4/ The test shall be conducted at a temperature of $205^{\circ} \pm 3^{\circ}\text{C}$.
- 5/ One determination shall be made from each sample unit and the results reported as "pass" or "fail."
- 6/ The needle shall measure 0.044 inch \pm 0.001 inch across the blade at the eye. The thread for both classes shall be polyester-, cotton-, or rayon-covered in accordance with MIL-T-43548, ticket No. 50, 2 or 3 ply for the needle and ticket No. 70, 2 or 3 ply for the looper, or spun polyester in accordance with MIL-T-43624, size 30; 2, 3, or 4 ply for needle and size 40, 2 or 3 ply for the looper.

4.4.4 Packaging inspection. The cloth shall be inspected in accordance with the quality assurance provisions of PPP-P-1134.

5. PACKAGING

5.1 Put-up and preservation. Put-up and preservation shall be level A or Commercial as specified (see 6.2).

5.1.1 Levels A and Commercial. The cloth shall be put-up and preserved in accordance with the applicable requirements of PPP-P-1134.

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5.2 Packing. Packing shall be level A, B, or Commercial as specified (see 6.2).

5.2.1 Levels A, B, and Commercial. The cloth shall be packed in accordance with the applicable requirements of PPP-P-1134.

5.3 Marking. In addition to any special marking required by the contract or purchase order, shipments shall be marked in accordance with the applicable requirements of PPP-P-1134.

6. NOTES

6.1 Intended use. Class 1 cloth is used for pocketing and waistband material in dress and semi-dress trousers. Class 2 cloth is used as pocketing material in dress coats.

6.2 Ordering data. Acquisition documents should specify the following:

- a. Title, number, and date of this document.
- b. Class of cloth required (see 1.2).
- c. When a first article is required (see 3.2, 4.3, and 6.4).
- d. Color required, if other than natural (see 3.4).
- e. Width of cloth required (see 3.5.2).
- f. Minimum length, if other than specified (see 3.10).
- g. Selection of applicable levels of put-up, preservation, and packing required (see 5.1 and 5.2).

6.3 Standard sample. For access to samples, address the contracting activity issuing the invitation for bids.

* 6.4 First article. When a first article is required, it shall be inspected and approved under the appropriate provisions of FAR 52.209. The first article should be a preproduction sample. The contracting officer should specify the appropriate type of first article and the number of units to be furnished. The contracting officer should include specific instructions in all acquisition instruments regarding arrangements for selection, inspection, and approval of the first article.

6.5 Recycled material. It is encouraged that recycled material be used when practical as long as it meets the requirements of this document (see 3.3).

6.6 Fabric defect scales. Sears Fabric Defect Replica Kits are available from Sears, Roebuck and Company, Department 817, (ATTN: BSC 23-29), Sears Tower, Chicago, IL 60684.

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* 6.7 Subject term (key word) listing.

Cloth
 Pocketing
 Polyester
 Waistband

6.8 Changes from previous issue. The margins of this document are marked with an asterisk (*) to indicate where changes (additions, modifications, corrections, deletions) from the previous issue were made. This was done as a convenience only, and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content, as written, irrespective of the marginal notations and relationship to the last previous issue.

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NOTE: This form may not be used to request copies of documents, nor to request waivers, deviations, or clarification of specification requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

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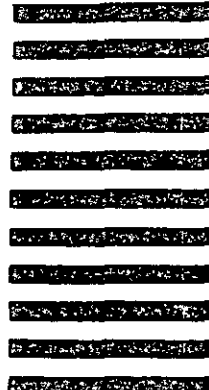
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STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER MIL-C-43718C		2. DOCUMENT TITLE Cloth, Polyester; Polyester And Cotton; Polyester And Rayon, For Pockets	
3a. NAME OF SUBMITTING ORGANIZATION		4. TYPE OF ORGANIZATION (Mark one)	
b. ADDRESS (Street, City, State, ZIP Code)		<input type="checkbox"/> VENDOR	
		<input type="checkbox"/> USER	
		<input type="checkbox"/> MANUFACTURER	
		<input type="checkbox"/> OTHER (Specify): _____	
5. PROBLEM AREAS			
a. Paragraph Number and Wording:			
b. Recommended Wording:			
c. Reason/Rationale for Recommendation:			
6. REMARKS			
7a. NAME OF SUBMITTER (Last, First, MI) - Optional		b. WORK TELEPHONE NUMBER (Include Area Code) - Optional	
c. MAILING ADDRESS (Street, City, State, ZIP Code) - Optional		8. DATE OF SUBMISSION (YYMMDD)	