

MIL-C-43763(GL)

21 January 1972

SUPERSEDING

(see 6.5)

MILITARY SPECIFICATION

CLOTH, TROPICAL, POLYESTER/RAYON (DURABLE PRESS)

1. SCOPE

1.1 This specification covers tropical cloth made with a blend of polyester and rayon, chemically treated with an uncured durable press finish.

2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

SPECIFICATIONS

MILITARY

MIL-T-43548 - Thread, Polyester, Cotton-Covered

FEDERAL

PPP-P-1133 - Packaging and Packing of Synthetic Fiber Fabrics

STANDARDS

FEDERAL

FED-STD-4 - Glossary of Fabric Imperfections

FED-STD-191 - Textile Test Methods

MILITARY

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes

(Copies of specifications, standards, drawings and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

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2.2 Other publications.- The following documents form a part of this specification to the extent specified herein. Unless a specific issue is identified, the issue in effect on date of invitation for bids or request for proposal shall apply:

Rules and Regulations Under the Textile Fiber Products Identification Act

(Copies may be obtained without charge from the Federal Trade Commission, Washington, D. C. 20580.)

Technical Manual of the American Association of Textile Chemists and Colorists

Method No. 119-1970 Color Change Due to Flat Abrasion (Frosting):

Screen Wire Method

Method No. 124-1969 Appearance of Durable Press Fabrics after Repeated Home Launderings

Method No. 88C-1971 Appearance of Creases in Wash and Wear Items after Home Laundering

(Application for copies should be addressed to AATCC National Headquarters, P. O. Box 12215, Research Triangle Park, N. C. 27709.)

### 3. REQUIREMENTS

3.1 Standard sample.- The dyed, treated, pressed and cured cloth shall match the standard sample (which has been pressed and cured) and 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 Materials.-

##### 3.2.1 Fiber blend.-

3.2.1.1 Polyester fiber.- The fiber shall be polyethylene glycol terephthalate.

3.2.1.2 Rayon fiber.- The fiber shall be 1.5 denier, dull rayon.

3.2.2 Yarn.- The warp and filling yarn shall be a blend of polyester staple fiber and rayon staple fiber. The dyed cloth shall contain  $65 \pm 3$  percent polyester fiber and the remaining percent rayon based on the dry weight of the desized specimens, when tested as specified in 4.4. The yarn shall be 2 ply for both the warp and the filling.

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3.3 Color.- The color of the cured cloth shall be Army Tan 445 and shall match the cured standard sample (see 6.3). The color shall be imparted by selected vat colors applied by a continuous thermal fixation, steam reduction and oxidation procedure.

3.3.1 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, treated and cured cloth shall contain no more labile sulfur than shown by the standard sample when tested as specified in 4.4. When a standard sample is not available the dyed cloth shall show no more than a slight trace of labile sulfur as defined in the test method when tested as specified in 4.4.

3.3.2 Matching.- The color of the cured cloth shall match the standard sample under natural (north sky) daylight or artificial daylight having a color temperature of 7500° Kelvin and shall be a good approximation to the standard sample under incandescent lamplight at 2800° Kelvin, when examined as specified in 4.2.2.4.

3.3.3 Colorfastness - The cured cloth shall show colorfastness to laundering, crocking, perspiration, light, frosting and sublimation equal to or better than the standard sample when tested as specified in 4.4.

3.4 Physical requirements - The dyed, treated and cured cloth shall conform to the requirements specified in table I when tested as specified in 4.4

TABLE I - Physical requirements

Weight oz. per sq. yd. minimum	Yarns per inch Minimum		Breaking strength pounds minimum		Tearing strength pounds minimum	
	Warp	Filling	Warp	Filling	Warp	Filling
6.5	90	48	170	120	6.0	4.0

3.4.1 Width.- The width of the cloth shall be as specified (see 6.2) and shall be the minimum width inclusive of selvages.

3.4.2 Weave.- The weave shall be plain.

3.5 Cloth preparation.- The cloth shall be scoured and heat set prior to dyeing.

3.6 Nonfibrous materials.- The starch and protein content including chloroform-soluble and water-soluble material of the scoured and dyed cloth shall not exceed 2.0 percent when tested as specified in 4.4.

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**3.7 Dimensional stability.-**

3.7.1 (For Government procurements only) The resin or reactant treated dyed cloth shall not shrink more than 1.5 in the warp and 1.0 percent in the filling under the curing conditions specified in footnote 2/ of Table III, when tested as specified in 4.4.

3.7.2 The cured cloth shall have dimensional changes of not more than 2.5 percent in the warp and 1.5 percent in the filling when tested as specified in 4.4.

3.8 Treatment.- The dyed cloth shall be given an approved (see 6.4) durable press and soil release treatment. This treatment shall consist of a suitable catalyzed resin system in combination with a soil release agent and hand modifiers. A wetting agent may be used to facilitate processing. Durable press resins and soil release agents other than those approved for use are prohibited. The cloth shall be processed so that the uncured and cured cloth shall meet the applicable requirements of this specification when tested as specified in 4.4.

3.8.1 Appearance, soil release and crease retention.- The cured cloth shall show ratings not less than the following when tested after 15 launderings as specified in 4.4.

	<u>Minimum average rating per sample unit</u>
Appearance rating	3.5
Soil release rating	3.5
Crease retention rating	3.5

3.9 Spray rating limit - The results of the three individual determinations on the dyed, treated and cured cloth for spray rating shall not exceed ratings of 70, 70, 70 (after 3 launderings) when tested as specified in 4.4.

3.10 Seam efficiency - The dyed, treated and uncured cloth shall have a seam efficiency of not less than 85 percent when tested as specified in 4.4.

3.11 pH.- The pH value of the water extract of the dyed, treated and cured cloth shall be no less than 5.0 nor more than 8.5 when tested as specified in 4.4.

3.12 Length and put-up - Unless otherwise specified (see 6.2), the chemically treated but uncured cloth shall be furnished in continuous lengths each not less than 40 yards. Each length shall be put up on rolls as specified in PPP-P-1133.

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

3.14 Marking - The face side of the cloth shall be identified by applying a stamping on that side of the cloth with the word "Face" at each end of the roll.

3.15 The piece tickets (see 5.3) shall show the date of application of the durable press and soil release treatment by month and year or by actual date.

3.16 Workmanship - The dyed, treated and uncured cloth shall conform to the quality established by this specification. The demerit points per 100 square yards when calculated as specified in section 4 shall not exceed the established maximum point value.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection - Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier 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 the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Certificate of compliance - Where certificates of compliance are submitted, the Government reserves the right to check test such items to determine the validity of the certification.

4.2 Inspection - Sampling for inspection shall be performed in accordance with MIL-STD-105 except where otherwise indicated hereinafter.

4.2.1 Component and material inspection - In accordance with 4.1 above, components and materials shall be tested in accordance with all the requirements of referenced specifications, drawings and standards unless otherwise excluded, amended, modified or qualified in this specification or applicable purchase documents.

4.2.2 Examination of the end item - Examination of the end item shall be in accordance with 4.2.2.1 through 4.2.2.4.

4.2.2.1 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

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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 4.2.2.1.1, except that only those slubs and knots which exceed the limits shown on figure 2, of FED-STD-4, shall be scored. No linear yard (increments of 1 yard on the measuring device or the inspection machine) from any one roll within the sample, shall be penalized more than 4 points. The sample size shall be in accordance with the following:

<u>Lot size (yards)</u>	<u>Sample size (rolls) 1/</u>
3200 or less	8
3201 up to and including 10,000	13
10,001 and over	20

1/ No more than one roll shall be taken from any shipping container unless the number of shipping containers in the lot is less than the required number of rolls in which case all shipping containers shall be present in the sample.

The lot shall be unacceptable if the points per 100 square yards of the total yardage examined exceeds 30 points. The lot shall be unacceptable if the points per 100 square yards of two or more individual rolls exceeds 45 points. If one roll exceeds 45 points per 100 square yards, a second sample of 20 rolls shall be examined only for individual roll quality examination. The lot shall be unacceptable if one or more rolls in the second sample exceeds 45 points per 100 square yards. Point computation for lot quality and individual roll quality shall be as follows:

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

4.2.2.1.1 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

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

Baggy, ridgy or wavy cloth

Width less than specified

Poor dye penetration mottled, streaky or cloudy

Overall uncleanness

Excessive neppiness

4.2.2.2 Examination for length.-

4.2.2.2.1 Individual rolls.- 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 ticket shall be considered a defect with respect to length. The lot shall be unacceptable if two or more rolls in the sample are defective in respect to length.

4.2.2.2.2 Total yardage 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 tickets. The rolls examined shall be those selected for the examination of individual rolls.

4.2.2.3 Examination for shade - Each roll in the lot shall be examined visually for shade (see 3 3 2). The sample unit shall be a piece not less than 5 inches by 8 inches which has been pressed and cured by the fabric supplier. A roll shall be unacceptable if the cured sample unit fails to meet the requirement for shade matching. A sample unit shall be drawn from each roll in the lot and identified with the roll number. When specified (see 6 2) a second piece shall be taken and made available for reference in the uncured condition.

4.2.2.4 Examination for race markings and compliance with the Textile Fiber Products Identification Act - During the yard-by-yard examination, each roll in the sample shall be examined for these defects. The lot shall be unacceptable if two or more rolls in the sample have the race stamping missing from either or both ends or the face stamping on the wrong side, or are not labeled, ticketed or invoiced in accordance with the Textile Fiber Products Identification Act.

4.3 Examination of preparation for delivery requirement - An examination shall be made in accordance with the provisions of PPP-P-1133, to determine that packaging, packing and marking comply with section 5 requirements.

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4.3.1 Examination for dating of treatment.- An examination shall be made to determine that the piece ticket shows the date of the application of the durable press and soil release treatment (see 3.15). Each roll not containing this information on the piece ticket shall be a defect. The lot shall be unacceptable if two or more of these defects occur.

4.4 Testing of the end item. The methods of testing specified in FED-STD-191 wherever applicable and as listed in table II and III, shall be followed. The physical and chemical values specified in section 3 apply to the results of the determinations made on a sample unit to test purposes as specified in the applicable test method. All test reports shall contain the individual values utilized in expressing the final result. The sample unit for testing as specified in table II shall be 1 2 yard full width of the dyed cloth. For the uncured cloth tests in table III, the sample unit will be 3-1/2 yards of dyed, treated and uncured cloth. For the cured cloth tests the sample unit shall be 3-1/4 yards, full width of dyed treated and cured cloth. The sample size (number of sample units) shall be as shown in the table below. The lot size shall be expressed in units of 1 yard. The lot shall be unacceptable if one or more sample units fail to meet any test requirements specified.

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

TABLE II - Test methods (applicable to dyed cloth only)

<u>Characteristic</u>	<u>Requirement paragraph</u>	<u>Test method</u>
Polyester identification	3 2 1 1	1/
Rayon identification	3 2 1 2	1/
Polyester Fiber content	3 2 2	4 4 1
Yarn ply	3 2 2	Visual 2/
Heat set	3 5	1/
Scouring	3 5	1/
Weave	3 4 2	Visual 2/
Nonfibrous material	3 6	2611

- 1/ Unless otherwise specified a certificate of compliance shall be submitted and will be acceptable for the stated requirement.
- 2/ One determination for each sample unit and the result reported as "pass" or "fail".



TABLE III.- Test methods (applicable to treated cloth)

Characteristic	Requirement paragraph	Test method
Uncured cloth		
Seam efficiency	3.10	5110 <u>1/</u>
Dimensional stability during curing		
Warp	3.7.1	<u>2/</u>
Filling	3.7.1	<u>2/</u>
Cured cloth		
Labile sulfur	3.3.1	2020
Colorfastness to:		
Laundering	3.3.3	5610
Crocking	3.3.3	5651
Perspiration	3.3.3	5680
Light	3.3.3	5660
Frosting	3.3.3	4.4.2
Sublimation	3.3.3	4.4.3
Weight	3.4	5041
Yarns per inch:		
Warp	3.4	5050
Filling	3.4	5050
Breaking strength:		
Warp	3.4	5100
Filling	3.4	5100
Tearing strength:		
Warp	3.4	5132
Filling	3.4	5132
Dimensional stability after 15 launderings:		
Warp	3.7.2	4.4.4
Filling	3.7.2	4.4.4
Appearance after 15 launderings	3.8.1	4.4.4
Crosc retention after 15 launderings	3.8.1	4.4.4

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TABLE III.- Test methods (applicable to treated cloth) (cont d)

Characteristic	Requirement paragraph	Test method
Soil release after 15 launderings	3 8 1	4.4.4
Spray rating After 3 launderings	3 9	4 4 4 2 and 5526
pH	3 11	2811

1/ The needle shall measure 0.044 ± 0.001 inch across the blade at the eye. The spun polyester thread shall be ticket No. 50 2 ply in the needle and ticket No. 70 2 ply in the looper conforming to MIL-T-43548

2/ Three specimens 22 inches by 22 inches for testing dimensional stability during curing shall be cut from treated but uncured cloth, and be marked as described in 4.4.4.2. The specimens shall then be pressed on a hot head press at 310° F and 80 pounds per square inch gauge pressure under the following cycle at full pressure:

5 seconds steam  
5 seconds bake  
5 seconds vacuum during bake  
release head and continue vacuum  
for 5 seconds

Curing cycle: Pressed fabric should be cured at a minimum of 325° F for a period of 10 minutes

#### 4.4.1 Polyester fiber content -

4.4.1.1 Test specimen - The specimen shall be approximately 2 grams made up of yarn unravelled from the dyed cloth sample and cut up into small pieces approximately 1/4 inch in length

#### 4.4.1.2 Apparatus, reagents, methods cited -

Apparatus as described in Method 2611

Sintered glass filter crucible of coarse porosity.

Hydrometer.

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Sulfuric acid, 75 percent (density 1.67) prepared by pouring first 350 cubic centimeters (cc.) of water in a round-bottom flask, then adding 680 cc. of concentrated sulfuric acid slowly, with cooling under the tap. The density of the solution is adjusted to 1.67 using a hydrometer.

Sulfuric acid, dilute (100 cc. of concentrated sulfuric acid added to 1900 cc. of water).

4.4.1.3 Procedure. - The nonfibrous material shall be removed as specified in Method 2611. The desized specimen shall be dried to a constant weight, cooled in a desiccator and weighed. The specimen shall then be immersed in 200 cc. of 75 percent solution of sulfuric acid for 1 hour with intermittent stirring. The residual fibers shall be transferred to the glass crucible and the excess acid solution removed by suction. The residual fibers shall be washed on the fiber filter successively with dilute sulfuric acid, water dilute ammonia solution (soak for ten minutes) and again with water (soak for ten minutes). After each separate washing, the crucible is drained by suction. The residue shall be dried to a constant weight in an air oven at 105° to 110° C. This is the "weight of the dry polyester fiber" in the specimen.

4.4.1.4 Result. - The percentage of polyester fiber shall be based on the extractive moisture free basis and the polyester fiber content shall be calculated with the following equation:

$$\text{Polyester fiber, percent} = \frac{\text{Weight of dry polyester fiber}}{\text{Weight of dry desized specimen}} \times 100$$

4.4.1.5 Two specimens shall be tested from each sample unit and the polyester fiber content shall be the average of the results obtained from the specimen tested and shall be reported to the nearest .0 percent.

4.4.2 Frosting - The test method used shall be AATCC Test Method 119-1970 Color Change Due to Flat Abrasion (Frosting, Screen Wire Method).

4.4.3 Sublimation - The test method used shall be Method 5642 of FED-STD-191 and the test shall be conducted at a temperature range of 4

4.4.4 Appearance of cloth, crease retention, soil release, and the determination of dimensional stability. -

4.4.4.1 Apparatus and material. -

4.4.4.1.1 The following apparatus and materials are required for laundering:

- (a) Kenmore Automatic Washing Machine Model 600 or similar machine (in case of disputes, the Kenmore Model 600 shall be used)
- (b) Kenmore Automatic Dryer Model 600 or equivalent

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- (c) AATCC Standard Detergent or equivalent
- (d) Mineral Oil, Nujol Plough Inc Memphis Tennessee or equivalent.
- (e) AATCC Standard Blotting paper or equivalent
- (f) Five pound cylindrical weight 2 1/2 inches diameter
- (g) Dummy pieces for ballast - 36 x 16 inches hemmed of type 128 cotton sheeting added to test specimens to make an approximately 4-pound load
- (h) AATCC glassine paper or equivalent

4.4.4.1.2 The following apparatus and materials are required for evaluation of samples:

(a) Overhead lighting procedure Apparatus shall be as specified in AATCC Test Method 124 1969. In addition AATCC three dimensional Durable Press Replicas, Deering Milliken Corporation photograph standards for evaluating stain release and a non-reflecting black topped table 35 ± 1 inches high shall also be required. The dimensions of the table shall be at least 30 x 24 inches with the long dimensional parallel to the viewing board.

(b) Overhead and side lighting Apparatus shall be as specified in AATCC Test Method 88C-1971. In addition photographic standards for evaluating pressed-in creases shall be required.

4.4.4.1.3 Evaluation shall be conducted in a room where the only source of light will be that used for observation. To prevent unwanted reflection of light that will interfere with the observation the walls of the room may be painted a flat non-reflecting black or blackout curtains may be hung on each side of the viewing area.

4.4.4.2 Test for characteristics involving laundering - Three specimens 22 x 22 inches measured parallel to the warp and filling shall be cut from a portion of the treated cloth sample which has been pressed and cured (see 3.1.1) flat. One specimen shall be cut from each side of the sample unit to within three inches of the selvages and the third specimen shall be taken from the center. No two specimens shall contain the same filling yarns. The specimens shall be conditioned to equilibrium under Standard Conditions in accordance with FED-STD-191. The conditioned specimens shall be laid without tension on a flat surface care being taken that the cloth is free from wrinkles or creases. Three distances each a minimum of 18 inches, shall be measured and marked off parallel to each of the warp and filling directions of the specimen. Each pair of markings shall be a minimum of 6 inches from each other and not closer than one inch to the edges of the specimen. The distance may be marked with indelible ink and a fine pointed pen or by sewing fine threads into the cloth, or by stamping. The measured distance shall be parallel to the respective yarns. Three specimens 15 x 15 inches shall also be cut from an uncured portion of the treated cloth sample. These specimens shall be cured with a

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warpwise crease pressed through the center of the specimen. If specimens from these two sets are not to be used for spray rating tests following three launderings, a third set of specimens at least 8 x 8 inches shall be prepared. The two (or three) sets of samples shall then be laundered in accordance with 4.4.4.2.1.

4.4.4.2.1 Laundering.- Place the three 15-inch by 15-inch creased specimens and the 22-inch by 22-inch specimens and the three 8 inch by 8-inch specimens for spray ratings in the washer. The washing load shall be approximately four pounds. Dummy pieces shall be added to the machine along with the specimens to make up the approximately four pound load. Fill to the full water level of the washer with water of a hardness not to exceed 50 parts per million and at a temperature of  $140 \pm 5^\circ$  F. Add 140 grams of detergent. Set the washer for a 12 minute cycle on the "Normal" setting. Allow the washing to proceed automatically through the final spin cycle. Remove the specimens immediately at the completion of the final spin and separate from the dummy pieces and each other if tangled. Place the complete washed load (4 pounds) in the dryer and dry at the "Normal" cycle and a setting which generates an exhaust temperature range of  $140^\circ$  to  $160^\circ$  F. Operate the dryer until the load is dry and continue tumbling 5 minutes with the heat turned off (cool down cycle). Remove the load immediately after the machine stops. Repeat the wash and dry cycles for 3 complete cycles, following which the samples to be used for spray rating tests shall be removed from the load and conditioned for test. The load shall then be continued until 14 complete cycles. At the completion of the fourteenth cycle, the creased specimens to be used for the evaluation of the soil release characteristic shall be separated from any samples that are being tested for dimensional stability. Each specimen to be tested for soil release shall be stained with one spot of mineral oil. Place the area to be stained on AATCC blotting paper. Using an eyedropper stain the specimens using 5 drops to form the spot. Place a 3 x 3 inch piece of glassine paper directly over the oil. Keep the weight in place 60 seconds. Remove the weight and glassine paper and wipe off the excess oil with clean tissue. Allow the test specimen to hang undisturbed for at least 15 minutes but not over 2 hours. The stained specimens, any specimens that are being tested for dimensional stability and the dummy pieces required to make up the four pound load are returned to the washing machine and laundered for the complete fifteenth wash and dry cycle. When the fifteenth cycle is completed the specimens are conditioned to equilibrium under Standard Conditions in accordance with FED-STD-191. During conditioning and during periods of interruption of the cycles the creased samples shall be suspended from a line with the crease running in the vertical direction to avoid distortion.

4.4.4.3 Evaluation.- Three trained observers shall evaluate each sample unit for appearance, crease retention and soil release characteristics. The observers shall make their evaluations independent of each other. Each observer shall evaluate each specimen for appearance and crease retention as it hangs on the viewing board while standing in front of the viewing board and four feet back from it.

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4.4.4.3.1 Dimensional stability - The laundered and conditioned specimens to be evaluated for dimensional stability shall be laid out without tension on a flat surface in the standard atmosphere. Care shall be taken that the specimens are free from wrinkles and creases. The previously measured distances marked on the specimen shall again be measured in both the warp and filling directions. The dimensional stability of the specimen shall be calculated as follows:

$$\text{Dimensional change, percent} = \frac{A - B}{A} \times 100$$

Where: A = Average of initial measurements (3 specimens)  
B = Average measurements after laundering (3 specimens)

The dimensional change of the sample unit in the warp and filling directions shall be the average of the specimens tested in each direction respectively and shall be reported separately to the nearest 0.1 percent. The individual values used to calculate the averages shall also be reported.

4.4.4.3.2 Evaluation of the appearance of the cloth - The overhead lighting shall be used (see 4.4.4.1.2a). Mount the creased specimen on the viewing board with the center of the specimen five feet from the floor with the crease in the vertical direction. Place three dimensional plastic replicas on each side of the specimen with the centers five feet from the floor to facilitate comparative rating. The specimen shall be rated according to the appearance on the plastic replica that most nearly matches the appearance of the cloth. The average of the rating values assigned for appearance of the cloth by each observer rounded off to the nearest 0.5 rating shall be the rating for the specimen. Each rating value given by each observer for appearance of the cloth shall also be reported.

4.4.4.3.3 Evaluation of pressed-in creases - After evaluating the appearance of the cloth the required light shall be added to the overhead lighting (see 4.4.4.1.2b), and the specimens evaluated for the appearance of the pressed-in creases. Using the applicable standards the specimens shall be compared with the standards and rated in the same manner as in 4.4.3.2. The average rating value rounded off to the nearest 0.5 rating for crease retention and the individual rating value given by each observer shall also be reported.

4.4.4.3.4 Evaluation of soil-release - The overhead lighting shall be used (see 4.4.4.1.2a). The applicable standard shall be mounted on the viewing board 45 inches from the floor. The specimen containing the stain shall be placed on a black-topped table 35 ± 1 inches high and in front of the standard. The observer shall stand in front of the specimen and four feet back from the viewing board. The specimen shall be compared with the standard and rated

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according to the appearance of the standard that most nearly matches the stain on the specimen. The rating of the stain is the stain release rating assigned by each observer. The average of the rating values given by each observer rounded off to the nearest 0.5 rating shall be the stain-release value for the sample unit evaluated.

## 5. PREPARATION FOR DELIVERY

5.1 Packaging.- Packaging shall be level A or C as specified (see 6.2).

5.1.1 Level A and C.- The cloth, put up as specified, shall be packaged in accordance with the applicable requirements of PPP-P-1133.

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

5.2.1 Levels A, B and C.- The cloth shall be packed in accordance with the applicable requirements of PPP-P-1133.

5.3 Marking.- In addition to any special marking required by the contract or order, shipments shall be marked in accordance with the applicable requirements of PPP-P-1133 (see 3.14)

## 6. NOTES

6.1 Intended use.- The cloth covered by this specification is intended for use in durable press shirts and trousers.

6.2 Ordering data.- Procurement documents should specify the following:

- (a) Title, number and date of this specification.
- (b) Color of cloth required (see 3.3)
- (c) Width of cloth required, if other than specified (see 3.4.1).
- (d) Length of roll required if other than specified (see 3.12)
- (e) Whether uncured shade samples are required (see 4.2.2.3)
- (f) Selection of applicable put up packaging, and packing (see 5.1 and 5.2).

6.3 Standard sample.- For access to standard sample, address the procuring office issuing the invitation for bids

6.3.1 Caution is necessary in shade matching this color in that the polyester fiber may have been optically brightened by the fiber manufacturer

6.3.2 The standard sample for Tan 445 was dyed by the thermal fixation process with the following dyestuff formulation:

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Special Vat Brown C-GR  
 Special Vat Yellow C-GG  
 Special Vat Gray C-GN

6.4 Approval of the durable press resins and soil release agents for utilization under this specification is the responsibility of the U. S. Army Natick Laboratories, Natick Ma 01760 and is based on extensive tests, including those for human toxicity which are not set forth in this specification. Because of the time necessary to conduct full evaluations only those treatments approved and so listed in the invitation for bids or request for proposals shall be considered acceptable for the related procurement

6.5 Supersession data - This specification includes the requirements of limited purchase description LP/P DES 28-69 dated 8 July 1969

6.6 In event procedures for pressing and curing sensitized fabric are not available the following method is recommended

**Pressing:** Pressing of the sensitized fabric should be accomplished on a hot head press at approximately 310 F and 80 pounds per square inch gauge pressure under the following cycle at full pressure:

5 seconds steam  
 5 seconds bake  
 5 seconds vacuum during bake  
 release head and continue vacuum  
 for 5 seconds

**Curing Cycle:** Pressed fabric should be cured at a minimum of 325 F for a period of 10-12 minutes

**Custodian:**

Preparing activity.

Army - GL

Army - GL

**Review activity:**

Project No 8305 A184

Army - MD



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SPECIFICATION ANALYSIS SHEET		Form Approved Budget Bureau No 22-R255
<p><b>INSTRUCTIONS</b> This sheet is to be filled out by personnel, either Government or contractor, involved in the use of the specification in procurement of products for ultimate use by the Department of Defense. This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured with a minimum amount of delay and at the least cost. Comments and the return of this form will be appreciated. Fold on lines on reverse side, staple in corner, and send to preparing activity. Comments and suggestions submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or serve to amend contractual requirements.</p>		
<p><b>SPECIFICATION</b> Cloth, Tropical, Polyester/Rayon (Durable Press) MIL-C-43763(GL)</p>		
<p><b>ORGANIZATION</b></p>		
<p><b>CITY AND STATE</b></p>		<p><b>CONTRACT NUMBER</b></p>
<p><b>MATERIAL PROCURED UNDER A</b>  <input type="checkbox"/> DIRECT GOVERNMENT CONTRACT      <input type="checkbox"/> SUBCONTRACT</p>		
<p><b>1 HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?</b>  <b>A GIVE PARAGRAPH NUMBER AND WORDING</b></p>		
<p><b>B RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES</b></p>		
<p><b>2 COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID</b></p>		
<p><b>3 IS THE SPECIFICATION RESTRICTIVE?</b>  <input type="checkbox"/> YES      <input type="checkbox"/> NO (If "yes" in what way?)</p>		
<p><b>4 REMARKS (Attach any pertinent data which may be of use in improving this specification. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity.)</b></p>		
<p><b>SUBMITTED BY</b> (Printed or typed name and activity - Optional)</p>		<p><b>DATE</b></p>

DD FORM 1426  
1 JAN 66

REPLACES EDITION OF 1 OCT 64 WHICH MAY BE USED