

MIL-C-40070(Ord)
15 June 1959
(See section 6)

MILITARY SPECIFICATION

CLOTH, ACRYLIC-RAYON

(FOR CARTRIDGE BAGS)

1. SCOPE

1.1 Scope. - The specification covers natural acrylic-viscose-rayon cloth for use in the manufacture of cartridge bags for artillery ammunition. The cloth is not for use with propellants containing nitroguanidine.

1.2 Classification. - The acrylic-viscose rayon cloth shall be of the following classes, as specified (see 6.1):

- Class 1 - Breaking strength 60 pounds per inch, minimum.
- Class 2 - Breaking strength 80 pounds per inch, minimum.
- Class 3 - Breaking strength 125 pounds per inch, minimum.
- Class 4 - Breaking strength 170 pounds per inch, minimum.

2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issue in effect on date of invitation for bids, form a part of this specification.

SPECIFICATIONS

FEDERAL

- CCC-T-191 - Textile Test Methods.
- DDD-S-751 - Stitches, Seams, and Stitching
- PPP-P-51 - Packaging, Packing and Marking of Textile Fabrics (Woolens, Worsteds, Cotton, Silks and Synthetics).

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- MIL-T-13505 - Thread, Silk, Sewing (For Propellant Bags).

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STANDARDS

MILITARY

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

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

3. REQUIREMENTS

3.1 Preproduction sample approval. - Unless otherwise specified (see 6.1), before production is commenced, the contractor shall submit fifty (50) square yards of finished fabric to the contracting officer for approval (see 4.2).

3.2 Material. - Acrylic-viscose rayon cartridge cloth shall be woven of acrylic-viscose rayon yarns that have been spun from a blend of any acrylic fibers and viscose fibers.

3.3 Chemical requirements.

3.3.1 Ether soluble material. - The ether soluble material shall be not more than 10 percent, when tested as specified in 4.3.2.1.1.

3.3.2 Size. - The cloth shall be finished with a starch size. The finished cloth shall not contain more than 10 percent starch when tested as specified in 4.3.2.1.2.

3.3.3 Acrylic fiber content. - The acrylic fiber content shall be 50 percent minimum (min.) and 60 percent maximum (max.), when tested as specified in 4.3.2.1.3

3.3.4 pH of water extract. - The pH of water extract shall be 5.0 min. and 9.0 max., when tested as specified in 4.3.2.2.

3.3.5 Ash. - The ash content shall be 2.0 percent, max., when tested as specified in 4.3.2.3.

3.3.6 Acidity or alkalinity.

3.3.6.1 Acidity. - The acidity, determined as acetic acid, shall be not more than 0.1 percent, when tested as specified in 4.3.2.4.

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3.3.6.2 Alkalinity. - The alkalinity, determined as sodium carbonate, shall be not more than 0.1 percent, when tested as specified in 4.3.2.4.

3.3.7 Halogens. - The cloth shall contain no halogens, when tested as specified in 4.3.2.5.

3.4 Physical requirements. - The finished cloth shall comply with the requirements in table 1 when tested as specified in 4.3.2, and as otherwise specified herein.

Table I - Requirements

| | Class 1 | Class 2 | Class 3 | Class 4 |
|--|---------------------------------|-----------|-----------|------------|
| Weave | Plain-single, one end in a dent | 2X1 twill | 2X1 twill | 2X2 basket |
| Weight, ounces per square yard | | | | |
| Min. | 4.75 | 5.75 | 8.75 | 11.0 |
| Max. | 5.25 | 6.25 | 9.25 | 11.5 |
| Thread count, threads per inch, min. | | | | |
| Warp | 35 | 34 | 45 | 48 |
| Fill | 35 | 34 | 45 | 48 |
| Slippage value, min. | | | | |
| Warp | 60 | 60 | 60 | 60 |
| Fill | 60 | 60 | 60 | 60 |
| Breaking strength, pounds per inch, min. | | | | |
| Warp | 60 | 80 | 125 | 170 |
| Fill | 60 | 80 | 125 | 170 |
| Stretch, percent, max. | | | | |
| Warp | 10 | 10 | 10 | 10 |
| Fill | 10 | 10 | 10 | 10 |

3.5 Dimensions

3.5.1 Width. - The width shall be as specified in the contract or purchase order (see 6.1).

3.5.2 Bolts. - Each bolt shall contain not less than 60 nor more than 220 linear yards of cloth. A bolt may contain two pieces of the cloth, but neither piece shall be less than 20 yards long.

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3.6 Workmanship. - The finished cloth shall be clean, evenly woven and shall conform to the quality and grade of product established by this specification. The occurrence of defects shall not exceed the applicable acceptable quality levels specified in 4.3.

4. QUALITY ASSURANCE PROVISIONS

4.1 Unless otherwise specified herein, the supplier is responsible for the performance of all inspection requirements prior to submission for Government inspection and acceptance. Except as otherwise specified, the supplier may utilize his own facilities or any commercial laboratory acceptable to the Government. Inspection records of the examinations and tests shall be kept complete and available to the Government as specified in the contract or order.

4.2 Preproduction sample inspection. - The preproduction sample submitted in accordance with 3.1 shall be visually inspected for appearance and finish. The sample shall be tested for physical and chemical properties in accordance with the methods shown in table IV and paragraphs 4.3.2.1 thru 4.3.2.8. In addition, cartridge bags of the size required for propelling charges for which the cloth is intended, shall be fabricated from the preproduction sample and loaded. The seams shall be inspected for compliance with requirements to determine that the fabric does not ravel to the extent that seam width requirements are not met.

4.3 Inspection for acceptance. - Inspection shall be in accordance with the provisions of Standard MIL-STD-105 and Appendix thereto, except when otherwise indicated.

4.3.1 Inspection of the end item

4.3.1.1 Examination of the end item. - Defects found during the examination shall be classified in accordance with 4.3.1.1.1, 4.3.1.1.2 and 4.3.1.1.3.

4.3.1.1.1 Yard by yard examination. - The required yardage of each piece shall be inspected on the face side and visual defects classified in accordance with table II. The Government reserves the right to require examination for any defects not included herein and to classify such defects in accordance with the definitions contained in MIL-STD-105. All defects found shall be counted regardless of their proximity one to another, except where two or more defects represent a single local condition of the cloth, in which case only the more serious defects shall be counted. A continuous defect shall be counted as one defect for each warpwise yard or fraction thereof in which it occurs. The unit of product for this examination shall be one linear yard. The sample size shall

be in accordance with inspection level III, table III of Standard MIL-STD-105. The acceptable quality level shall be 1.5 major and 6.5 total defects (major and minor combined) per 100 units (yards). The lot size shall be expressed in units of 1 yard each. An approximate equal number of yards shall be examined from each piece selected.

Table II Classification of defects

| Defect | Classification | |
|--|----------------|-------|
| | Major | Minor |
| Abrasion mark or weak spot - any open place or any area visibly thinner or weaker than surrounding normal cloth | X | - |
| Broken or missing yarns | | |
| Multiple, regardless of length | X | - |
| Single, more than 2 inches in length | X | - |
| Single, 2 inches or less in length | - | X |
| Cut, hole or tear, any size | X | - |
| Floats or skips - Two or more, more than 1/4 inch in combined warp and filling directions or single floating over 1 inch in length | - | X |
| Knots - any knot extending above surface of cloth or with untrimmed tails extending from cloth, clearly visible* | - | X |
| Light or fine filling bar - clearly visible* | X | - |
| Coarse or heavy filling bar - clearly visible* | - | X |
| Smash, any | X | - |
| Slubs, jerked-in filling, slough off, or coarse yarn three or more times the diameter of normal yarn | - | X |
| Spots, stains or streak - extending for one(1) inch or more in combined directions, clearly visible* | - | X |
| Wrong draw - 2 or more ends 1/2 inch or more in length or single, 9 inches or more in length | - | X |
| Wrinkle or crease, hard embedded | - | X |
| Width, less than specified | - | X |
| Selvage, cut, torn, broken or scalloped | - | X |
| (Note: Selvage defects extending continuously or intermittently through more than one half of the piece shall be classified as an overall defect.) | | |
| *At normal inspection distance (approximately 3 feet) | | |

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4.3.1.1.2 Overall examination. - Each defect listed below shall be counted no more than once in each piece examined. The unit of product for this examination shall be one piece. The sample size and acceptance number shall be as shown in table IV.

Defects

Selvage curled, folded, rolled or slack continuously or intermittently throughout the piece.

Overall uncleanness

Objectionable odor

Uneven weaving throughout the piece

Table III

| Lot size in yards | Sample size in pieces | Maximum No. of defects acceptable in sample |
|-------------------|-----------------------|---|
| Up to 1300 ✓ | 3 | 0 |
| 1301 to 3200 | 5 | 0 |
| 3201 to 8000 | 7 | 0 |
| 8001 to 22,000 | 10 | 0 |
| 22,001 to 110,000 | 15 | 1 |
| 110,001 and over | 25 | 1 |

✓ If a lot contains fewer than three (3) pieces, each piece in the lot shall be examined.

4.3.1.1.3 Length examination.

4.3.1.1.3.1 Examination for length of individual pieces. - Each piece in the sample shall be examined for gross length. Any gross length found to be less than the specified minimum length, or any gross length found to be more than 2 yards less the gross length marked on the piece ticket, shall be considered a defect with respect to length. The unit of product for this examination shall be 1 piece. The sample size and acceptance number shall be as shown in table III.

4.3.1.1.3.2 Examination for total yardage in sample. - The lot shall be unacceptable if the total of the actual gross lengths of pieces in the sample is less than the total of the gross lengths marked on piece tickets.

4.3.1.2 Examination for packaging, packing and marking for shipment. - Examination shall be made for compliance with the requirements in section 5.

4.3.2 Testing of the end item. - The methods of testing specified in specification CCC-T-191, wherever applicable and as listed in table IV and paragraphs 4.3.2.1 through 4.3.2.8 shall be followed. The physical and chemical values specified in section 3 apply to the average of the determinations made

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on a unit of product for test purposes as specified in the applicable test methods. For each characteristic, the acceptable quality level shall be 6.5 test failures per 100 units. The inspection level shall be level 1-2 table VII, of the Appendix to Standard MIL-STD-105. The unit of product for testing shall be 2 yards, full width, of the finished cloth. The lot size shall be expressed in units of 1 linear yard.

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Table IV

| Property | Specification Requirement | Reference Test Method | #Determ. per unit of Prod. | Results Reported as: |
|------------------------------|---------------------------|-----------------------|----------------------------|--|
| <u>CHEMICAL REQUIREMENTS</u> | | | | |
| Ether soluble matter | 3.3.1 | 4.3.2.1.1 | 2 | Avg. of 2 deter. to nearest 1.0% |
| Size content | 3.3.2 | 4.3.2.1.2 | 2 | Avg. of 2 deter. to nearest 1.0% |
| Acrylic fiber content | 3.3.3 | 4.3.2.1.3 | 2 | Avg. of 2 deter. to nearest 1.0% |
| pH of water extract | 3.3.4 | 4.3.2.2 | 2 | Avg. of 2 deter. to nearest 0.1 value |
| Ash content | 3.3.5 | 4.3.2.3 | 1 | Nearest 0.1% |
| Acidity or alkalinity | 3.3.6 | 4.3.2.4 | 2 | Avg. of 2 deter. to nearest 0.1% |
| Halogens | 3.3.7 | 4.3.2.5 | 1 | Pass or fail |
| <u>PHYSICAL REQUIREMENTS</u> | | | | |
| Weave | Table 1 | Visual | 1 | Pass or fail |
| Weight | Table 1 | 5041 | 5 | Avg. of 5 deter. to nearest 0.1 oz. |
| Thread count | Table 1 | 5050 | 5 | Avg. of 5 deter. to nearest whole No. |
| Warp | Table 1 | 5050 | 5 | Avg. of 5 deter. to nearest whole No. |
| Filling | Table 1 | 5100 & 4.3.2.6 | 5 | Avg. of 5 deter. to nearest whole value. |
| Slippage value | Table 1 | 5100 & 4.3.2.6 | 5 | Avg. of 5 deter. to nearest whole value. |
| Warp | Table 1 | 5100 & 4.3.2.6 | 5 | Avg. of 5 deter. to nearest whole value. |
| Filling | Table 1 | 5100 & 4.3.2.7 | 5 | Avg. of 5 deter. to nearest 1.0 lb. |
| Breaking strength | Table 1 | 5100 & 4.3.2.7 | 5 | Avg. of 5 deter. to nearest 1.0 lb. |
| Warp | Table 1 | 5100 & 4.3.2.7 | 5 | Avg. of 5 deter. to nearest 1.0 lb. |
| Filling | Table 1 | 5100 & 4.3.2.8 | 5 | Avg. of 5 deter. to nearest 1.0% |
| Stretch | Table 1 | 5100 & 4.3.2.8 | 5 | Avg. of 5 deter. to nearest 1.0% |
| Warp | Table 1 | 5100 & 4.3.2.8 | 5 | Avg. of 5 deter. to nearest 1.0% |
| Filling | Table 1 | 5100 & 4.3.2.8 | 5 | Avg. of 5 deter. to nearest 1.0% |

4.3.2.1 Sizing and acrylic fiber content.

4.3.2.1.1 Ether soluble matter. - Two specimens, weighing approximately 0.5 gram each, shall be cut from each of the pieces comprising the sample. These specimens shall be weighed together and transferred to the extraction chamber of a Soxhlet extraction apparatus having ground-glass connections. The extraction chamber shall be assembled to a tared receiving flask and other transferred to the extraction chamber until the specimens are covered and the ether siphons over into the flask. Approximately 25 ml. more ether shall be added to the extraction chamber, a condenser assembled to it and the assembled apparatus placed on a steam bath. The extraction shall be allowed to proceed for 1.5 hours. Heating shall be discontinued at a time when the ether content of the extraction chamber is nearly sufficient to cause the ether to siphon over into the receiving flask. The flask, containing the oily extract, shall be heated on a steam bath until the ether is removed. The flask and residue shall be dried in an oven at 100°C. for 1 hour, cooled in a desiccator, and weighed. The weight of residue shall be calculated to percent ether extract.

4.3.2.1.2 Size. - The cloth specimen remaining in the extraction chamber (see 4.3.2.1.1) shall be transferred to a tared beaker and heated in a steam bath until the ether is removed. The beaker and specimen shall be dried in an oven maintained at 100°C. to 105°C. for one hour, cooled in a desiccator and weighed. Dsize the specimen in accordance with method 2611.1 (paragraph 4.4) described in Federal Specification CCC-T-191B. The starch content shall be calculated as follows:

$$\text{Percent starch} = \frac{(A-B) \times 100}{C}$$

where:

- A = weight of specimen after ether extraction
- B = weight of specimen after desizing
- C = weight of specimen before ether extraction

4.3.2.1.3 Acrylic fiber content. - The desized, weighed cloth specimens (see 4.3.2.1.2) shall be placed in a 600 ml. beaker and 150 ml. of Dimethylformamide (DMF) added. This beaker and contents shall be placed on a steam bath and heated for 15 minutes. The liquid shall be decanted and the addition of DMF, heating and decanting repeated a total of five times. The contents of the beaker shall be washed with distilled water until the odor from the DMF has been removed. The specimens shall be transferred to a tared 250 ml. beaker. The beaker and contents shall be placed in an oven maintained at 100° to 105°C. for 1 hour, cooled in a desiccator and weighed. The difference between this weight and that of the tared beaker represents the weight of the nonacrylic fibrous portion of the specimen. The acrylic fiber content shall be calculated as follows

$$\text{Percent acrylic fiber} = \frac{(A-B) \times 100}{A}$$

where:

- A = weight of desized specimens
- B = weight of desized specimens after extraction with DMF

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4.3.2.2 pH of water extract. - Two specimens weighing approximately 0.5 grams each, shall be cut from each of the pieces comprising the sample. These specimens shall be combined, weighed, and transferred to a 250 ml. beaker. One hundred and fifty ml. of freshly boiled, distilled water shall be added to the beaker, the beaker covered with a watch glass, and the water boiled gently for 30 minutes. In case the volume of water becomes less than one-half the original amount during the boiling period, sufficient boiling distilled water shall be added to restore it to the original volume. At the end of 30 minutes the covered beaker and contents shall be removed from the source of heat, the volume brought to 150 ml. by adding freshly boiled distilled water. The covered beaker and contents shall be cooled at 25° to 30°C. without agitating the contents, to minimize the absorption of carbon dioxide from the atmosphere. The pH of the cooled liquid shall be determined, using a glass electrode pH electrometer, within 1 hour after removing the beaker from the source of heat. The distilled water used for this test shall be carried through the above operation as a blank, and must show a pH value in the range of 6.0 to 7.0.

4.3.2.3 Ash. - Sufficient specimens shall be cut from each of the pieces comprising the sample so as to obtain a total of approximately 2 grams, and transferred to a tared platinum or porcelain crucible and moistened with concentrated nitric acid. The crucible shall be heated on a steam bath for 1 hour and then heated carefully over a flame so as to avoid any loss. When the contents of the crucible have been charred, heat to dull redness until all carbonaceous matter has been burned off. The crucible shall be cooled in a desiccator and weighed. The gain in weight shall be calculated to percent ash in the sample as follows:

$$\text{Percent ash} = 100 \frac{(A-B)}{W}$$

where:

A = weight of crucible and ignited residue

B = weight of crucible empty

W = weight of specimens

4.3.2.4 Acidity or alkalinity. - The solution used in the pH water extraction (see 4.3.2.2) shall be filtered. If the pH of the solution is between 7.0 and 9.0, the solution shall be titrated with N/10 hydrochloric acid solution using methyl red as the indicator. If the pH of the solution is between 5.0 and 7.0, titrate with N/10 sodium hydroxide solution using phenolphthalein as the indicator. Any acidity shall be calculated to percent acetic acid and any alkalinity shall be calculated to percent sodium carbonate.

4.3.2.5 Halogens. - A copper wire shall be heated in a Bunsen flame until all green coloration disappears. The wire shall be removed from the flame, strands or yarn taken from the filling of the fabric from any one of the pieces comprising the sample, wound around the hot end of the wire, and the wire again introduced into the flame. The presence of green coloration in the flame which persists for more than 3 seconds indicates the presence of halogens in the fabric. The above procedure shall be repeated using strands of yarn taken from the warp of the fabric from any one of the pieces comprising the sample.

4.3.2.6 Slippage value

4.3.2.6.1 Apparatus. - A pendulum type testing machine as specified in Specification CCC-T-191, method 5100 with a suitable autographic recording device attached shall be used for determination of slippage value. The machine shall be operated in such a manner that the pulling clamp shall have a speed of 12 ± 0.5 inches per minute.

4.3.2.6.2 Preparation of specimens. - Specimens, 4 inches wide by 16.0 to 16.5 inches long, shall be selected for test. Five sets of two specimens each, one set from each of the five pieces comprising the sample, are required, one specimen of each set for warp slippage value, having the short dimension parallel to the warp yarns, and the other specimen of each set for the filling slippage value, having the short dimension parallel to the filling yarns. Unless otherwise specified, no specimen shall be taken nearer the selvage than one-tenth the width of the material. The specimens shall be prepared by cutting strips of cloth of the number and in the directions specified above, approximately 4.5 inches wide and 17 inches long. Any cut or broken threads shall then be raveled from the strip of cloth until only threads remain in the length-wise direction of the cloth which are approximately as long as the width of the cloth strip. Sufficient yarns shall then be raveled from both the long and short dimensions of the strip of cloth until the specimen is 4 inches wide by 16 to 16-1/2 inches long. Any other convenient method of preparing the specimen may be used provided it doesn't effect the physical properties of the cloth. Fold a test specimen back on itself so that the distance from the fold to one edge, parallel to the short dimension, measures approximately 5 inches and to the opposite edge at least 10 inches. The fold must be parallel to the crosswise yarns in the specimen. At 0.38 inch from the fold, sew a seam parallel to the crosswise yarns of the specimen. Use a seam of the type designated as 301-SSa-1 by Specification DDD-S-751. (Make the seam SSa-1 with one row of stitches, 12 stitches per inch, type 301.) In making the seam, use a needle and a thread of sufficient strength so that it will not break when the seam is tested for elongation. (A number 21 needle and both of the following threads have been found satisfactory: Commercial grade H (14 pound) water-proofed silk, finished line thread with a lefthand machine twist; or cotton thread with lefthand machine twist having a minimum breaking strength of 5 pounds when tested in accordance with paragraph F-4E of Specification MIL-T-13505 (Ord) and a minimum thickness of 0.017 inch. Condition the specimens for at least 24 hours at $21^\circ \pm 2^\circ\text{C}$. and 65 ± 2 percent relative humidity.

4.3.2.6.3 Procedure. - The distance between the jaws of the test machine shall be adjusted to 3 inches. A 6-ounce clamp shall be attached to the specimen parallel to and at a distance of 3 inches from the seam described above. The clamp shall be attached to the 10-inch length of the specimen. The clamp can be assembled from a metallic photographic film clip approximately 5 inches long, a brass or steel rod 6 inches long and 3/16 inch in diameter, or brass or steel weights equal in weight to the 6-inch rod to bring the total weight of the assembly to 6 ounces. The 10-inch portion of the test specimen shall be placed symmetrically in the upper jaws of the test machine so that the long direction of

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the specimen is parallel to the direction of application of the load. The specimen shall be clamped in the upper jaw so that the 6-ounce clamp described above is approximately 1/4 inch below the lower jaws of the test machine. The test machine shall be reset so that a zero load is shown on the graphic record. Make certain that the 6-ounce clamp is supported only by the test specimen so that a uniform tension of 6 ounces is supplied to the specimen. The lower jaws of the test machine shall be fastened to the specimen, taking care to grip the same yarns in the lower jaws as are gripped in the upper jaws. The apparatus shall be arranged to obtain a tension-stretch curve up to the breaking strength of the specimen, the stretch being indicated in inches by the vertical component of the curve and the tension being indicated in pounds by the horizontal component. The machine shall be started and allowed to apply tension until the specimen breaks. This graphic record shall be designated as the fabric-stretch curve. The same specimen shall be inserted in the jaws of the machine so that the seam is in a position parallel to the jaws and midway between the upper and lower jaws. The specimen shall be clamped in the jaws and tension applied by means of the 6-ounce clamp, as directed above, before tightening the lower jaws. The apparatus shall be arranged so that the graphic record of this test will be made on the same chart and will start at the same point as the fabric-stretch curve. The machine shall be started and tension allowed to be applied to the specimen until either the cloth breaks or the seam fails. This graphic record shall be designated as the seam-stretch curve. The tension shall be noted at which the vertical distance between the seam-stretch curve and the fabric-stretch curve is equal to the sum of (a) the vertical distance between these curves when the tension is 1 pound, and (b) a vertical distance on the chart equivalent to 0.25 inch on the cloth. The slippage shall be calculated as follows:

$$\text{Slippage value} = \frac{100A}{B}$$

where:

- A = Tension at which the difference between the seam-stretch curve and the fabric-stretch curve is 0.25 inch plus the difference between these curves when the tension is 1 pound.
- B = minimum breaking strength for the class of cloth being tested as in table I.

The slippage value in the warp direction shall be considered as the average of 5 results obtained for the warp slippage specimens and the slippage value in the fill direction as the average of 5 results obtained for the fill slippage specimens.

4.3.2.7 Breaking strength. - The breaking strength shall be determined concurrently with the slippage value test and shall be read from the fabric-stretch curve of the graphic record. The breaking strength is the point

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of maximum tensile load in test. The breaking strength of the warp yarns is taken as the maximum tension in pounds per inch recorded on the fabric-stretch curve for the fill slippage specimens. The breaking strength of the fill yarns is taken as the maximum tension in pounds per inch recorded on the fabric-stretch curve for the warp slippage specimens. The average of the 5 values obtained in each direction shall be reported as the breaking strength in that direction.

4.3.2.8 Stretch. - The percent of stretch shall be determined concurrently with the slippage value and shall be calculated as shown below for measurements of the fabric-stretch curve of the graphic record. The percent of stretch of the warp yarns is obtained from the fabric-stretch curve obtained when the slippage value of the fill yarns is determined. The percent of stretch of the fill yarns is obtained from fabric-stretch curve obtained when the slippage value of the warp yarns is determined. The percent of stretch in each direction shall be considered as the average of 5 values, determined in that direction calculated as follows:

$$\text{Percent of stretch} = \frac{100 (A-B)}{3.00 \bullet B}$$

where:

A = elongation in inches of the portion of the specimen tested when the tension is 20 pounds for class 1 cloth; 30 pounds for class 2 cloth; 40 pounds for class 3 cloth and 50 pounds for class 4 cloth as read on the fabric stretch curve¹.

B = elongation in inches of the portion of the specimen tested when the tension is 1 pound as read on the fabric stretch curve.¹

¹ The elongation of the specimen is represented by the vertical component of the fabric-stretch curve at the required tension.

5. PREPARATION FOR DELIVERY

5.1 Packaging. - Packaging shall be level A, B, or C as specified (see 6.1).

5.1.1 Levels A, B, and C. - The cloth shall be packed in accordance with the applicable requirements for class 2 fabrics of Specification FPP-P-51.

5.2 Packing. - Packing shall be level A, B or C as specified (see 6.1).

5.2.1 Levels A, B, and C. - The cloth shall be packed in accordance with the applicable requirements of Specification FPP-P-51.

5.3 Marking. - In addition to any special marking required by the contract or order, shipments shall be marked in accordance with the requirements of Specification FPP-P-51.

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6. NOTES

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

- (a) Title, number, and date of this specification.
- (b) Class of material required (see 1.2).
- (c) Width of material required (see 3.5.1).
- (d) Selection of applicable levels of packaging and packing (see 5.1 and 5.2).
- (e) Special marking.
- (f) Whether preproduction sample approval is required (see 3.1)

6.2 This specification supersedes Purchase Description PA-PD-849 dated 7 June 1956 and specification change notice number 1 dated 26 September 1958.

Notice: When Government drawings, specifications or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

Custodians:

Army - Ordnance Corps

Preparing activity

Army - Ordnance Corps