

**INCH-POUND**MIL-W-25361E  
9 April 1990  
SUPERSEDING  
MIL-W-25361D  
13 April 1979

## MILITARY SPECIFICATION

## WEBBING, TEXTILE, POLYESTER, LOW ELONGATION

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

## 1. SCOPE

1.1 Scope. This specification covers low elongation textile webbing composed of a continuous filament polyester warp and bulked nylon filling or a continuous filament polyester filling.

1.2 Classification. The webbing shall be of the following types and classes as specified (see 6.2).

## Type:

|     |                                  |
|-----|----------------------------------|
| I   | - 3600-pound breaking strength   |
| II  | - 6000-pound breaking strength   |
| III | - 7000-pound breaking strength   |
| IV  | - 8700-pound breaking strength   |
| V   | - 10,000 pound breaking strength |
| VI  | - 15,000-pound breaking strength |

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 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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MIL-W-25361E

Class:

- 1 - Untreated
- 2 - Latex treated

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 document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

SPECIFICATION

MILITARY

MIL-P-43334 - Packaging of Textile Webbing and Tape

STANDARDS

FEDERAL

FED-STD-191 - Textile Test Methods

MILITARY

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

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Bldg. 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

FEDERAL TRADE COMMISSION

Rules and Regulations Under the Textile Fiber Products Identification Act

(Copies may be obtained from the Federal Trade Commission, Correspondence Branch, Washington, DC 20580-0001.)

## MIL-W-25361E

2.2. Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

## AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)

## Chromatic Transference Scale

(Application for copies should be addressed to the American Association of Textile Chemists and Colorists, P.O. Box 12215, Research Triangle Park, NC 27709-2215.)

(Non-Government standards and other publications are normally available from the organizations that prepare or 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 document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

## 3. REQUIREMENTS

3.1 First article. When specified (see 6.2), a sample shall be subjected to first article inspection (see 6.3) in accordance with 4.3.

3.2 Samples. The webbing shall match the standard sample for shade and shall be equal to or better than the standard sample with respect to all characteristics for which the standard sample is referenced (see 6.4).

3.3 Material. It is encouraged that recycled material be used when practical as long as it meets the requirements of this specification.

3.3.1 Polyester yarns. The warp yarn for all types and the filling yarn for types V and VI shall be either 1000 or 1100 denier (nominal) semi-dull or bright, high tenacity polyester fiber identified as polyethylene glycol terephthalate with a minimum melting point of 472<sup>o</sup>F and shall conform to the ply and twist requirements specified in table I.

3.3.2 Bulked nylon yarn. The filling yarn for types I, II, III and IV webbing shall be bright, continuous filament bulked nylon.

3.4 Weave.

3.4.1 Type I. The weave shall be a two up, two down twill with one reversal at the center of the webbing.

MIL-W-25361E

3.4.2 Types II, III, IV and V. The weave shall be as shown in figure 1 with one reversal at the center of the webbing.

3.4.3 Type VI. The webbing shall be woven in a three-ply (face, middle and back) plain weave with binders weaving three up and three down. The binders pull one face, one middle, and one back pick together. Warp ends weave two ends as one, binder and selvage ends weave single. The selvages shall have eight ends on one edge and nine ends on the other. A cross section of the weave is shown in figure 2.

3.5 Physical requirements. The finished webbing shall conform to the requirements in table I when tested as specified in 4.4.3.

TABLE I. Construction and physical requirements

|  | Type                                   |  |  |                   |                                      |                                      |
|--|--|--|--|-------------------|--------------------------------------|--------------------------------------|
|  | I                                      | II                                     | III                                    | IV                | V                                    | VI                                   |
| Filling yarn no.:                          |  |  |  |                   |                                      |                                      |
| Denier                                     | 1880 ± 10%                             | 1880 ± 10%                             | 1880 ± 10%                             | 1880 ± 10%        | 1000 or 1100                         | 1000 or 1100                         |
| Ply:                                       |  |  |  |                   |                                      |                                      |
| Warp (face and back)                       | 2                                      | 2                                      | 2                                      | 2                 | 2                                    | 3                                    |
| Binder                                     | -                                      | -                                      | -                                      | -                 | -                                    | 2                                    |
| Filling                                    | -                                      | -                                      | -                                      | -                 | 2                                    | 2                                    |
| Ply twist, turns per<br>inch $\frac{1}{2}$ |  |  |  |                   |                                      |                                      |
| Warp (face and back)                       | 1.5 - 3.5                              | 1.5 - 3.5                              | 1.5 - 3.5                              | 1.5 - 3.5         | 2.5 - 3.0                            | 2.5 - 3.0                            |
| Binder                                     | -                                      | -                                      | -                                      | -                 | -                                    | 2.5 - 3.0                            |
| Filling                                    | -                                      | -                                      | -                                      | -                 | 2.5 - 3.0                            | 2.5 - 3.0                            |
| Warp ends (min):                           |  |  |  |                   |                                      |                                      |
| When 1000 denier<br>yarns are used:        |  |  |  |                   |                                      |                                      |
| Face and back                              | 168                                    | 238                                    | 282                                    | 380               | 398                                  | 494 $\frac{2}{41}$                   |
| Binder                                     | -                                      | -                                      | -                                      | -                 | -                                    | 41                                   |
| When 1100 denier<br>yarns are used:        |  |  |  |                   |                                      |                                      |
| Face and back                              | 154                                    | 216                                    | 256                                    | 346               | 362                                  | 449 $\frac{2}{37}$                   |
| Binder                                     | -                                      | -                                      | -                                      | -                 | -                                    | 37                                   |
| Picks per inch min.,                       | 19                                     | 23                                     | 23                                     | 32                | 22                                   | 17                                   |
| Width, inches                              | 1- $\frac{23}{32}$<br>± $\frac{1}{16}$ | 1- $\frac{23}{32}$<br>± $\frac{1}{16}$ | 1- $\frac{23}{32}$<br>± $\frac{1}{16}$ | 3 ± $\frac{1}{8}$ | 1- $\frac{3}{4}$<br>± $\frac{1}{16}$ | 1- $\frac{3}{4}$<br>± $\frac{1}{16}$ |
| Weight, oz/yd max.,                        | 1.80                                   | 2.30                                   | 2.64                                   | 4.25              | 3.90                                 | 7.50                                 |
| Thickness, inches                          | .040 - .065                            | .060 - .085                            | .070 - .095                            | .065 - .090       | .110 - .135 $\frac{3}{4}$            | .215 - .235                          |

5

MIL-W-25361E

TABLE I. Construction and physical requirements (cont'd)

|  | Type  |       |       |       |  |        |
|--|-------|-------|-------|-------|--|--------|
|  | I     | II    | III   | IV    | V  | VI     |
| Breaking strength:   |       |       |       |       |  |        |
| Initial, lbs. min <u>4/</u>  | 3,600 | 6,000 | 7,000 | 8,700 | 10,000   | 15,000 |
| After abrasion, lbs.<br>min. <u>4/ 5/ 6/</u>   | -     | -     | -     | -     | 9,000  | 13,500 |
| After accelerated<br>aging, percent loss<br>(max) based on<br>initial breaking<br>strength <u>6/</u> | -     | -     | -     | -     | 5.0  | 5.0    |
| Elongation, percent<br>(max):  |       |       |       |       |  |        |
| At 2500 lb. load <u>6/</u>   | 18.0  | -     | -     | -     | -  | -      |
| At 3000 lb. load <u>6/</u>   | -     | 13.0  | 12.0  | 12.0  | 9.0  | 7.5    |
| At 90 percent of<br>specified minimum<br>breaking strength <u>7/</u>                                 | -     | 17.5  | 17.5  | 18.5  | 16.0   | 17.5   |
| Gumminess after<br>accelerated aging   | -     | -     | -     | -     | No evidence of stickiness<br>for all latex treated<br>webbing.                           |        |
| Stiffness at -65°F<br>± 2°F:   |       |       |       |       |  |        |
| Initial  | -     | -     | -     | -     | Not more than 3 times greater<br>than stiffness value obtained<br>at Standard Conditions |        |

TABLE I. Construction and physical requirements (cont'd)

|                         | Type |    |     |    |   |  |
|-------------------------|------|----|-----|----|---|--|
|                         | I    | II | III | IV | V | VI   |
| After accelerated aging | -    | -  | -   | -  | - | Not more than 3 times stiffer than unaged webbing at -65°F |

1/ This requirement applies to the yarn prior to weaving.

2/ Face, middle, and back ends.

3/ For type V, class 2, dyed webbing, the thickness range shall be .080-.110 inch.

4/ The breaking strength of any individual specimen in any sample unit shall be no lower than the minimum specified.

5/ See 6.5.

6/ Pertains only to class 2 latex treated webbings.

7/ Pertains to untreated and to treated webbings.

## MIL-W-25361E

3.6 Color. The color of the types I, II, III and IV finished webbing shall be natural white or shall match the standard sample for Air Force Shade Sea Green 1001, Air Force Sage Green 1565, or Camouflage Green 483 as specified (see 6.2). The type V and VI shall be Camouflage Green 483. When dyed webbing is specified, the dyed, untreated webbing shall match the shade standard and the shade imparted by the treatment shall be acceptable.

3.6.1 Matching. The color of the dyed webbing 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  $100 \pm 20$  foot candles and shall be a good match to the standard sample under incandescent lamplight at  $2300 \pm 200\text{K}$ .

3.6.2 Colorfastness. The dyed and finished webbing shall show colorfastness to light equal to or better than the standard sample or equal to or better than a rating of "good". Colorfastness to crocking shall be equal to or better than the standard sample or shall have an AATCC chromatic transference scale rating of not lower than 3.5. Testing shall be as specified in 4.4.3.

3.7 pH. The pH value of the water extract of the finished webbing, shall be not less than 5.0 and not greater than 8.5 when tested as specified in 4.4.3.

3.8 Nonfibrous material. The water-soluble and chloroform-soluble materials shall be not greater than 2.0 percent when tested as specified in 4.4.3. For treated webbing, determination shall be made after dyeing and prior to the application of the latex treatment.

3.9 Finish.

3.9.1 Class 1, untreated. When class 1 is specified, the webbing shall be untreated.

3.9.2 Class 2, latex treatment. When class 2 is specified, the webbing shall be impregnated with a natural rubber latex containing the necessary curatives and antioxidants. The webbing shall be saturated by total immersion in a latex bath for a period of time sufficient to allow penetration to the core of the webbing and the excess then removed to permit conformance to the finished weight requirement. The webbing shall be dried and vulcanized.

3.10 Put-up. The webbing shall be put up in rolls. Unless otherwise specified (see 6.2), each roll of webbing shall contain 90 to 110 yards. No roll shall contain more than three pieces and no piece shall be less than 10 yards in length.

3.11 Identification tickets. Each roll of webbing shall have an identification ticket attached to the roll in accordance with MIL-P-43334.



## MIL-W-25361E

3.12 Fiber identification. Each roll of webbing shall be labeled and ticketed for fiber content in accordance with the Textile Fiber Products Identification Act.

3.13 Workmanship. The finished webbing shall conform to the quality of product established by this specification.

#### 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 (examinations and tests) 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 specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept 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 3.1 and 6.2), it shall be examined for the defects specified in 4.4.2.1 through 4.4.2.3 and tested as specified in 4.4.3.

4.4 Quality conformance inspection. Unless otherwise specified, sampling for inspection shall be performed in accordance with MIL-STD-105.

## MIL-W-25361E

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 specification or applicable purchase document.

4.4.1.1 Component and material certification. A certificate of compliance may be acceptable as evidence that the characteristics listed below conform to the specified requirements.

| <u>Characteristic</u>  | <u>Requirement paragraph</u> |
|--|------------------------------|
| Polyester yarns:<br>Material identification,<br>denier, ply, and twist | 3.3.1 and table I            |
| Bulk nylon yarn:<br>Material identification,<br>denier, ply, and twist | 3.3.2 and table I            |

4.4.2 End item examination.

4.4.2.1 Yard-by-yard examination. The webbing shall be examined on both sides for the defects listed in table II. All defects found shall be counted regardless of their proximity to each other except where two or more defects represent a single local condition, in which case only the more serious defect shall be counted. A continuous defect shall be counted as one defect for each warpwise yard or fraction thereof in which it occurs. The lot size shall be expressed in yards. The sample unit shall be 1 linear yard. The inspection level shall be III and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 0.015 for major defects and 15 for total (major and minor combined) defects. The number of rolls from which the sample yardage is to be selected shall be in accordance with table III. The sample yardage shall be apportioned equally among the selected rolls.

TABLE II. End item visual defects

| <u>Examine</u>           | <u>Defect</u>   | <u>Classification</u> |              |
|--------------------------|---|-----------------------|--------------|
|                          |   | <u>Major</u>          | <u>Minor</u> |
| Abrasion mark,<br>bruise | Resulting in rupture of individual yarns or plies, distortion in the orientation of thread, dimensional distortion, areas noticeably thinner than adjoining unaffected areas, or in nap sufficient to obscure the identity of the filaments in any yarn |                       | 101          |

## MIL-W-25361E

TABLE II. End item visual defects (cont'd)

| Examine                                  | Defect  | Classification |       |
|--|---|----------------|-------|
|  |   | Major          | Minor |
| Broken or missing end                    | Two or more, regardless of length missing, or single, missing for more than 6 inches  | 102            |       |
|  | Single, missing for more than 1/4, but not more than 6 inches   |                | 201   |
| Broken or missing pick                   | Two or more regardless of extend  | 103            |       |
| Cut, hole, or tear                       | Any   | 104            |       |
| Crease, edge folded or rolled            | Webbing twisted or distorted, will not lie flat upon application of manual pressures  |                | 202   |
| Drop-ply                                 | More than two ends within same length and extending 9 linear inches or more <u>1/</u>   | 105            |       |
|  | One or two ends within same length and extending 9 linear inches or more <u>1/</u>  |                | 203   |
| Edges                                    | Cut, frayed, torn, slack, regardless of length or otherwise poorly constructed and exceeding 1/4 inch in length   | 106            |       |
| Fine or light filling bar                | Any <u>1/</u>   | 107            |       |
| Floats                                   | Three or more measuring 1/2 inch or more in combined warp and filling directions; or single, floating over more than 1 inch   | 108            |       |
|  | Three or more measuring less than 1/2 inch in combined warp and filling directions; or single, floating over more than 1/2 inch but not more than 1 inch if in warp, over more than 1/4 of the width but not more than 1 inch if in filling |                | 204   |
| Heavy or coarse filling bar, heavy place | Noticeably stiffer or thicker than adjoining unaffected webbing   | 109            |       |

## MIL-W-25361E

TABLE II. End item visual defects (cont'd)

| Examine                                     | Defect  | Classification |       |
|---|---|----------------|-------|
|   |   | Major          | Minor |
| Hitch-back crack,<br>open place             | Opening between adjoining picks or<br>warpwise tension area over part of<br>the width, resulting in light and<br>heavy places <u>1/</u> |                | 205   |
| Jerked-in filling,<br>slough-off            | A clearly visible loop of filling<br>pulled in at edge <u>1/</u>  |                | 206   |
| Kinks                                       | More than three in any 9 linear inches<br>on surface of webbing <u>1/</u>   | 110            |       |
| Knots                                       | More than one knot in any 9 linear<br>inches  | 111            |       |
|   | More than one knot in any linear yard<br>with oversized, or untrimmed ends<br>extending from surface of webbing                         |                | 207   |
| Mispick, skips<br>(harness)                 | Resulting in widthwise repeated<br>floats more than 1/4 inch long   | 112            |       |
|   | Resulting in abrupt break in<br>sequence of weave, or widthwise<br>repeated floats 1/4 inch or less<br>long                             |                | 208   |
| Mixed filling<br>shade bar                  | Any <u>1/</u>   |                | 209   |
| Slack end                                   | Two or more in same length, jerked-<br>in between picks, or loops on<br>surface of webbing <u>1/</u>                                    | 113            |       |
|   | Single jerked-in between picks, or<br>loops on surface of webbing <u>1/</u>   |                | 210   |
| Slub or slug, gout                          | More than twice the thickness of<br>the yarn (or ply, if plied)   |                | 211   |
| Spot, stain, streak                         | Any spot, stain or streak <u>1/</u>   |                | 212   |
| Smash                                       | Any smash   | 114            |       |
| Tight end                                   | Any <u>1/</u>   |                | 213   |
| Tight pick or<br>filling, edge<br>scalloped | Resulting in rolling of webbing;<br>(any noticeable indentation of<br>edge)   | 115            |       |

## MIL-W-25361E

TABLE II. End item visual defects (cont'd)

| Examine             | Defect   | Classification |       |
|---------------------|--|----------------|-------|
|                     |  | Major          | Minor |
| Weak or tender spot | Any <u>1/</u>  | 116            |       |
| Wrong draw          | Extending 9 linear inches or more                    | 117            |       |
| Width               | Less than minus tolerances, more than plus tolerance | 118            |       |

1/ Clearly visible at normal inspection distance (approximately 3 feet).

4.4.2.2 Overall examination. The webbing shall be examined for the defects listed below. Each defect listed shall be counted not more than once in each roll examined. The sample size shall be the applicable number of rolls indicated in table III. Each roll in the sample shall be examined over its entire length. The lot shall be rejected if the total number of defects in the sample exceeds the applicable acceptance number specified in table III.

Defects

Objectionable odor.  
 Uncleaness throughout.  
 Off shade, (not within established tolerance).  
 Poor color penetration, cloudy, mottled or streaky throughout.  
 Poorly constructed, not firmly and tightly woven.  
 Class 2 - Latex treatment not fully cured, tacky, uneven.  
 Not labeled in accordance with Textile Fiber Produces Identification Act.

TABLE III. Sample size

| Lot size in yards                  | Sample size in rolls <u>1/</u> | Acceptance number |
|------------------------------------|--------------------------------|-------------------|
| 1200 or less                       | 3                              | 0                 |
| 1201 up to and including 3200      | 5                              | 0                 |
| 3201 up to and including 10,000    | 8                              | 0                 |
| 10,001 up to and including 35,000  | 13                             | 0                 |
| 35,001 up to and including 150,000 | 20                             | 1                 |
| 150,001 and over                   | 32                             | 2                 |

1/ If a lot contains fewer than 3 rolls, each roll in the lot shall be examined.

## MIL-W-25361E

4.4.2.3 Length examination. During the overall examination, each roll in the sample shall be examined for the defects listed below. If the total number of length defects in the sample exceeds the applicable acceptance number specified in table III, the lot shall be rejected. In addition, the lot shall be rejected if the total of the actual gross lengths of the rolls in the sample is less than the total of the gross lengths marked on the roll tickets.

Length defects

Gross length of roll is more than 2 yards less than the gross length marked on the ticket

Length of roll not as specified in 3.10

Length of individual piece is less than 10 yards

More than three pieces on a roll

4.4.3 End item testing. The webbing shall be tested for the characteristics listed in table IV. The methods of testing specified in FED-STD-191 wherever applicable and as listed in table IV shall be followed. Except for breaking strength (initial, after abrasion, and after accelerated aging), the physical and chemical values specified in section 3 apply to the results of the determinations made on a sample unit for test purposes as specified in the applicable test methods. All test reports shall contain the individual values utilized in expressing the final result. The lot size shall be expressed in units of 1 linear yard. The sample unit shall be as follows:

- 9 yards finished webbing (class 1)
- 25 yards finished webbing (class 2)
- 1 yard dyed, untreated webbing

The lot shall be unacceptable if one or more sample units fail to meet any requirement specified. For breaking strength (initial and after abrasion) the lot shall be unacceptable if any test specimen fails to meet the minimum requirement specified. For breaking strength after accelerated aging, the lot shall be unacceptable if the lot percent average loss in strength exceeds the maximum requirement. When the data in the "Number of determinations per sample unit" and the "Results reported as" columns are not specified in table IV, they shall be as required by the referenced test method. 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                                 |

## MIL-W-25361E

TABLE IV. End item tests

| Characteristic                    | Requirement reference | Test method              | No. of determinations per sample unit | Results reported as  |
|-----------------------------------|-----------------------|--------------------------|---------------------------------------|--|
| Weave                             | 3.4                   | Visual                   | 1                                     | Pass or fail   |
| Ends total                        | 3.5                   | 5050                     | -                                     | -  |
| Picks per inch                    | 3.5                   | 5050                     | -                                     | -  |
| Weight                            | 3.5                   | 5041 <u>1</u> /          | 1                                     | Nearest 0.01 oz  |
| Thickness                         | 3.5                   | 5030                     | -                                     | -  |
| Breaking strength:<br>Initial     | 3.5                   | 4108                     | 5                                     | Individually and average of 5 deter. to nearest 1.0 lb   |
| After abrasion<br>(class 2)       | 3.5                   | 5309 and 4108            | 5                                     | Individually and average of 5 deter. to nearest 1.0 lb   |
| After accelerated aging (class 2) | 3.5                   | 5850 <u>2</u> / and 4108 | -                                     | Aver. of 5 deter. to nearest 1.0 lb. Then nearest 1.0 percent loss from untreated, not aged results. |

## MIL-W-25361E

TABLE IV. End item tests (cont'd)

| Characteristic   | Requirement reference | Test method                                | No. of determinations per sample unit | Results reported as                              |
|--|-----------------------|--|---------------------------------------|--|
| Elongation:  |                       |  |                                       |  |
| At 2500 lb load:<br>type I   | 3.5                   | 4108                                       | 5                                     | Aver. 5 deter.<br>to nearest<br>0.1 percent      |
| At 3000 lb load:<br>types II, III, IV,<br>V, VI  | 3.5                   | 4108                                       | 5                                     | Aver. 5 deter.<br>to nearest<br>0.1 percent      |
| At 90 percent of<br>specified minimum<br>breaking strength;<br>types II, III, IV,<br>V, VI | 3.5                   | 4108                                       | 5                                     | Aver. 5 deter.<br>to nearest<br>0.1 percent      |
| Gumminess after<br>accelerated aging;<br>(class 2)   | 3.5                   | 5850 <u>2/</u><br>and <u>3/</u><br>4.4.3.1 | 5                                     | Pass or fail,<br>for each<br>specimen<br>tested. |
| Stiffness at -65°F:  |                       |  |                                       |  |
| Initial  | 3.5                   | 4.4.3.2                                    | -                                     | -  |
| After accelerated<br>aging   | 3.5                   | 5850 <u>2/</u> and<br>4.4.3.3              | -                                     | -  |
| Colorfastness to:  |                       |  |                                       |  |
| Wet and dry<br>crocking  | 3.6.2                 | 5651                                       | -                                     | -  |
| Light  | 3.6.2                 | 5660                                       | -                                     | -  |
| pH   | 3.7                   | 2811                                       | -                                     | -  |
| Nonfibrous material  | 3.8                   | 2611                                       | -                                     | Aver. 2 deter.<br>to nearest<br>0.1 percent      |

1/ Except that one specimen 1 linear yard in length shall be weighed.



## MIL-W-25361E

- 2/ Except that the webbing shall be oven aged for 7 days at  $150^{\circ} \pm 2^{\circ}\text{F}$ .
- 3/ The specimens which will be used for determining breaking strength after accelerated aging shall be evaluated for these characteristics.

4.4.3.1 Stickiness or gumminess. Determination shall be made by immediately placing the specimen removed from the oven across the center of a 15 centimeter diameter circular standard filter paper (S&S.No. 596 or equal) on a glass plate. A 1/4 inch glass plate 8 inches square shall be placed on top of the specimen and loaded at the center with a 2000 gram weight. After 10 minutes the weight and upper plate shall be removed. The webbing shall then be grasped at each end just outside the area in contact with the filter paper, and with enough tension to keep it straight, and be carefully lifted. If the filter paper lifts from the lower glass plate, the specimen shall be considered as failing the requirement.

4.4.3.2 Stiffness, initial. Specimens of webbing brought to equilibrium under Standard Conditions shall be placed in a cold chamber and maintained at  $-65^{\circ} \pm 2^{\circ}\text{F}$  for 4 hours. At the end of the exposure period the specimens, while still in the cold chamber at  $-65^{\circ} \pm 2^{\circ}\text{F}$ , shall be tested for stiffness in accordance with Method 5206. The stiffness values obtained with the sample tested at Standard Conditions shall be used to calculate the percentage change in stiffness.

4.4.3.3 Stiffness, after accelerated aging. Specimens of webbing after oven aging at  $158^{\circ} \pm 2^{\circ}\text{F}$  in accordance with Method 5850, and brought to equilibrium under Standard Conditions, shall be placed in a cold chamber at  $-65^{\circ} \pm 2^{\circ}\text{F}$  for 4 hours. At the end of the exposure period, the specimens, while still in the cold chamber at  $-65^{\circ} \pm 2^{\circ}\text{F}$ , shall be tested for stiffness in accordance with Method 5206 and the results recorded. The stiffness values obtained with the unaged webbing tested at  $65^{\circ} \pm 2^{\circ}\text{F}$  shall be used to calculate the percentage change in stiffness.

4.4.4 Packaging examination. The examination shall be in accordance with the quality assurance provisions of MIL-P-43334.

4.4.5 Palletization examination. The examination shall be in accordance with the quality assurance provisions of MIL-P-43334.

## 5. PACKAGING

5.1 Preservation. Preservation shall be level A or Commercial as specified (see 6.2).

5.1.1 Levels A and Commercial preservation. Webbing, put up as specified, shall be preserved in accordance with the applicable requirements of MIL-P-43334.

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

## MIL-W-25361E

5.2.1 Levels A, B, and Commercial packing. Webbing shall be packed in accordance with the applicable requirements of MIL-P-43334.

5.3 Palletization. When required (see 6.2), palletization shall be in accordance with the applicable requirements of MIL-P-43334.

5.4 Marking. In addition to any special marking required by the contract or purchase order, shipments shall be marked in accordance with MIL-P-43334.

## 6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The webbing is intended for use in aircraft safety belts and restraining harnesses. The type VI webbing is intended for use as slings for heavy rockets and rocket warheads.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of this specification.
- b. Type and class (see 1.2).
- c. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2).
- d. When first article is required (see 3.1, 4.3, and 6.3).
- e. Color required (see 3.6).
- f. When length of rolls is other than specified (see 3.10).
- g. Levels of preservation and packing (see 5.1 and 5.2).
- h. When palletization is required (see 5.3).

6.3 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 also include specific instructions in acquisition documents regarding arrangements for selection, inspection, and approval of the first article.

6.4 Sample. For access to samples, address the contracting activity issuing the invitation for bids or request for proposal.

6.5 Abrasion resistance. Requirements for abrasion resistance of the webbing are based on the use of hexagonal rods supplied by the Narrow Fabrics Institute, Inc., as noted in Method 5309 of FED-STD-191.

6.6 Dye combination for Camouflage Green 483. A suggested but not mandatory dye combination for Camouflage Green 483 is as follows:

MIL-W-25361E

Disperse Blue 60  
Disperse Blue 57  
Disperse Orange 30  
Disperse Yellow 42

6.7 Subject term (key word) listing.

Aircraft safety belts  
Bulked nylon  
Continuous filament  
Latex  
Rocket slings

6.8 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodians:

Army - GL  
Air Force - 99

Preparing activity:

Army - GL  
(Project 8305-0328)

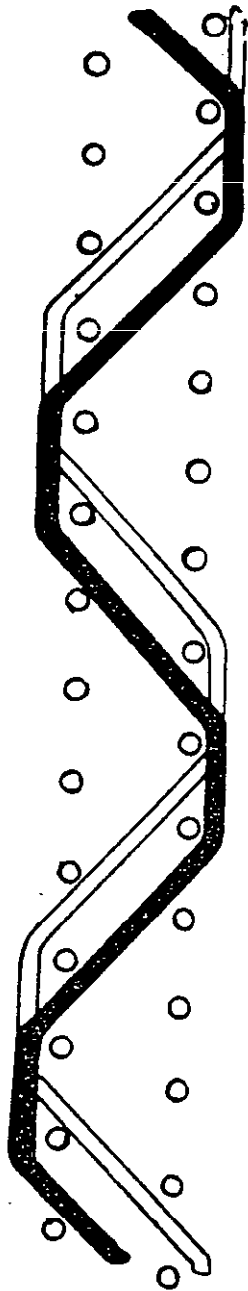
Review activities:

Army - MI  
Air Force - 82  
DLA - CT

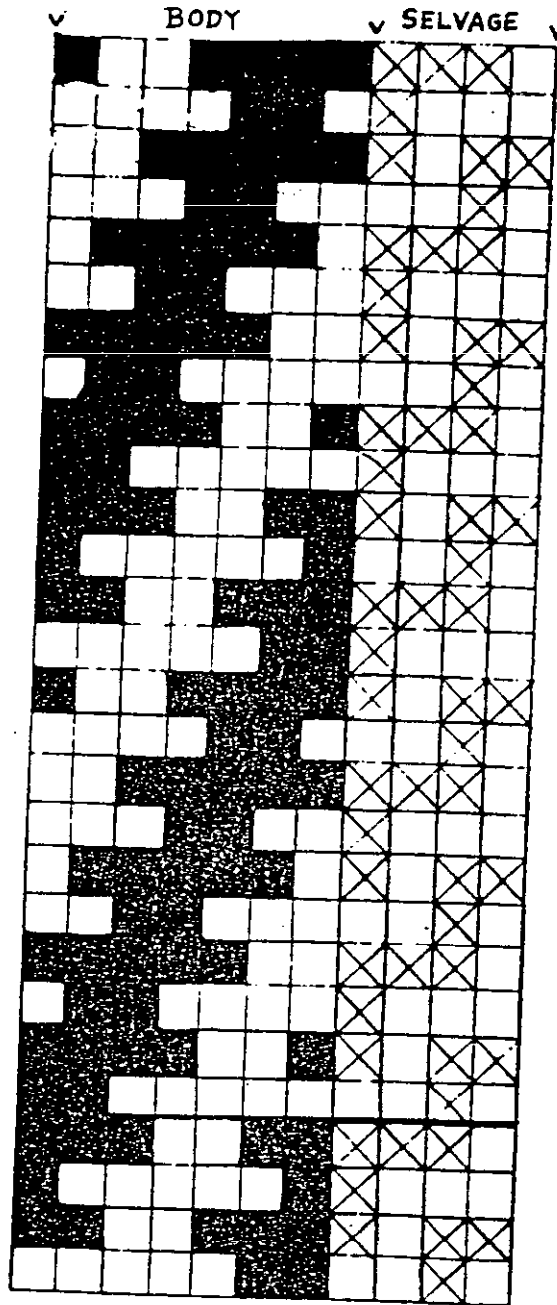
User activities:

Army - ME  
Air Force - 45

MIL-W-25361E



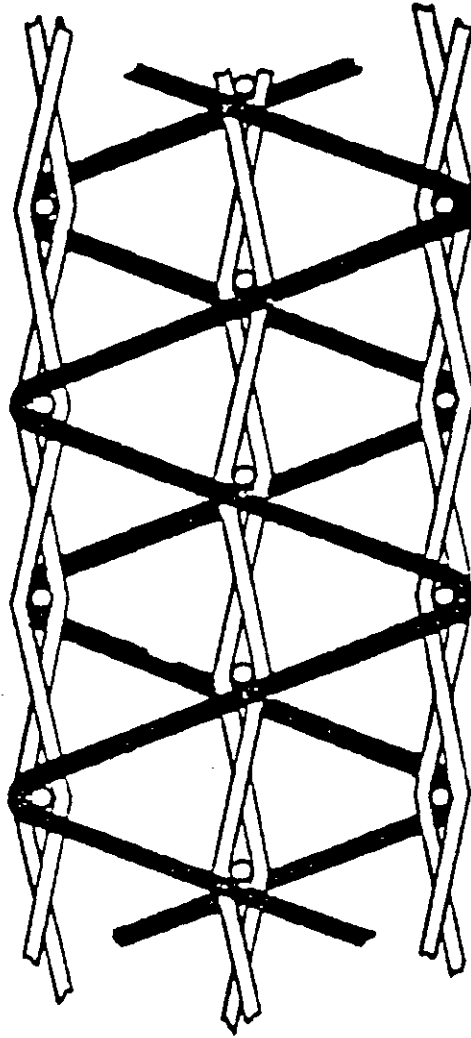
FILLING CROSS SECTION



WARP CROSS SECTION

FIGURE 1. Weave diagram: types II, III, IV and V

MIL-W-25361E



*BINDER YARNS WEAVING ONE END AS ONE  
WARP YARNS WEAVING TWO ENDS AS ONE*

*FIGURE 2. Cross section filling for type VI.*

# STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

## INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of 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.

|   |  |                                       |
|---|--|---------------------------------------|
| <b>I RECOMMEND A CHANGE:</b>  | 1. DOCUMENT NUMBER<br>MIL-W-25361E   | 2. DOCUMENT DATE (YYMMDD)<br>90/04/09 |
| 3. DOCUMENT TITLE<br>WEBBING, TEXTILE, POLYESTER, LOW ELONGATION  |  |                                       |
| 4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.) |  |                                       |
| 5. REASON FOR RECOMMENDATION  |  |                                       |
| 6. SUBMITTER  |  |                                       |
| a. NAME (Last, First, Middle Initial)   | b. ORGANIZATION  |                                       |
| c. ADDRESS (Include Zip Code)   | d. TELEPHONE (Include Area Code)<br>(1) Commercial<br>(2) AUTOVON<br>(If applicable)   | 7. DATE SUBMITTED<br>(YYMMDD)         |
| 8. PREPARING ACTIVITY   |  |                                       |
| a. NAME<br>U.S. Army Natick Research, Development<br>and Engineering Center<br>ATTN: STRNC-ES                             | b. TELEPHONE (Include Area Code)<br>(1) Commercial<br>(508)651-5221  | (2) AUTOVON<br>8-256-5221             |
| c. ADDRESS (Include Zip Code)<br>Kansas Street<br>Natick, MA 01760-5014   | IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:<br>Defense Quality and Standardization Office<br>5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466<br>Telephone (703) 756-2340 AUTOVON 289-2340 |                                       |