INCH-POUND
A-A-55301
November 15, 1996

COMMERCIAL ITEM DESCRIPTION

WEBBING, TEXTILE, TEXTURED OR MULTIFILAMENT NYLON

The General Services Administration has authorized the use of this commercial item description as a replacement for MIL-W-43668 for all Federal agencies.

1 SCOPE. This document covers textured or multifilament nylon (or similar) webbing used for individual equipment belts, rifle slings and load carrying equipment

2. CLASSIFICATION. The webbing shall be in the following types:

Type I	2 1/4 inches
Type II	1 1/4 inches
Type III	1 inch
Type IV	3/4 inch
Type V	5/8 inch
Type VI	1 1/2 inch

3. SALIENT CHARACTERISTICS. The webbing shall be made with either textured or untextured synthetic yarn in 6 widths as specified in para 2.

3.1 Materials (description of materials).

3.1.1 Yarn. The yarn for the warp and filling for all types, except for types I and III alternate, shall be heat and light resistant, continuous filament textured nylon yarn. Air Jet texturing is acceptable. The filling yarn for type III alternate shall be textured yarn and the warp yarn for type III alternate shall be textured yarn and the warp yarn for type III alternate and the warp for type I alternate shall be heat and light resistant multifilament yarn. The yarns for all webbing shall not be subjected to any type of bleaching process.

3.1.2 Twist. When untextured yarn is used the face, back and binder warps of the Type I construction the yarn shall have a minimum of 2 1/2 turns per inch in the final twist. The number of singles yarn shall be twisted together in one operation.

3.2 Color. The color shall be as specified by the procuring activity.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data which may improve this document should be sent to: Defense Personnel Support Center, Clothing and Textiles Directorate, Attn: DPSC-FNS, 2800 South 20th Street, Philadelphia, PA 19145-5099.

AMSC N/A **FSC 8305**

3.2.1 Matching. The color of the dyed webbing shall match the standard sample (Samples can be obtained from DPSC) when viewed under filtered tungsten lamp which approximate artificial daylight having a correlated color temperature of 7500+/- 200K, with illumination of 100 +/- 20 foot candles, and shall be a good match to the standard sample under incandescent lamplight at 2300 +/- 200 K.

3.2.2 Colorfastness. The dyed webbing shall show fastness to light and laundering equal to or better than the standard sample or equal to or better than a rating of 4 when tested against it self. The number of test samples shall be one per sample unit and the size shall be two to six grams of webbing(test methods AATCC 61-1A-1989 and AATCC 16 Opt A-1990). The dyed webbing shall show fastness to crocking equal to or better than the standard sample or shall have an AATCC Chromatic Transference scale rating of not lower than 3.5 (Test method AATCC 8-1989).

3.2.3 Spectral reflectance for Camouflage green 483. Finished Camouflage Green 483 webbing greater than 1 1/4 inches in width shall meet the spectral reflectance factors (in percent) for the visible/near infrared wavelength range 600 to 860 nanometers (nm) as specified below when tested as follows.

Spectral reflectance data shall be obtained from 600 to 860 nanometers (nm), at 20 nm intervals on the spectrophotomer relative to a barium sulfate standard, the prefered white reference standard. Other white reference materials may be used, provided they are calibrated to absolute white; e.g. Halon, magnesium oxide, or vitrolite tiles. The spectral bandwidth shall be less than 26 nm at 860 nm. Reflectance measurements may be made by either the monochromatic or polychromatic mode of operation. When the polychromatic mode is used, the spectrophotometer shall operate with the specimen diffusely illuminated with the full emission of the source that simulates either CIE Source A or CIE Source D65. The specimen shall be measured as a single layer, backed with two layers of the same webbing and shade. Measurements will be taken on a minimum of two different areas and the data averaged. The specimen shall be viewed at an angle no greater than 10 from normal, with the specular component included. Photometric accuracy of the spectrophotometer shall be within one percent and wavelength accuracy within 2 nm. The standard aperture size used in the color measurement device shall be 1.0 to 1.25 inches in diameter. When the measured reflectance values for any color at four or more wavelengths do not meet the limits specified in the chart below, it shall be a test failure.

Spectral Reflectance Requirements for Camouflage Green 483

Wavelength(nm)	Reflectance(%)		Wavelength(nm)	Reflectance(%)	
	Min	Max		Min	Max
600	3	10	740	7	52
620	3	10	760	11	60
640	3	10	780	17	64
660	3	11	800	24	67
680	3	13	820	32	70
700	4	28	840	37	71
720	5	40	860	40	73

3.3 Physical requirements. The dyed webbing shall conform to the requirements in table I.

TABLE I. Physical requirements

Characteristics	Type I	Type II	Type III	Type IV	Type V
Width, inches	2 1/4 - 1/16 ± 1/8	1 1/4 ± 1/16	1 ± 1/16	3/4 + 1/16	5/8 + 1/16
Thickness inches 2/	0.125 - 0.150	0.075 + 0.007	0.046 + 0.007	0.055 - 0.0700	0.038 - 0.050
Weight oz./lin.yd (Min) 3/	3.85	1.10	0.5	0.48	0.32
Stiffness load pounds widthwise only 4/	0.70 - 2.30	---	---	---	---
Warp ends, full width: Face, back, and middle warps (min)	202	---	---	---	---
Face and back (min)	---	89	101	69	65
Binder warp (min)	50	10	15	8	9
Stuffer warp (min)	---	---	---	14	---
Picks/inch (min)	33	23	36	33	36
Picks/inch (min) (shuttleless loom)	64 1/	46 1/	72 1/	66 1/	72 1/
Breaking strength lbs (min) 5/	---	2000	1000	875	625

1/ 2 picks per shed.
2/ Test method FED STD 191 method 5030
3/ Test method ASTM D3776-85
4/ Test method FED STD 191 method 5202 2 by 1 inch specimen, long dimension in filling direction. The specimen shall be bent to a 20 degree angular deflection.
5/ Test method FED STD 191 method 4108

TABLE I. Physical requirements(con't)

Characteristics	Type I (Alternate)	Type III (Alternate)	Type VI
Width, inches	2 1/4 - 1/16	1 ± 1/16	1 1/2± 1/16
Thickness inches 2/	0.125 - 0.150	0.046 + 0.007	0.046± 0.007
Weight oz./lin.yd (Min) 3/	3.85	0.65	1.10
Stiffness load pounds widthwise only 4/	0.70 - 2.30	---	---
Warp ends, full width: Face, back, and Middle warps (min)	---	---	---
Face and back (min)	83	97	137
Binder warp (min)	38	22	30
Stuffer warp (min)	304	---	---
Picks/inch (min) Picks/inch (min) (shuttleless loom)	58 1/	80 1/	80 1/
Breaking strength lbs (min) 5/	---	1000	1500

1/ 2 picks per shed.
2/ Test method FED STD 191 method 5030
3/ Test method ASTM D3776-85

4/ Test method FED STD 191 method 5202 2 by 1 inch specimen, long dimension in filling direction. The specimen shall be bent to a 20 degree angular deflection.
5/ Test method FED STD 191 method 4108

3.4 Weaves.

3.4.1 Type I. The webbing shall be three layers, bound by a binder which weaves 3 up (face, middle, face) 3 down (back, middle, back) to form a filling rib effect on both face and back. The middle layer shall weave 2 ends as 1 equivalent. See Figure 1.

3.4.2 Type I Alternate. The Weave shall be as specified in figure 5.

3.4.3 Type II. The webbing shall be a tubular plain weave bound together by a plain weave binder. See Fig 6.

3.4.4 Type III. The webbing shall be a tubular weave bound together by a plain weave binder. See Fig. 7.

3.4.5 Type III Alternate. The webbing shall be a tublar plain weave, weaving 2 ends as 1 or equivalent bound together by a binder weaving 2 up and 2 down, the adjacent finder weaving 2 down and 2 up. See Fig. 8.

3.4.6 Type IV. The webbing shall be a tubular plain weave with stuffer bound by a plain weave binder. See Fig. 9.

3.4.7 Type V. The webbing shall be a tubular plain weave bound by a plain weave binder. See Fig. 7.

3.4.8 Type VI. Same as Type III Alternate. See Paragraph 3.4.5.

NOTE: When shuttleless loom construction is used, a catchcord will be incorporated in all types depicted in figures 2 or 3.

3.5 pH. The pH value of the water extract of dyed webbing shall be no less than 5.0 nor more than 8.5 when tested under FED STD 191 method 2811.

3.5 1. Curvature. The finished webbing shall show no more lateral curvature than 1/4 inch within a yard as shown in figure 4. The test specimen shall be a length of webbing, full width, measuring a minimum of 40 inches. The specimen shall bot be stretched smoothed, or otherwise changed from its original condition prior to testing. Five specimens shall be tested from each sample unit.

3.6 Label/tag. Each roll or spool shall be individually bar-coded. The bar coding element shall be a 13 digit national stock number (NSN). The bar code type shall be a medium to high code density and shall be located so that it is completely visible on the item when it is folded and/or packaged as specified and so that it causes no damage to the item.

4. REGULATORY REQUIREMENTS. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

5. QUALITY ASSURANCE PROVISIONS

5.1 Product Conformance. The products provided shall meet the salient characteristics of this commercial item description, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial market. The government reserves the right to require proof of such conformance.

5.2 Market acceptance criteria. The item offered, or a generic equivalent, must have been sold to the commercial market or to the Government for at least two years.

5.3 Warranty. The item offered shall include the standard warranty given to the commercial market beginning with the date of delivery of the individual items.

5.4 Visual examination. Each yard shall be examined for the defects listed below.

5.4.1 Defects. Any hole, cut, or tear; broken or missing yarn; smash; float, mispick, harness skip, or other misweave; hitchback, stripback; open or thin place, crack (warp or filling); knot or slub; loose, slack, or tight yarns; reed mark, wrong draw; abrasion mark, bruise, tender or weak spot; embedded crease or wrinkle; selvage cut, torn, folded, rolled, slack, or tight; filling bar, coarse filling, or mixed filling; spot, stain, streak, or dirty yarn; foreign matter; shade not as specified; finish not equal to or better than standard; offshade or uneven shading throughout piece; mottled, cloudy, streaky, or barre; overall uncleanness or soiled; baggy, ridgy, wavy, or unevenly woven; width not within established tolerances; net length less than indicated on the ticket; fiber identification marking omitted; bar code omitted or not readable by scanner; human-readable interpretation (HRI) omitted or illegible; bar code not visible on roll; bar code causes damage to the item; any items not packaged in accordance with the contract or purchase order. Each defect shall be marked with a 1-1/2 inch long string; the string shall be inserted into the selvage opposite the defect.

5.4.2 Acceptance Criteria. Acceptance Criteria shall be as specified in the contract or purchase order.

6. PACKAGING

6.1 Preservation, packing, and marking. The preservation, packing, and marking shall be as specified in the contract or order.

7. NOTES

7.1 Source of Government documents. Copies of military and Federal documents are available from:

Standardization Documents Order Desk
Bldg. 4D
700 Robbins Avenue
Philadelphia, PA 19111-5094

7.2 Source of non-Government documents

ASTM Test Methods

(Applications for copies should be addressed to American Society For Testing and Materials, 100 Barr Harbor Drive, West Conshohocken,PA 19428-2959.)

AATCC Test Method

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

MILITARY INTERESTS:

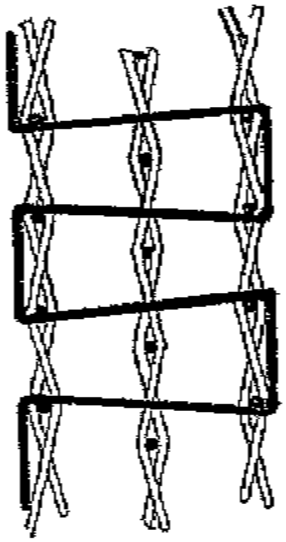
Custodians
Army - GL
Navy - AS
Air force - 99

Review Activities
Army - MD
Navy - NU
Air Force - 11

CIVIL AGENCY COORDINATING ACTIVITY:
GSA - FSS

PREPARING ACTIVITY:
DLA - CT

Project 8305-0617



FACE AND BACK WARP YARNS WEAVING ONE END AS ONE
MIDDLE WARP YARNS WEAVING TWO ENDS AS ONE
BINDER WARP YARNS WEAVING TWO ENDS AS ONE

FIGURE 1. CROSS SECTION FILLING

Selvage locked by knitting filling loops simultaneously with additional catch thread using "inclined" latch needle.

FIGURE 2. CATCH CORD DIAGRAM

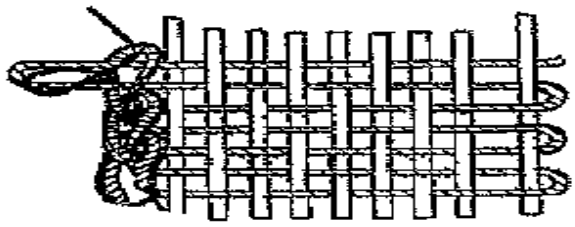


FIGURE 3. CATCH CORD DIAGRAM

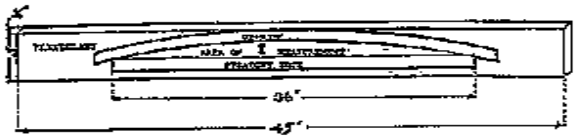
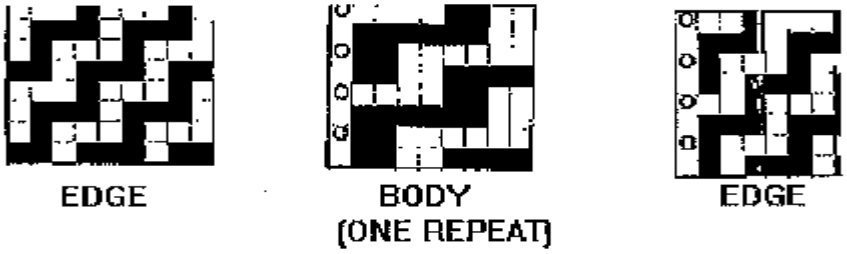


FIGURE 4. DIAGRAM CURVATURE MEASUREMENT


EDGE
BODY
(ONE REPEAT)
EDGE
WEAVE DIAGRAM
FACE WARP - WEAVE 1 END AS 1
STUFFER WARP - WEAVE 4 ENDS AS 1
BINDER WARP - WEAVE 2 ENDS AS 1

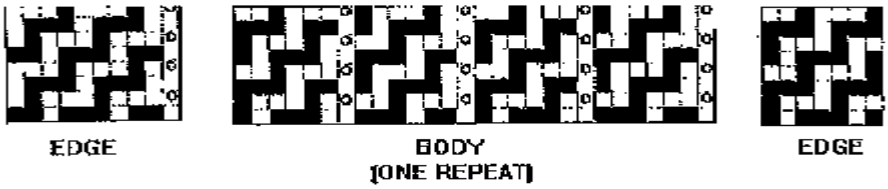
FIGURE 5



FACE WARP - WEAVE 1 END AS 1
BINDER WARP - WEAVE 1 END AS 1

TYPE II - 1-1/4 INCHES

FIGURE 6. WEAVE DIAGRAM



FACE WARP - WEAVE I END AS 1
BINDER WARP - WEAVE 1 END AS 1

TYPE III - 1 INCH

TYPE V- 5/8 INCH

FIGURE 7. WEAVE DIAGRAM

TYPE III - ALTERNATE - 1 INCH

TYPE VI - 1-1/2 INCHES

FIGURE 8. WEAVE DIAGRAM

TYPE IV - 3/4 INCH

FIGURE 9. WEAVE DIAGRAM