



Phone: (401) 762-5500
Email: ACWCO@acw1.com

INCH-POUND
MIL-DTL-27265F
03 May 2021
SUPERSEDING
MIL-W-27265E
27 June 1988

DETAIL SPECIFICATION

WEBBING, TEXTILE, WOVEN NYLON IMPREGNATED

This document is approved for use by all Departments and Agencies of the Department of Defense (DoD).

1. SCOPE

1.1 Scope. This specification covers the requirements for a webbing, textile, woven nylon impregnated with a resin or latex.

1.2 Classification. This specification covers the following classes.

1.2.1 Classes.

Class R – Resin impregnated

Class L – Latex impregnated

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 3 and 4 of this specification, whether or not they are listed.

Comments, suggestions, or questions on this document should be addressed: Attn: DLA Troop Support, 700 Robbins Avenue, Philadelphia, PA 19111-5096. Since contact information can change, verify the currency of the address information using Acquisition Streamlining and Standardization Information System (ASSIST) online database <https://assist.dla.mil>.

AMSC N/A

FSC 8305

DISTRIBUTION STATEMENT A. Approved for public release. Distribution is unlimited.

2.2 Government documents

2.2.1 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 cited in the solicitation or contract.

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-DTL- 4088 - Webbing, Textile, Woven Nylon
MIL-PRF-17337 - Webbing, Textile, Woven Nylon

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-3064 - Evaluation of Quality of Textile Materials

(Copies of these documents are available online at <https://quicksearch.dla.mil>.)

2.2.2 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 or contract.

FEDERAL TRADE COMMISSION

Rules and Regulations Under the Textile Fiber Products Identification Act

(Copies of this document are available online at <https://www.ftc.gov>.)

2.3 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)

AATCC EP1 - Evaluation Procedure for Gray Scale for Color Chang
AATCC EP2 - Evaluation Procedure for Gray Scale for Staining
AATCC EP9 - Evaluation Procedure for Visual Assessment of Color Difference of
Textiles
AATCC TM16.3 - Test Method for Colorfastness to Light: Xenon Arc
AATCC TM61 - Test Method for Colorfastness to Laundering: Accelerated

(Copies of these documents are available online at <https://www.aatcc.org>.)

AMERICAN SOCIETY FOR QUALITY (ASQ)

ASQ/ANSI Z1.4 - Sampling Procedures and Tables for Inspection by Attributes

(Copies of this document are available online at <https://asq.org>.)

ASTM INTERNATIONAL

- | | |
|-------------------|--|
| ASTM D1388 | - Standard Test Method for Stiffness of Fabrics |
| ASTM D1777 | - Standard Test Method for Thickness of Textile Materials |
| ASTM D3776/D3776M | - Standard Test Methods for Mass Per Unit Area (Weight) of Fabric |
| ASTM D5035 | - Standard Test Method for Breaking Force and Elongation of Textile Fabrics (Strip Method) |
| ASTM D5427 | - Standard Practice for Accelerated Aging of Inflatable Restraint Fabrics |

(Copies of these documents are available online at <https://www.astm.org>.)

INFORMA HEALTHCARE

Repeat Insult Patch Test - Modified Draize Procedure –
Principles and Methods of Toxicology, A Wallace Hayes (editor).

(Copies of this document are available online at <https://www.crcpress.com>.)

2.4 Order of precedence. Unless otherwise noted herein or in the contract, 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 in accordance with 4.2.

3.2 Recycled, recovered, environmentally preferable, or biobased materials. Recycled, recovered, environmentally preferable, or biobased materials should be used to the maximum extent possible, provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs.

3.3 Material. The untreated nylon webbing to be impregnated shall conform to the type, class, width, and color of MIL-DTL-4088 or MIL-PRF-17337 as specified in 6.2.

3.4 Color. The webbing shall be natural or dyed in accordance with MIL-DTL-4088 or MIL-PRF-17337, or as specified in the contract or purchase order (see 6.2). Unless otherwise specified, when the webbing is treated with resin or latex, the shade of the natural or dyed webbing prior to the application of the finish shall match the standard sample when tested as specified in 4.6.5. The final shade of the treated webbing after finishing shall be that resulting from the combination of the base shade (before finishing) and the color imparted by the resin or latex. This change in shade imparted by the treatment shall be acceptable.

3.5 Colorfastness. Unless otherwise specified in the contract or procurement documents, the finished webbing referenced in 3.3 shall conform to the colorfastness requirements listed below in Table I when tested as specified in 4.5.

TABLE I. Colorfastness requirements (all classes).

Color evaluation	Laundering (color Change and Staining), minimum	Light (after 40 AFU or 170 $\text{kJ}/(\text{m}^2\text{nm})@420\text{nm}$), <u>1/</u> minimum <u>1/</u>
All colors	2.5	3.5

1/ AFU: AATCC Fading Units

3.6 Physical requirements. The finished webbing shall conform to the requirements, listed below, in Table II, when tested as specified in 4.5.

THIS SPACE LEFT INTENTIONALLY BLANK

TABLE II. Physical requirements.

Characteristic	Requirements	
	Class R	Class L
Weight, ounces/linear yard	No more than 10 % increase of maximum untreated weight	No more than 10 % increase of maximum untreated weight
Breaking Strength, pounds:		
- Initial (after treatment)	No less than minimum requirement for MIL-W-4088 and MIL-W-17337	No less than minimum requirement for MIL-W-4088 and MIL-W-17337
- After treatment and abrasion	No less than 80 percent minimum requirement for MIL-W-4088 webbing <u>1/</u>	No less than 80 percent, minimum requirement for MIL-W-4088 webbing
- After treatment and accelerated aging <u>2/</u>	N/A	No less than 95 percent after treatment
Thickness, inch	No more than the untreated range with a minus tolerance of 12 percent.	No more than the untreated range with a minus tolerance of 12 percent.
Stickiness	N/A	No stickiness. Pass/fail

1/ The breaking strength after abrasion shall apply to all types of treated MIL-W-4088 webbings, except for Type XVIII. The breaking strength after abrasion for Type XVIII webbing shall be no less than 75 percent of its breaking strength after treatment.

2/ Specimens after accelerated aging shall display no evidence of stickiness or gumming.

3.6.1 Stiffness.

3.6.1.1 At a temperature of -65°F. The Class L treated webbing shall be subjected to a temperature of -65 (± 2)°F and compared for stiffness to a specimen tested at standard conditions and the results obtained shall not be more than three (3) times greater than the results obtained at standard conditions, when tested as specified in 4.6.1.

3.6.1.2 After accelerated aging at a temperature of -65°F. After accelerated aging the class L treated webbing shall be tested for stiffness as specified in 4.6.2. The results shall be compared to that of a treated but un-aged specimen similarly tested and shall vary not more than (± 20) percent, when tested as specified in 4.6.2.

3.6.2 Finishing treatments.

3.6.2.1 Class R – resin impregnated. The Class R webbing shall be impregnated with a solvent-free, aqueous polyurethane dispersion for textiles (see 6.2). The resin treated webbing shall meet the colorfastness and physical requirements properties specified in this document.

3.6.2.2 Class L – latex impregnated. The Class L webbing shall be impregnated with a synthetic or natural rubber latex containing the necessary curatives and anti-oxidants to meet the colorfastness and physical requirements properties specified in this document.

3.7 Identification. For Government procurements only, unless otherwise specified (see 6.2), each roll of webbing shall have an identification ticket attached to the roll.

3.8 Width. For Government procurements only, the width of the finished webbing shall be as specified in MIL-DTL-4088 or MIL-PRF-17337 and shall be minimum acceptable width.

3.9 Length and put-up. For Government procurements only, unless otherwise specified (see 6.2), the webbing shall be put-up in rolls. The length and put-up shall be as specified in MIL-DTL-4088 or MIL-PRF-17337, as applicable.

3.10 Fiber identification. Each roll of the finished webbing shall be labeled or ticketed for fiber content in accordance with the Rules and Regulation Under the Textile Fiber Products Identification Act.

3.11 Workmanship. The finished cloth shall be uniform in quality and shall conform to the quality of product established on this specification. The occurrence of defects as specified in 4.4, shall not exceed the quality acceptance levels as specified in the contract or purchase order.

4. VERIFICATION

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

- a. First article inspection (see 4.2).
- b. Conformance inspection (see 4.3).

4.2 First article inspection. A first article, submitted in accordance with 3.1, shall be inspected, examined for appearance, color and finished defects listed in 4.4 and tested for the characteristics as specified in 4.5.

4.3 Conformance inspection. Conformance inspection shall include the visual examination of 4.4 and the tests of 4.5 through 4.6 as applicable. Sampling for inspection shall be performed in accordance with ASQ/ANSI Z1.4 and with acceptance quality limits (AQLs) as specified in the contract or purchase order, except where otherwise indicated (6.2).

4.3.1 Inspection conditions. Unless otherwise specified in this specification or applicable procurements documents (see 6.2), all inspections shall be performed in accordance with this specification and all the requirements of referenced documents.

4.4 Visual examination. Each roll of webbing in the sample shall be examined yard-by-yard on both sides for defects in accordance with Type II of MIL-STD-3064.

4.4.1 Roll identification and marking examination. During the yard-by-yard examination, each roll in the sample shall be examined for defects as specified in MIL-STD-3064.

4.4.2 Shade variation examination. During the yard-by-yard examination, each roll in the sample shall be examined for shade variation as specified in MIL-STD-3064.

4.4.3 Length examination. For Government procurements only, during the yard-by-yard examination, each roll in the sample shall be examined for length as specified in MIL-STD-3064.

4.5 End item testing. The webbing shall be tested for the characteristics listed in Table III. The methods of testing as specified wherever applicable and as listed in Table III shall be followed. All test reports shall contain the individual values utilized in expressing the final results. The sample unit shall be as follows for all physical and colorfastness tests:

a. For Types I, Ia, II and III webbing – Class R, 8-yards; Class L, 14-yards of the finished webbing, and for both classes, 1/2-yard of the webbing prior to treatment.

b. For all other types – Class R, 16-yards; Class L, 25-yards of the finished webbing; and for both classes, 1/2-yard of the webbing prior to treatment.

The lot shall be unacceptable if one (1) or more tests fail to meet the requirement specified. The sample size shall be in accordance with the following:

<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

THIS SPACE LEFT INTENTIONALLY BLANK

TABLE III. Material testing.

Characteristic	Requirement reference	Test method
Colorfastness: - Laundering - Light	Table I	AATCC TM61, Test 3A 1/, <u>2</u> / AATCC TM16.3, Option 3 <u>2</u> /
Weight	Table II	ASTM D3776/D3776M <u>3</u> /
Breaking Strength: - Initial (after treatment) - After treatment and abrasion - After treatment and accelerated aging (Class L only)	Table II	ASTM D5035 <u>4</u> / 4.6.4 and ASTM D5035 <u>5</u> / ASTM D5427 & ASTM D5035 <u>6</u> /
Thickness	Table II	ASTM D1777 <u>7</u> /
Stiffness (Class L only): - At -65°F - At -65°F and after accelerated aging	3.6.1	4.6.1 and ASTM D1388 4.6.2 and ASTM D1388

1/ Rated using the AATCC EP1, Evaluation Procedure for Gray Scale for Color Change and AATCC EP2, Evaluation Procedure for Gray Scale for Staining.

2/ Rated using the AATCC EP1, Evaluation Procedure for Gray Scale for Color Change

3/ Average of determinations calculated to nearest 0.01 ounces per linear yard.

4/ Individual results calculated to nearest 1.0 pound.

5/ Average of determinations calculated to nearest 1.0 pound then 1.0 percent.

6/ Specimen shall hang vertically for 48 hours at 100°C – 105°C. Average of determinations calculated to nearest 1.0 pound then to nearest 1.0 percent loss from untreated, aged results.

7/ Average of determinations calculated to nearest 0.001 inch.

4.6 Methods of testing and inspection.

4.6.1 Stiffness at -65°F (Class L only). Specimens of webbing brought to equilibrium under standard conditions shall be placed in a cold chamber and maintained at -65 (±2)°F for 4 hours. At the end of the exposure period, the specimens while still at the -65°F, shall be tested for stiffness in accordance with ASTM D1388, Option A; results obtained, and the difference in inches calculated. The results shall be reported to the nearest 0.1-inch.

4.6.2 Stiffness at -65°F after accelerated aging (Class L only). Specimens of webbing after accelerated aging in accordance with ASTM D5427 (footnote 6/), having been brought to equilibrium with standard conditions, shall be placed in a cold chamber and maintained at -65 (± 2)°F for 4 hours. At the end of the exposure period, the specimens shall be tested while still at the -65°F conditions, for stiffness in accordance with ASTM D1388, Option A. Specimens of un-aged treated webbing shall be subjected to and tested at the -65°F temperature as specified above; results shall be obtained for the aged and un-aged, and percent change calculated.

4.6.3 Stickiness or gumming. The samples used for determining breaking strength after accelerated aging (ASTM D5427) shall be used to test for stickiness. After removal from oven, the specimen shall be immediately placed across the center of a 15-centimeter diameter circular standard filter paper, 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 2,000-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, carefully lifted. If the filter paper lifts from the lower glass plate, the specimen shall be considered as failing the requirement.

4.6.4 Abrasion testing. The abrasion resistance of textile webbing shall be determined using a webbing abrasion tester consisting of a power driven oscillating drum, having an outside diameter of 16-inches with a suitable means for attaching the specimen without causing damage. A crank shall be attached to the drum in such a manner that when the specimen is attached it will oscillate over the hexagonal rod the required distance during each stroke at the required rate.

The specimen shall be the full width of the material being tested and shall have a minimum length of 54-inches. Five (5) specimens shall be tested from each sample unit. One (1) end of each specimen is attached to the drum and the other end passing over a hexagonal steel rod attached to a weight of 2-pounds (± 2) ounces for specified breaking strengths up to 1000 to 3000 pounds, and 5.2-pounds (± 2) ounces for breaking strengths over 3000-pounds. The steel hexagonal rods shall be 0.250 (± 0.001)-inch when measured across opposite flat sides and the radius of the edges shall be 0.020 (± 0.004)-inch. The steel shall have a cold drawn finish and a Rockwell Hardness of B-91 to B-101. The edges of the hexagonal rods shall not have any burrs, nicks or scale. The rod shall be placed so that the specimen has the weight attached to one end and the other end passing over the hexagonal rod and attached to the drum forming an angle of 85 (± 2) degrees. The specimen shall oscillate across the hexagonal rod and each end of the abraded area equidistant from the ends of the specimen. The edges of each new rod shall be identified as 1 through 6, and only alternate edges (e.g. 1, 3, and 5) shall be used for abrading. No abraded edge shall be used more than once. The drum should oscillate in order for the specimen to traverse 12 (± 1)-inches over the rod at a rate of 60 (± 2) strokes per minute for 5000 strokes. One single stroke is 12(± 1)-inches in one direction only. The result shall be calculated as the percentage of change in the characteristic as calculated below:

$$\text{Percent change in characteristic} = \frac{A-E}{A} \times 100$$

Where: A = Value before abrasion
 E = Value after abrasion

The resistance to abrasion shall be reported as the change in characteristic as specified in the applicable test method or procurement document.

4.6.5 Visual shade matching. The color and appearance of the dyed and untreated webbing shall match the standard sample when viewed using the AATCC EP9, Evaluation Procedure for Visual Assessment of Color Difference of Textiles, Option C, with sources simulating artificial daylight D⁷⁵ illuminant with a color temperature of 7500 (± 200) K illumination of 100 (± 20) foot candles, and shall be a good match to the standard sample under incandescent lamplight at 2856 (± 200) K.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Department or Defense Agency, or within the military service's system commands. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD- ROM products, or by contacting the responsible packaging activity.

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 parachutes and their accessories, tow target reinforcement, safety belts, bomb hoists and slings, tie-down equipment, and overrun barrier.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this specification
- b. Class required (see 1.2.1)
- c. The specific issue of individual documents referenced (see 2.2)
- d. When first article is required (see 3.1, 4.2)
- e. Conformance inspection acceptance quality limits (AQLs) (see 4.3)
- f. Color required (see 3.4)
- g. Identification when required (see 3.7)
- h. Width of webbing required (see 3.8)
- i. Length required if other than specified (see 3.9)
- j. Inspection conditions (see 4.3.1)
- k. Packaging (see 5.1)

6.3 Standard sample. For access to standard samples and pattern drawings, address the contracting activity issuing the invitation for bids or request for proposals.

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

6.6 Subject term (key word) listing.

Belts
Latex
Parachutes
Resin

Custodians:
Army - GL
Navy – NU
Air Force – 11

Preparing Activity:
DLA-CT

(Project: 8305-2021-009)

Review Activities:
Army –AR, EA, MD
Navy – MC, OS, SH

NOTE: The activities listed above were interested in this document as of date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using ASSIST online database at <https://assist.dla.mil>.