

INCH-POUND

MIL-DTL-28933C (MC)  
16 October 1997  
SUPERSEDING  
MIL-S-28933B (MC)  
23 May 1994

## DETAIL SPECIFICATION

### SLING, SWORD, SHOULDER - NYLON WEBBING, WHITE

This specification is approved for use by U.S. Marine Corps, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

#### 1. SCOPE

1.1. Scope. This specification covers requirements for one type white nylon sword sling.

#### 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

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to the Commander (PSE-D), Marine Corps Systems Command, Quantico, VA 22134-5010 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 8465

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specified requirements documents cited in sections 3 and 4 of this specification, whether or not they are listed.

## 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 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).

### SPECIFICATIONS

#### FEDERAL

V-T-295 - Thread, Nylon

#### DEPARTMENT OF DEFENSE

MIL-F-10884 - Fasteners, Snap

### STANDARDS

#### FEDERAL

FED-STD-191 - Textile Test Methods

FED-STD-311 - Leather, Methods of Sampling and Testing

FED-STD-595 - Colors Used in Government Procurement

FED-STD-751 - Stitches, Seams, and Stitchings

#### DEPARTMENT OF DEFENSE

MS27981 - Fastener, Snap, Style 2A

(Unless otherwise indicated, copies of the above specifications, standards, handbooks are available from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

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

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## DRAWINGS

### MARINE CORPS

695179B0000 - Sling, Shoulder, Nylon, Web, Sword, White

### ARMY NATICK LABORATORIES

2-1-767 - Test Jaws for High Strength Textiles; Assembly complete. Split drum type

(Copies should be obtained from the contracting officer or his authorized representative.)

2.3. Non-Government publications. The following document(s) 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).

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

(Application for copies should be addressed to The American National Standards Institute, 11 West 42nd Street, New York, NY 10036.)

Department of Defense (DoD) Standard Color Card of Official Standardized Shades for Sewing Threads 1968

(Application for copies should be addressed to the Color Association of the United States, Inc., 409 W. 44th Street, New York, NY 10016-0927.)

2.4. 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. Standard sample. Standard samples are furnished solely for guidance and information to the contractor (see 6.3). Variation

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from this specification may appear in the sample, in which case the specification shall govern.

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

3.3. Materials.

3.3.1 Leather. The leather for the pad, adjustable belt loops and ring loop shall be cattlehide, free from cuts, damaged grain, open scratches, grub holes, brands, wrinkles or any other defect which may affect the appearance or serviceability of the finished sling.

3.3.1.1. Tannage. The leather shall be white mineral tanned with a suitable synthetic retannage (melamine, vinyl, or equal), exhibiting properties that meet the requirements of this specification.

3.3.1.2. Finish. The leather shall be full grain or full grain lightly snuffed. The flesh side shall be smooth and free from flesh.

3.3.1.3. Cracking. The leather shall not crack.

3.3.1.4. Chemical requirements. The leather shall conform to the following chemical requirements:

<u>Characteristics</u>	<u>Minimum</u>	<u>Maximum</u>
Chloroform extract-percent	12.5	-
Total ash-percent	11.5	-
Acidity (pH)	3	4.5

3.3.1.5. Weight. The pad, adjustable belt loops and ring loop shall be 10.5 to 11.0 ounces for single ply leather.

3.3.1.6. Color. The leather shall be white on the flesh side and grain side approximating shade No. 27875 of FED-STD-595, showing good fastness to wet and dry crocking and showing no appreciable "yellowing".

3.3.2 Poromeric. Poromeric material (see 6.4) 0.055 to 0.065 inch thick with a smooth high gloss finish may be used as an

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alternate to the leather for the pad, adjustable belt loops and ring loop. The color shall be white. The belt loops and pad shall be 2-ply. The weight requirement shall not apply (see 3.3.1.5).

3.3.3 Webbing, nylon. The white nylon webbing shall conform to the following requirements:

Material identification	Nylon
Width (inches)	1-1/8
Thickness (inches)	0.031 minimum
Weight (ounces per yard)	0.049 maximum
Breaking strength (pounds)	1216 minimum
Warp ends	237 minimum
Picks per inch	44 minimum
Ply warp	1 minimum
Ply filling	1 minimum
Weave	Tubular: 1 up/1 down Binder: 1 up/1 down

3.3.4 Metal parts.

3.3.4.1. Buckles. Buckles (female portion) attached to pad; buckles (male portion) attached to each adjustable nylon webbing strap, shall be zinc alloy, nickel finish conforming to the dimensions on drawing number 695179B0000. Two complete buckles are required.

3.3.4.2. Slides. Slides attached to each nylon webbing strap shall be brass, nickel finish, conforming to dimensions on drawing number 695179B0000. Two slides are required.

3.3.4.3. Ring. The ring for attaching the sword hook shall be low carbon steel, nickel finish in size and shape indicated on drawing number 695179B0000.

3.3.4.4. Rivets. Rivets attached to the leather loop on the pad, holding two metal loops, shall be carbon steel, nickel finish, head size 13/64 inch, barrel length 1/4 inch. Two rivets are required.

3.3.4.5. Snap fasteners. Snap fasteners for the adjustable belt loops shall be brass, nickel finish, conforming to style 2A, finish 3, construction A of MIL-F-10884, and MS27981, part Nos. 1N and 3N for button and socket and Nos. 4N and 7N for stud and

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eyelet. Eight studs and eyelets and two buttons and sockets are required on each sling.

3.3.5 Adhesive. The adhesive used for gluing together pad and belt loop parts indicated in drawing number 695179B0000 shall be natural or synthetic latex, natural or synthetic rubber solvent cement, or synthetic resin cements.

3.3.6 Thread. Nylon thread shall conform to type I, class 1, size FF of V-T-295. The color of the thread shall be white (see DoD Standard Color Card of Official Standardized Shades for Sewing Threads 1968).

3.3.7 Labels. Each sling shall have a gummed label attached to the back of the pad containing the following information:

Nomenclature: (Sling, Sword, Shoulder)

Name of contractor:

3.4. Design. The sling shall be the U.S. Marine Corps design as shown on drawing number 695179B0000.

3.5. Construction. The construction of the sling shall conform to drawing number 695179B0000. All stitching shall be done with stitch type 301, conforming to FED-STD-751, 11 stitches per inch with the ends of the stitching backstitched and neatly secured. The pad and belt loops shall be made from two pieces of leather assembled and glued to form two plies with the grain side of leather on the outside. The two plies of pad shall be stitched together with one row of stitches 1/8 inch from the edge on all sides as shown on drawing number 695179B0000. The nylon webbing ends shall be folded and top stitched with three rows of stitches 1/16 inch from the edge, through three plies of webbing as shown on drawing number 695179B0000. The same construction requirements will also apply when using the alternate poromeric material.

3.5.1 Type 301 stitching. Thread breaks in stitching shall be overstitched not less than 1/2 inch back of the break. Ends of stitching shall be backstitched or backtacked not less than 1 inch except where ends are caught in other seams or stitching. Thread tension shall be maintained so that there will be no loose or tight stitching and the lock will be embedded in the center of the materials sewed. All thread ends shall be trimmed.

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3.5.2 Setting of snap fasteners. If a hole is punched before inserting the male or female part of the fastener, the hole shall be smaller than the outside diameter of the fastener tube so that the tube must be forced through the hole.

3.5.3 Gluings. Glued parts shall be securely bonded with the adhesive specified herein. No adhesive shall appear upon any outside finished surface.

3.5.4 Metal parts finish. All surfaces and edges shall be clean, smooth, and free from burrs, drag, step, tool marks, sharp edges and corners, and roughness. Finishing shall not be carried to the point where edges are excessively rounded or details of design fail to meet the requirements shown on drawing number 695179B0000 and specified herein.

3.6. Dimensions. The dimensions of the finished sling shall be as specified in drawing number 695179B0000.

3.7. Workmanship. The finished sling shall conform to the quality and grade of product established by this specification.

3.8. Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable 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.

#### 4. VERIFICATION

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

- a. First article inspection (see 4.3).
- b. Conformance inspection (see 4.4).

4.2. Inspection conditions. Unless otherwise specified, all inspections shall be performed in accordance with the provisions set forth in ANSI/ASQC Z1.4.

4.3. First article inspection. When first article is required, inspection shall be made of a completely fabricated sling for all provisions of this specification.

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4.4. Conformance inspection.

4.4.1 Component and material inspection. Components and materials shall be tested in accordance with all the requirements of referenced specifications, drawings and standards unless otherwise excluded, amended, modified or qualified in this specification or applicable purchase document. In addition to testing provisions contained in subsidiary specifications, drawings and standards, testing shall be performed on components listed in Table I. All test reports shall contain the individual values utilized in expressing the final results. Sampling shall be in accordance with the following:

Lot size	Sample size
800 or less	2
801 to 22,000 inclusive	3
22,001 and over	5

The lot shall be unacceptable if one or more sample units fail to meet any test requirements in Table I. The unit for expressing lot sizes and the sample unit for testing shall be as follows:

<u>Component</u>	<u>Expressed as</u>	<u>Sample unit for testing</u>
Leather	one side or skin	<u>1</u> /
Webbing	yard	7 continuous linear yards
Buckles, slides, rings & rivets	each	one pr.
Adhesive	1 pound	1/2 pint composite

1/ The sample size shall consist of 15 pieces for each test, selected from 15 sides or skins. Sampling procedure and location from which the sample unit is to be obtained shall be in accordance with section 4 of FED-STD-311.



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TABLE I. Test methods.

Components	Characteristics	Reqmt. para	Test method	Det. per S/Unit	Results reported as
Leather	Material identification	3.3.1	Visual	1	Pass or fail
	Tannage	3.3.1.1	Visual	1	Pass or fail
	Cracking	3.3.1.3	4011 <u>1</u> /	-	-
	Chloroform extract	3.3.1.4	6341 <u>1</u> /	-	-
	Ash, total	3.3.1.4	6421 <u>1</u> /	-	-
	pH	3.3.1.4	6621 <u>1</u> /	-	-
	Weight	3.3.1.5	1011 <u>1</u> /	-	-
	Crocking	3.3.1.6	3011 <u>1</u> /	-	-
	Yellowing	3.3.1.6	5660 <u>2</u> /	-	Pass or fail
Webbing	Material identification	3.3.3	Visual	1	Pass or fail
	Width	3.3.3	5020 <u>2</u> /	-	-
	Thickness	3.3.3	5030 <u>2</u> /	1	to nearest 0.0001 inch
	Weight	3.3.3	5040 <u>2</u> /	1	to nearest 0.001 oz.
	Breaking strength	3.3.3	5100 <u>3</u> /	-	-
	Warp ends	3.3.3	5050	-	Pass or fail
	Picks per inch	3.3.3	5050	-	Pass or fail
	Ply, warp	3.3.3	Visual	1	Pass or fail
	Ply, filling	3.3.3	Visual	1	Pass or fail
	Weave	3.3.3	Visual	1	Pass or fail
Buckles	Material identification	3.3.4.1	Visual	1	Pass or fail
Slides	Material identification	3.3.4.2	Visual	1	Pass or fail
Rings	Material identification	3.3.4.3	Visual	1	Pass or fail
Adhesive	Material identification	3.3.5	Visual	1	Pass or fail

1/ Test method of FED-STD-311.2/ Test method of FED-STD-191.

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- 3/ Breaking strength test shall be made in accordance with method 5100 of FED-STD-191, except that the speed of the pulling clamp shall be  $4.0 \pm 1.0$  inches per minute and the warp strength shall be determined on the full width of the webbing. The jaw dimensions shall be greater than the width of the webbing.

Flat type clamps described in method 5100 or drum type clamps may be used. The distance between the jaws shall be 10 inches for flat type clamps and 10 inches between center (free breaking length) when split drum type is used. Split drum type test jaws applicable to the prescribed method of testing shall be in accordance with drawing number 2-1-767.

4.4.2 In-process inspection. Inspection shall be made at any point or during any phase of the manufacturing process to determine whether operations or assemblies are accomplished as specified herein. The Government reserves the right to exclude from consideration for acceptance any material for which in-process inspection has indicated nonconformance. In-process inspection shall be conducted to see that accomplishment of the following is in accordance with requirements specified herein.

<u>Requirement operation or assembly</u>	<u>Requirement</u>
Weight of leather pad, adjustable belt loops and ring loop is not less or more than specified herein.	3.3.1.5
Leather loop on pad is skived.	Dwg. No. 695179B0000
Leather plies forming pad are glued prior to stitching.	Dwg. No. 695179B0000
Buckles (male & female), slides, rings and rivets conform to dimensions specified herein.	Dwg. No. 695179B0000

4.4.3 Examination of the end item. The defects found during examination shall be classified in accordance with the list shown in 4.4.3.1 and 4.4.3.2. The sample unit for these examinations shall be one completely fabricated sling.

4.4.3.1. Classification of defects. All defects shall be classified as follows:

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Examine	Defects	Classification		
		Major	Minor	
		A	B	
Webbing	a. Holes, cuts, or tears.	101		
	b. Webbing defects: - seriously affecting serviceability or appearance. - not seriously affecting serviceability or appearance.	102	201	
	c. Not firmly and tightly woven; edges frayed or scalloped.	103		
Leather	a. Broken grain, badly healed scar, scratches, cuts, open grub, or tick mark, hole, open vein, flank, or other grain defects: - seriously affecting serviceability. - not seriously affecting serviceability.	104		
		105		
Poromeric	a. Not specified color.	106		
	b. Not specified thickness.	107		
Hardware	a. Broken or malformed; finish omitted; corroded areas; burrs or sharp edges which may cause injury in handling.	108		
Seams and stitching	a. Open seams: - 3/8 inch or less. - more than 3/8 inch.		202	301
	b. Runoffs (see open seams):		203	
	c. Raw edges: - any raw edge.		204	
NOTE: A seam shall be classified as open when one or more continuous skipped stitches or runoffs occur.				
NOTE: Raw edges not securely caught in stitching shall be classified as open seams.				
	d. Seam and stitch type: - wrong seam or stitch type.	109		

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Examine	Defects	Classification		
		Major	Minor	
		A	B	
Seams and stitching (cont'd)	e. Stitch tension: - loose, resulting in a loosely exposed top or bobbin thread; tight, resulting in excessive tightness or seams.		205	
	f. Stitches per inch: 1. One to two stitches less than minimum specified.			302
	2. Three or more stitches less than minimum specified.	110		
	3. One or more stitches in excess of maximum specified.			303
	g. Stitching margin: - not as specified affecting serviceability.		206	
	h. Stitching ends: - backstitched less than 1 inch.			304
	i. Thread breaks: - backstitched less than 1/2 inch.	111		
NOTE: Thread breaks not backstitched shall be classified as open seams.				
Cleanness	j. Stitching: - one or more required rows of stitching omitted.	112		
	a. Grease or oil stains, clearly noticeable.	113		
	b. Small spots or stains: - seriously affecting appearance.			305
	- not seriously affecting appearance.			306
	c. Thread ends not trimmed throughout.	114		

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Examine	Defects	Classification		
		Major	Minor	
		A	B	
Components and Assembly	a. Any required component part or operation omitted (unless otherwise classified herein).	115		
Construction details	a. Pad.			
	1. Ends of shoulder or waist straps not inserted between double thickness of pad.	116		
	2. Any part of pad and adjustable belt loops constructed with one piece of leather instead of two.	117		
	3. Loop for ring not securely riveted to pad, riveted through both thicknesses of pad.	118		
	b. Poromeric material:			
	1. Not high gloss.	119		
	2. Abraded, scratched, or other finish damage.	120		
	c. Ring:			
	- reversed, i.e., not assembled as specified on drawing number 695179B0000.		206	
	d. Adhesive:			
	1. Glued parts not securely bonded; i.e., separate easily.	121		
	2. Exposed on outside finished surface:			
	- affecting appearance.	122		
	- not affecting appearance.			307
	e. Snap fasteners on pad and belt loops:			
	1. Misplaced, failing to serve intended purpose.	123		

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Examine	Defects	Classification		
		Major	Minor	
		A	B	
Construction details (cont'd)	2. Any fastener not functioning properly, failing to effect as secure closure or to open freely.	124		
NOTE: Incomplete roll of end of cap tube is evidence of improper and insecure clinching. Fasteners evidencing incomplete roll will separate in use.				
	3. Splits in roll of cap tube.		208	
	4. Button and socket or stud and eyelet separate. The snap fastener shall be snapped and unsnapped at least twice to determine whether parts of fastener separate or whether they effect a smooth and secure closure.	125		
	f. Buckles (male and female): - not assembled to waist and shoulder straps as indicated on drawing number 695179B0000, or failing to adjust straps freely.	126		
	g. Shoulder and waist straps: - not securely stitched to pad or not assembled to pad as indicated on drawing number 695179B0000.	127		

4.4.3.2. Examination for dimensional characteristics. Slings shall be examined for dimensional defects as follows:

<u>Examine</u>	<u>Defect</u>
Exterior angle of shoulder straps (see front view drawing number 695179B0000).	Less than 55° or more than 65°.
Components and location dimensions.	Not within tolerances specified herein.

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## 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 material is to be performed by Department of Defense (DoD) 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 activity within the Military Department of Defense Agency, or within the Military Department's Systems Command. 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 slings are intended for carrying the sword and scabbard used by officer personnel of the U.S. Marine Corps.

6.2. Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of the specification.
- b. Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.2).
- c. Packaging requirements (see 5.1).
- d. Whether first article is required (see 3.2).

6.3. Standard sample. For information regarding the availability of a sample sling and of the shade specified, address inquiry to the procuring activity issuing the invitation for bids.

6.4. Poromeric material. The poromeric material produced by Inmont Corporation has proven to be satisfactory for use in this sling.

6.5. Adhesive. Metroband shoe adhesive number C-273 has proven satisfactory in assembling this sling.

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6.6. Subject term (keyword) listing.

Belt loops  
Buckles  
Poromeric  
Ring loops  
Slides

6.7. 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.

Preparing Activity:

Navy - MC

Project No. 8465-N242



# 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.

### I RECOMMEND A CHANGE:

1. DOCUMENT NUMBER  
MIL-DTL-28933C

2. DOCUMENT DATE (YYMMDD)  
971016

3. DOCUMENT TITLE SLING, SWORD, SHOULDER - NYLON WEBBING, WHITE

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)  
(1) Commercial  
(2) AUTOVON  
(if applicable)

7. DATE SUBMITTED  
(YYMMDD)

### 8. PREPARING ACTIVITY

a. NAME  
COMMANDER, MARCORSYSCOM, PSE-D

b. TELEPHONE (Include Area Code)  
(1) Commercial (703) 784-4584  
(2) AUTOVON 278-4584

c. ADDRESS (Include Zip Code)  
2033 BARNETT AVE, SUITE 315,  
QUANTICO, VA 22134-5010

IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:  
DEFENSE QUALITY AND STANDARDIZATION OFFICE  
5203 Leesburg Pike, Suite 1403, Falls Church, VA 22401-3466  
Telephone (703) 756-2340 AUTOVON 289-2340