

INCH-POUND

MIL-L-1709E

10 August 1989

SUPERSEDING

MIL-L-1709D

28 April 1975

MILITARY SPECIFICATION

LINES, TENT

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

1. SCOPE

1.1 Scope. This specification covers tent lines used in tentage and other items such as tarpaulins and covers.

1.2 Classification. The tent lines shall be of the types indicated in table I and of the following classes as specified (see 6.2).

- Class A - Rope, manila
- Class B - Rope, sisal
- Class C - Rope, cotton, twisted
- Class D - Cord, cotton, braided
- Class E - Rope, jute
- Class F - Twine, cotton seine
- Class G - Rope, polyester
- Class H - Cord, fibrous, polyester, diamond braid

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 self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 8340

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

MIL-L-1709E

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).

SPECIFICATIONS

FEDERAL

- T-C-571 - Cords, Cotton; General and Special Purposes, Sash and Venetian Blind
- T-T-871 - Twine, Cotton, Wrapping
- T-T-881 - Twine, Cotton, Seine
- V-T-285 - Thread, Polyester
- PPP-B-26 - Bag, Plastic, (General Purpose)
- PPP-B-636 - Boxes, Shipping, Fiberboard

MILITARY

- MIL-R-1670 - Rope, Tent-Lay
- MIL-H-1679 - Hook, Tent; with Thimble, for Guy Line, Assembly Tent
- MIL-R-30500 - Rope, Polyester
- MIL-L-35078 - Loads, Unit: Preparation of Semiperishable Subsistence Items; Clothing, Personal Equipment and Equipage; General Specification For
- MIL-C-43678 - Cords, Fibrous, Polyester, Diamond Braid

STANDARDS

FEDERAL

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

MILITARY

- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes
- MIL-STD-129 - Marking for Shipment and Storage
- MIL-STD-147 - Palletized Unit Loads
- MIL-STD-731 - Quality of Wood Members for Containers and Pallets

MIL-L-1709E

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Naval Publications and Forms Center, (ATTN: NPODS), 5801 Tabor Avenue, Philadelphia, PA 19120-5099.)

2.2 Non-Government publications. The following document forms 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 SOCIETY FOR TESTING AND MATERIALS (ASTM)

D 3951 - Standard Practice for Commercial Packaging

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103-1187.)

(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 Materials and components.

3.2.1 Rope, manila. The manila rope for class A shall conform to type I, class 2 of MIL-R-1670 (see 6.6).

3.2.2 Rope, sisal. The sisal rope for class B shall conform to type II, class 2 of MIL-R-1670 (see 6.6).

3.2.3 Rope, cotton, twisted. The cotton twisted rope for class C shall conform to type IV, class 2 of MIL-R-1670 (see 6.6).

3.2.4 Cord, cotton, braided. The braided cotton cord for class D shall conform to type I, class 3 of T-C-571 (see 6.6).

3.2.5 Rope, jute. The jute rope for class E shall conform to type III, class 2 of MIL-R-1670.

MIL-L-1709E

3.2.6 Twine, cotton. The cotton twine for class F shall conform to type II, commercial number 96 of T-T-881.

3.2.7 Rope, polyester. The polyester rope for class G shall be a continuous filament polyester fiber, conforming to MIL-R-30500 in sizes specified. The ends of the rope shall be cut off squarely and shall be securely whipped, taped, or heat sealed to prevent untwisting or fraying. The color of the rope shall be Olive Drab 7. When spliced rope is required, eye splices shall be accomplished with a minimum of four full tucks. Tapered splices are permitted.

3.2.8 Thread, polyester. The thread shall be natural, conforming to type I, class 1, subclass A, size E or FF of V-T-285.

3.2.9 Twine, cotton, wrapping. The 5 ply wrapping twine shall conform to type II, class 1 of T-T-871.

3.2.10 Hook, tent, with thimble. The tent hook, with thimble, used in the type XXXIX tent line shall conform to MIL-H-1679. As an alternate, a commercial type of hook and thimble of comparable size may be furnished upon approval of the contracting officer.

3.2.11 Cord, fibrous, polyester, diamond braid. The polyester cord for class H shall be multifilament, bright tenacity polyester fiber conforming to MIL-C-43678. The ends of the cord shall be seared or heat sealed to prevent fraying.

3.3 Physical requirements. The finished tent lines shall conform to the requirements specified in table I and as specified herein.

Class A - Rope, manila
 Class B - Rope, sisal
 Class C - Rope, cotton, twisted
 Class D - Cord, cotton, braided
 Class E - Rope, jute
 Class F - Twine, cotton seine
 Class G - Rope, polyester
 Class H - Cord, fibrous, polyester, diamond braid

3.3.1 Finishes. The end finishes, eye finishes, footstops and splices as referenced in figure number shall be in accordance with figures 1 through 15 and as specified herein.

TABLE I. Physical requirements

| Type | Nomenclature | Rope size (in.) | Class of rope Std. Substitute (see 6.3) | Cut length | | | Finish of lines | | | Finished length of lines Fig. No. Ft. In. | | |
|------|---------------------------------|--------------------|---|---------------------|---------------------|-----------------------------------|------------------|-----------------------------------|-------------------------|--|----------|-----|
| | | | | Cir. | Dia. | Class A, B, C, E or G lines | Class D lines | Class A, B, C, E or G lines | Class D & F lines | | Fig. No. | |
| | | | | | | | | | | | | Ft. |
| I | Line, tent, footstop 7 in. | 3/4 | A | D | -- | 19 | -- | 19 | 12 | 12 | -- | 7 |
| II | Line, tent, footstop, 10 in. | 5/8 | C | G or H | -- | 14 | -- | -- | 13 | -- | -- | 10 |
| III | Line, tent, 2 ft. | 3/4 | A | B, C, D, E, or G | 2 | -- | 2 | 6 | 5 | 5 | -- | 1/ |
| V | Line, tent, 3 ft. 4 in. | 3/4 | 1/4 | C | -- | 4 | -- | -- | 3 | -- | -- | 4 |
| VI | Line, tent, 3 ft. 4 in. | 3/4 | 1/4 | A | B, C, D, E, or G | 3 | 4 | 3 | 10 | 5 | -- | 1/ |
| VIII | Line, tent, 4 ft. 6 in. | 3/4 | 1/4 | A | B, C, D, E, or G | 4 | 6 | 4 | 6 | 5 | 5 | 4 |
| IX | Line, tent, 4 ft. 7 in. | 1-1/2 | 3/8 | A | B, C, D, E, or G | 4 | 7 | 5 | 1 | 6 | 6 | 1/ |
| X | Line, tent, 6 ft. | 3/4 | 1/4 | A | B, C, D, E, or G | 6 | -- | 6 | 6 | 5 | 5 | 1/ |
| XI | Line, tent, 6 ft. | 1-1/2 | 1/2 | A | B, E or G | 6 | -- | -- | -- | 6 | -- | 6 |

MIL-L-1709E

MIL-L-1709E

TABLE I. Physical requirements (cont'd)

| Type | Nomenclature | Rope size (in.) | Class of rope Std. Substitute (see 6.3) | Cut length | | | Finish of lines | | | Finished length of lines Fig. No. Ft. In. | |
|-------|-----------------------------|--------------------|---|------------|-------|---------|--------------------------|-------|----------------|---|----|
| | | | | Class A. | | Class D | Class A, B, C, E or G | | Class D & F | | |
| | | | | lines | lines | lines | lines | lines | | | |
| XIII | Line, tent, 7 ft. | 5/8 | 3/16 C G or H | 7 | 6 | -- | 11 | -- | 7 | -- | |
| XIV | Line, tent, 8 ft. | 3/4 | 1/4 A B, C, D, E, or G | 8 | -- | 8 | -- | 5 | 5 | 8 | |
| XV | Line, tent, 8 ft. | 3/4 | 1/4 A B, C, D, E, or G | 8 | 8 | 9 | -- | 1 | 12 | 8 | |
| XVI | Line, tent, 9 ft. 2 in. | -- | 1/8 D | -- | -- | 9 | 2 | -- | Unfin. | 9 | 2 |
| XVII | Line, tent, 10 ft. 6 in. | 3/4 | 1/4 A B, C, D, E, or G | 10 | 6 | 11 | -- | 5 | 5 | -- | 1/ |
| XVIII | Line, tent, 11 ft. | 1 | 5/16 A B, C, D, E, or G | 11 | -- | 11 | -- | 5 | 5 | 11 | -- |
| XIX | Line, tent, 11 ft. 6 in. | 1 | 5/16 A B, C, D, E, or G | 12 | 3 | 12 | 11 | 1 | 12 | 11 | 6 |
| XX | Line, tent, 12 ft. | 1-1/2 | 1/2 A B, E or G | 12 | -- | -- | -- | 4 | -- | 12 | -- |

TABLE I. Physical requirements (cont'd)

| Type | Nomenclature | Rope size (in.) | Class of rope Std. Substitute (see 6.3) | Cut length | | | Finish of lines | | | Finished length of lines Fig. No. Ft. In. | | |
|---------|---|--------------------|---|------------------|------|-------------------------------------|------------------------------|-----------------------------------|-------------------------|--|-----|-----|
| | | | | Cir. | Dia. | Class A. B,C,E or G & F lines | Class D C,E or G lines | Class A, B, C, E or G lines | Class D & F lines | | | |
| | | | | | | | | | | | Ft. | In. |
| XXI | Line, tent, 13 ft. | 1 | 5/16 A | B,C,D,E, or G | 13 | 9 | 14 | 5 | 1 | 1 | 13 | -- |
| XXIII | Line, tent, 14 ft. | 3/4 | 1/4 A | B,C,D,E, or G | 14 | -- | 14 | 6 | 5 | 5 | -- | 1/ |
| XXIV | Line, tent, 15 ft. | 1-1/8 | 3/8 A | B,C,D,E, or G | 15 | 10 | 16 | 7 | 2 | 11 | 15 | -- |
| XXVI | Line, tent, 18 ft. 6 in. | 1-1/2 | 1/2 A | B,E or G | 18 | 6 | -- | -- | 6 | -- | 18 | 6 |
| XXVIII | Line, tent, 19 ft. | 1 | 5/16 A | B,C,D,E, or G | 19 | 9 | 20 | 5 | 1 | 11 | 19 | 1 |
| XXXI | Line, tent, 27 ft. | 3/4 | 1/4 A | B,C,D,E, or G | 27 | -- | 27 | 6 | 5 | 5 | -- | 1/ |
| XXXV | Line, tent, 36 ft. | 1 | 5/16 A | B,C,D,E, or G | 36 | -- | 36 | -- | 5 | 5 | 36 | -- |
| XXXVIII | Line, tent, 50 ft. | 1 | 5/16 A | B,C,D,E, or G | 25 | 5 | 26 | 1 | 7 | 10 | 50 | -- |
| XXXIX | Line, tent, 52 ft. w/thimble and hook | 1-1/2 | 1/2 A | B,E or G | 52 | 6 | -- | -- | 2/ | -- | 52 | -- |
| XL | Line, tent, 64 ft. | 1 | 5/16 A | B,C,D,E, or G | 32 | 5 | 33 | 1 | 7 | 10 | 64 | -- |

MIL-L-1709E

MIL-L-1709E

TABLE I. Physical requirements (cont'd)

| Type | Nomenclature | Rope size (in.) | Cir. Dia. | Class of rope Std. Substitute (see 6.3) | Cut length | | | Finish of lines | | | Finished length of lines Fig. No. Ft. In. | | | |
|--------|-----------------------------|--------------------|--------------|---|------------|-----|-----|-----------------|-----|------------------|--|----------|-----------------------------------|------------------|
| | | | | | Ft. | In. | Ft. | In. | Ft. | In. | | Fig. No. | | |
| | | | | | | | | | | | | | Class A, B, C, E or G lines | Class D lines |
| XLIII | Line, tent, 13 ft. 6 in. | 1-1/8 | 3/8 | A | B, E, or G | 13 | 6 | -- | -- | 4 | -- | -- | 13 | 6 |
| XLVI | Line, tent, 6 ft. 8 in. | 1-1/2 | 1/2 | A | B, E or G | 7 | 6 | -- | -- | 2 | -- | -- | 6 | 8 |
| XLVII | Line, tent, 48 in. | 1-1/8 | 3/8 | A | B, E or G | -- | 54 | -- | -- | 13 | -- | -- | -- | 48 |
| XLVIII | Line, tent, 72 in. | 1-1/8 | 3/8 | A | B, E or G | -- | 72 | -- | -- | 4 | -- | -- | -- | 72 |
| XLIX | Line, tent, 48 in. | 1-1/8 | 3/8 | A | B, E or G | -- | 48 | -- | -- | 4 | -- | -- | -- | 48 |
| L | Line, tent, 25 ft. | 3/4 | 1/4 | A | B, E or G | 25 | 6 | -- | -- | 14 | -- | -- | 25 | -- |
| LJ | Line, tent, 25 ft. | 3/4 | 1/4 | A | B, E or G | 26 | -- | -- | -- | 15 | -- | -- | 25 | -- |
| LII | Line, tent, 12 ft. 6 in. | -- | 7/32 | D | -- | -- | -- | 12 | 6 | Unfin. both ends | -- | -- | 12 | 6 |
| LIII | Line, tent, 15 ft. | -- | 7/32 | D | -- | -- | -- | 15 | -- | Unfin. both ends | -- | -- | 15 | -- |
| LIV | Line, tent, 21 ft. 6 in. | -- | 7/32 | D | -- | -- | -- | 21 | 6 | Unfin. both ends | -- | -- | 21 | 6 |
| LVI | Line, tent, 19 ft. | -- | 1/8 | D | -- | -- | -- | 19 | -- | Unfin. both ends | -- | -- | 19 | -- |
| LVII | Line, tent, 30 ft. | -- | 1/8 | D | -- | -- | -- | 30 | -- | Unfin. both ends | -- | -- | 30 | -- |

MIL-L-1709E

TABLE I. Physical requirements (cont'd)

| Type | Nomenclature | Rope size (in.) | Cir. Dia. | Class of rope Std. Substitute (see 6.3) | Cut length | | | Finish of lines | | | Finished length of lines Fig. No. Ft. In. | |
|-------|--|--------------------|--------------|---|------------|-----|------------------|-----------------------------------|-----|-------------------------|--|----------|
| | | | | | Class A. | | Class D lines | Class A, B, C, E or G lines | | Class D & F lines | | |
| | | | | | Ft. | In. | | Ft. | In. | | | Fig. No. |
| LVIII | Line, tent, 35 ft. | -- | 1/8 | D | -- | -- | 35 | Unfin. both ends | -- | -- | 35 | -- |
| LIX | Line, tent, 15 ft. | -- | No. | F | -- | -- | 15 | Unfin. both ends | -- | -- | 15 | -- |
| LX | Line, tent, 6 ft. | -- | No. | F | -- | -- | 6 | Unfin. both ends | -- | -- | 6 | -- |
| LXIII | Line, tent, 23 ft. 3 in. | 1-1/2 | 1/2 | A | -- | -- | -- | 8 | 3/ | -- | 23 | 3 |
| LXIV | Line, tent, with rope clamp 14 ft. | 5/8 | 3/16 | G | -- | -- | -- | -- | 4/ | -- | 14 | -- |

1/ Length of line shall be same as cut length for applicable class of rope.

2/ Finish shall be same as figure 2 except splice around thimble with guy hook attached.

3/ TYPE LXIII shall be made of two pieces of rope, one 24 feet long and one 24 inches long.

4/ Ends shall be secured with a copper alloy rope clamp (see 6.7).

MIL-L-1709E

3.3.3 Color. The color of the rope shall be as specified in the applicable subsidiary rope specification unless otherwise specified in the applicable end use specification or contract (see 6.2).

3.4 Construction.

3.4.1 Stitching, machine. All machine stitching shall conform to FED-STD-751 for stitch type indicated.

3.4.1.1 Machine serving. Machine serving shall be as specified on the applicable referenced figure. A pure silicone fluid, type DC 200 or equal may be used in machine serving to lubricate the thread if required in the manufacturing process. Machine serving the ends shall be accomplished by using stitch type 304 or 308, 12 to 16 stitches per inch. The stitching shall extend at least 1-1/2 inches from the free end of the rope.

3.4.1.2 Footstops. The machine stitched footstops (type II) shall be stitched the entire length with stitch type 301, 5 to 7 stitches per inch and shall then be knotted mechanically as shown on figure 13.

3.4.1.3 Sewn eye. The sewn eye as shown on figure 11 shall be finished with stitch type 304, 12 to 16 stitches per inch. A minimum of 3 inches of overcast stitching shall be used to join the lengths of rope together. The stitch shall be run off the joined strands onto the longer single strand a minimum of 1/2 inch.

3.4.1.4 Thread breaks. Thread breaks in stitching shall be overstitched not less than 1 inch at each break on stitch type 301 and not less than 3/4 inch on type 304 stitching.

3.4.2 Hand serving. Hand serving as specified on referenced figures shall be securely and neatly accomplished with double strands of twine specified in 3.2.9. Waxed twine will be allowed.

3.4.3 Splicing. Unless otherwise specified, all splices, shall have three tucks. Unless otherwise specified, the ends of all strands shall be clipped after the splice is completed to a length of not less than 1 inch nor more than 1-1/4 inches.

3.4.4 Eye size. The size of the eyes shall be as specified on the applicable referenced figure and shall be the measurement of the inside loop when stretched taut.

3.4.5 Dimensions. Any dimension for lengths of lines specified in table I and any dimension specified in the referenced figures are minimum.

MIL-L-1709E

3.4.6 Knots. Knots shall be tied as specified in the applicable figure. All knots shall be pulled tight mechanically so that they cannot be readily untied by hand.

3.5 Workmanship. The tent lines shall contain no kinks, broken or loose ends, bulged strands, strand marks or loosely twisted strands. The lines shall be clean and free of grease or oil stains and shall have no objectionable odor. There shall be no cut, chafe, fray or abrasion marks. Braided cord shall be evenly braided so as to contain no open places or breaks in continuity of braid or soft spots. The finish of the cord shall not be gummy or tacky nor cause the cord to check or crack.

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.

4.2 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 dimensions specified in table I and for the defects listed in table II. The presence of any defect or any dimension not as specified shall be cause for rejection of the first article.

MIL-L-1709E

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

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.

4.4.2 End item visual examination. The end items shall be examined for the defects listed in table II. The lot size shall be expressed in units of tent lines. The sample unit shall be one tent line. The inspection level shall be level I (see 6.4).

TABLE II. End item visual defects

| Examine | Defect |
|--------------------------------------|---|
| Appearance and workmanship (general) | Kinks; broken or loose ends; bulged strands; strand knots Strands loosely twisted Grease; oil stains; general uncleanliness throughout line, clearly noticeable Objectionable odor Cut, chafe, fray, rub or abrasion mark Braided cord unevenly braided resulting in open places or breaks in continuity of braid or soft spots Finish of cord gummy or tacky; finish causes cord to check or crack Ends of synthetic fiber tent lines not securely whipped, taped, heat sealed, or clamped (type LXIV) Not constructed as specified Uneven or spotty dyeing Color not as specified |
| Splicing (when applicable) | Number of tucks less than specified Tucking not accomplished as specified Clipped end of splice strand extends less than 1 inch or more than 1-1/4 inches from splice Not accomplished as specified; loose Insufficient tension around thimble (when applicable), viz., rope slips off thimble |
| Knotting (when applicable) | Not as specified Can be readily untied by hand Omitted |

MIL-L-1709E

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

| <u>Examine</u> | <u>Defect</u> |
|-----------------------------------|---|
| Hand serving (when applicable) | Not accomplished with double strand of twine Accomplished with less than seven complete turns Any operation omitted First turn less than 1/2 inch from end of line or more than 3/4 inch from end of line |
| Machine serving (when applicable) | Accomplished with other than 304 or 308 stitch type Extends less than 1-1/2 inches from free end of rope |
| Sewn eye | Accomplished with other than 304 stitch type Joined lengths of rope stitched with less than 3 inches of overcast stitching Stitching run off onto the longer strand less than 1/2 inch |
| Stitching (general) | Loose stitching Not overstitched at each break Overstitched less than 1 inch at each break on stitch type 301 Overstitched less than 3/4 inch at each break on stitch type 304 or 308 Stitches per inch less than 5 or more than 7 on type 301 stitching; less than 12 or more than 16 on type 304 or 308 stitching |

4.4.3 End item dimensional examination. The end items shall be examined for conformance to the dimensions specified in table I. Any dimension not as specified in table I shall be classified as a defect. The lot size shall be expressed in units of tent lines. The sample unit shall be one tent line. The inspection level shall be S-2 (see 6.4).

4.4.4 Packaging examination. The fully packaged end items shall be examined for the defects listed below. The lot size shall be expressed in units of shipping containers. The sample unit shall be one shipping container fully packaged. The inspection level shall be S-2 (see 6.4).

MIL-L-1709E

| <u>Examine</u> | <u>Defect</u> |
|---------------------------------|--|
| Marking (exterior and interior) | Omitted; incorrect; illegible; of improper size, location, sequence, or method of application |
| Materials | Any component missing, damaged, or not as specified |
| Workmanship | Inadequate application of components, such as: incomplete sealing or closure of flap, improper taping, loose strapping or inadequate stapling Bulged or distorted container |
| Content | Number of lines per container is more or less than required |

4.4.5 Palletization examination. The fully packaged and palletized end items shall be examined for the defects listed below. The lot size shall be expressed in units of palletized unit loads. The sample unit shall be one palletized unit load, fully packaged. The inspection level shall be S-1 (see 6.4).

| <u>Examine</u> | <u>Defect</u> |
|---------------------|---|
| Finished dimensions | Length, width, or height exceeds specified maximum requirement |
| Palletization | Pallet pattern not as specified Load not bonded as specified |
| Weight | Exceeds maximum load limits |
| Marking | Omitted; incorrect; illegible; of improper size, location, sequence, or method of application |

5. PACKAGING

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

5.1.1 Level A preservation. Each tent line shall be unit packed in a plastic bag conforming to type I or II, any style of PPP-B-26.

5.1.2 Commercial preservation. Each tent line shall be preserved in accordance with ASTM D 3951.

MIL-L-1709E

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

5.2.1 Level A packing. Tent lines preserved as specified in 5.1, shall be packed in the quantities specified in table III. The container shall be a fiberboard box conforming to style RSC-L, grade V2s of PPP-B-636. Each box shall be closed, waterproofed, and reinforced with strapping or tape banding in accordance with the appendix of PPP-B-636. Boxes shall be arranged in unit loads in accordance with MIL-L-35078 for the type and class of load specified (see 6.2). Strapping shall be limited to nonmetallic strapping, except for type II, class F loads.

TABLE III. Tent lines

| Type | Number of tent lines per container |
|---------|------------------------------------|
| I | 1200 |
| II | 4000 |
| III | 800 |
| V | 600 |
| VI | 500 |
| VIII | 400 |
| IX | 175 |
| X | 300 |
| XI | 100 |
| XIII | 450 |
| XIV | 250 |
| XV | 200 |
| XVI | 800 |
| XVII | 175 |
| XVIII | 90 |
| XIX | 90 |
| XX | 50 |
| XXI | 80 |
| XXIII | 140 |
| XXIV | 50 |
| XXVI | 30 |
| XXVIII | 60 |
| XXXI | 70 |
| XXXV | 35 |
| XXXVIII | 20 |
| XXXIX | 8 |
| XL | 15 |
| XLIII | 125 |
| XLVI | 110 |
| XLVII | 325 |
| XLVIII | 200 |

MIL-L-1709E

TABLE III. Tent lines (cont'd)

| Type | Number of tent lines per container |
|-------|------------------------------------|
| XLIX | 325 |
| L | 125 |
| LI | 125 |
| LII | 200 |
| LIII | 170 |
| LIV | 125 |
| LVI | 500 |
| LVII | 250 |
| LVIII | 200 |
| LIX | 1000 |
| LX | 1200 |
| LXIII | 40 |
| LXIV | 225 |

5.2.2 Level B packing. Tent lines of one type and class only, packaged as specified in 5.1, shall be packed in the quantities specified in table III in a snug-fitting fiberboard shipping container conforming to style RSC-L, type CF, variety SW or type SF, class domestic grade 275 of PPP-B-636.

5.2.3 Commercial packing. Tent lines, preserved as specified in 5.1, shall be packed in accordance with ASTM D 3951.

5.3 Palletization. When specified (see 6.2), tent lines, packed as specified in 5.2.2 and 5.2.3, shall be palletized on a 4-way entry pallet in accordance with load type Ia of MIL-STD-147. Pallet types shall be type I (4-way entry), type IV, or type V in accordance with MIL-STD-147. Pallets shall be fabricated from wood groups I, II, III, or IV of MIL-STD-731. Each prepared load shall be bonded with primary and secondary straps in accordance with bonding means K and L or film bonding means O or P. Pallet patterns shall be in accordance with the appendix of MIL-STD-147.

5.4 Marking. In addition to any special marking required by the contract or purchase order, bundles, shipping containers and palletized unit loads shall be marked in accordance with MIL-STD-129 or ASTM D 3951, as applicable.

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 tent lines are intended for use on various types of tents, shelters, and tarpaulins.

MIL-L-1709E

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of this specification.
- b. Type and class required (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 a first article is required (see 3.1, 4.3, and 6.3).
- e. Color if required (see 3.3.3).
- f. Levels of preservation and packing (see 5.1 and 5.2).
- g. Type and class of unit load (see 5.2.1).
- h. When palletization is required (see 5.3).
- i. Acceptance criteria required (see 6.4).

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 Acceptance criteria. The acceptance criteria below is recommended for use. The acceptance criteria as specified in the contract or purchase order shall be binding. Unless otherwise specified, the following acceptance criteria are in accordance with MIL-STD-105.

6.4.1 For end item visual examination. An acceptable quality level (AQL), expressed in terms of defects per hundred units, of 4.0 is recommended.

6.4.2 For end item dimensional examination. An AQL, expressed in terms of defects per hundred units, of 4.0 is recommended.

6.4.3 For packaging examination. An AQL, expressed in terms of defects per hundred units, of 2.5 is recommended.

6.4.4 For palletization examination. An AQL, expressed in terms of defects per hundred units, of 6.5 is recommended.

6.5 For procurement purposes. The substitute class (see 6.6) shall not be furnished unless specifically authorized in the contract or purchase order.

6.6 Substitution of materials. When the use of cotton, manila or sisal rope is restricted due to unavailability of these fibers, solid braid general purpose nylon cord, per MIL-C-43307 or solid braid polyester cord, per MIL-C-43256 may be substituted for the braided cotton cord. Nylon rope, per

MIL-L-1709E

MIL-R-17343, may be substituted for the manila, sisal or twisted cotton rope where applicable. The approval of these alternates is the responsibility of the US Army Natick Research, Development, and Engineering Center, Natick, MA 01760-5014 in conjunction with the contracting officer or the procuring activity.

6.7 Rope clamp. The Astrup Co., Cleveland, Ohio, brass rope clamp No. 225 has been found to meet the requirements for type LXIV tent lines.

6.8 International standardization agreement. Certain provisions of this specification are the subject of international standardization agreement as cited in NATO, STANAG NO. 2882, relative to camouflage requirements for tents, shelters and subsidiary components. When amendment, revision, or cancellation of this specification is proposed that will modify the international agreement concerned, the preparing activity will take appropriate action through international standardization channels, including departmental standardization offices, to change the agreement or make other appropriate accommodations.

6.9 Subject term (key word) listing.

Cord
Rope
Twine

6.10 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
Navy - NU
Air Force - 99

Preparing activity:

Army - GL
(Project 8340-0500)

Review activities:

Air Force - 82
Navy - YD
DLA - CT

User activities:

Navy - MC
Air Force - 45

MIL-L-1709E

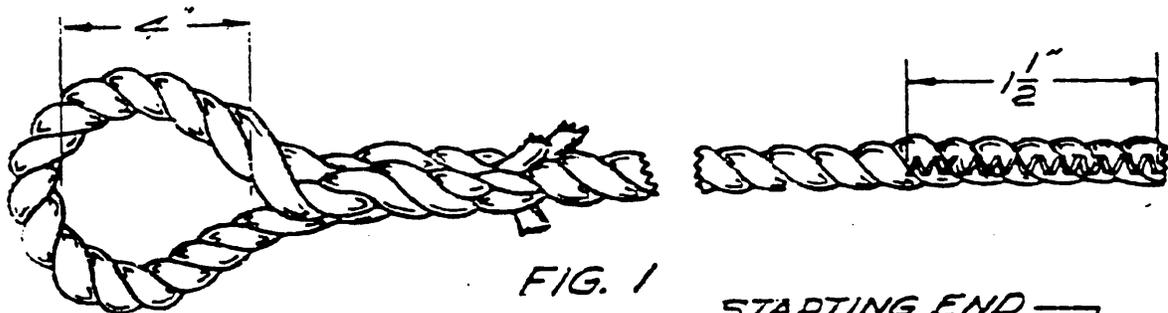


FIG. 1

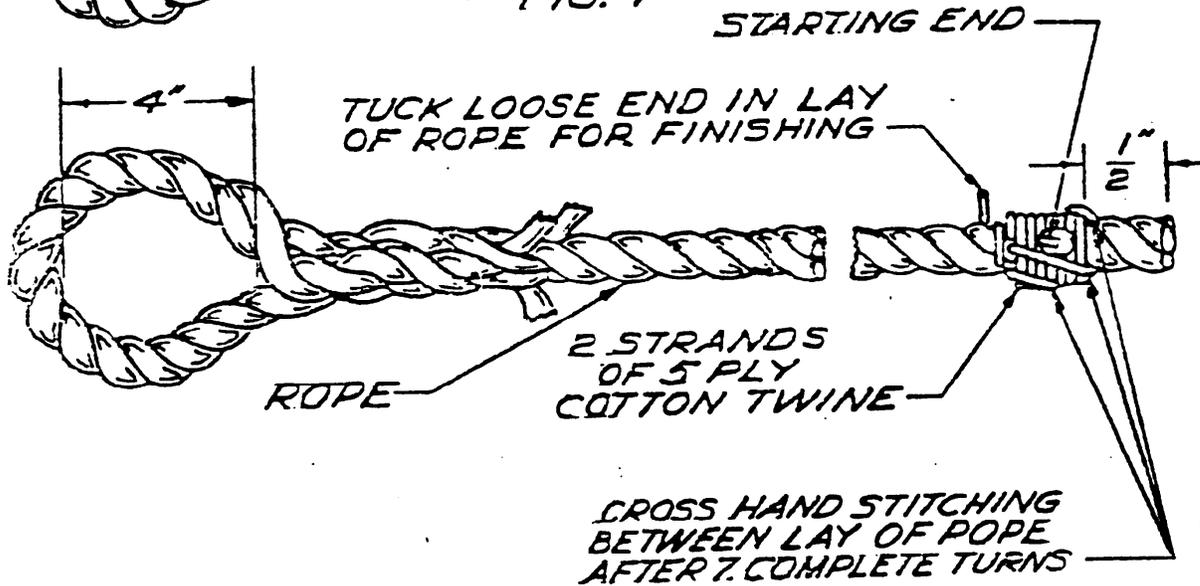


FIG. 2

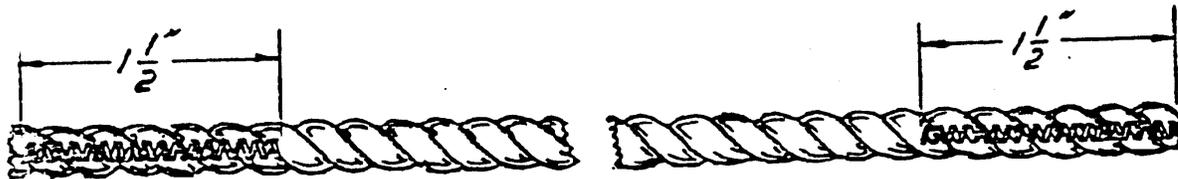


FIG. 3

MIL-L-1709E

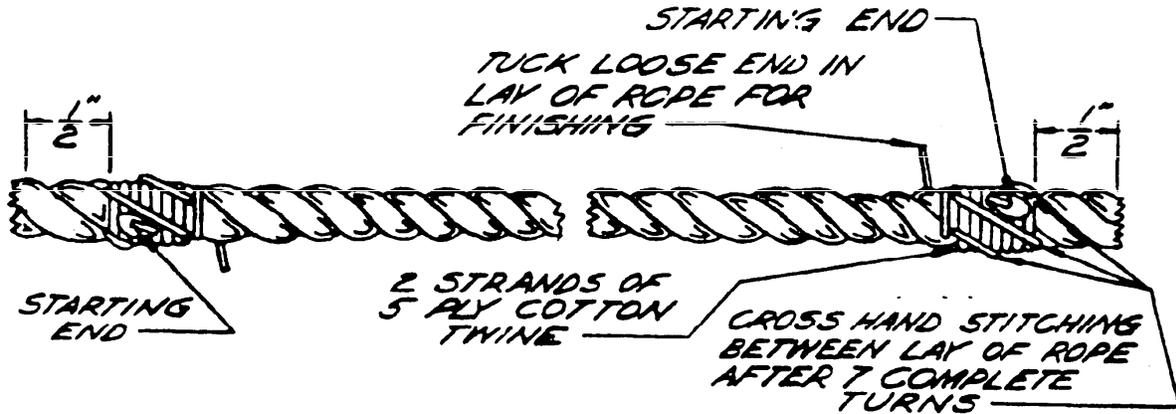
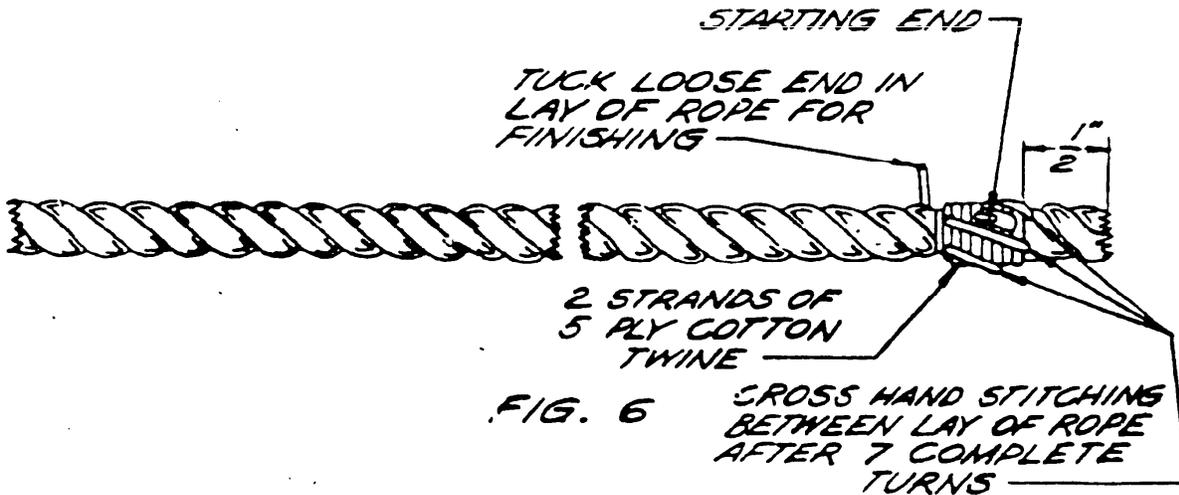


FIG. 4



FIG. 5



MIL-L-1709E

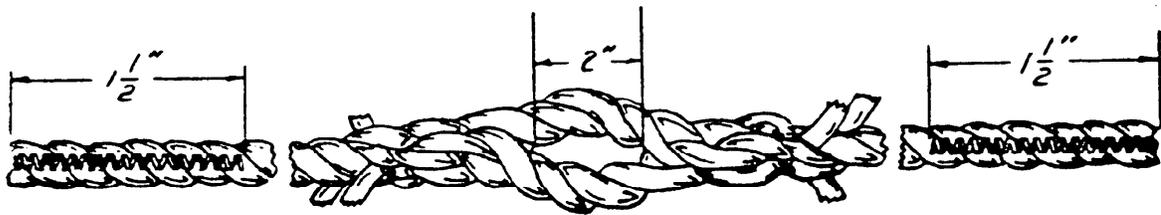
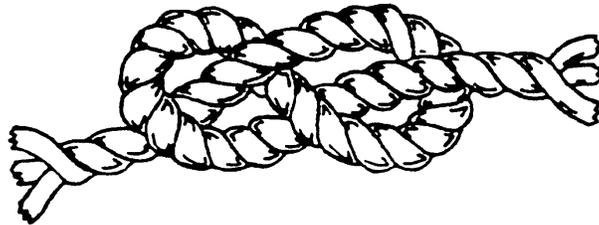
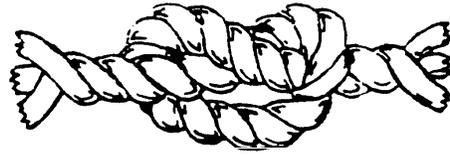


FIG. 7

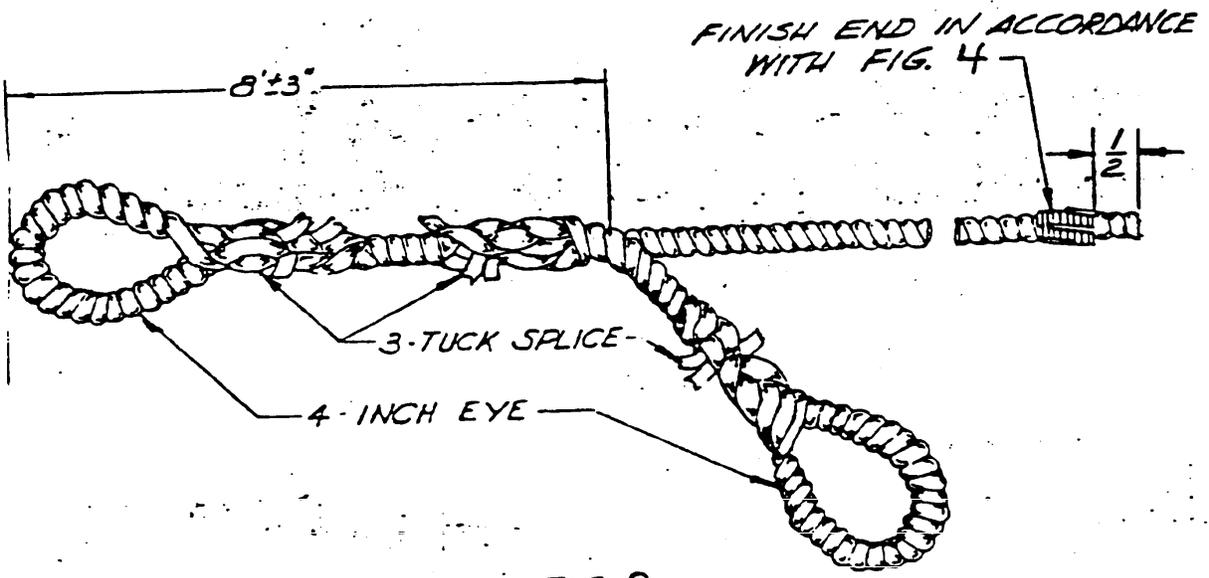


FIG. 8

MIL-L-1709E

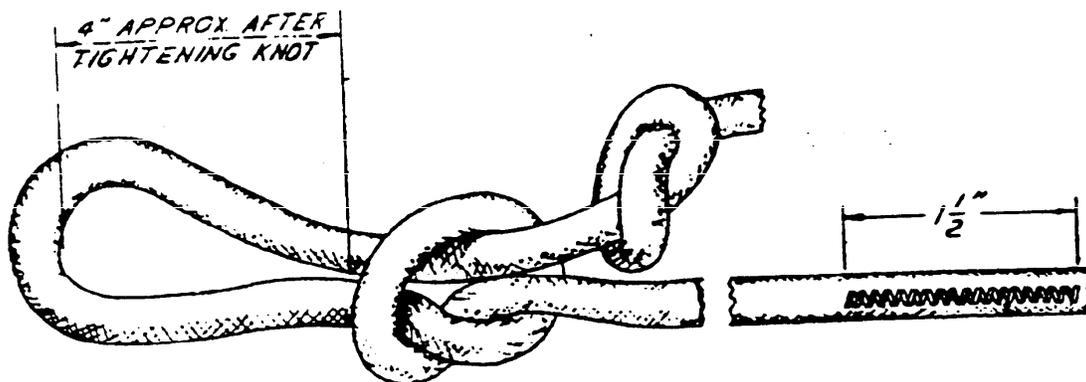


FIG. 9

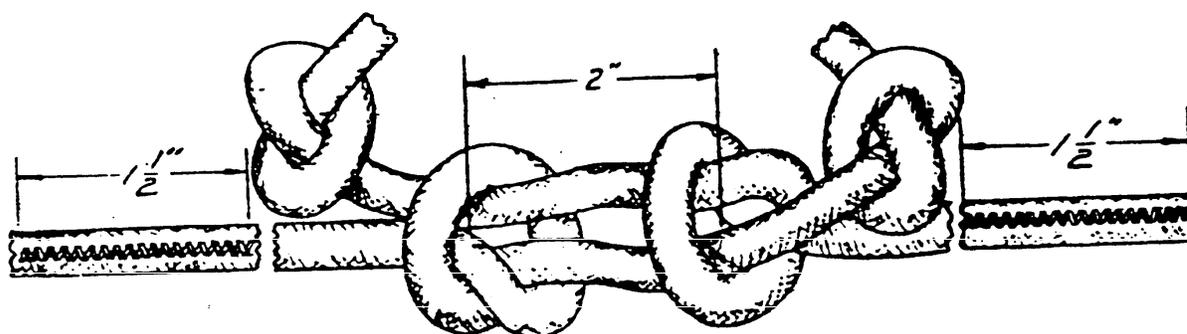


FIG. 10

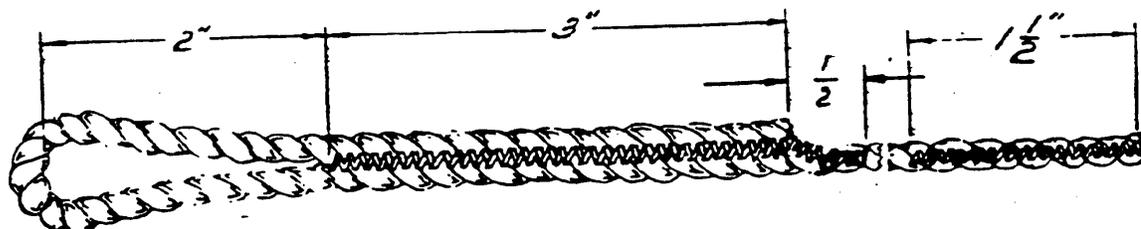


FIG. 11

MIL-L-1709E

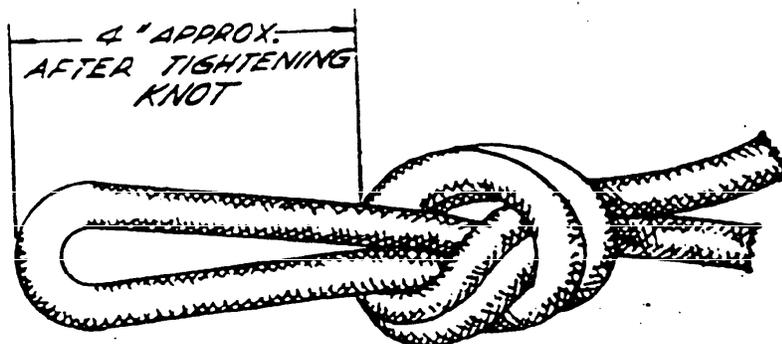


FIG. 12

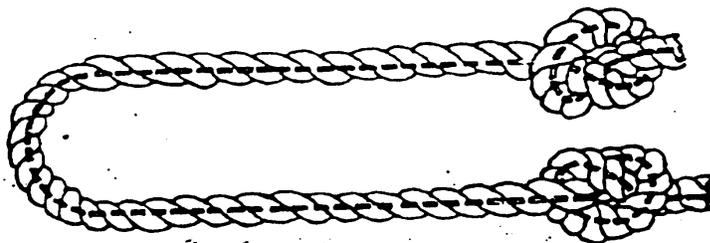
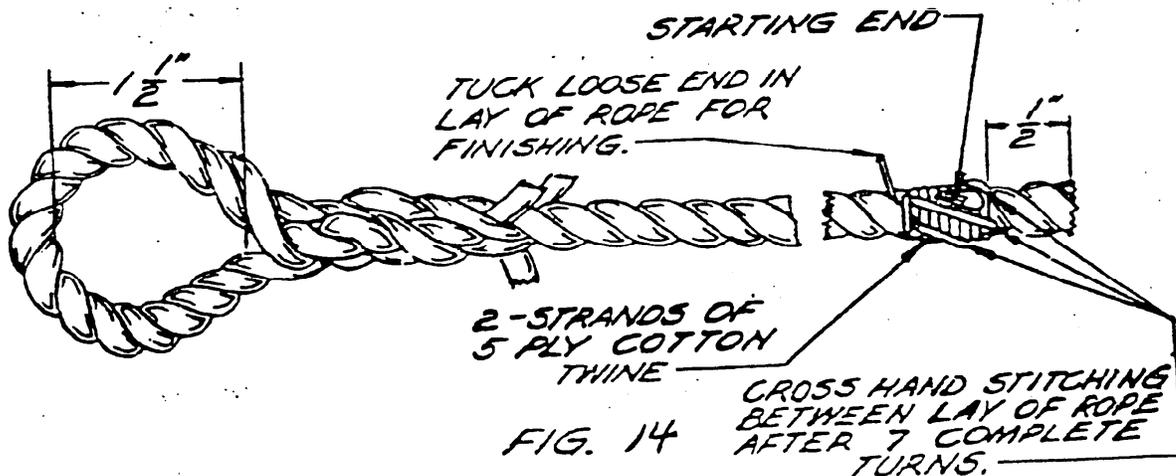


FIG. 13



MIL-L-1709E

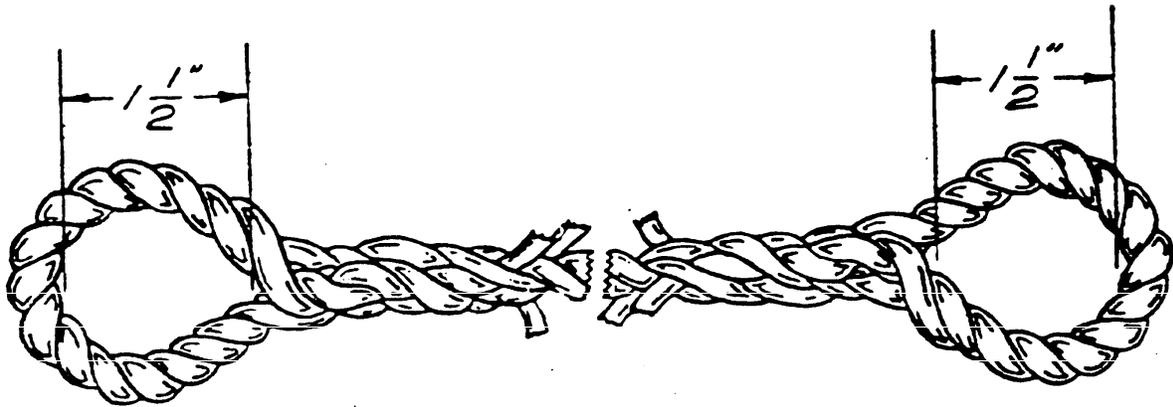


FIG. 15

INSTRUCTIONS: In a continuing effort to make our standardization documents better, the DoD provides this form for use in submitting comments and suggestions for improvements. All users of military standardization documents are invited to provide suggestions. This form may be detached, folded along the lines indicated, taped along the loose edge (*DO NOT STAPLE*), and mailed. In block 5, be as specific as possible about particular problem areas such as wording which required interpretation, was too rigid, restrictive, loose, ambiguous, or was incompatible, and give proposed wording changes which would alleviate the problems. Enter in block 6 any remarks not related to a specific paragraph of the document. If block 7 is filled out, an acknowledgement will be mailed to you within 30 days to let you know that your comments were received and are being considered.

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

(Fold along this line)

(Fold along this line)

DEPARTMENT OF THE ARMY

U.S. ARMY NATICK RESEARCH, DEVELOPMENT
and ENGINEERING CENTER
ATTN: STRNC-ES
Natick, MA 01760-5014



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE \$300

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 12062 WASHINGTON D. C.
POSTAGE WILL BE PAID BY THE DEPARTMENT OF THE ARMY

Commander
U.S. Army Natick Research, Development
and Engineering Center
ATTN: STRNC-ES
Natick, MA 01760-5014



