

INCH-POUND

MIL-S-13365C
 22 December 1989
 SUPERSEDING
 MIL-S-13365B
 7 June 1976

MILITARY SPECIFICATION

SLING, ENDLESS: WIRE-ROPE, GROMMET-TYPE

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

1. SCOPE

1.1 Scope. This specification covers a 3/4-inch-diameter, 12-foot inside circumference, grommet-type, wire-rope endless sling.

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

QQ-S-781	- Strapping, Steel, and Seals.
RR-W-410	- Wire Rope and Strand.
PPP-B-601	- Boxes, Wood, Cleated-Plywood.

MILITARY

MIL-P-116	- Preservation, Methods of.
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Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: USA Belvoir Research, Development, and Engineering Center, ATTN: SIRBE-TSE, Fort Belvoir, VA 22060-5606 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 3940

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STANDARDS

MILITARY

MIL-STD-105	- Sampling Procedures and Tables for Inspection by Attributes.
MIL-STD-129	- Marking for shipment and Storage.
MIL-STD-130	- Identification Marking of US Military Property.
MIL-STD-889	- Dissimilar Metals.

(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 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, (except for related associated detail specifications, specification sheets or MS standards), 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 Description. The wire-rope grommet-type sling (hereinafter called "sling") shall be a rope-laid grommet having the same appearance as a 6 x 19 wire rope with a 1 x 19 wire strand core.

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

3.3 Material. Material shall be as specified herein. Materials not specified shall be selected by the contractor and shall be subject to all the provisions of this specification.

3.3.1 Wire strand. The wire strand shall be 1/4-inch nominal diameter consisting of 19 wires of one diameter, or 25 wires consisting of 19 wires of one diameter with 6 filler wires of one diameter. The material for the individual wires shall be improved plow steel.

3.3.2 Material deterioration prevention and control. The item(s) shall be fabricated from compatible materials, inherently corrosion resistant or treated to provide protection against the various forms of corrosion and deterioration that may be encountered in any of the applicable operating and storage environments to which the item may be exposed.

3.3.3 Dissimilar metals. Dissimilar metals shall not be used in intimate contact with each other unless protected against galvanic corrosion. Dissimilar metals and methods of protection are defined and detailed in MIL-STD-889.

3.3.4 Identification of materials and finishes. The contractor shall identify the specific material, material finish or treatment for use with component and subcomponent, and shall make information available upon request to the contracting officer or designated representative.

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3.4 Construction. The sling shall be fabricated from one continuous length of wire strand, wound on itself, to form a grommet, with the ends hand tucked. At points other than the area of tuck, the finished sling shall have the appearance of a 6 x 19 wire rope similar in wire, wire rope and strand construction for type I, general purpose, class 2, 6 x 19, construction 1 (two operations) or construction 4 (filler wire) in RR-W-410. The body of the finished sling shall have a 3/4-inch nominal diameter, and the inside circumference of the sling shall be 12 feet, plus or minus 6 inches.

3.5 Finish. Unless otherwise specified (see 6.2), the sling shall have an uncoated bright finish.

3.6 Lubrication. The strand of steel wire shall be coated with a lubricant during manufacture. The lubricant shall have a mineral base compounded with additives designed to provide corrosion protection and lubricating qualities during shipping, storage, handling and initial period of service.

3.7 Capacities. The strength requirements of the sling shall be as follows:

<u>Rated capacity</u>	<u>Pounds</u>
Vertical hitch	14,800
Vertical basket hitch	39,000
Choker hitch	11,200
 <u>Proof load</u>	
Vertical hitch	29,600
 <u>Minimum breaking strength</u>	
Vertical hitch	74,000

The sling shall withstand the proof load without damage or permanent deformation.

3.8 Identification marking. The sling shall be identified in accordance with MIL-STD-130 and shall state the safe working load for both the vertical hitch and the choker hitch.

3.9 Workmanship. The slings shall be uniform in strand pitch, free from kinks, loose strands, loose or broken wires, and other visible irregularities, faults, and defects. Tucked ends shall not be exposed.

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 the specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

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4.1.1 Responsibility for compliance. All items must 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 acceptance of defective material.

4.1.2 Component and material inspection. The contractor is responsible for insuring that components and materials are manufactured, examined, and tested in accordance with referenced specifications and standards, as applicable.

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).
- c. Inspection of packaging (see 4.6).

4.3 First article inspection.

4.3.1 Examination. The first article sling shall be examined as specified in 4.5.1. Presence of one or more defects shall be cause for rejection.

4.3.2 Tests. The first article sling shall be tested as specified in 4.5.2.1 through 4.5.2.3. Failure of any test shall be cause for rejection.

4.4 Quality conformance inspection.

4.4.1 Sampling. Sampling for examination and tests shall be in accordance with MIL-STD-105, table I and table IIa. A lot shall be accepted when 0 defects are found and rejected when 1 or more defects are found.

4.4.2 Examination.

4.4.2.1 Samples. Samples selected in accordance with 4.4.1 shall be examined for the defects specified in 4.5.1. Presence of one or more defects shall be cause for rejection.

4.4.3 Tests.

4.4.3.1 Samples. Samples selected in accordance with 4.4.1 shall be tested as specified in 4.5.2.1 through 4.5.2.2. Failure of any test shall be cause for rejection.

4.5 Inspection procedure.

4.5.1 Examination. The slings shall be examined as specified herein for the following major defects:

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- 101. Material not as specified.
- 102. Construction not as specified.
- 103. Dimensions not as specified.
- 104. Finish not as specified.
- 105. Lubrication not as specified.
- 106. Identification marking missing, incomplete, or not legible.
- 107. Workmanship not as specified.
- 108. Materials not resistant to corrosion and deterioration or treated to be made resistant to corrosion and deterioration.
- 109. Dissimilar metals not in accordance with MIL-STD-889.
- 110. Material and material finish or treatment information not available.
- 111. Wire strand not as specified.

4.5.2 Tests.

4.5.2.1 Test conditions. Strength tests for requirements specified in 3.7 shall be made on a tensile testing machine using mandrels with a diameter of 3-3/4 inches (plus 1/2 inch, minus 0 inch). The point of tuck shall be positioned midway between the mandrels. The load shall be applied at a uniform rate.

4.5.2.2 Proof load. With the sling positioned in a testing machine as specified in 4.5.2.1, steadily apply the load until the proof load specified in 3.7 is reached. Evidence of any damage or permanent deformation shall constitute failure of this test.

4.5.2.3 Minimum breaking strength. With the sling positioned in a testing machine as specified in 4.5.2.1, steadily apply the load to the sling until the minimum breaking strength specified in 3.7 is reached. Inability of the sling to withstand any load less than the minimum breaking strength for the vertical hitch as specified in 3.7 shall constitute failure of this test.

4.6 Inspection of packaging.4.6.1 Quality conformance inspection of pack.

4.6.1.1 Unit of product. For the purpose of inspection, a completed pack prepared for shipment shall be considered a unit of product.

4.6.1.2 Sampling. Sampling for examination shall be in accordance with MIL-STD-105, table I and table IIa. A lot shall be accepted when 0 defects are found and rejected when 1 or more defects are found.

4.6.1.3 Examination. Samples selected in accordance with 4.6.1.2 shall be examined for the following defects. Presence of one or more defects shall be cause for rejection.

- 112. Preservative not applied to the sling as specified for level A.
- 113. Slings not coiled and the coil not secured as specified for level A or C.
- 114. Shipping containers not as specified.
- 115. Strapping not as specified for level A.
- 116. Marking illegible, incomplete, incorrect, or missing.

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5. PACKAGING

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

5.1.1 Level A. Each sling shall be preserved in accordance with MIL-P-116, method I, using type P-1 preservative. (Note: Materials used for cleaning the sling shall not be detrimental to the lubricant applied to the wire rope during manufacture.) The sling shall then be coiled to a minimum size coil. The coil shall be secured with three equally spaced ties, using soft annealed, zinc-coated, or galvanized-coated wire.

5.1.2 Level C. Slings shall not require preservative. The sling shall be coiled to a minimum size coil. The coil shall be secured with three equally spaced ties using soft annealed wire.

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

5.2.1 Level A. Slings preserved as specified in 5.1 shall be packed in close-fitting boxes conforming to PPP-B-601, overseas type, style optional. Strapping shall conform to QQ-S-781, class 1, type I or IV, finish B size as applicable.

5.2.2 Level B. Packing shall be as specified for level A, except that boxes shall be domestic type and strapping may be finish A.

5.2.3 Level C. Slings preserved as specified in 5.1 shall be packed in close fitting wooden boxes that will prevent damage to the contents during shipment.

5.3 Marking. Marking shall be in accordance with MIL-STD-129.

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 grommet-type, endless wire rope sling is intended for use in cargo handling operations. The sling is simple to handle, and may be used in several different ways to lift various loads (i.e., choker or anchor hitch, basket hitch, inverted basket hitch, toggle hitch, etc.).

6.2 Ordering data. Acquisition documents should 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 specified issue of individual documents referenced (see 2.1).
- c. Time frame required for submission of first-produced sling and number of slings required (see 3.2 and 6.3).
- d. Finish when other than specified (see 3.5).
- e. Level of preservation and of packing required (see 5.1 and 5.2).

6.3 First article. When a first article inspection is required, the item(s) should be a preproduction model. The first article should consist of one or more units. The contracting officer should include specific instructions in acquisition documents regarding arrangements for examinations, approval of the first article test results and disposition of the first articles. Invitation for

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bids should provide that the Government reserves the right to waive the requirement for samples for first article inspection to those bidders offering a product which has been previously acquired or tested by the Government, and that bidders offering such products, who wish to rely on such production or test, must furnish evidence with the bid that prior Government approval is presently appropriate for the pending contract. Bidders should not submit alternate bids unless specifically requested to do so in the solicitation.

6.4 Subject term (key word) listings.

Sling
Wire rope, endless sling
Wire rope, grommet-type

6.5 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. The margins of the amendment are marked with an asterisk to indicate where changes (additions, modifications, corrections, deletion) from the previous amendment were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous amendment.

6.6 AQL certification. This specification is certified to be in compliance with current Army Materiel Command (AMC) policy for the elimination of AQL's/LTPD's (Acceptable Quality Levels/ Lot Tolerances Percent Defectives) from military specifications.

(Certified by/date:  12/22/87).

Custodians:
Army - ME
Air Force - 84

Preparing activity:
Army - ME

Review activity:
DLA - GS

Project 3940-0182

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.

1. RECOMMEND A CHANGE:		1. DOCUMENT NUMBER MIL-S-13365C	2. DOCUMENT DATE (YYMMDD) 891222
3. DOCUMENT TITLE			
4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)			
5. REASON FOR RECOMMENDATION			
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