

MIL-W-81002B(AS)
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 SUPERSEDING
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MILITARY SPECIFICATION

WIRE ROPE, STEEL, 1-3/8 INCH DIAMETER, 6 BY 30,
 TYPE G, LANG LAY FLATTENED STRAND, FIBER CORE,
 HIGH-STRENGTH (FOR AIRCRAFT ARRESTING)

This specification is approved for use within the Naval Air Systems Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defence.

1. SCOPE

1.1 Scope. This specification covers one type of high-strength, 6 by 30, Type G flattened strand, 1-3/8 inch diameter steel wire rope with fiber core for aircraft arresting deck pendant applications.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. The following specifications and standards form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

SPECIFICATIONS

MILITARY

MIL-B-121	-	Barrier Material, Greaseproofed, Waterproofed, Flexible.
MIL-C-16173	-	Corrosion Preventive Compound, Solvent Cutback, Cold Application.

STANDARDS

MILITARY

MIL-STD-129	-	Marking for Shipment and Storage.
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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: Commanding Officer, Naval Air Engineering Center; Systems Engineering and Standardization Department (SESD), Code 53, Lakehurst, NJ 08733, 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 4010

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

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2.1.2 Other Government documents (drawings). The following Government drawing forms a part of this specification to the extent specified herein. Unless otherwise specified, the issue shall be that in effect on the date of the solicitation.

DRAWINGS

NAVAL AIR ENGINEERING CENTER

- * 607021 - Hook Point, Aircraft Arresting.

(Copies of specifications, standards, and other Government documents (drawings) required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted shall be those listed in the issue of the DODISS specified in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS shall be the issue of the nongovernment documents which is current on the date of the solicitation.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- * ASTM A 370 - Mechanical Testing of Steel Products.
- ASTM E 8 - Metallic Materials, Tension Testing of.

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

(Nongovernment standards and other publications are normally available from the organizations which prepare or which 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 specification and the references cited herein, (except for associated detail specifications, specification sheets or MS standards), the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Qualification. The wire rope furnished under this specification shall be a product which is authorized by the qualifying activity for listing on the applicable qualified products list at the time set for opening of bids (see 4.3 and 6.3).

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3.2 Materials.

* 3.2.1 Steel wire. The steel used in the manufacture of the wire rope covered by this specification shall be of aircraft quality carbon steel and shall be uncoated, i.e., not galvanized, tinned, etc.

3.2.2 Fiber core. The fiber core shall be of the best quality of hard fiber commercially used for cores of wire ropes and shall be thoroughly cleaned and free from waste. The hard fibers are manila (abaca) and sisal (African, Java, Mauritius, Mexican, or Yucatan). A mixture of two or more species of hard fibers may be used. The core shall not contain jute fibers. The fiber core shall be evenly twisted and of uniform ply.

3.2.2.1 Core lubricant. The fiber core shall be thoroughly impregnated with a suitable corrosion inhibiting lubricant during the process of core manufacture. The amount of lubricant shall be not less than 10% of the weight of the lubricated core, determined prior to wire rope fabrication. The lubricant shall be compatible with the lubricant in the strands.

* 3.3 Design and construction. The design and construction of the wire rope shall be in accordance with this specification. No deviation from any of the requirements of this specification shall be permitted unless specifically

requesting a deviation shall be forwarded to the Commander, Naval Air Systems Command (Code AIR-551), Washington DC 20361 and to the Commanding Officer, Naval Air Engineering Center (Code 512), Lakehurst, New Jersey 08733.

* 3.3.1 Rope construction. The wire rope shall be 6 by 30, Type G, flattened strand wire construction, right lay, lang lay, preformed, with a fiber core. The rope shall have one fiber core and six strands of 30 wires each, making a total of 180 wires in all the strands. The wire rope shall be capable of meeting all the requirements of this specification.

3.3.1.1 Rope pitch. All the strands making up the wire rope shall have the same pitch which shall be within the range specified in Table I.

3.3.2 Strand construction. Each of the six strands of the wire rope shall have a triangular core strand of six wires around which shall be laid an inner layer of 12 wires and an outer layer of 12 wires. The core strand wires shall be of one diameter. The wires of the inner layer shall be of one diameter. The triangular core may contain worming wires which are not to be included in the wire count.

3.3.2.1 One diameter. Wires in a wire rope are one diameter if the difference between the diameter of the smallest wire and the diameter of the largest wire is not greater than the value specified in Table II.

3.3.2.2 Joints. The strands of the wire rope shall contain no joints made after fabrication of the strands. If joints are made in the individual wires before or during fabrication of the strands, the wires shall be electrically butt welded. The distance between a joint in any one wire and the joint in any other wire in the same strand shall not be less than 18 inches.

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* 3.3.3 Lubrication. A suitable corrosion inhibiting lubricant shall be applied to the strands during fabrication of the wire rope. This lubricant shall be capable of being completely removed by immersion in 1,1,1 trichloroethane for 30 minutes at $70^{\circ}\text{F} \pm 10^{\circ}\text{F}$ and shall have no deleterious effects on the end product form or function (see 5.1 and 6.4).

3.3.4 Seizing. Each end of each length of wire rope shall be suitably seized before each cutting operation is performed.

3.3.5 Preforming. The individual wires and strands shall be preformed into the helical shape they will have in the finished wire rope.

* 3.4 Physical and mechanical properties. The physical and mechanical properties of the wire rope shall conform to the requirements specified in Table I. The individual wires used for the construction of the cable shall meet the requirements of Table III when tested in accordance with 4.5.5.4.

3.5 Swaging characteristics. The wire rope shall demonstrate the capability to satisfactorily accept and retain swaged terminals when tested in accordance with 4.5.5.

3.6 Dynamic load test performance. The wire rope shall satisfy the performance requirements of the dynamic load test conditions specified in 4.5.6.

3.7 Identification marking. A suitable printed tape or tapes shall be incorporated into the fiber core. The tape shall bear, at not more than one foot intervals, the name of the wire rope manufacturer, the words, "FOR AIRCRAFT ARRESTING," and the number of this specification.

3.7.1 Legibility. The tape shall not shred or otherwise become unreadable during the manufacturing process.

3.8 Workmanship. The wire rope shall be uniform in quality and shall be free from irregularities, defects, or foreign matter which could adversely affect safety, performance, reliability, or durability. The wire shall be free from splits, cold shuts, or other detrimental defects.

* 3.9 Straightness. Cable, when tested in accordance with 4.5.8 for straightness, shall not exceed any of the following deviations from straightening:

- a. One inch in any ten foot length.
- b. A total of four inches in any length up to 100 feet.

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 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.

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The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

* 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 assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.2 Classification of inspections. The examination and testing of the wire rope shall be classified as follows:

- a. Qualification inspection (see 4.3).
- b. Quality conformance inspection (see 4.4).

4.3 Qualification inspection. Qualification inspection shall consist of the examinations and tests specified in Table IV.

4.3.1 Qualification samples. The qualification sample shall consist of 1500 feet of wire rope for which qualification approval is required. Samples shall be forwarded to the Commanding Officer Naval Air Engineering Center (Code 512) Lakehurst, New Jersey 08733. The sample shall be plainly identified by securely attached durable tags marked with the following information.

Sample submitted by (name) (date) for Qualification inspections in accordance with the requirements of MIL-W-81002B(AS) under authorization (reference letter authorizing the inspection) (see 6.3).

* 4.3.1.1 Test report. The contractor shall retain results of the chemical composition test and all other tests specified herein with the exception of the dynamic load test. Location and identity of the plant which produced the sample tested shall also be retained. All of the above shall be made readily available to the Government quality assurance representative.

4.3.2 Retention. The retention of qualification shall consist of periodic verification to determine compliance of the qualified wire rope with the requirements of this specification. Periodic verification shall be by certification unless otherwise specified by the activity responsible for the Qualified Products List (QPL) and shall be at intervals of not more than two years.

* 4.4 Quality conformance inspections. Quality conformance inspections shall consist of the examinations and tests listed in Table V. The dynamic load test will be performed by the Government. Every shipping reel of wire rope offered for acceptance under this specification shall be subjected to quality conformance inspection. Any shipping reel of wire rope containing a defect or failing a test shall be rejected.

4.5 Inspection methods.

4.5.1 Examination. The wire rope shall be visually examined throughout its length to determine conformance with 3.8. For this purpose, the rope shall travel no faster than 100 feet per minute and shall be stopped for closer examination when required.

4.5.1.1 Identification tape. The wire rope specimen selected for the ductility test shall be examined to determine that it contains the tape as specified in 3.7.

4.5.1.2 Spacing between strands. Measurements of the strand gap spacing shall be made around a full circumference of the wire rope at least five feet back from the end of the wire rope on a shipping reel; also at two additional points at least five to ten feet apart and anywhere else that the strand gap appears excessive. The measurements shall be made with conventional feeler gauges not forcibly inserted. At the time of measurement, the wire rope shall be on a deck or on support racks and under no load. The maximum gap shall not exceed .025 inch and the average of the six gap readings shall not exceed .015 inch (see Table I).

4.5.2 Preforming test. The diameter at the end of a wire rope specimen shall be measured. The seizing adjacent to the cut shall be removed and the diameter shall be measured again. The increase in diameter due to the removal of the seizing shall not exceed 1/16 inch. At least one hour after cutting the wire rope specimen, the axial distance between the ends of any of the strands shall not exceed 1/4 inch. Upon completion of this test, the seizing shall be replaced.

4.5.3 Ductility (wrapping test). One specimen representing each different diameter of wire, except the wires used in the triangular core strand or worming wires, shall be selected from each strand of the wire rope (see 3.3.2 and 3.3.2.1). The wire specimens shall be wrapped in a close helix for six complete turns around a mandrel of the same nominal diameter as that of the wire. The wire specimens shall not show any evidence of fracture.

4.5.4 Breaking strength. The wire rope shall be tested in accordance with the requirements of ASTM E 8. The breaking strength shall not be less than specified in Table I.

* 4.5.5 Swaging test (qualification and quality conformance inspections). A 7 foot 1-1/2 inch specimen of the wire rope shall be cut from the qualification sample or from each shipping reel of the wire rope offered under contract, as applicable, and terminals shall be press swaged by the government to both ends of the specimen by the procedure outlined in the appendix of this specification. The specimen, with terminals press swaged thereto, shall be subjected by the government to the examinations and tests of 4.5.5.1, 4.5.5.2, and 4.5.5.3 in that order. If the specimen fails in one or more of these examinations and tests, a second specimen shall be similarly prepared and tested. If the second specimen also fails in any part of the series of tests, the qualification sample or the shipping reel represented by the specimen shall be rejected.

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4.5.5.1 Spacing between strands after swaging. Measurements of the strand gap spacing of the swaged specimen shall be made in accordance with 4.5.1.2 around the circumference of the wire within 3 inches of the base of each terminal. At the time of measurement, the wire rope shall be on a deck or support rack and under no load. If any gap exceeds 0.125 inch the specimen shall be rejected. If no gap exceeds 0.125 inch, the specimen shall be proofloaded in accordance with 4.5.5.2.

4.5.5.2 Proof loading. The specimen shall be proof loaded to 120,000 pounds and held at this load for a minimum of one minute. After proof loading, no strand gap spacing measured as in 4.5.5.1 shall exceed 0.100 inch. Checks for slippage of the terminals relative to the rope shall be made and the amount of slippage of either terminal shall not exceed 1/8 inch. Strand gap spacing of more than 0.100 inch after proof loading, or slippage exceeding 1/8 inch in either terminal after proof loading shall constitute failure of the test (see 6.4).

4.5.5.3 Tension test. If the specimen has met the requirements of 4.5.5.1 and 4.5.5.2, it shall be tensile tested to destruction by the procedure of 4.5.4, applying the tension through the terminals. The specimen shall break at not less than 90% of the minimum breaking strength specified for the wire rope of this specification. Slippage of both terminals shall be measured. Failure of the specimen to exhibit at least 90% of the specified minimum breaking strength of the wire rope, or slippage of either terminal in excess of 3/16 inch, including the slippage measured in the proof loading test, shall constitute failure of the test. If the specimen breaks in such manner as to preclude slippage measurement at one of the terminals, the measurement at the other terminal shall be considered the test result.

* 4.5.5.4 Individual wire inspection. The wire rope on each shipping reel shall be subjected to the inspections shown in Table V. Any shipping reel on which a length of wire rope containing low breaking strength or low reduction of area values of the individual outer lay wires is wound shall be rejected.

* 4.5.5.5 Reduction of area. The outer layer wires used to confirm the individual wire requirements of Paragraph 3.4 shall be obtained by unlaying two individual strands of wire rope, each three feet long. Strands may be taken from the same three foot length or separate lengths. Wire samples shall be tested in accordance with ASTM-A-370, supplement IV. A 50X magnification comparator may be used instead of the point micrometer specified. Data obtained from either method may be used for acceptance (see 6.5).

* 4.5.6 Dynamic load tests. Deck pendants made from the wire rope and terminals will be assembled and tested by the Government in accordance with Table VIa and Table VIb, as specified. A Mark 7 Mod 1-3 arresting engine and a 25,000-pound deadload will be used. The deck pendants will be installed in the arresting engine, 95 foot deck sheave span, engagement point, 20 feet off center, installation similar or equivalent to RSTS No. 1 at the Naval Air Engineering Center, Lakehurst, New Jersey. Pendants will be tested dynamically by engagements with the deadload equipped with a hook point conforming to Naval Air Engineering Center Drawing 607021. The hook point will be attached to the deadload with a stringer type hook shank arranged for deck pick-up of the pendant. Criteria for failure shall be the parting of one or more strands.

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Failure between the wire rope and the terminal does not constitute failure of the rope but will require the testing of another specimen. The number of arrestments with any single hook point will not exceed twelve.

4.5.7 Examination of preparation for delivery. The wire rope as prepared for shipment shall be examined to determine conformity of the preparation for delivery to the requirements of Section 5.

* 4.5.8 Straightness. Straightness shall be measured using any of the following cable samples: (1) a 40 foot minimum length cut from each reel, (2) the 100 foot qualification sample supplied with each reel, or (3) the first crossdeck pendant cut from each reel. Each cable length shall be laid on the deck and pulled from one end in one direction leaving the other free, until the cable sample is as straight as procedure permits, then allowed to remain in a non-restrained free condition. Straightness shall be measured as shown in Figure 1 and shall meet the requirements of 3.9.

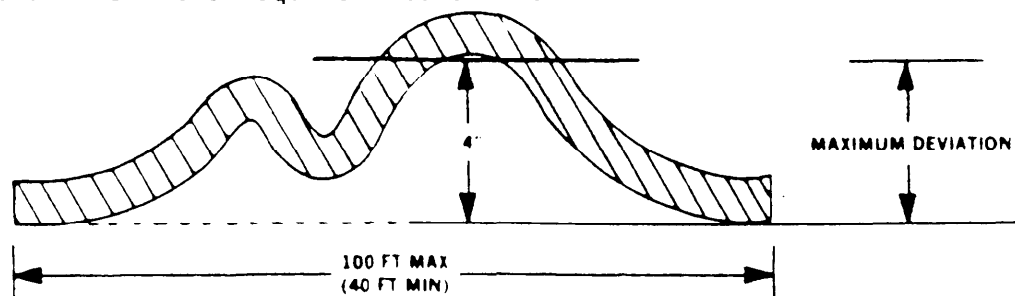


FIGURE 1

5. PACKAGING

* 5.1 Preservation. The wire rope shall be protected from corrosion during shipment and storage by preserving with an asphaltic compound conforming to MIL-C-16173, Grade 1 or an asphaltic-paraffinic compound approved for use by the Naval Air Engineering Center, Code 512. The compound shall be applied over the entire length of the rope prior to final reeling. It shall cover all exposed wire surfaces and penetrate the crevices between wire and strands. The compound shall be compatible with, and adhere to, the strand lubricant chosen for 3.3.3. The compound shall be of a consistency that will not drain off after extended storage or unreeling (see 6.6).

5.2 Packing. Wire rope shall be wound on substantial commercial type reels. The outer periphery of the reels shall be covered with grease-proof barrier material conforming to MIL-B-121, Type II, Grade A, Class 2. The outside diameter of each reel shall be enclosed with solid blocked wood sheathing. Only one length of rope shall be furnished on any single reel. The reels shall be capable of withstanding storage, rehandling, and reshipment without necessity of repacking.

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

5.3.1 Additional marking. The following additional marking shall also be added:

- a. Wire rope, steel, 1-3/8 inch diameter, 6 by 30, Type G, right lay, lang lay, flattened strand, fiber core, MIL-W-81002.

- b. Shipping reel number.
- c. Length.
- d. Certification indicating the master (or manufacturing) reel from which the wire rope was taken.
- e. Strength test results obtained from samples taken from the individual shipping reel.

6. NOTES

6.1 Intended use. Wire rope covered by this specification is used as deck pendants in landing military aircraft during carrier operations. This wire rope was designed with a minimum margin of safety and is subjected to impact and dynamic loads. Failure of this wire rope could result in the loss of lives of both aircraft and flight deck personnel as well as loss of an aircraft. The importance of providing a product of uniformly excellent quality cannot be overemphasized.

6.2 Ordering data. Acquisition documents should specify the following:

- a. Title, number, and date of this specification.
- b. Quantity of wire required.

* 6.3 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time set for opening of bids, qualified for inclusion in Qualified Products List (QPL-81002) whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or purchase orders for the products covered by this specification. The activity responsible for the Qualified Products List is the Naval Air Systems Command (Code AIR-551), Department of the Navy, Washington, DC 20361; however, information pertaining to qualification of products may be obtained from the Commanding Officer, Naval Air Engineering Center (Code 512), Lakehurst, New Jersey 08733. Prior to submission of the samples for qualification inspection, the manufacturer shall submit a request to the Naval Air Engineering Center (Code 512) indicating a date on which the samples can be forwarded and requesting an authorization number to accompany the samples plus the name and address of the qualification inspection facility.

* 6.4 Lubrication removal. If the lubrication requirement described in 3.3.3 is not met, there may be difficulty meeting the proof load requirements of 4.5.5.2.

* 6.5 Reduction in area measurements. The most accurate values of reduction in area will be obtained using the 50X comparator. The reduction in area obtained using point micrometers could result in lower readings than the actual values. If minimum requirements are found using point micrometers, comparator readings are not needed. If minimum requirements are not found using point

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micrometers, the material must be checked using the comparator or be rejected based on micrometer values. Material failing to meet minimum requirements when the 50X comparator is used will be rejected (see 4.5.5.5).

* 6.6 All-asphaltic preservative. When using the all-asphaltic preservative, MIL-C-16173, Grade 1, extreme difficulty may be encountered in meeting the peeling requirement of paragraph 5.1. Information on methods of successful application is proprietary with previous manufacturers. It is the current manufacturer's responsibility to meet the peeling requirement of 5.1, whether by devising a successful method of applying all-asphaltic preservative, or by using an asphaltic-paraffinic preservative acceptable to NAVAIRENGCEN.

6.7 Definitions.

6.7.1 Wire. Each individual cylindrical steel rod or thread is designated as a wire.

6.7.2 Strand. Each group of wires helically twisted or laid together is designated as a strand.

6.7.3 Wire rope. A group of strands helically twisted or laid about a central core is designated as a wire rope. The strands and the core act as a unit.

6.7.4 Preformed type. Wire rope in which the strands and their wires are permanently shaped during fabrication to the spiral form they assume in the finished wire rope shall be identified as preformed wire rope.

6.7.5 Diameter. The diameter of the wire rope is the diameter of the circumscribing circle.

6.7.6 Lay or twist. The helical form taken by the wires in the strand and by the strands in the wire rope is characterized as the lay or twist of the strand or wire rope, respectively.

6.7.7 Right lay. In a right lay the wires or strands are in the same direction as the thread on a right hand screw.

6.7.8 Lang lay. A lang lay rope is one in which the direction of the lay of the strands in the rope is the same as the direction of the lay of the wires in the strands.

6.7.9 Pitch (or length of lay). The distance, parallel to the axis of the strand or wire rope, in which a wire or strand makes one complete turn about that axis is designated as the pitch (or length of lay) of the strand or wire rope, respectively.

* 6.8 Subject term (key word) listing.

Aircraft arresting cable
Fiber-core steel wire rope
Cable, aircraft arresting
Rope, steel wire, fiber-cored
Steel wire rope

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* 6.9 Changes from previous issue. Asterisks are used in this revision to indicate where changes (additions, modifications, or deletions) from the previous issue 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 previous issue.

Preparing activity:
Navy - AS

(Project No. 4010-N031)

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TABLE I. Physical and mechanical properties.

Property	Data
Size (Nominal)	1-3/8 inches
Diameter (actual)	1-3/8 inches, min; 1-15/32 inches, max.
Weight (approx)	3.40 lbs/ft.
Breaking strength	188,000 lbs, min
Rope pitch	7.8 inches, min; 8.6 inches, max
Strand gap	.025 inch, max; .015 inch, max avg.
* Straightness	4 inches maximum over any length 40 feet or greater.

TABLE II. Wires of one diameter.

Wire diameter (inch)	Difference between the diameter of the smallest wire and the diameter of the largest wire (inch)
0.028 to 0.059	0.0020
0.060 to 0.092	0.0025
0.093 to 0.141	0.0030

* Table III. Individual Wire Requirements 1/.

Minimum Reduction of Area %		
Wires Tested	No. of Samples Tested	Minimum Average Value %
Outer Layer Wires	24	40

1/ A minimum of 20 outer lay wires, representing two strands from any one reel, must have a reduction of area of 37% or more.

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TABLE IV. Qualification inspection.

Examination of test		Test specimen
Examination	4.5.1	Entire length of 1500 feet
Preforming	4.5.2	End of wire rope remaining on reel after other specimens are removed
Ductility (wrapping test)	4.5.3	2-1/2 foot length
Breaking strength	4.5.4	7 foot length
Swaging characteristics	4.5.5	As specified in 4.5.5
* Individual wire inspection	4.5.5.4	3 foot length
* Reduction of area	4.5.5.5	3 foot length
Dynamic load	4.5.6	As specified in 4.5.6
* Straightness	4.5.8	As specified in 4.5.8

TABLE V. Quality conformance inspection.

Examination of test		Test specimen
Examination	4.5.1	Entire length
Preforming	4.5.2	End of wire rope remaining on reel after other specimens are removed
Ductility (wrapping test)	4.5.3	2-1/2 foot length
Breaking strength	4.5.4	7 foot length
Swaging characteristics	4.5.5	As specified in 4.5.5
* Individual wire inspection	4.5.5.4	3 foot length
* Reduction of area	4.5.5.5	3 foot length
Dynamic load	4.5.6	As specified in 4.5.6
Straightness	4.5.8	As specified in 4.5.8

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TABLE VIa. Dynamic load test conditions(for qualification inspection).

Test conditions	(Engagement point, 20 feet off center)
Number of pendants	5
Total engagements per pendant at same point of engagement	4
Engagement speed knots, ± 2 knots	130 <u>1/</u> * 126 <u>2/</u>
Acceptable number pendant failures	1
Rejection number pendant failures	2

1/ With 1-3/8 inch purchase cable.2/ With 1-7/16 inch purchase cable.TABLE VIb. Dynamic load test conditions(for quality conformance inspection).

Test conditions	Test 1 (20 feet off center)	Test 2 <u>1/</u> (20 feet off center)
Number of pendants from each shipping reel	1	2
Total engagements per pendant at same point of engagement	4	4
Engagement speed, knots, ± 2 knots	125 <u>2/</u> * 121 <u>3/</u>	125 <u>2/</u> * 121 <u>3/</u>

1/ Test 2 will be performed only if the first pendant from a shipping reel does not meet the requirements of Test 1. If either of the two pendants of Test 2 fails to meet the requirements, the shipping reel will be rejected.

2/ With 1-3/8 inch purchase cable.3/ With 1-7/16 inch purchase cable.

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APPENDIX

PROCEDURE FOR PRESS SWAGING STEEL TERMINALS
TO WIRE ROPE OF THIS SPECIFICATION

10. SCOPE

10.1 Scope. This appendix covers the procedure which will be used for press swaging steel terminals to the wire rope of this specification for test purposes.

20. APPLICABLE DOCUMENTS

This section is not applicable to this appendix.

30. PROCEDURE

30.1 Wire rope measurement. Measure the diameter of the wire rope at three places for each terminal. The measurements shall be made six inches from the rope end to which the terminal is to be attached.

30.2 Preparation of terminal. Determine the proper inside diameter of the terminal by averaging the three diameter measurements of the wire rope end. The inside diameter of the terminal should be machined to give a 0.0 to .016 inch interference based on the measured rope diameter. The Rockwell hardness of the terminal should not exceed B88 for the barrel portion and should range from C34 to C38 for the eye end.

* 30.3 Degreasing of rope end. Degrease 12 inches of the wire rope end by soaking for 15-30 minutes in a suitable solvent (1,1,1 trichloroethane) or other solvent approved by NAVAIRENGCEN.

30.4 Positioning terminal. Using the prepositioning machine, position the terminal on the wire rope. Rotate the terminal clockwise to bottom the rope.

30.5 Checking bottoming of wire rope. Check the terminal for bottoming of the wire rope by inserting the wire gage into the inspection hole in the terminal. The gage should go in 1-1/4 to 1-1/2 inches. If the gage goes deeper than 1-1/2 inches, remove the terminal and repeat the bottoming process using the same terminal. If the gage still goes deeper than 1-1/2 inches, remove the terminal and use a larger inside-diameter terminal. After positioning the terminal on the end of the wire rope to the proper depth, try to rotate the terminal by hand. If the terminal rotates, remove it and use a smaller size terminal. Repeat steps 30.4 and 30.5.

30.6 Press swaging. Swaging of the terminal shall be done in accordance with any acceptable method normally performed by the contractor. All information on the swaging procedure including initial terminal bore, clearance, and number and sequence of hits shall be made available to the qualifying activity (see 4.3.1).

30.7 Lubrication. Prior to and during the swaging operation, apply aircraft general purpose grease to the terminal and die.

30.8 Finished swage diameter. The finished swage diameter should be 2.625 (+ 0.005, - 0.015) inches.

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.

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STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL*(See Instructions - Reverse Side)*1. DOCUMENT NUMBER
MIL-W-81002B(AS)2. DOCUMENT TITLE WIRE ROPE, STEEL, 1-3/8 INCH DIAMETER, 6 BY 30,
TYPE G, LANG LAY FLATTENED STRAND, HIGH STRENGTH (FOR AIRCRAFT AIR)

3. NAME OF SUBMITTING ORGANIZATION

4. TYPE OF ORGANIZATION (Mark one)

☐

VENDOR

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5. PROBLEM AREAS

a. Paragraph Number and Wording:

b. Recommended Wording:

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7a. NAME OF SUBMITTER (Last, First, MI) - Optional

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