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 SUPERSEDING
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 20 FEBRUARY 1950

MILITARY SPECIFICATION

CASING; FLEXIBLE CONTROL, AIRCRAFT

This specification has been approved by the Department of Defense and is mandatory for use by the Department of the Navy, the Army and the Air Force.

1. SCOPE

1.1 This specification establishes the requirements for one type of control cable flexible casing for aircraft use.

2. APPLICABLE DOCUMENTS

2.1 The following specifications and standards of the issue in effect on date of invitation for bids, form a part of this specification to the extent specified herein:

SPECIFICATIONS

FEDERAL

QQ-W-423-Wire, Steel, C o r r o s i o n-Resisting
 PPP-B-585-Boxes, Wood, Wirebound
 PPP-B-591-Boxes, Fiberboard, Wood-Cleated
 PPP-B-601-Boxes, Wood, Cleated-Plywood
 PPP-B-621-Boxss, Wood, Nailed and Lock-Corner
 PPP-B-636-Boxes, Fiber

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MIL-B-116-Preservation, Methods of
 MIL-B-138-Boxes, Wood, Fiberboard-Lined for Overseas Shipment (for Weight of Contents not exceeding 500 Pounds)
 MIL-B-4229-Boxes, paperboard, metal-stayed
 MIL-B-10377-Box, wood, cleated, veneer, paper overlaid

STANDARDS

MILITARY

MIL-STD-105-S a m p l i n g Procedures and Tables for Inspection by Attributes

MIL-STD-129-Ma r k i n g for Shipment and Storage

Air FORCE-NAVY AERONAUTICAL

AN8016-Casing-F 1 e x i b l e Push-Pull Control

AND10069-Casing Assembly-Installation of Control Flexible

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

3. REQUIREMENTS

3.1 Materials. Materials shall be as specified herein. When materials are used that are not specifically designated, they shall be e n t i r e l y suitable for the purpose.

3.2 Construction. The casing shall consist of a coiled wire core on which is braided a double-layer cotton-thread covering, treated with a proofing compound.

3.3 Dimensions. All dimensions of the casing shall be in accordance with Standard AN8016.

3.4 Core.

3.4.1 The wire used in the manufacture of the core shall be in accordance with Specification QQ-W-423, Composition FS-316, condition B, Form I.

3.4.2 The core shall be tightly wound from wire the size of which is given on the applicable drawing with the dimensions and tolerances permitted.

3.4.3 The initial tension in the core shall be not less than 41/2 pounds.

3.4.4 The core shall be evenly wound with accurate alinement of the coils. It shall be free from kinks, gaps, or other defects.

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3.4.5 The casing shall be furnished in coils of 100 feet \pm 3 inches with no more than one splice within the coil length specified in the order. When a splice is included in a coil, it shall be easily identified in order that it will not be used when the material is cut to length.

3.5 Braided Covering.

3.5.1 A double layer covering shall be tightly braided on the core, thoroughly treated with a proofing compound, and allowed to dry.

3.5.2 The covering shall in no instance be slipped over the core.

3.5.3 The inner and outer braids comprising the covering shall each consist of approximately 64 cotton threads whose size shall be between 20/2 ply and 30/2 ply, soft finished. The proofing compound shall be applied to each braid.

3.6 Proofing compound.

3.6.1 The color of the proofing compound shall be black.

3.6.2 The proofing compound shall be of such a composition that it will thoroughly impregnate the threads. It shall dry thoroughly and shall not be tacky.

3.6.3 The compound shall be free from acids or other ingredients which would impair the strength or reduce the normal life of the fabric covering.

3.7 Performance.

3.7.1 *Flexibility of finish.* The casing shall not crack or buckle when tested in accordance with 4.3.1.

3.7.2 *Water resistance.* The increase in weight of the casing due to immersion in water shall not exceed 5 percent of the original weight when tested in accordance with 4.3.9.

4. QUALITY ASSURANCE PROVISIONS

4.1 General. All inspection required herein for the examination and testing of casings is classified as Acceptance Inspection.

4.2 Inspection lot. An inspection lot shall consist of all coils of casing of the same size produced consecutively by one machine or one series of progressive processing machines and presented for inspection at one time. Each coil shall be plainly marked or tagged to identify it with the lot to which it belongs.

4.2.1 *Sampling for examination of product.* Sample coils of casing shall be selected at random from each inspection lot in accordance with MIL-STD-105, Inspection Level II, AQL 1.0 percent defective. From each sample coil, a sufficient length shall be examined with respect to material, workmanship, construction > dimensions, core, braided covering, and proofing compound.

4.2.2 *Sampling for tests.* Flexibility of finish and water resistance tests: Samples of coils of casing shall be selected at random from each inspection lot in accordance with the Appendix to MIL-STD-105, Inspection Level L-7, acceptance number zero. A sufficient length of casing shall be tested from each sample coil. These lengths may be the same as those used in examination of product.

4.3 Tests.

4.3.1 *Flexibility of finish.* The sample shall be bent 180 degrees over a 3-inch radius and then carefully examined. The finish of the casing shall not crack or buckle during the test. Each length of core shall be inspected before the braided covering is applied.

4.3.2 *Water resistance test.* The ends of the sample shall be sealed and plugged with paraffin and the sample carefully weighed. It shall then be bent 180 degrees over a 3-inch radius and immersed in water at room temperature for 24 hours. At the end of this time, the sample shall be removed, dried of surplus water with a dry cloth and weighed immediately. The increase in weight of the casing due to immersion in water for 24 hours shall not exceed 5 percent of the original weight. There shall be no evidence of cracks in the finish or deterioration due to immersion. Each length of core shall be inspected before the braided covering is applied.

4.4 Rejection and retest.

4.4.1 *Resubmitted inspection lots.* MIL-STD-105 shall apply except that a resubmitted inspection lot shall be inspected by the contractor under supervision of the Government Inspector using tightened inspection. Where the original acceptance number was zero, a sample size represented by the next higher sample size code letter shall be chosen. Before an inspection lot is resubmitted, full particulars concern-

ing the cause of previous rejection and the action taken to correct the defects found in the inspection lot shall be furnished by the contractor to the Government Inspector.

5. PREPARATION FOR DELIVERY

5.1 Application. The requirements of this Section apply only to direct purchase by or direct shipments to the Government.

5.2. Preservation and packaging.

5.2.1 Level A.—Casing shall be preserved in accordance with Specification MIL-P-116, Method III, and packed in containers meeting Specification MIL-B-4229, or PPP-B-636 (overseas type). For domestic shipment, containers meeting Specification PPP-B-636 (domestic type) may be used. The unit quantity shall consist of 100 feet of coiled casing.

5.2.2 Level C.—Casing shall be preserved and packaged in accordance with the manufacturer's commercial practice.

5.3 Packing.

5.3.1 Level A. Casing preserved and packaged to meet the requirements of 5.2.1, shall be packed in exterior type shipping containers meeting the requirements of Specification MIL-P-138, PPP-B-591 (overseas type), PPP-B-636 (overseas type), PPP-B-585, PPP-B-621 (overseas type), PPP-B-601, or 1kUL-B-10377. As far as practicable, exterior shipping containers shall be of uniform shape and size, be of minimum cube and tare consistent with the protection required, and contain identical quantities. The gross weight of each pack shall be limited to approximately 200 pounds. Containers shall be closed and strapped in accordance with the applicable container specification or appendix thereto.

5.3.2 Level B. Casing preserved and packaged to meet the requirements of 5.2.1 shall be packed in domestic type exterior shipping containers meeting the requirements of Specification PPP-B-591, PPP-B-601, PPP-B-585, PPP-B-621, PPP-B-636, or MIL-B-10377. Exterior shipping containers shall be of minimum cube and tare consistent with the protection required. As far as practicable, exterior shipping containers shall be of uniform shape

and size and contain identical quantities. The gross weight of each pack shall be limited to approximately 500 pounds for Air Force procurement and 200 pounds for Navy.

5.3.3. Level C. Packages which require overpacking for acceptance by the carrier shall be packed in exterior type shipping containers in a manner that will insure safe transportation at the lowest rate to the point of delivery. Containers shall meet the Consolidated Freight Classification Rules or regulations of other common carriers as applicable to the mode of transportation.

5.4 Marking of shipments. Interior packages and exterior shipping containers shall be marked in accordance with Standard MIL STD-129. The identification shall include the following information listed in order shown:

Stock No. or other identification number as specified in the purchase document
CASING ; FLEXIBLE C O N T R O L,
AIRCRAFT
Specification MIL-C-5638A
Quantity
Name of manufacturer
Name of contractor (if different from manufacturer)
Contract or Order No.

6. NOTES

6.1 Intended use. The casing covered by this specification is intended for use with flexible or nonflexible cable $\frac{1}{16}$, $\frac{5}{64}$, $\frac{3}{32}$, $\frac{1}{8}$, and $\frac{5}{32}$ inches in diameter in the control systems of synchronized gun units, bomb-rack equipment, and other similar aircraft applications.

6.2 Ordering data. Procurement documents should specify the following:

(a) Title, number and date of this specification.

(b) AN part number of the casing desired.

(c) Applicable levels of preservation and packaging. (See Sec. 5.)

Notice: When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility whatsoever; and the

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fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

Custodians:

Navy—Bureau of Aeronautics
Air Force
Army—Ordnance Corps

Other interest:

Army—T

Preparing Activity:

Navy—Bureau of Aeronautics

SPECIFICATION ANALYSIS SHEET		Form Approved Budget Bureau No. 119-R004	
INSTRUCTIONS			
<p>This sheet is to be filled out by personnel either Government or contractor, involved in the use of the specification in procurement of products for ultimate use by the Department of Defense. This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured with a minimum amount of delay and at the least cost. Comments and the return of this form will be appreciated. Fold on lines on reverse side, staple in corner, and send to preparing activity (as indicated on reverse hereof).</p>			
SPECIFICATION			
ORGANIZATION (of submitter)		CITY AND STATE	
CONTRACT NO.	QUANTITY OF ITEMS PROCURED	DOLLAR AMOUNT \$	
MATERIAL PROCURED UNDER A			
<input type="checkbox"/> DIRECT GOVERNMENT CONTRACT <input type="checkbox"/> SUBCONTRACT			
1. HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?			
A. GIVE PARAGRAPH NUMBER AND WORDING.			
B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES.			
2. COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID			
3. IS THE SPECIFICATION RESTRICTIVE?			
<input type="checkbox"/> YES <input type="checkbox"/> NO IF "YES", IN WHAT WAY?			
4. REMARKS (Attach any pertinent data which may be of use in improving this specification. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity)			
SUBMITTED BY (Printed or typed name and activity)		DATE	

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