

MILITARY SPECIFICATION

THIMBLES,
WIRE-CABLE, AIRCRAFT

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

1. SCOPE

1.1 Scope. This specification establishes the requirements for aircraft wire-cable thimbles to be furnished in the following grades, as specified:

- Grade A - Carbon Steel
- Grade B - Corrosion-Resisting Steel
- Grade C - Phosphor Bronze

2. APPLICABLE DOCUMENTS

2.1 Government documents.

- * 2.1.1 Specifications and standards. Unless otherwise specified (see 6.2), the following specifications and standards of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation, form a part of this specification to the extent specified herein.

SPECIFICATIONS

Federal

QQ-B-750	Bronze, Phosphor, Bar, Plate, Rod, Sheet, Strip, Flat Wire, and Structural and Special Shaped Sections
PPP-B-566	Box, Folding, Paperboard
PPP-B-636	Box, Shipping, Fiberboard
QQ-Z-325	Zinc coating, Electrodeposited, Requirements for

Military

MIL-P-116	Preservation - Packaging, Methods of
MIL-S-5059	Steel; Corrosion-Resisting (18 - 8), Plate, Sheet and Strip
* MIL-C-87115	Coating, Immersion Zinc Flake/Chromate Dispersion

- * Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: HQ AFLC CASO/LODS, Federal Center, Battle Creek, MI 49016 by using the self-addressed Standardization Document Proposal (DD Form 1426) appearing at the end of this document or by letter.

STANDARDS

Federal

FED-STD-151 Metals, Test Methods

Military

MIL-STD-129 Marking for Shipment and Storage

DRAWINGS

Air Force-Navy Aeronautical Standard

AN100 Thimble - Wire-Cable

* (Copies of specifications and standards required by manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)

* 2.1.2 Other Government documents, drawings, and publications. The following other Government documents form a part of this specification to the extent specified herein.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 380-78 Cleaning and Descaling Stainless Steel Parts, Equipment and Systems

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

2.1.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.

3. REQUIREMENTS

3.1 Material. Shall conform to applicable specifications and requirements as specified herein.

3.2 Composition. Thimbles shall be manufactured from the following material:

3.2.1 Grade A. Shall be cold-rolled and annealed steel of the composition as specified in the following table:

Composition			
Carbon	Manganese	Phosphorus	Sulphur
Percent	Percent	Percent (max)	Percent (max)
0.05-0.15	0.30-0.60	0.045	0.050

3.2.2 Grade B. Shall be of corrosion-resisting sheet steel conforming to Specification MIL-S-5059, composition G.

* 3.2.3 Grade C. Shall be of medium temper sheet phosphor bronze conforming to Specification QQ-B-750.

* 3.2.4 Reclaimed materials. The use of reclaimed materials shall be encouraged to the maximum extent possible.

3.3 Shape, dimensions and tolerances. Shall conform to Drawing AN100.

3.4 Finish.

* 3.4.1 Grade A. Shall be in accordance with Specification MIL-C-87115 or zinc plated in accordance with Specification QQ-Z-325.

3.4.2 Grade B. Shall be passivated in accordance with ASTM A-380-78.

3.4.2.1 All grade B thimbles shall be washed in water and dried after passivation.

3.5 Corrosion resistance. Passivated thimbles (grade B thimbles) shall show no sign of corrosion, or tarnish and rust that cannot be removed with a damp cloth, after continuous exposure to salt spray for 24 hours.

3.6 Workmanship. Shall be in accordance with high-class aircraft manufacturing practice. Thimbles shall be free from seams, laminations, blisters and other surface defects.

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. 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.

4.2 Methods of Examination and Tests. All the tests required for the testing of thimbles are classified as Inspection tests, for which necessary sampling techniques and methods of testing are specified in this section. The contractor shall furnish all samples and shall be responsible for accomplishing the required tests. When inspection is conducted at the contractor's plant, all inspection and testing shall be under the supervision of the Government Inspector. Contractors not having laboratory testing facilities satisfactory to the Government shall engage the services of a commercial testing laboratory acceptable to the inspector. The contractor shall furnish test reports, in duplicate, showing quantitative results for all tests required by this specification, and signed by an authorized representative of the contractor or laboratory, as applicable. Acceptance or approval of material during course of manufacture shall in no case be construed as a guaranty of the acceptance of the finished product.

4.2.1 Examination of product. Representative thimbles shall be carefully examined to determine conformance with this specification with respect to workmanship, finish, dimensions and tolerances as shown on the drawing.

4.3 Sampling tests.

4.3.1 Selection of samples. Inspection samples shall consist of at least two thimbles from each lot.

4.3.1.1 Lot. A lot shall consist of all thimbles of one grade and size submitted for inspection at the same time and place.

* 4.3.1.2 Grade A. Samples for tests shall be selected in accordance with Specification MIL-C-87115. Samples for zinc plating tests shall be selected in accordance with Specification QQ-Z-325.

4.3.1.3 Grade B. At least one thimbles from each lot of grade B samples shall be selected for corrosion-resistance tests.

4.3.2 Methods.

4.3.2.1 Gages. The manufacturer shall provide hardened steel pin gages suitable for checking the internal dimensions of the thimbles.

4.3.2.2 Finish.

* 4.3.2.2.1 Grade A thimbles. Grade A thimbles shall be tested in accordance with Specification MIL-C-87115 and the zinc plating shall be tested in accordance with Specification QQ-Z-325.

4.3.2.2.2 Grade B thimbles. Grade B thimbles shall be subjected, after passivation, to the salt-spray test for the specified time in accordance with Specification FED-STD-151.

4.4 Rejection and retests. If any sample fails to meet the requirements of this specification, the Inspector shall select another sample from the lot. If this sample fails to meet the requirements of this specification, the lot which it represents shall be rejected. Before resubmitting for acceptance, full particulars concerning previous rejection and the action taken to correct the defects found in the original shall be furnished to the Inspector. Thimbles rejected after retest shall not be again submitted without the specific approval of the Procuring Service.

4.5 Packaging inspection. Preservation, packing and marking shall be examined for conformance to Section 5.

* 5. PACKAGING

5.1 Preservation-Packaging. Preservation packaging shall be Level A or C as specified (see 6.2).

5.1.1 Level A. Unless otherwise specified, thimbles in unit quantities of 50 shall be packaged Method 1C of MIL-P-116 in a unit container conforming to PPP-B-566. Box closure shall be in accordance with the appendix to the box specifications.

5.1.2 Level C. Thimbles shall be clean and packaged in a manner that will afford adequate protection against corrosion deterioration and physical damage during shipment from supply source to the first receiving activity.

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

5.2.1 Level A. Unless otherwise stipulated a quantity of thimbles packaged as specified in 5.1 shall be packed in a fiberboard container conforming to PPP-B-636, Class weather resistant, style optional. Insofar as practicable, containers shall contain identical quantities and be of minimum cube and tare consistent with the protection required. Closure and strapping shall be in accordance with the appendix to PPP-B-636.

5.2.2 Level B. Level B shall be the same as Level A except the shipping container shall conform to class domestic.

5.2.3 Level C. The packaged thimbles shall be packed in shipping containers in a manner that will afford adequate protection against damage during direct shipment from the supply source to the first receiving activity. These packs shall conform to applicable carrier rules and regulations.

5.3 Marking. In addition to any special marking required by the contract or order (see 6.2), each unit package, intermediate and exterior shipping container shall be marked in accordance with MIL-STD-129.

6. NOTES

6.1 Intended use. Thimbles are intended for use in making spliced and wrapped cable terminals for aircraft.

6.2 Ordering data. Requisitions, contracts, and orders should state the AN part number and quantity contained in each interior package.

* 6.2.1 Level of packing. Applicable levels of packaging and packing required (see 5.1 and 5.2).

6.2.2 Special markings required (see 5.3).

6.3 Changes from previous issue. The margins of this specification are marked with an asterisk to indicate where changes (additions, modifications, corrections, 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 last previous issue.

Custodians:

Navy - AS

Air Force - 99

Preparing activity:

Air Force - 99

Review activities:

DLA - IS

Navy - SH, MC

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