

MIL-C-55442B
23 May 1985
SUPERSEDING
MIL-C-55442A
7 June 1967

MILITARY SPECIFICATION

CABLE ASSEMBLIES AND CORD ASSEMBLIES, PACKAGING OF

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

1. SCOPE

1.1 Scope. This specification covers the requirements for packaging of all types of electrical and fiber optic cable and cord assemblies.

2. APPLICABLE DOCUMENTS

2.1 Government specifications and standards. Unless otherwise specified, 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

L-P-378	- Plastic Sheet and Strip, Thin Gauge, Polyolefin
T-T-871	- Twine, Fibrous Cotton, Wrapping
QQ-S-781	- Strapping, Steel and Seals
PPP-B-636	- Boxes, Shipping, Fiberboard
PPP-B-640	- Boxes, Fiberboard, Corrugated, Triple-Wall
PPP-F-320	- Fiberboard; Corrugated and Solid, Sheet Stock (Container Grade), and Cut Shapes
PPP-T-60	- Tape, Pressure-Sensitive Adhesive, Waterproof, For Packaging

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to US Army Communications-Electronics Command, ATTN: AMSEL-MMD-P, Fort Monmouth, New Jersey 07703-5006, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AREA PACK

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- PPP-T-76 - Tape, Pressure-Sensitive Adhesive, Paper
(For Carton Sealing)

MILITARY

- MIL-P-116 - Preservation, Methods Of

STANDARDS

MILITARY

- MIL-STD-105 - Sampling Procedures and Table for Inspection
of Attributes
MIL-STD-129 - Marking for Shipment and Storage
MIL-STD-2073-1 - DoD Material Procedures for Development and
Application of Packaging Requirements

(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.)

2.2 Other publications. The following document forms a part of this specification to the extent specified herein.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- ASTM D 3951 - Standard Practice for Commercial Packaging

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

2.3 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 Preservation. Preservation shall be level A, B, or C, as specified (see 6.2b).

3.1.1 Level A.

3.1.1.1 Cleaning. Cleaning shall be in accordance with process C-1 of MIL-P-116.

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3.1.1.2 Drying. Drying shall be in accordance with the applicable procedures of MIL-P-116.

3.1.1.3 Preservation application. No preservative required.

3.1.1.4 Unit packing. Unit pack each assembly in accordance with methods or submethods of MIL-P-116 as specified herein, insuring compliance with the applicable requirements of that specification.

3.1.1.4.1 Assemblies weighing less than 10 pounds. Unit pack each assembly submethod IC-1 as follows: Coil each assembly to a minimum allowable diameter, when practicable, and cushion by wrapping in material conforming to the general cushioning requirements of MIL-P-116.

3.1.1.4.2 Assemblies weighing 10 pounds or more. Unit pack each assembly method III in accordance with one of the following requirements.

3.1.1.4.2.1 Assemblies without reels. Each assembly shall be wound uniformly into a coil, and the connectors shall be inserted into the eye of the coil or, when not practicable, secured to the coil. The diameter of the coil eye shall be not less than 14 times the diameter of the cable for non-flexing service types, and not less than 8 times the diameter of the cable for repeated flexing service types. The ratio of the overall coil width to the height of the coil shall be as near unity as possible. Secure the cable with twine conforming to T-T-871, type II, class 1, or equivalent, at a minimum of three places equidistantly spaced around the circumference of the coil. The connectors shall be inserted into a bag fabricated of material conforming to L-P-378, type II, minimum 4-mils thick. The bag shall be secured to the cable with tape conforming to PPP-T-76 or PPP-T-60. Further unit packing shall be accomplished in accordance with one of the following requirements.

3.1.1.4.2.1.1 Assemblies without reels weighing 10 pounds to 40 pounds. Each assembly shall be unit packed within a close-fitting box conforming to PPP-B-636, type CF, class weather-resistant. A liner made of fiberboard conforming to PPP-F-320, type CF, class weather-resistant, variety SW, grade W5c, shall be placed against the inside walls of the box. The liner shall have its ends butt in the center of a side panel of the box. The dimensions of the liner shall be such that the liner will fit snugly inside the box. The center of the box shall be supported with a V-shaped insert made of fiberboard conforming to PPP-F-320, type CF, class weather-resistant, variety SW, grade W5c. The insert shall be positioned inside the eye of the coil. The insert shall be fabricated so that the connectors fit between the two legs of the insert, when practicable. The depth of the insert shall be the same as the depth of the liner. Closure shall be in accordance with the appendix of the box specification.

3.1.1.4.2.2 Assemblies on stackable reels. Unit pack each assembly method III as follows: Insert connectors into a bag fabricated of material conforming to L-P-378, type II, minimum 4-mils thick. The bag shall be secured to the cable with tape conforming to PPP-T-76 or PPP-T-60. The cable shall be wound uniformly on the reel. The connectors shall be secured to the reel with a locking device. If the reel does not have a locking device, the connectors shall be tied to the cable with twine conforming to T-T-871, type II, class 1 or equivalent. Each reel with assembly shall be overwrapped with one thickness of fiberboard conforming to PPP-F-320, type SF, class weather-resistant, of sufficient width to extend the full distance between the reel flanges and of sufficient length to overlap the ends by at least 6 inches. The overlap shall be secured with two bands of flat steel strapping conforming to QQ-S-781, type I, finish A. No further unit packing required.

3.1.1.4.2.3.1 Assemblies on non-stackable reels weighing 10 to 40 pounds. Each assembly shall be packed within a close-fitting box conforming to PPP-B-636, type CF, class weather-resistant. A liner made of fiberboard conforming to PPP-F-320, type CF, class weather-resistant, variety SW, grade W5c, shall be placed against the inside walls of the box. The liner shall have its ends butt in the center of a side panel of the box. The dimensions of the liner shall be such that the liner will fit snugly inside the box. Closure shall be in accordance with the appendix of the box specification.

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3.1.1.4.2.3.2 Assemblies on non-stackable reels weighing over 40 pounds. Each assembly shall be packed within a close-fitting box conforming to PPP-B-640, class 2, style E or PPP-B-636, type CF, class weather-resistant. The gross weight of boxes conforming to PPP-B-640 shall not exceed 250 pounds. A liner made of fiberboard conforming to PPP-F-320, type CF, class weather-resistant, variety TW, shall be placed against the inside walls of the box. The liner shall have its ends butt in the center of a side panel of the box. The dimensions of the liner shall be such that the liner will fit snugly inside the box. Closure shall be in accordance with the appendix of the applicable box specification.

3.1.1.5 Intermediate packing. Assemblies, unit packed as specified in 3.1.1.4.1, shall be placed in intermediate containers conforming to PPP-B-636, type CF, class weather-resistant. Uniform quantities of unit packs to be placed in intermediate containers shall be 5 or multiples thereof, restricted to: 5, 10, 15, 20, 25, 50, or 100. Intermediate containers shall not exceed a maximum of 40 pounds net weight and a maximum of 1.5 cubic feet, with at least two dimensions not exceeding 16 inches. Closure shall be in accordance with the appendix of the box specification. Intermediate containers shall not be required when the total quantity being shipped will result in only one intermediate container per shipping container.

3.1.2 Level B. Preservation shall be as specified in 3.1.1.

3.1.3 Level C. Unless otherwise specified, preservation shall be in accordance with ASTM D 3951.

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

3.2.1 Level A. Packing shall be in accordance with MIL-STD-2073-1.

3.2.2 Level B. Packing shall be in accordance with MIL-STD-2073-1.

3.2.3 Level C. Unless otherwise specified, packing shall be in accordance with ASTM D 3951.

3.3 Marking.

3.3.1 Military. In addition to any special marking required by the contract or order, marking for level A and B shall be in accordance with MIL-STD-129 and, when applicable, as specified in 3.3.1.1.

3.3.1.1 Special marking requirements. When required by the contract or order, containers shall be marked as specified.

3.3.2 Level C. Unless otherwise specified, in addition to any special marking required by the contract or order, interior packs and exterior shipping containers shall be marked in accordance with ASTM D 3951.

3.4 Workmanship. The quality of workmanship for level A and B shall be such as to permit acceptance of the completed packaging requirements in accordance with the inspection provisions specified in section 4.

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3.5 Deviations. Requests for deviation in packaging design shall be supported by test data proving the ability of the assemblies packaged in accordance with the proposed design change, to withstand the applicable tests for the selected method, including the rough handling tests in accordance with MIL-P-116. Deviation approval shall be contingent on availability of packaging material selected and economies realized.

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 the prescribed requirements.

4.2 Classification of inspections. The inspections specified herein are classified as follows:

- a. First Article Inspection of packaging.
- b. Quality Conformance Inspection of packaging.

4.2.1 First article inspection of packaging. When specified (see 6.2c), first article inspection shall be performed by the contractor, after award of contract and prior to production, at a time and location acceptable to the Government. First article inspection of packaging shall be accomplished in accordance with the unit pack design validation requirements of MIL-P-116.

4.2.2 Quality conformance inspection of packaging.

4.2.2.1 Material inspection. All material to be used in packaging shall be inspected in accordance with the applicable material specification.

4.2.2.2 Preservation inspection. Inspection of preservation and interior markings shall be in accordance with group A and B quality conformance inspection requirements of MIL-P-116. Lot formation and sampling procedures shall be as specified therein.

4.2.2.3 Packing inspection. Inspection of packing and the marking for shipment and storage shall consist of the examinations specified in Table I, "Packing inspection provisions." Lot formation shall consist of all packs made of the same materials during an identifiable period and submitted at one time for acceptance. Sampling procedures shall be in accordance with MIL-STD-105, using a single sampling plan and acceptable quality level of 4.0 percent defective.

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TABLE I. Packing inspection provisions.

NO.	CHARACTERISTIC	METHOD OF INSPECTION
101	Intermediate container not as specified	Visual
102	Improper closure of intermediate container	Visual
103	Shipping containers not in accordance with specification	Visual
104	Excessive cube	Visual
105	Improper blocking and bracing	Visual
106	Closure not in accordance with specification	Visual
107	Weight and size exceed container limitations	Weight and Measure
108	Strapping not in accordance with specification, incorrectly applied, omitted	Visual
109	Markings omitted, incorrect, or illegible	Visual

5. PACKAGING

5.1 Packaging. Not applicable to this specification.

6. NOTES

6.1 Intended use. The preservation, packing, and marking specified herein are intended for direct shipments to the Government. However, this specification may also be used for the preparation of cable assemblies for shipment from the parts contractor to the original equipment manufacturer.

6.2 Ordering data. Acquisition documents should specify the following:

- a. Title, number and date of this specification.
- b. Level A, B, or C preservation and packing (see section 3).
- c. When first article inspection is required (see section 4).
- d. When first article packaging inspection test reports require Acquisition Activity approval prior to production unit packing.

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6.3 Level B preservation. When level B preservation is specified, this level of protection will only be used under known favorable conditions during transportation, storage, and handling.

6.4 Environmental. Environmental pollution prevention measures are contained in the packaging material specifications referenced herein. Refer to material specifications or preparing activity for recommended disposability methods.

6.5 Changes from previous issue. Asterisks are not used in this revision to identify changes with respect to the previous issue, due to the extensiveness of the change.

Custodians:

Army - CR
Navy - EC
Air Force - 99

Preparing activity:

Army - CR

(Project PACK-0779)

Review activities:

Army - SM
Navy - AS, OS, SH
Air Force - 85

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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.

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STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER MIL-C-55442B		2. DOCUMENT TITLE CABLE ASSEMBLIES AND CORD ASSEMBLIES, PACKAGING OF	
3a. NAME OF SUBMITTING ORGANIZATION		4. TYPE OF ORGANIZATION (Mark one)	
		<input type="checkbox"/> VENDOR <input type="checkbox"/> USER <input type="checkbox"/> MANUFACTURER <input type="checkbox"/> OTHER (Specify): _____	
b. ADDRESS (Street, City, State, ZIP Code)			
5. PROBLEM AREAS			
a. Paragraph Number and Wording:			
b. Recommended Wording:			
c. Reason/Rationale for Recommendation:			
6. REMARKS			
7a. NAME OF SUBMITTER (Last, First, MI) - Optional		b. WORK TELEPHONE NUMBER (Include Area Code) - Optional	
c. MAILING ADDRESS (Street, City, State, ZIP Code) - Optional		8. DATE OF SUBMISSION (YYMMDD)	