

MIL-C-3131E  
 22 October 1979  
 SUPERSEDING  
 MIL-C-3131D  
 2 March 1970  
 (See 6.3)

## MILITARY SPECIFICATION

### CORDAGE; PACKAGING OF

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

#### 1. SCOPE

- \* 1.1 This specification covers the preservation, packing, and marking for shipment of cordage of all types.

#### 2. APPLICABLE DOCUMENTS

2.1 Issues of documents. The following documents, of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

#### SPECIFICATIONS

##### FEDERAL

L-P-378 - Plastic Sheet and Strip, Thin Gauge Polyolefin.  
 CCC-C-429 - Cloth, Osnaburg, Cotton.  
 CCC-C-467 - Cloth, Burlap, Jute (or Kenaf).  
 PPP-B-576 - Box, Wood Cleated, Veneer, Paper Overlaid.  
 PPP-B-585 - Boxes, Wood, Wirebound.  
 PPP-B-591 - Boxes, Shipping, Fiberboard, Wood Cleated.  
 PPP-B-601 - Boxes, Wood, Cleated-Plywood.  
 PPP-B-621 - Boxes, Wood, Nailed and Lock-Corner.  
 PPP-B-636 - Box, Shipping, Fiberboard.  
 PPP-B-640 - Boxes, Fiberboard, Corrugated, Triple-Wall.  
 PPP-B-1055 - Barrier Material, Waterproofed Flexible.  
 PPP-F-320 - Fiberboard, Corrugated and Solid, Sheet, Stock (Container Grade), and Cut Shapes.  
 PPP-T-97 - Tape, Pressure-Sensitive Adhesive, Filament Reinforced.  
 PPP-V-205 - Veneer, Paper Overlaid, Container-Grade.

##### MILITARY

MIL-P-116 - Preservation-Packaging, Methods of.  
 MIL-L-10547 - Liners, Case, and Sheet, Overwrap; Water-Vaporproof or Waterproof, Flexible.  
 MIL-T-40625 - Tubing, Bias Sewn (Burlap or Osnaburg) Cloth.

#### STANDARDS

##### MILITARY

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.  
 MIL-STD-129 - Marking for Shipment and Storage.  
 MIL-STD-147 - Palletized Unit Loads for 40" x 48" Pallets.

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

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Naval Sea Systems Command, SEA 3112, Department of the Navy, Washington, DC 20362 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

FSC PACK

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2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply.

UNIFORM CLASSIFICATION COMMITTEE AGENT

Uniform Freight Classification Ratings, Rules and Regulations

(Application for copies should be addressed to the Uniform Classification Committee Agent, Tariff Publication Officer, Room 1106, 222 South Riverside Plaza, Chicago, IL 60606.)

NATIONAL MOTOR FREIGHT TRAFFIC ASSOCIATION, INC. AGENT

National Motor Freight Classification

(Application for copies should be addressed to the National Motor Freight Traffic Association, Inc., ATA TRAFFIC Dept., 1616 "P" Street, N.W., Washington, DC 20036.)

(Technical society and technical association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

3. REQUIREMENTS

\* 3.1 Preservation. Preservation shall be Level A, Level C, or commercial as specified (see 6.2).

3.1.1 Level A.

3.1.1.1 Cord, twine, rope, or chalk line in balls, or on cards, cones, spools, or tubes. Balls, cards, cones, spools or tubes of cord, twine, rope, and chalk line, weighing 2-1/2 pounds or less, of the same kind and size shall be unit packed in snug-fitting fiberboard boxes conforming to PPP-B-636, style RSC, type CF or SF, class domestic or weather-resistant.<sup>1/</sup> Box closures shall be as specified in the appendix to the box specification. Quantity per box shall be as specified in table I. Balls, cards, cones, spools, or tubes of cord, twine and rope weighing over 2-1/2 pounds, of the same kind and size, in quantities of not more than 30 pounds net weight, shall be unit packed in snug-fitting fiberboard boxes conforming to PPP-B-636, style RSC, type CF or SF, class domestic or weather resistant.<sup>1/</sup> Box closure shall be as specified in the appendix to the box specification.

TABLE I. Quantity per box.

Weight of individual unit	Number of units per box
1/2 pound or less .....	48
Over 1/2 pound to 1 pound, inclusive ..	24
Over 1 pound to 2-1/2 pounds, inclusive	12

3.1.1.1.1 When specified (see 6.2), cord, twine, rope, or chalk line in balls, or on cards, cones, spools, or tubes shall be unit packed one each in accordance with MIL-P-116, method III. The unit packs shall be intermediate packed in quantities as specified in table I. Intermediate container and requirements shall conform to 3.1.1.1. If intermediate container is used as a shipping container, the class selected shall be appropriate for the packing level specified.<sup>1/</sup>

3.1.1.2 Cord, line, twine, and rope in hanks. Hanks of cord, line, twine, and rope, of the same kind and size, in quantities of one dozen hanks, shall be unit packed in snug-fitting fiberboard boxes in accordance with 3.1.1.1. Hanks may be connected in groups of 12 or in groups of 2, 3 or more hanks totaling 12 hanks.

3.1.1.3 Cord, line, twine, and rope in coils. Coils shall be secured with a minimum of 4 equally spaced ties of cord or rope passing through the coil center to the outside and knotted on the circumference of the coil. Unless otherwise specified (see 6.2), coils weighing less than 50 pounds shall be individually unit packed in a fiberboard box as specified in 3.1.1.1.

\* <sup>1/</sup> For Army and Marine Corps purposes, boxes shall be class weather-resistant.

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3.1.1.3.1 Wrapping of coils weighing less than 50 pounds. Unless otherwise specified (see 6.2), coils shall not be wrapped. When wrapping is specified, coils shall be individually wrapped with waterproof barrier material conforming to PPP-B-1055 (class to be determined by the specification use requirement) or L-P-378. All seams, joints and closures shall be sealed in a manner which will afford waterproofness equal to the wrap material used.

\* 3.1.1.3.2 Wrapping of coils weighing 50 pounds or more. When specified (see 6.2), rope 1-1/2 inches and under in circumference shall be overwrapped and sewn in cotton osnaburg cloth conforming to class 2 of CCC-C-429; or jute (or kenaf) burlap cloth conforming to class 1 of CCC-C-467. The wrapping shall be securely sewn with 16-ply cotton twine or 3-ply jute twine and approximately one stitch to the inch and every third stitch knotted. In lieu of the sewn wrapping, the cloth covering may be in bias-sewn tubing form or bags (tubing pre-sewn one end) conforming to MIL-T-40625 with closures effected by sewing as specified for wrapping or securing each open end with two wire ties. The wire ties shall be not less than 6 inches long, 0.072 inch thick, galvanized soft iron or steel wire with a 1/2 inch diameter formed eye at each end. Rope over 1-1/2 inches in circumference will require no wrapping.

3.1.1.4 Cord, line, twine, and rope on reels. Unless otherwise specified (see 6.2), each reel of cord, line, twine, or rope weighing less than 50 pounds shall be individually unit packed in a fiberboard box as specified in 3.1.1.1.

\* 3.1.1.4.1 Reels for synthetic fiber ropes. The reels shall be constructed as follows at the contractor's option.

\* 3.1.1.4.1.1 Wood.

- (a) Ropes of 3/4 inch to 2-1/2 inch circumference. For ropes of 3/4 inch to 2-1/2 inch circumference, the reel heads shall be of 5/8 or 3/4 inch boards, two-ply, with the grain of wood laid perpendicular to each other and securely nailed with the nail ends clinched on the outer surface of the reel. The nail heads shall be countersunk below the surface of the wood. Boards constituting the inside face of the flange shall be free from warpage and shall be nailed to provide an even surface free from splinters and protruding edges at the board joints. The barrel shall consist of 3/4 inch thick staves mortised into the reel heads. The reel shall be assembled with three 3/8 inch diameter steel bolts having cup washers on each end. The head ends shall have 2 inch diameter (minimum) center holes.
- (b) Ropes of 2-3/4 inch to 7 inch circumference. For ropes of 2-3/4 inch to 7 inch circumference, the reels shall be constructed as specified in 3.1.1.4.1.1(a) with the following exceptions:
  - (1) The thickness of the reel head boards shall be 7/8 inch, two ply.
  - (2) The barrel shall consist of 1 inch thick wood staves mortised into the reel heads.
  - (3) The reel shall be assembled with four 3/8 or 1/2 inch diameter steel bolts having cup washers on each end.
- (c) Ropes of 8 to 12 inch circumference. For ropes of 8 to 12 inch circumference, the reels shall be constructed as specified in 3.1.1.4.1.1(a) with the following exceptions:
  - (1) The thickness of the reel head boards shall be 7/8 inch, two or three ply.
  - (2) The barrel shall consist of 1 inch thick wood staves mortised into the reel heads.
  - (3) The reel shall be assembled with four 1/2 or 3/4 inch diameter steel bolts having cup washers on each end.

\* 3.1.1.4.1.2 Plywood. Plywood with combinations of waxed tubing, metal, plastic, plyveener or plywood as the barrel material and reel flange thickness as follows:

- (a) 3/8 inch thick for net weights 20 thru 80 pounds.
- (b) 1/2 inch thick for net weights 81 thru 125 pounds.
- (c) 5/8 inch thick for net weights 126 thru 180 pounds; in addition, 3-5/16 inch bolts and nuts shall be used for the flange and barrel assembly.
- (d) 3/4 inch thick for net weights 181 thru 350 pounds, with nuts and bolts as required in 3.1.1.4.1.2(c).
- (e) 7/8 inch thick for net weights 351 thru 699 pounds; in addition, 4-5/8 inch nuts and bolts shall be used for the flange and barrel assembly.

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with the appendix to MIL-L-10547. Caseliners for fiberboard boxes, PPP-B-636 and PPP-B-640, shall not be required when all center and edge seams and the manufacturer's joint of the box are waterproofed with tape in accordance with the appendix to the applicable box specification. In addition, caseliners will not be required for shipping containers when the interior packs are of a weather-resistant container or waterproof wrap and the pack closures are sealed in manner to afford waterproofness equal to that of the interior container or wrap. The gross weight of the wood or wood-cleated boxes shall not exceed 200 pounds and fiberboard boxes shall not exceed the weight limitations of the applicable box specification.

3.2.1.1.1 Coils of cord, line, twine, and rope weighing 50 pounds and over, or over 1-1/2 inches in circumference shall be wrapped with burlap or osnaburg cloth as specified in 3.1.1.3.2 for shipment.

3.2.1.1.2 Synthetic fiber rope furnished on reels, wrapped as specified in 3.1.1.4.2 will require no further protection for shipment.

3.2.1.2 Level B. Cord, twine, rope, and line in balls or on cards, cones, tubes, spools, hanks, or coils weighing less than 50 pounds, preserved as specified (see 6.2), shall be packed in containers conforming to any one of the following specifications at the option of the contractor:

<u>Specification</u>	<u>Classification</u>	<u>Special Requirements</u>
PPP-B-576	Class 1	
PPP-B-585	Class 1	
PPP-B-591	Class 1	
PPP-B-601	Domestic type	
PPP-B-621	Class 1	
PPP-B-636	Domestic	1/
PPP-B-640	Class 1	1/

1/When specified (see 6.2), for Army procurements, class weather-resistant or overseas type containers shall be used.

Containers shall be closed in accordance with the applicable box specification or appendix hereto with method I closure applying to PPP-B-636 boxes. The gross weight of wood or wood-cleated containers shall not exceed 200 pounds. Fiberboard boxes shall not exceed the weight limitations of the applicable box specification.

3.2.1.2.1 Coils of cord, line, twine, and rope weighing 50 pounds and over, preserved as specified in 3.1.1.3.2, will require no further overpacking.

3.2.1.2.2 Synthetic fiber rope furnished on reels, wrapped as specified in 3.1.1.4.2 will require no further protection for shipment.

3.2.1.3 Level C. Cordage, preserved as specified (see 6.2), shall be prepared for shipment, at the lowest rate, in a manner which will insure acceptance by common carrier and will afford protection against physical damage during shipment from the supply source to the first receiving activity for immediate use. Containers or method of packing for shipment shall conform to the Uniform Freight or National Motor Freight Classification Rules and Regulations or other carrier's rules and regulations as applicable to the mode of transportation.

\* 3.2.1.4 Commercial. Commercial packing shall be as specified in the contract or order (see 6.2).

3.2.2 Palletizing. When specified (see 6.2), shipping containers, coils, or reels shall be palletized for shipment in accordance with MIL-STD-147.

3.3 Marking. In addition to any special markings required by the contract or order (see 6.2), interior unit packs, exterior shipping containers, reels, coils, and palletized loads shall be marked in accordance with MIL-STD-129.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract, the contractor may use his own or

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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 Sampling.

4.2.1 Lot. All cordage submitted for shipment at one time shall be considered a lot.

4.2.2 Sampling for examination. A random sample of containers shall be selected from each inspection lot offered for inspection in accordance with MIL-STD-105 at inspection level I and an acceptable quality level (AQL) equal to 2.5 percent defective.

#### 4.3 Inspection and tests.

4.3.1 Examination. Each sample selected in accordance with 4.2.2 shall be visually and dimensionally examined to verify compliance with the requirements of this specification.

4.3.2 Inspection testing. Tests of packaging materials shall be in accordance with the requirements of the applicable packaging material specification.

4.4 Examination of packaging requirements. An examination shall be made to determine that preservation, packing, palletization and marking requirements of this specification are complied with. Defects shall be scored in accordance with the list below. The sample unit shall be one shipping container or one palletized unit load fully prepared for delivery with the exception that the shipping container need not be sealed. Defects of closure listed below shall be examined on shipping containers fully prepared for delivery. The lot size shall be the number of containers or palletized unit loads in the end item inspection lot. The inspection level shall be S-3 and the AQL shall be 4.0 defects per hundred units.

<u>Examine</u>	<u>Defect</u>
Material	Any component missing Any component damaged.
Workmanship	Inadequate application of components, such as: incomplete closure of case liners, wrappings, container flaps, loose strapping, inadequate stapling or nailing, inadequate securing or sealing of wrapping materials, insecure sewing or loose wire ties.
Preservation-unit packs Content: Balls, cords, cards, tubes, spools or cones	More or less than 48 units when each unit weighs 1/2 pound or less. More or less than 24 units when each unit weighs 1/2 pound to 1 pound inclusive. More or less than 12 units when each unit weighs over 1 pound to 2-1/2 pounds inclusive. Net weight exceeds 30 pounds when each unit weighs more than 2-1/2 pounds. Units not identical. Units not of same size. Not in snug-fitting fiber boxes.
Put up units in hanks	Not in quantities of one dozen hanks. Units not identical. Units not of same size. Not in snug-fitting fiber boxes.
Coils or reels weighing less than 50 pounds	Not individually packaged.
Put up units in coils	Less than 4 ties. Ties not equally spaced. Ties not knotted on circumference.

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<u>Examine</u>	<u>Defect</u>
Balls, cords, cards, tubes, spools, cones or reels weighing less than 50 pounds	Units not identical. Units not of same size. Not in snug-fitting fiber boxes.
Packing: Containers; All units except reels weighing 50 pounds or more or coils weighing 50 pounds or more	Not of uniform size. Not of uniform construction. Do not contain identical items. Contents not tightly packed, permitting shifting or movement.
Pallets: Finished dimension	Length, width or height exceeds specified maximum requirements.
Palletization	Not as specified. Pallet pattern not as required. Interlocking loads not as required. Loads not bonded with straps as required.
Weight	Gross weight of wood or wood cleated boxes exceeds 200 pounds. Gross weight of fiber boxes exceeds limitations of applicable box specification. Gross weight of pallet exceeds maximum load limits.
Marking	Omitted, incorrect, illegible, of improper size, location, sequence or method of application.

## 5. PACKAGING

5.1 This section is not applicable to this specification.

## 6. NOTES

6.1 Intended use. The preservation, packing, and marking requirements specified herein are intended to insure proper and safe storage and transportation of cordage for direct shipments to Government activities or shipments processed at a military activity or agency.

\* 6.2 Ordering data. Acquisition documents should specify the following:

- (a) Title, number, and date of this specification.
- (b) Selection of the applicable level of preservation and level of packing required (see 3.1 and 3.2).
- (c) Quantity per unit pack required, if different, for cord, twine, rope, or chalk line in balls, on cards, cones, spools, or tubes (see 3.1.1.1.1).
- (d) Whether other than individual unit packs of coils or reels of cord, line, twine, and rope are required (see 3.1.1.3 and 3.1.1.4).
- (e) When coils shall be wrapped (see 3.1.1.3.1 and 3.1.1.3.2).
- (f) Commercial preservation and packing required (see 3.1.3 and 3.2.1.4).
- (g) When weather resistant fiberboard boxes are required for Army under level B (see 3.2.1.2, foot note 1).
- (h) When palletizing is required (see 3.2.2).
- (i) Special marking, if required (see 3.3).



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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:**

Army - GL  
Navy - SH  
Air Force - 99

**Preparing activity:**

Navy - SH  
(Project PACK-0597)

**Review activities:**

Army - SM  
Navy - SA, MC  
DLA - IS

**User activity:**

Navy - YD

## STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

OMB Approval  
No. 22-R255

**INSTRUCTIONS:** The purpose of this form is to solicit beneficial comments which will help achieve procurement of suitable products at reasonable cost and minimum delay, or will otherwise enhance use of the document. DoD contractors, government activities, or manufacturers/vendors who are prospective suppliers of the product are invited to submit comments to the government. Fold on lines on reverse side, staple in corner, and send to preparing activity. 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. Attach any pertinent data which may be of use in improving this document. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity.

## DOCUMENT IDENTIFIER AND TITLE

MIL-C-3131E

NAME OF ORGANIZATION AND ADDRESS

CONTRACT NUMBER

MATERIAL PROCURED UNDER A

☐ DIRECT GOVERNMENT CONTRACT ☐ SUBCONTRACT

## 1. HAS ANY PART OF THE DOCUMENT CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?

A. GIVE PARAGRAPH NUMBER AND WORDING.

B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES

## 2. COMMENTS ON ANY DOCUMENT REQUIREMENT CONSIDERED TOO RIGID

## 3. IS THE DOCUMENT RESTRICTIVE?

☐ YES ☐ NO (If "Yes", in what way?)

## 4. REMARKS

SUBMITTED BY (Printed or typed name and address - Optional)

TELEPHONE NO.

DATE

DD FORM 1426  
1 JAN 72

REPLACES EDITION OF 1 JAN 66 WHICH MAY BE USED

S/N 0102-014-1802