NOT-MEASUREMENT SENSITIVE

MIL-C-3131F
6 January 1995
SUPERSEDING
MIL-C-3131E
22 October 1979
(See 6.7)

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 Scope. This specification establishes the requirements for packaging (preservation, packing and marking) of all types of cordage for shipment, stowage and storage.

1.2 Levels of protection.

1.2.1 Preservation.

Level A (see 3.4.1)
Level C (see 3.4.2)
Commercial (see 3.4.3)

1.2.2 Packing.

Level A (see 3.5.1, 3.5.2.1, 3.5.3.1, and 3.5.4.1)
Level B (see 3.5.1, 3.5.2.1, 3.5.3.1, and 3.5.4.1)
Level C (see 3.5.1, 3.5.2.1, 3.5.3.1, and 3.5.4.1)
Commercial (see 3.5.2.2, 3.5.3.1.1 and 3.5.4.2)

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, SEA 03R42, Naval Sea Systems Command, 2531 Jefferson Davis Hwy, Arlington, VA 22242-5160 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 AREA PACK

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

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

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-1055	- Barrier Material, Waterproofed Flexible.
PPP-V-205	- Veneer, Paper Overlaid, Container-Grade.

MILITARY

MIL-P-116	- Preservation, Methods of.
MIL-L-19140	- Lumber and Plywood, Fire-Retardant Treated.
MIL-T-40625	- Tubing, Bias Sewn (Burlap or Osnaburg) Cloth.

STANDARDS

MILITARY

MIL-STD-2073-1 - DoD Materiel Procedures for Development and Application of Packaging Requirements.

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Bldg. 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.2 Non-Government publications. The following document(s) form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

D 1974	- Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Shipping Containers.
D 3951	- Standard Practice for Commercial Packaging. (DoD adopted)
D 4727	- Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes.
D 5118	- Standard Practice for Fabrication of Fiberboard Shipping Boxes.
D 5330	- Tape, Pressure-Sensitive, Packaging, Filament-Reinforced.

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

(Non-Government standards and other publications are normally available from the organizations that prepare or 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 document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Order of precedence. When material (see 1.1) is acquired in conformance with a commodity specification having detailed packaging or preparation for delivery requirements which differ from this specification, the packaging or preparation for delivery specified in the commodity specification shall apply.

3.2 Definitions or explanation of packaging terms. Definitions or explanation of packaging terms applicable to this specification shall be as stated in 6.5.

3.3 Materials. Packaging materials shall be as specified herein.

3.3.1 Recovered materials. Unless otherwise specified herein, all equipment, material, and articles incorporated in the products covered by this specification shall be new and may be fabricated using materials produced from recovered materials to the maximum extent practicable without jeopardizing the intended use. The term "recovered materials" means materials which have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. Unless otherwise specified (see 6.2), none of the above shall be interpreted to mean that the use of used or rebuilt products is allowed under this specification.

3.3.2 New materials. The use of newly developed packaging materials or procedures are encouraged and recommended and will be permitted under the conditions specified herein, provided they are equal to or better than the specified materials or procedures (see 6.3).

3.3.3 Navy fire-retardant materials.

(a) Cushioning and wrapping materials. The use of excelsior, newspaper, shredded paper (all types) and similar hydroscopic or nonneutral materials and all types of loose fill materials, for applications such as cushioning, fill, stuffing, and dunnage is prohibited.

(b) Treated lumber and plywood. When specified (see 6.2), all lumber and plywood including laminated veneer material used in shipping container and pallet construction, members, blocking, bracing, and reinforcing shall be fire-retardant treated material conforming to MIL-L-19140 as follows:

Levels A and B - Type II - weather resistant.
Category 1 - general use.
Level C - Type I - non-weather resistant.
Category 1 - general use.

(c) Fiberboard. When specified (see 6.2), fiberboard used in the construction of unit containers shall be of class-domestic, non-weather resistant fiberboard and cleated fiberboard boxes including interior packing forms and shall meet the flamespread index and the specific optic density requirements of ASTM D 4727.

3.4 Preservation. Preservation shall be level A, level C, or commercial, as specified (see 6.2).

3.4.1 Level A.

3.4.1.1 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 ASTM D 5118, class weather-resistant, with the box classification selection such as type, variety and grade at the supplier's option. Box closure shall be in accordance with method V of ASTM D 1974. 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 as specified herein.

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

3.4.1.1.1 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 3.4.1.1.

3.4.1.2 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 3.4.1.1. Hanks may be connected in groups of 12 or in groups of 2, 3 or more hanks totaling 12 hanks.

3.4.1.3 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 3.4.1.1.

3.4.1.3.1 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.

3.4.1.3.2 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, type optional of CCC-C-429; or cloth, burlap, jute (or kenaf) conforming to class 1 minimum 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.

3.4.1.4 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 3.4.1.1.

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

3.4.1.4.1.1 Wood (see 3.3.3(b)).

(a) Ropes of 3/4 to 2-1/2 inch circumference. For ropes of 3/4 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 washers on each end. The head ends shall have 2 inch diameter (minimum) center holes.

(b) Ropes of 2-3/4 to 7 inch circumference. For ropes of 2-3/4 to 7 inch circumference, the reels shall be constructed as specified in 3.4.1.4.1.1(a) with the following exceptions:

(1) The thickness of the reel head boards shall be minimum 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 a minimum of four 3/8 or 1/2 inch diameter steel bolts having cup washers on each end.

(c) Ropes of 8 to 16 inch circumference. For ropes of 8 to 16 inch circumference, the reels shall be constructed as specified in 3.4.1.4.1.1(a) with the following exceptions:

(1) The thickness of the reel head boards shall be minimum 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 a minimum of four 1/2 or 3/4 inch diameter steel bolts having cup washers on each end.

3.4.1.4.1.2 Plywood (see 3.3.3(b)). Plywood with combinations of waxed tubing, metal, plastic, plyveneer or plywood as the barrel material and reel flange thickness as follows:

(a) 3/8 inch thick for net weights 20 through 80 pounds.
(b) 1/2 inch thick for net weights 81 through 125 pounds.
(c) 5/8 inch thick for net weights 126 through 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 through 350 pounds, with nuts and bolts as required in 3.4.1.4.1.2(c).
(e) 7/8 inch thick for net weights 351 through 699 pounds; in addition, 4-5/8 inch nuts and bolts shall be used for the flange and barrel assembly.
(f) 3/4 inch thick doubled for net weights 700 through 1675 pounds. In addition, a minimum of five 1/2 inch bolts and nuts shall be used for the flange and barrel assembly.

3.4.1.4.1.3 Plastic. Plastic reels shall be hi-density, hi-impact plastic or reinforced (fiberglass) plastic of a one-piece construction or with injected molded plastic reel flanges with a spiral wrapped cardboard tube core held together with 1/4 inch steel bolts or pressed and glued together. The reels shall have a maximum flange diameter of 25 inches and a maximum barrel traverse of 25 inches. The minimum barrel outside diameter shall be 3 inches for reel flange sizes 14 inches and under. The minimum barrel outside diameter shall be 5 inches for reel flange sizes over 14 inches to 25 inches. Maximum net weight of plastic type reels shall not exceed 50 pounds.

3.4.1.4.1.4 Metal. Metal reels shall be of a single trip disposable type. All parts shall be made with no sharp edges or burrs and assembly shall be such that parts will not loosen or become damaged. Reels shall be cleaned and given a protective finish in accordance with industry practice. The net weight of rope on metal reels shall not exceed 700 pounds.

3.4.1.4.2 Wrapping of rope furnished on reels. Synthetic fiber (such as nylon or polyester) rope furnished on reels shall be dual wrapped with plastic and burlap as follows: The initial wrap shall be of minimum 4 mil thickness, commercial grade, black polyethylene of a width to extend between the reel flanges and of a length to completely encircle the wound rope with a minimum 3 inch overlap. Overlap shall be heat sealed. The outer wrap shall be of minimum 7-1/2 ounce burlap (based on a 40 inch width) and of sufficient width to: (a) completely cover the initial wrap on metal or wood reels and (b) for wood reels to be

stapled to the internal surfaces of the reel flanges. The outer wrap shall be lashed circumferentially with cord, line, or rope ties. One tie shall be placed adjacent to each reel flange, drawn up snugly and tied. Additional ties, as required, shall be applied equidistant between the reel flanges to secure the burlap wrap. Alternatively, wrapping materials may conform to single wall corrugated fiberboard in accordance with ASTM D 4727 (see 3.3.3(c)) or veneer, paper overlaid conforming to type II of PPP-V-205. For Army, fiberboard wrapping materials shall conform to class weather-resistant. Wrapping shall overlap a minimum of 3 inches. Wrapping shall be secured with a minimum of two corrosion-resisting treated (coated or galvanized) flat, steel nailless strapping or pressure-sensitive, reinforced tape conforming to ASTM D 5330, type IV. Strapping shall be of minimum 1/2 inch width and placed approximately 6 inches from each flange. Additional straps, as required to prevent wrap deformation, shall be applied and spaced equidistant between the reel flanges. Pressure-sensitive tape shall be overlapped a minimum of 6 inches.

3.4.2 Level C. Preservation shall be as specified under level A except as follows:

(a) Unless otherwise specified (see 6.2), fiberboard (see 3.3.3(c)) shall conform to class-domestic/fire-retardant. Box closure shall be in accordance with method I using pressure sensitive tape.
(b) The veneer, paper overlaid required under 3.4.1.4.2 shall conform to type I.

3.4.3 Commercial. Commercial preservation, shall be in accordance with ASTM D 3951.

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

3.5.1 Level A, B and C. Shipping containers packed with the same items shall be of the same construction and of uniform size and of minimum cube and tare consistent with the protection required. Shipping containers shall contain identical quantities of identical items.

3.5.2 Cord, twine, rope, line in balls or on cards, cones, spools, tubes, hanks, or coils weighing less than 50 pounds.

3.5.2.1 Levels A, B and C containers. Material preserved as specified (see 3.4), shall be packed in exterior shipping containers for the level of packing specified (see 3.5) in accordance with table VII, exterior shipping container requirements of MIL-STD-2073-1, appendix C, and herein. Unless otherwise specified (see 6.2), container selection and options shall be at the contractor's option.

3.5.2.1.1 Caseliners, closure and gross weight.

3.5.2.1.1.1 Caseliners. Unless otherwise specified (see 6.2), level A shipping containers containing material preserved level C or commercial shall be provided with waterproof caseliners in accordance with MIL-STD-2073-1.

parts of 30K 2.2. A PPAT plan shall be prepared in accordance with the requirem

3.5.2.1.1.2 Closure. Container closure, reinforcing, or banding shall be in accordance with the applicable container specification or appendix thereto except that weather-resistant fiberboard boxes shall be closed in accordance with method V and reinforced with non-metallic or tape banding and domestic or fire-retardant fiberboard boxes shall be closed in accordance with method I using pressure sensitive tape.

3.5.2.1.1.3 Weight. Wood, plywood, and cleated type containers exceeding 200 pounds gross weight shall be modified by the addition of skids in accordance with MIL-STD-2073-1 and the applicable container specification or appendix thereto.

3.5.2.2 Commercial. Material preserved as specified (see 3.4) shall be packed for shipment in accordance with ASTM D 3951 and herein.

3.5.2.2.1 Container modification. Shipping containers exceeding 200 pounds gross weight shall be provided with a minimum of two, 3 by 4-inch nominal wood skids laid flat, or a skid or sill-type base which will support the material and facilitate handling by mechanical handling equipment during shipment, stowage and storage.

3.5.3 Coils of cord, line, twine, and rope weighing 50 pounds and over, or over 1-1/2 inches in circumference.

3.5.3.1 Levels A, B and C. Coils shall be wrapped as specified in 3.4.1.3.2.

3.5.3.1.1 Commercial. Commercial packing shall be as specified in 3.5.2.2.

3.5.4 Synthetic fiber rope on reels.

3.5.4.1 Levels A, B and C. Synthetic rope furnished on reels, wrapped as specified in 3.4.1.4.2 and 3.4.2 will require no further protection for shipment.

3.5.4.2 Commercial. Commercial packing shall be as specified in 3.5.2.2.

3.6 Palletization. When specified (see 6.2), packaged cordage shall be palletized in accordance with MIL-STD-2073-1.

3.7 Marking, level A, B, C, and commercial. In addition to any special marking required (see 6.2), interior packs and shipping containers, coils, reels, and palletized unit loads shall be marked including bar coding for shipment, stowage, and storage in accordance with MIL-STD-2073-1, appendix F.

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 (examinations and tests) 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 ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall meet all requirements of section 3. 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 ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of the manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.2 Inspection conditions. Unless otherwise specified (see 6.2), inspection shall be performed in accordance with the test conditions specified in the applicable specification.

4.3 Lot. A lot shall consist of all packaged cordage on the same acquisition (contract or order) document, prepared for delivery and shipment under essentially the same conditions and submitted for inspection at one and the same time and place.

4.4 Sampling.

4.4.1 Examination. A random sample of containers, coils or reels shall be selected from each lot offered for inspection. For a lot size of 3 to 35000 the sample size is 3. For a lot size of 35001 and over, the sample size is 13. In all cases the acceptance criteria is accept on 0 reject on 1. All defective items must be replaced with acceptable items prior to acceptance. Rejected lots may be screened and resubmitted for inspection.

4.5 Quality conformance inspection.

4.5.1 Examination. Each sample selected in accordance with 4.4.1 shall be visually and dimensionally examined to verify compliance with the requirements of this specification.

4.5.2 Examination of packaging. An examination shall be made to determine compliance with the packaging (preservation, packing, palletization, and marking) requirements of this specification. Examination for defects shall include those defects listed below. The sample unit shall be in accordance with 4.4.1 except that the shipping container need not be closed. Defects of closure shall be examined on the shipping container as fully prepared for delivery and shipment.

variables like system complexity, program phase, availability of funds,

Examine	Defect
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 fiberboard 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 fiberboard 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.
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 fiberboard 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. Content not tightly packed, permitting shifting or movement. Caseliner missing. Closure reinforcing and banding not as specified. Skids missing, improper, not as specified.

reliability and mission reliability, shall be determined for the device

Examine	Defect
Palletization	Not as specified.
Marking	Omitted, incorrect, illegible, not as specified.

5. PACKAGING

5.1 Packaging requirements. Not applicable to this specification. Packaging requirements are specified in section 3.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The packaging requirements specified in this specification are intended to ensure proper and safe delivery, stowage, storage and transportation of cordage for direct shipments to Government activities; for material processed at a Military activity, and for preparing packaging requirements in acquisitioning documents.

6.2 Acquisition requirements. Acquisition documents must specify the following:

(a) Title, number, and date of this specification.
(b) Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2).
(c) When use of used or rebuilt products is allowed (see 3.3.1).
(d) When fire-retardant treated lumber and plywood is required (see 3.3.3(b)).
(e) When fire-retardant fiberboard is required (see 3.3.3(c)).
(f) Level of preservation and packing required (see 3.4 and 3.5).
(g) Quantity per unit pack required, if different, for cord, twine, rope, or chalk line in balls, on cards, cones, spools, or tubes (see 3.4.1.1.1).
(h) Whether other than individual unit packs of coils or reels of cord, line, twine, and rope are required (see 3.4.1.3 and 3.4.1.4).
(i) When coils shall be wrapped (see 3.4.1.3.1 and 3.4.1.3.2).
(j) Fiberboard boxes if other than specified (see 3.4.2(a)).
(k) Container selection if other than contractor's option (see 3.5.2.1).
(l) When caseliners are not required (see 3.5.2.1.1.1).
(m) Palletization, when required (see 3.6).
(n) Special marking required (see 3.7).
(o) If inspection conditions are other than specified (see 4.2).

6.3 Consideration of data requirements. The following data requirements should be considered when this specification is applied on a contract. The applicable Data Item Descriptions (DID's) should be reviewed in conjunction with the specific acquisition to ensure that only essential data are requested/provided and that the DID's are tailored to reflect the requirements of the specific acquisition. To ensure correct contractual application of the data requirements, a Contract Data Requirements List (DD Form 1423) must be prepared to obtain the data, except where DoD FAR Supplement 27.475-1 exempts the requirement for a DD Form 1423.

Reference Paragraph	DID Number	DID Title	Suggested Tailoring
3.3.2	DI-E-2121	Certificate of compliance	----

The above DID's were those cleared as of the date of this specification. The current issue of DoD 5010.12-L, Acquisition Management Systems and Data Requirements Control List (AMSDL), must be researched to ensure that only current, cleared DID's are cited on the DD Form 1423.

6.4 Definitions or explanation of terms.

6.4.1 Levels of protection. The following levels of protection apply equally to preservation and packing.

6.4.1.1 Level A. This packaging provides maximum protection. It is needed to protect material under the most severe worldwide shipment, handling, and storage conditions. Preservation and packing will be designed to protect material against direct exposure to extremes of climate, terrain, and operational and transportation environments, without protection other than that provided by the pack. The conditions to be considered include, but are not limited to:

(a) Multiple handling during transportation and intransit storage from point of origin to final user.
(b) Shock, vibration, and static loading during shipment.
(c) Loading on shipdeck, transfer at sea, helicopter delivery, and offshore or over-the-beach discharge, to final user.
(d) Environmental exposure during shipment or during intransit operations where port and warehouse facilities are limited or nonexistent.
(e) Outdoor storage in all climatic conditions for a minimum of 1 year.
(f) Static loads imposed by stacking.

For packing (exterior containers) it has been determined and agreed upon by the joint DoD packaging administrators that fiberboard and paperboard are not an acceptable material for use under level A packing.

6.4.1.2 Level B. This packaging provides intermediate protection. It is needed to protect material under anticipated favorable environmental conditions of worldwide shipment, handling, and storage. Preservation and packing will be designed to protect material against physical damage and deterioration during favorable conditions of shipment, handling, and storage. The conditions to be considered include, but are not limited to:

(a) Multiple handling during transportation and intransit storage.
(b) Shock, vibration, and static loading of shipments worldwide by truck, rail, aircraft, or ocean transport.
(c) Favorable warehouse environment for a minimum of 18 months.
(d) Environmental exposure during shipment and intransit transfers, excluding deck loading and offshore cargo discharge.
(e) Stacking and supporting superimposed loads during shipment and extended storage.

For packing (exterior containers) weather-resistant grades of fiberboard and paperboard are permitted under level B. Domestic type or grade (non-weather resistant) fiberboard and paperboard are not acceptable under level B packing. Level B packing as defined in 6.4.1.2(b) covers shipments worldwide by all types of transportation.

6.4.1.3 Level C. This packaging provides minimum protection. It is needed to protect material under known favorable conditions. The following criteria determine the requirements for this degree of protection:

(a) Use or consumption of the item at the first destination.
(b) Shock, vibration, and static loading during the limited transportation cycle.
(c) Favorable warehouse environment for a maximum of 18 months.
(d) Effects of environmental exposure during shipment and intransit delays.
(e) Stacking and supporting superimposed loads during shipment and temporary storage.

6.4.1.4 Commercial. Although not specifically defined by any Government regulation or instruction, commercial packaging (preservation and packing) is understood to be those practices by manufacturers and contractors to protect and identify material and items packaged for retail and wholesale distribution purposes. ASTM D 3951 provides guidance in the application of commercial packaging. It has been determined by joint DoD instructions that commercial, also in some areas addressed as industrial packaging, should only be used or specified when such packaging is known to satisfy the DoD needs. Such use should be determined before a contract for supplies is awarded or within the life cycle of the contract when substantial savings to the Government may result. Commercial (industrial) packaging should not be specified where multiple shipments and handlings are anticipated or desired.

6.4.2 Packaging terms. For definitions or explanation of packaging terms not specified herein, MIL-P-116, ANSI MH15.1 and ASTM D 996 apply.

6.4.2.1 Exterior pack. A container, bundle, or assembly which is sufficient by reason of material, design, and construction to protect material during shipment and storage. This can be the unit pack or a container with any combination of unit or intermediate packs.

6.4.2.2 Intermediate pack. A wrap, box, or bundle which contains two or more unit packs of identical items.

6.4.2.3 Marking. Application of numbers, letters, labels, tags, symbols, or colors for handling or identification during shipment and storage.

6.4.2.4 Military packaging. The materials and methods or procedures prescribed in Federal/Military specifications, standards, drawings or other authorized documents, which are designed to provide the degree of packaging protection determined necessary to prevent damage and deterioration during world-wide distribution of material.

6.4.2.5 Packaging. The process and procedures used to protect material from deterioration or damage. It includes cleaning, drying, preserving, packing, marking, and unitization.

6.4.2.6 Packing. Assembling of items into a unit, intermediate, or exterior pack with necessary blocking, bracing, cushioning, weatherproofing, reinforcement, and marking.

6.4.2.7 Preservation. Application of protective measures, including cleaning, drying, preservation materials, barrier materials, cushioning, and containers when necessary.

6.4.2.8 Unitization. Assembly of packs of one or more line items of supply into a single load in such a manner that the load can be handled as a unit through the distribution system. Unitization (unitized loads/unit loads) encompasses consolidation in a container, placement on a pallet or load base, or securely binding together.

6.4.2.9 Unit pack. The first tie, wrap, or container applied to a single item or quantity thereof, or to a group of items of a single stock number, preserved or unpreserved, which constitutes a complete or identifiable package.

6.5 Detailed information. Supplemental information on packaging may be found in the following manuals:

DSAM4145.2, Vol. I, TM38-230-1, NAVSUP PUB 502, AFP 71-15, MCO P4030.31B, Preservation and Packaging (Volume I) (National Stock Number 0530-LP-050-2073).

DSAM4145.2, Vol. II, TM38-230-2, NAVSUP PUB 503, Vol. II, AFR 71-16, MCO P4030.21C, Packing (Volume II) (National Stock Number 0530-LP-050-3211).

DSAM4145.7, TM38-236, NAVSUP PUB 504, AFP 15-01-3, AFP 71-8, MCO P4030.30B, Preparation of Freight for Air Shipment (National Stock Number 0530-LP-050-4001).

DSAM4145.3, TM38-250, NAVSUP PUB 505, AFR 71-4, MCO P4030.19D, Preparation of Hazardous Materials for Military Air Shipment (National Stock Number 0530-LP-050-5007).

Military Standardization Handbook, MIL-HDBK-304, Package Cushioning Design.

(Copies of the listed documents may be obtained from the Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120 or from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.)

6.6 Subject term (key word listing).

Boxes
Caseliners
Containers
Cushioning
Marking
Packing
Palletization
Preservation
Wrapping

6.7 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue, due to the extensiveness of the changes.

Custodians:
Army - GL
Navy - SH

Review activities:
Army - SM
Navy - SA, YD
DLA - IS

User activity:
Navy - MC

Preparing activity:
Navy - SH
(Project PACK-0898)

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the comment number and revision letter should be given.

2. The submitter of this form must complete blocks 4, 5, 6, and 7.

3. The preparing activity must provide a reply within 30 days from receipt of this form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of 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.

I RECOMMEND A CHANGE:	1. DOCUMENT NUMBER MIL-C-3131F	2. DOCUMENT DATE (YYMMDD) 950106

3. DOCUMENT TITLE
CORDAGE; PACKAGING OF

4. NATURE OF CHANGE (identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME (Last, First, Middle Initial)	b. [illegible]
c. ADDRESS (Include Zip Code)	d. TELEPHONE (Include Area Code) (1) Commercial: (2) DSN: (If applicable)	7. DATE SUBMITTED (YYMMDD)

8. PREPARING ACTIVITY

a. NAME Technical Point of Contact (TPOC) MS. G. HALL, SEA 03M3 ADDRESS ALL CORRESPONDENCE AS FOLLOWS:	b. TELEPHONE (Include Area Code) (1) Commercial: DSN: TPOC: 703-602-0145 8-332-0145
c. ADDRESS (Include Zip Code) COMMANDER, NAVAL SEA SYSTEMS COMMAND ATTN: SEA 03R42 2531 JEFFERSON DAVIS HIGHWAY ARLINGTON, VA 22242-5160	IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403 Falls Church, VA 22041-3466 Telephone 703-756-2340 DSN 289-2340