

MIL-M-3184C  
3 April 1986  
 SUPERSEDING  
 MIL-M-3184B  
 3 November 1969  
 (See 6.7)

## MILITARY SPECIFICATION

### MACHINERY: DECK AND VEHICLE MOUNTED WITH ASSOCIATED EQUIPMENT AND PROVISIONED (REPAIR PARTS) ITEMS; 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 packaging (cleaning, drying, preservation, packing, and marking) requirements for machinery, such as capstans, davits, sliding padeyes, elevators, conveyors, cranes, hoists, stream transfer heads, ram tensioners, sliding blocks, sliding block drives, winches, windlasses, accessories, associated equipment, and provisioned (repair parts) items.

#### 2. APPLICABLE DOCUMENTS

##### 2.1 Government documents.

2.1.1 Specifications and standards. The following specifications and standards form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation.

#### SPECIFICATIONS

##### FEDERAL

- P-D-680 - Dry Cleaning Solvent.
- TT-P-664 - Primer, Coating, Synthetic, Rust-Inhibiting, Lacquer-Resisting.
- UU-P-268 - Paper, Kraft, Wrapping.
- PPP-B-566 - Boxes, Folding Paperboard.
- PPP-B-576 - Boxes, Wood, Cleated, Veneer, Paper Overlaid.
- PPP-B-585 - Boxes, Wood, Wirebound.

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 55Z3, Department of the Navy, Washington, DC 20362-5101 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

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## FEDERAL (Continued)

- 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 - Boxes, Shipping, Fiberboard.
- PPP-B-640 - Boxes, Fiberboard, Corrugated, Triple-Wall.
- PPP-B-665 - Boxes: Paperboard, Metal Edged and Components.
- PPP-B-676 - Boxes, Setup.
- PPP-B-1055 - Barrier Material, Waterproofed, Flexible.
- PPP-C-795 - Cushioning Material, Flexible, Cellular, Plastic Film For Packaging Applications.
- PPP-C-843 - Cushioning Material, Cellulosic.
- PPP-C-850 - Cushioning Material, Polystyrene, Expanded, Resilient (For Packaging Uses).
- PPP-C-1120 - Cushioning Material, Uncompressed Bound Fiber for Packaging.
- PPP-C-1752 - Cushioning Material, Packaging, Unicellular Polyethylene Foam, Flexible.
- PPP-C-1797 - Cushioning Material, Resilient, Low Density, Unicellular, Polypropylene Foam.
- PPP-F-320 - Fiberboard; Corrugated and Solid, Sheet Stock (Container Grade), and Cut Shapes.
- PPP-H-1581 - Hardware (Fasteners and Related Items), Packaging of.
- PPP-P-40 - Packaging, Packing, and Marking of Hand Tools.
- PPP-P-291 - Paperboard, Wrapping and Cushioning.
- PPP-T-60 - Tape: Packaging, Waterproof.

## MILITARY

- MIL-V-3 - Valves, Fittings, and Flanges (Except for Systems Indicated Herein); Packaging of.
- MIL-C-104 - Crates, Wood; Lumber and Plywood Sheathed, Nailed and Bolted.
- MIL-P-116 - Preservation, Methods of.
- MIL-B-121 - Barrier Material, Greaseproofed, Waterproofed, Flexible.
- MIL-P-149 - Plastic Coating Compound, Strippable (Hot Dipping).
- MIL-R-196 - Repair Parts, Accessories, and Kits, Mechanical; Packaging of.
- MIL-B-197 - Bearings, Anti-Friction, Associated Parts and Sub-Assemblies, Preparation for Delivery of.
- MIL-B-208 - Battery, Storage, Lead Acid, Automotive and Navy, Portable (Except Aircraft), Packaging and Packing of.
- MIL-B-233 - Boxes, Repair Parts, Storage.
- MIL-P-775 - Packaging of Hose, Hose Assemblies; Rubber, Plastic, Fabric, or Metal (Including Tubing); And Fittings, Nozzles, and Strainers.
- MIL-L-2105 - Lubricating Oil, Gear, Multipurpose.
- MIL-B-3106 - Board, Composition, Water-Resistant, Solid (For Filler or Cushioning Pads).
- MIL-H-3280 - Hoists, Chain, Manually Operated, Packaging of.

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- MIL-C-3580 - Crane and Crane-Shovels, Truck, Crawler, and Wheel Mounted, Full-Revolving, and Their Attachments, Packaging of.
- MIL-C-3774 - Crates, Wood; Open 12,000- and 16,000-Pound Capacity.
- MIL-B-3865 - Blocks, Rope, Tackle: Packaging of.
- MIL-P-4861 - Packing, Preformed, Rubber, Packing; Packaging of.
- MIL-R-5001 - Rubber Cellular Sheet, Molded and Hand Built Shapes; Latex Foam.
- MIL-C-5501 - Caps and Plugs, Protective, Dust and Moisture Seal, General Specification for.
- MIL-H-6083 - Hydraulic Fluid, Petroleum Base, For Preservation and Operation.
- MIL-R-6130 - Rubber, Cellular, Chemically Blown.
- MIL-I-8574 - Inhibitors, Corrosion, Volatile, Utilization of.
- MIL-C-9897 - Crates, Slotted Angle, Steel or Aluminum, for Lightweight Airframe Components and Bulky Item (For Maximum Loads of 3000 Pounds).
- MIL-E-10062 - Engine: Preparation for Shipment and Storage of.
- MIL-L-10547 - Liners, Case, and Sheet, Overwrap; Water-Vaporproof or Waterproof, Flexible.
- MIL-S-12134 - Synchros, Resolvers, and Servo Motors; Packaging of.
- MIL-V-13811 - Varnish, Waterproofing, Electrical, Ignition.
- MIL-E-16298 - Electric Machines Having Rotating Parts and Associated Repair Parts: Packaging of.
- MIL-P-16789 - Packaging of Pumps, Including Prime Movers and Associated Repair Parts.
- MIL-P-17286 - Propulsion and Auxiliary Steam Turbines and Gears (Including Repair Parts, Tools, Accessories and Instruments): Packaging of.
- MIL-C-17435 - Cushioning Material, Fibrous Glass.
- MIL-E-17555 - Electronic and Electrical Equipment, Accessories, and Provisioned Items (Repair Parts): Packaging of.
- MIL-P-17869 - Pumps and Motors, Power, Oil Hydraulic (Naval Shipboard Use).
- MIL-H-19457 - Hydraulic Fluid, Fire-Resistant, Non-Neurotoxic.
- MIL-R-20092 - Rubber Sheets and Molded Shapes, Cellular, Synthetic, Open Cell (Foamed Latex).
- MIL-L-21260 - Lubricating Oil, Internal Combustion Engine, Preservative And Break-In.
- MIL-B-22019 - Barrier Materials, Transparent, Flexible, Sealable, Volatile Corrosion Inhibitor Treated.
- MIL-B-22020 - Bags, Transparent, Flexible, Sealable, Volatile Corrosion Inhibitor Treated.
- MIL-B-22191 - Barrier Materials, Transparent, Flexible, Heat Sealable.
- MIL-E-23457 - Engines, Diesel, Marine Propulsion and Auxiliary, Medium Speed.
- MIL-I-24092 - Insulating Varnish, Electrical, Impregnating, Solvent Containing.
- MIL-A-25175 - Air Transport, Nontactical, Packing for.
- MIL-P-26514 - Polyurethane Foam, Rigid or Flexible, for Packaging.

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MILITARY (Continued)

- MIL-C-26861 - Cushioning Material, Resilient Type, General.
- MIL-C-52950 - Crates, Wood, Open and Covered.
- MIL-C-55442 - Cable Assemblies and Cord Assemblies, Packaging of.
- MIL-B-55521 - Batteries, Nonrechargeable, Packaging of.

STANDARDS

FEDERAL

- FED-STD-313 - Material Safety Data Sheets Preparation and the Submission of.

MILITARY

- MIL-STD-129 - Marking for Shipment and Storage.
- MIL-STD-147 - Palletized Unit Loads.
- MIL-STD-163 - Steel Mill Products Preparation for Shipment and Storage.
- MIL-STD-740 - Airborne and Structureborne Noise Measurements and Acceptance Criteria of Shipboard Equipment.
- MIL-STD-758 - Packaging Procedures for Submarine Repair Parts.
- MIL-STD-1186 - Cushioning, Anchoring, Bracing, Blocking, and Waterproofing; with Appropriate Test Methods.
- MIL-STD-1367 - Packaging, Handling, Storage, and Transportability Program Requirements (For Systems and Equipments).

2.1.2 Other Government documents. The following other Government documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issues shall be those in effect on the date of the solicitation.

DEPARTMENT OF LABOR

- Code of Federal Regulations, Title 29
- Part 1910, Section 145 and 1001 Asbestos - Occupational Safety and Health Standards.

(Application for copies should be addressed to the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.)

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

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted shall be those listed in the issue of the DoDISS specified in the solicitation. Unless otherwise specified, the issues of documents not listed in the DoDISS shall be the issue of the non-government documents which is current on the date of the solicitation.

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AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)  
MH15.1 - Glossary of Packaging Terms

(Application for copies should be addressed to the American National Standards Institute, 1430 Broadway, New York, NY 10018.)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)  
D 996 - Standard Terminology of Packaging and Distribution  
Environments.  
D 3951 - Standard Practice for Commercial Packaging.  
(DoD adopted)

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

(Nongovernment standards and other publications are normally available from the organizations which prepare or which distribute the documents. These documents also may be available in or through libraries or other informational services.)

3. REQUIREMENTS

3.1 Definitions or explanation of packaging terms. Definitions or explanation of packaging terms, applicable to this specification, shall be as stated in the applicable referenced specification and 6.4 herein. For definitions or explanation of packaging terms not specified therein, ANSI MH15.1 and ASTM D 996 shall apply.

3.2 Order of precedence. When an equipment or item is acquisitioned in conformance to 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.

3.3 First article. When specified in the contract or purchase order, a sample shall be subjected to first article inspection (see 4.4.1 and 6.3).

3.3.1 Dummy or simulated load. When specified (see 6.2.1), a dummy or simulated load may be used for rough handling tests (see 4.4.2). When a dummy or simulated load is substituted for the actual equipment or item in performing the rough handling tests, instrumentation of the pack is required for assurance that the acceleration of the packed item during the tests is less than the fragility rating of the item. The details of the instrumentation including location shall be included with the test results (see 4.4.3). Notification of tests shall be in accordance with the data ordering document (see 6.2.2).

3.4 Materials. The materials shall be as specified herein.

3.4.1 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

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collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. None of the above shall be interpreted to mean that the use of used or rebuilt products is allowed under this specification unless otherwise specifically specified.

3.4.2 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.

3.4.2.1 Certification of new materials. If the contractor desires to use materials or procedures other than those specified herein, he shall furnish to the contracting activity documented evidence in the form of a certificate of compliance (see 6.2.2), certified by a testing laboratory satisfactory to the contracting activity that the material or procedure is equal to or exceeds the requirements specified herein. If, after a review of the material or procedure and the related documented evidence, or the witnessing of the stipulated tests, it is the opinion of the contracting activity that the material or procedure meets or exceeds the requirements specified herein, authorization for use will be granted.

3.4.3 Asbestos. (See 6.5.)

3.4.3.1 Packaging materials. Asbestos or material and items containing asbestos shall not be used in the packaging of material or items covered by this specification (see 6.5).

3.4.3.2 Packaged items. Asbestos, and separately packaged components containing asbestos that is predominately distributed throughout the item, shall be packaged in sealed, dust and siftproof packages. Flexible packages shall be heat sealed. Packages shall be marked as specified (see 3.12.2.4).

3.4.3.3 Dusting material. Dusting material such as talc and talcum shall be asbestos free. A certificate of compliance (see 6.2.2), shall be furnished stating that the dusting material is asbestos-free.

3.4.4 Cushioning and wrapping materials (see 3.8.1.1.27). The use of excelsior, newspaper, shredded paper (all types) and similar hydroscopic or nonneutral materials and all types of loosefill materials for applications such as cushioning, filler, stuffing, and dunnage is prohibited. Materials selected for cushioning and wrapping shall have properties (characteristics) resistant to fire.

3.5 Technical data. Complete descriptive packaging details on drawings, test results, and packaging and transportation data requirements are not required when such were previously submitted and accepted by the contracting activity.

3.5.1 Data and drawings. When specified (see 6.2.1), the contractor shall prepare complete descriptive packaging details on drawings of the sample pack in accordance with the data ordering document included in the contract or order (see 6.2.2).

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3.5.1.1 Drawings. Information on the drawings shall include but not be limited to the following:

- (a) Method of preservation and applicable specification.
- (b) Level of preservation and packing.
- (c) Weight; net, tare and gross.
- (d) Dimensions; interior and overall exterior of the container.
- (e) Dimensional location of shock mounts, anchoring, blocking and bracing.
- (f) Bill of material listing specifications, material, type, class, grade or other data necessary for identification.
- (g) Assembly or disassembly instructions including special tools, if required.
- (h) Marking, including handling, structural markings, such as "use no hooks", "method II", center of gravity", and so forth.

3.5.2 Preservation and packing data. When specified (see 6.2.1), coded and in-the-clear preservation and packing data shall be in accordance with the data ordering document included in the contract or order (see 6.2.2).

3.5.3 Packaging, handling, storage and transportability plan (PHST). When specified (see 6.2.1), the system or equipment acquisition or program manager shall establish the PHST requirement. The plan, when required, shall be tailored for the applicable system or equipment acquisition in accordance with the requirements of MIL-STD-1367.

3.5.4 Material safety data sheet. For items containing a hazardous material, the contracting activity shall be provided a material safety data sheet (MSDS) at the time of contract award. The MSDS is DD form OSHA-20, found in and part of FED-STD-313. The MSDS shall be included with each shipment of the material covered by this specification.

### 3.6 Disassembly and matchmarking.

3.6.1 Disassembly. Equipment disassembly shall be the minimum necessary to make accessible for cleaning, drying, and preservation of equipment and its machined or critical surfaces. Removal of secondary assemblies, accessories, and projecting parts which will facilitate protection of the equipment from damage, pilferage, and loss, or reduction of cube is permitted where such removal will not affect permanent settings or alignments, and where the removed part can be readily assembled at the installation site without the need for special tools or gauges. Removed hardware (bolts, nuts, pins, screws, washers, and others) shall be reinstalled in the mating parts and secured to prevent their loss. Removed parts or items, other than hardware, shall be packaged to the same level of protection as the basic or prime equipment.

3.6.2 Matchmarking. Removed parts of the equipment shall be matchmarked to facilitate reassembly. Removed parts shall be tagged, marked, and tags attached to each mating item. The tags and printing thereon shall be resistant to water, oil, and fading.

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3.7 Painting and lubrication. Painted surfaces on which the paint is damaged or defective shall be cleaned and repainted with the original specified paint of the same quality and color. Rotating joints, bearings and similar moving items, and assembled units requiring lubrication for service shall be thoroughly lubricated with the required service lubricant. Excess lubricants shall be removed prior to packaging.

3.8 Levels of protection. (See 6.4.1).

3.8.1 Preservation. Preservation (unit pack) shall be level A, C or commercial as specified (see 6.2.1).

3.8.1.1 Level A. Unless otherwise specified herein, cleaning drying, and preservation shall be in accordance with MIL-P-116 and table I herein. Requirements as shown in table I are assigned by category; method and submethods of unit protection are assigned on the basis of the type of unit protection most commonly required for a specific category. Unless otherwise specified (see 6.2.1), the selection of the submethod under a particular method of unit protection is at the option of the contractor.

TABLE I. Preservation of associated equipment, accessories and provisioned items (repair parts).

Item	Unit protection method of MIL-P-116	Applicable type of preservative MIL-P-116		Special remarks
		Internal	External	
Absorber, shock spring	I	----	P-1, P-18	See 3.8.1.1.3
Actuator, hydraulic	I	P-15	P-2	See note 1
Battery: dry	---	----	----	Use MIL-B-55521 and see 3.11.1
storage	---	----	----	Use MIL-B-208 and see 3.11.1
parts, elements, and retainers	III	----	----	----
water-activated	1A-5	----	----	See 3.11.1
Bearing: anti-friction	---	----	----	Use MIL-B-197 and see 3.8.1.1.15
friction, sleeve: ferrous	I	P-2	P-2, P-18	See 3.8.1.1.3 and 3.8.1.1.15
impregnated (ferrous)	IC	None	None	----
non-ferrous	III	----	----	----
Belt, drive	III	----	----	See note 2
Block, rope, tackle	---	----	----	Use MIL-B-3865



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TABLE I. Preservation of associated equipment, accessories and provisioned items (repair parts). - Continued

Item	Unit protection method of MIL-P-116	Applicable type of preservative MIL-P-116		Special remarks
		Internal	External	
Cable, cord, and wire assemblies	---	----	----	Use MIL-C-55442
Cable, wire rope	---	----	----	Use MIL-STD-163
Chain, drive	I	----	----	See 3.8.1.1.6
Clutch:				----
non-ferrous	III	----	----	
ferrous (without lining)	IC	None	P-2, P-18	See 3.8.1.1.3
	IB	None	or type II, MIL-P-149	See note 3
ferrous (with linings)	IC	----	P-18	See 3.8.1.1.3 and 3.4.3
complete assembly	II	----	----	----
Collar, thrust or sleeve	I, IB	----	P-2, P-18, type II, MIL-P-149	See note 3 and 3.8.1.1.3
Cylinder, hydraulic	I	----	----	See 3.8.1.1.11.3
Electrical machines having rotating parts:				
(motor, generator, motor-generator, dynamotor, rotary converter, rotary inverter, rotary frequency charger, electrical engine starter and similar rotating equipment and associated repair parts)	---	----	----	Use MIL-E-16298
Electrical items, general	---	----	----	Use MIL-E-17555 and 3.8.1.1.19
Fittings	---	----	----	See 3.8.1.1.14
Flange	---	----	----	See 3.8.1.1.14
Gauge:				
fuel, oil and temperature-open	II	----	----	----
hermetically sealed	III	----	----	----
electrical	---	----	----	Use MIL-E-17555
measuring (dip-stick)	I	----	P-1, P-18, P-19	See 3.8.1.1.3

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TABLE I. Preservation of associated equipment, accessories and provisioned items (repair parts). - Continued

Item	Unit protection method of MIL-P-116	Applicable type of preservative MIL-P-116		Special remarks
		Internal	External	
Gasket: metal, ferrous	IC	----	P-2, P-18	See note 4 and 3.8.1.1.3
metal, non-ferrous	III	----	----	See note 4
combination metal and asbestos: ferrous	IC	----	P-18	See 3.8.1.1.3 and 3.4.3 and note 4
non-ferrous	III	----	----	See note 4 and 3.4.3
cork, felt, fiber, leather and paper	IC	----	None	See note 4
teflon, rubber, or neoprene	III	----	----	See notes 2 and 4
Gear	I	P-2	P-1, P-19	See 3.8.1.1.3
Gear box assembly	I	See note 1	P-1, P-19	See 3.8.1.1.3
Gear housing	I	P-2	P-1, P-19	See 3.8.1.1.3
Hardware, loose (nuts, keys, bolts, screws, rivets, washers, and others)	---	----	----	Use PPP-H-1581
Hook: block	---	----	----	Use MIL-C-3580
hoist chain	---	----	----	Use MIL-H-3280
Hose and hose fittings	---	----	----	Use MIL-P-775
Indicator, mechanical	I	P-2	P-2	----
Lever	I	----	P-1, P-18, P-19	See 3.8.1.1.3
Oil sight indicator	III	----	----	----
Packing, metallic (gland and diaphragm): ferrous	I, IC	----	P-2, P-18	See 3.8.1.1.3 and note 4
non-ferrous	III	----	----	See 3.4.3
Preformed O-ring	---	----	----	Use MIL-P-4861
Pump: hydraulic	I	P-15	P-2	See 3.8.1.1.11
other than hydraulic	---	----	----	Use MIL-P-16789

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TABLE I. Preservation of associated equipment, accessories and provisioned items (repair parts). - Continued

Item	Unit protection method of MIL-P-116	Applicable type of preservative MIL-P-116		Special remarks
		Internal	External	
Seal: oil (leather, rubber) strips	IC I	----	---- P-2, P-6 P-18	See note 4 See 3.8.1.1.3
Sealing ring: ferrous	I, IC	----	P-2, P-6 P-18, P-19	See note 4 and 3.8.1.1.3
non-ferrous Sheaves	III I, IC	----	---- P-1, P-18 P-19	See 3.8.1.1.3
Spring: flat (packing) garter (packing) coil	IC IC I, IC	None None ----	None None P-1, P-18 P-19	---- ---- See 3.8.1.1.3
Strainer, oil (cartridge) Shaft	III I, IC, IB	---- P-2	---- P-2, P-19 or type II, MIL-P-149	---- See note 3 and 3.8.1.1.3
Synchros, resolvers and servo motors	---	----	----	Use MIL-S-12134
Tools: hand special	---- ----	---- ----	---- ----	Use PPP-P-40 See 3.8.1.1.22
Valves	----	----	----	See 3.8.1.1.14
Worm, worm gears and wheels	I, IC or IB	----	P-2, P-18 P-19, type II, MIL-P-149	See note 3 and 3.8.1.1.3

## NOTES:

1. Unless otherwise specified (see 6.2.1), the item shall be preserved with the operating fluid specified in the equipment specification, or as approved by the contracting activity.
2. Rubber items when unit packed in multiples shall be dusted with talc or talcum powder (see 3.4.3.3).
3. Unless otherwise specified (see 6.2.1), preservative compounds shall not be required on method IB or II.
4. Provide protection against deformation.

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3.8.1.1.1 Cleaning and drying. All units, assemblies, and parts shall be cleaned and dried in accordance with the processes and procedures of MIL-P-116.

3.8.1.1.2 Preservatives. Preservative specified herein and identified by "P" numbers shall conform to the applicable specifications listed in MIL-P-116.

3.8.1.1.3 Application of preservation. Immediately after cleaning and drying, product surfaces subject to corrosion shall be treated with preservative, in accordance with table I herein. During and after preservative application, the product shall be handled in such a manner as to produce a uniform and homogeneous film. Type P-1 and P-19 protective films shall remain untouched, to allow the film to set before undertaking wrapping or packing operations. Preservative conforming to type P-1 and P-19 shall be limited to areas or surfaces where the preservative would not normally have to be removed prior to placing the equipment in operation, or where preservative removal by scraping or solvent action would not damage the part or equipment. When a volatile corrosion inhibitor (VCI) is selected (see table I, column 4, P-18), its use shall be in accordance with MIL-I-8574. Transparent, flexible, sealable, VCI-treated films or bags may be used and shall conform to MIL-B-22019 or MIL-B-22020, respectively. When items are unit-protected with VCI-treated materials, in addition to the markings required by the material specification, the unit pack shall have a caution label or marking as follows:

"WASH HANDS AFTER HANDLING VCI MATERIALS  
TO AVOID IRRITATION OF EYES AND SKIN."

3.8.1.1.3.1 Threaded and other unpainted non-critical metal surfaces. Unless otherwise specified (see 6.2.1), threaded and other unpainted noncritical corrodible metal surfaces shall be coated with preservative type P-2 and shall be wrapped or covered, as specified in 3.8.1.1.3.2.

3.8.1.1.3.2 Machined exterior surfaces. Machined exterior surfaces shall be coated with type P-2 preservative and shall be wrapped or covered with greaseproof barrier material conforming to type I, grade A of MIL-B-121. When components are packed in unsheathed crates (see 3.8.2.1.1), the following additional wrappings shall be applied:

3.8.1.1.3.2.1 Irregular surfaces. Preserved surfaces of irregular contour shall be wrapped or covered with greaseproof barrier material conforming to type I, grade A of MIL-B-121. All edges of the wrapped surfaces shall be sealed with pressure-sensitive tape conforming to class III of PPP-T-60.

3.8.1.1.3.2.2 Regular surfaces. Surfaces of regular contour, such as exposed areas of shafts or flat machined faces, shall be wrapped or covered with a non-bleeding waterproof barrier material conforming to class C-1 or C-2 of PPP-B-1055. All edges of the waterproof wrap shall be sealed with pressure-sensitive tape, conforming to class III of PPP-T-60.

3.8.1.1.4 Preservative protection. All equipment surfaces which are preserved shall be protected from direct contact with any blocking, dunnage, and shrouding by inserting one or more layers of barrier material conforming to type I, grade A of MIL-B-121, at points of contact.

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3.8.1.1.5 Sealing of openings. Small openings shall be sealed with tape conforming to class III of PPP-T-60. Large openings shall be covered with water-proof paper, conforming to class E-2 or L-4 of PPP-B-1055, and secured with tape, as specified herein. When openings are covered and the covering is vulnerable to puncture, the covering shall be further protected by hardboard, wood, plywood, or metal covers. The open ends of all piping and fittings shall be sealed with plastic plugs or caps conforming to MIL-C-5501.

3.8.1.1.6 Drive chains.

3.8.1.1.6.1 Exposed chains. Exposed chains shall be coated with type P-3 preservative assuring penetration of the preservative to the inner surfaces of the rollers, pins, and bushings. After the excess preservative has been drained, the chain shall be coated with type P-1 preservative. Chains removed from the equipment shall be preserved as specified herein and coiled and individually wrapped with greaseproof barrier material conforming to type I, grade A, class 2 of MIL-B-121, and secured with waterproof pressure-sensitive adhesive tape conforming to class III of PPP-T-60.

3.8.1.1.6.2 Enclosed chains. Enclosed chains and chain housings shall be preserved as specified for enclosed gears.

3.8.1.1.7 Gears.

3.8.1.1.7.1 Exposed gears. Exposed gears shall be coated with type P-1 or P-19 preservative.

3.8.1.1.7.2 Enclosed gears and gear housings.

3.8.1.1.7.2.1 Lubricant; engine operating oil. After cleaning, the gear housing shall be filled to the operating level with P-10 grade 10W or grade 30, preservative as applicable. The gears shall be actuated to insure coating of all interior parts and surfaces with preservative. The unit shall be tagged with the following marking indicated: "This housing is filled with preservative oil and is good for operation until the first required lubricant change."

3.8.1.1.7.2.2 Lubricant other than engine operating oil. Internal gears lubricated from within their own housing shall be cleaned by flushing or slushing with petroleum solvent, conforming to P-D-680. (Note: The unit shall not be operated while the cleaning solution is in the housing.) The housing shall be filled to the proper level with the applicable grade of lubricant, conforming to MIL-L-2105, and operated without load for a sufficient length of time, to insure coverage of all surfaces within the housing.

3.8.1.1.7.3 Gear housing closures. The gear housing drain and filler plugs shall be coated with type P-1 or P-19 preservative, before being replaced and tightened. Closure of openings into gear housings shall be in accordance with 3.8.1.1.5. Levers and controls shall be secured, to prevent movement that would change the seal at the point of entrance into the housing.

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3.8.1.1.8 Clutches (not components of internal combustion engines).

3.8.1.1.8.1 Disk brake and shoe type. Clutch collars, pins, all metal clutch facings, and similar metal surfaces, shall be coated with primer conforming to type 1 of TT-P-664. Care shall be taken to insure that the primer does not come into contact with composition facings. Brakes or clutches having all metal contact facings shall be set in the engaged position. Composition disk-type clutches shall be blocked to a partially engaged position to eliminate contact between facing and pressure plate. The clutch shall not be blocked entirely open, since prolonged complete depression of clutch springs may cause a loss of elasticity in the springs. Snap-over center and toggle-in type clutches shall be completely disengaged.

3.8.1.1.8.2 Jaw type. Clutch jaws, shifter yoke and machined surfaces of shafts shall be thoroughly coated with P-1, P-2, or P-19 preservative, as applicable (see 3.8.1.1.3).

3.8.1.1.8.3 Clutch housings. Drain plugs, when provided, shall be removed from dry type housings. The drain plugs shall be identified and attached (see 3.6) to the clutch control lever or some other conspicuous part of the clutch control mechanism. Threads of plugs and housing openings shall be coated with type P-1 or P-19 preservative. Clutch inspection plates and other openings shall be sealed as specified in 3.8.1.1.5. Levers and controls shall be secured to prevent movement that would damage the tape seal at points of entrance into the clutch housing.

3.8.1.1.8.4 External adjusting mechanisms. External adjusting mechanisms, such as gearshift transfer couplings or brake couplings, shall be thoroughly coated with type P-1 or P-19 preservative where removal of the preservative is not required for operation. Where removal of preservative is required or a grease type preservative is necessary, type P-11 preservative shall be used.

3.8.1.1.9 Brakes. Brakes shall be preserved as specified in 3.8.1.1.8.1.

3.8.1.1.10 Pumps. Except as specified in 3.8.1.1.11, pumps and associated equipment shall be preserved level A, in accordance with MIL-P-16789.

3.8.1.1.11 Hydraulic equipment and systems.

3.8.1.1.11.1 Pumps and motors. Unless otherwise specified in the applicable equipment specification, hydraulic pumps and motors intended for use with petroleum base fluids shall be preserved in accordance with MIL-P-17689, using preservative conforming to MIL-H-6083. Hydraulic pumps and motors intended for use with phosphate ester type fluids shall be preserved with preservative, conforming to MIL-H-19457. Threaded openings shall be closed with gasketed flat plates, providing seal integrity equal to the item stating the following information: "The interior of this item is coated with corrosion preventative compound (brand name and type or MIL-Spec Number), manufactured by (name of company). It was installed on (date) and should be replaced 1 year from date if still in storage."

3.8.1.1.11.1.1 Army only. Unless otherwise specified (see 6.2.1), reservoirs of hydraulic pumps and motors shall be filled to the operating level in accordance with MIL-P-17869.

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3.8.1.1.11.2 Valves, controls, accumulators, filter bodies, coolers and other hydraulic components. Hydraulic components shall be preserved as specified for pumps and motors (see 3.8.1.1.11.1).

3.8.1.1.11.3 Cylinders. Installed hydraulic cylinders, where practicable, shall be shipped in the extreme retracted position. Exposed, unpainted surfaces, which are not faying or friction surfaces, shall be preserved with type P-1 or P-19 preservative. Rod end bushings or bearings shall be lubricated to capacity with the applicable operating compound, or preserved with type P-11 preservative. Internal surfaces of the cylinder shall be coated as specified in 3.8.1.1.11.1. Closures shall be as specified in 3.8.1.1.5. Removed or partially disconnected cylinders shall have the piston secured, to prevent movement that would disrupt the preservative compound coating and damage the disconnected ends.

3.8.1.1.11.4 Sealed hydraulic transmissions. Sealed hydraulic transmissions shall be preserved with the fluid specified in the applicable equipment specification or preservative type P-15, as approved by the contracting agency. Electrical connections and components shall be preserved in accordance with 3.8.1.1.19.

3.8.1.1.11.5 Piping, tubing, and reservoirs. External unpainted ferrous surfaces of hydraulic oil piping, tubing and reservoirs shall be coated with type P-1 or P-19 preservative. Interior surfaces shall be preserved as specified in 3.8.1.1.11.1. Closure of openings shall be as specified in 3.8.1.1.5.

3.8.1.1.12 Steam equipment and systems. Steam equipment shall be preserved in accordance with MIL-P-17286. Interior surfaces of steam lines shall be coated with type P-3 preservative. Alternatively, when "chemical boil-out" cannot be used for preservative removal or where removal of preservative by hot water or steam is desired, preservative P-21 shall be used.

3.8.1.1.13 Hose, tubing and strainers. Hose, rubber, plastic, fabric (including tubing), fittings, nozzles, and strainers shall be prepared for shipment in accordance with the applicable system procedure specified herein or in accordance with MIL-H-775, level A, whichever is applicable.

3.8.1.1.14 Valves, fittings, and flanges. Valves, fittings, and flanges shall be prepared for shipment in accordance with the applicable system procedure specified herein or in accordance with MIL-V-3, level A, whichever is applicable.

3.8.1.1.15 Bearings, journals, and journal boxes. Installed antifriction bearings or bearing parts which have not been treated with preservative in conjunction with other systems already covered herein, shall be lubricated to capacity with the lubricant specified in the applicable equipment specification.

3.8.1.1.16 Drive belts, pulleys, and sheaves. Drive belts shall be removed or released from tension. Pulley faces, grooves and sheave grooves shall be coated with a light coat of clear, air drying insulating compound conforming to MIL-I-24092 or MIL-V-13811. When drive belts are not removed for shipment, strips of grease-proof barrier material conforming to grade A of MIL-B-121 shall

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be placed between belts and pulleys after the insulation compound has dried. Belts or pulleys shall be provided with a tag stating: "Remove barrier material prior to use." The pulleys and belts shall not be rotated thereafter. When drive belts are removed for shipment, they shall be wrapped either individually or in sets and preserved in accordance with table I herein (see 3.4.3.3).

3.8.1.1.17 Engines, prime mover.

3.8.1.1.17.1 Navy (ships) only. Diesel engines shall be preserved for shipment in accordance with MIL-E-23457, method II.

3.8.1.1.17.2 Engines (other than aircraft). Unless otherwise specified (see 6.2.1), engines shall be preserved in accordance with MIL-E-10062, level A, method I, type II classification.

3.8.1.1.18 Engine repair parts. Unless otherwise specified (see 6.2.1), repair parts for engines shall be preserved for shipment in accordance with MIL-R-196 (see 3.8.1.1.20).

3.8.1.1.19 Electrical components.

3.8.1.1.19.1 Electrical components not detached from basic equipment. Electric motors or similar rotating electrical equipment shall be unit protected in accordance with MIL-E-16298 or the alternate procedure therein, as applicable. Except when specified in the equipment specification, miscellaneous meters, switches, power distribution panels and similar electrical devices which cannot be practically detached for separate packaging shall, unless otherwise specified (see 6.2.1), be cleaned, oiled and lubricated as required for service, and sealed as specified in 3.8.1.1.5. Glass faces of indicating devices shall be cushioned (see 3.4.4) to prevent breakage.

3.8.1.1.19.2 Electrical components detached from the basic unit. Electrical components such as motors, electrical brakes, control panels, regulators, and switches which are detached from the basic unit for shipment shall be preserved in accordance with MIL-E-17555 or MIL-E-16298, as applicable to the type component involved.

3.8.1.1.19.3 Electrical wiring. Exposed ends of wires, openings, sockets, coupling plugs or terminals shall be sealed with pressure sensitive tape conforming to class III of PPP-T-60. The tape and all electrical wiring, both shielded and nonshielded, shall be coated by spraying with a clear, air drying insulating compound conforming to MIL-I-24092 or MIL-V-13811. Care shall be taken not to contaminate conducting areas and mating parts.

3.8.1.1.20 Repair parts and tools (accompanying equipment or for stock). Unless otherwise specified herein, repair parts and tools shall be preserved in accordance with table I, MIL-E-17555, MIL-E-16298, PPP-P-40, MIL-P-17286, or MIL-R-196, as applicable. Unless otherwise specified (see 6.2.1), repair parts shall be one part per unit package, except that all parts comprising a single set or assembly shall be individually protected and unit packed together as a single unit.



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3.8.1.1.21 Submarine repair parts. Repair parts for submarine usage shall be packaged in accordance with MIL-STD-758.

3.8.1.1.22 Special tools. Special tools shall be cleaned and preserved, in accordance with MIL-P-116 as follows:

- (a) Tools made of ferrous metal with non-critical surfaces shall be cleaned by process C-1, dried as required, coated with type P-2 or P-18 (see 3.8.1.1.3) preservative, and unit protected as in method I of MIL-P-116. In lieu of the greaseproof wrap required for P-2 preservative, tools may be wrapped in transparent, flexible, greaseproof film conforming to type II of MIL-B-22191.
- (b) Tools made of ferrous metal with critical surfaces shall be cleaned by process C-5, dried as required, coated with type P-9 preservative, and packaged as in method IC of MIL-P-116. Selection of the submethod of preservation shall be at the contractor's option. Transparent flexible greaseproof film, conforming to type II of MIL-B-22191, may be used in lieu of wrapping material, conforming to MIL-B-121, for a preliminary wrap.
- (c) Tools fabricated completely of non-ferrous materials or ferrous materials that are plated or otherwise treated, to resist corrosion, shall be unit protected by method III of MIL-P-116.

3.8.1.1.23 Unit containers. Unless otherwise specified (see 6.2.1), unit containers, except those specified in MIL-P-116 for the applicable method or submethod of preservation, shall conform to any one the following specifications, at the contractor's option, which will provide the required protection. Paperboard and fiberboard boxes shall be of the weather-resistant type, class or grade.

<u>Specification</u>	<u>Container</u>
PPP-B-566	Box, paperboard, folding
PPP-B-636	Box, fiberboard
PPP-B-665	Box, paperboard, metal-stayed
PPP-B-676	Box, paperboard, setup

Sealing and closure, as applicable, of unit containers shall conform to the applicable container specification or appendix thereto, and as specified herein. Closure of fiberboard boxes shall conform to method V. Bags may be used for packaging small parts by method III, when practicable. Bag closure shall be effected by heat-sealing, adhesives, or taping. Other type bag closure such as pressure-fit, zipper, and others, is acceptable for method III, provided that loss of contents will not result. Staples shall not be used. When the items exceed the weight limitations of the preceding unit containers, parts shall be packed directly into shipping containers for the level of packing specified (see 3.8.2).

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3.8.1.1.24 Intermediate containers. Unit quantities in an intermediate container shall be as specified (see 6.2.1). Intermediate containers shall be uniform in size and shape, and shall contain equal quantities in multiples of five, not exceeding 100 unit packs within the weight limitations specified herein. Unless otherwise specified (see 6.2.1), intermediate containers shall conform to any one of the following specifications, at the contractor's option, which will provide the required protection. Paperboard and fiberboard boxes shall be of the weather-resistant type, class or grade.

<u>Specification</u>	<u>Container</u>
PPP-B-566	Box, paperboard, folding
PPP-B-636	Box, fiberboard
PPP-B-665	Box, paperboard, metal-stayed
PPP-B-676	Box, paperboard, setup

Box closure shall conform to the applicable container specification or appendix thereto and as specified herein. Closure of fiberboard boxes shall be in accordance with method V. The gross weight of paperboard boxes shall not exceed 10 pounds. Unless otherwise specified (see 6.2.1), the gross weight of fiberboard boxes shall not exceed 20 pounds.

3.8.1.1.25 Repair parts boxes. Unless otherwise specified (see 6.2.1), repair parts boxes will not be required. When required, repair parts shall be packed in type M or type W repair parts boxes as specified (see 6.2.1), to MIL-B-233. The gross weight of parts shall not exceed 200 pounds in any one box. Where the combined weight of a set exceeds 200 pounds, such parts shall be grouped and packed in two or more boxes numbered consecutively to show the number of boxes in a complete set, except when an individual part exceeds 200 pounds, the part shall be individually packed in one repair parts box.

3.8.1.1.26 Index list of repair parts. An index list of repair parts shall be inserted in each shipping container containing repair parts accompanying the equipment or contracted for as a set or kit. The list shall be inserted in the index list support located on the interior side of the cover of the repair parts box or suitably placed on the inside of the box, for quick accessibility of the list. The list shall be placed in a transparent, waterproof plastic bag, minimum 4 mil thick. Closure shall be by heat sealing. The list shall give a complete itemized list of the contents of the container.

3.8.1.1.27 Cushioning materials (see 3.4, 3.8.2.1.3 and 6.5). Equipment or parts shall be cushioned, as required, to prevent damage to the item as determined by the criteria conforming to MIL-P-116, and to prevent puncture or tearing of the barrier materials utilized in packaging. Excessive use of cushioning within the unit pack shall be avoided since an unnecessary increase in tare weight and cube will result. The performance requirements conforming to MIL-P-116 shall be given consideration when determining the quantity of cushioning material actually required. Cushioning materials, used within the unit pack, shall conform to any of or combinations of the following specifications at the contractor's option which will provide the required protection:

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<u>Specification</u>	<u>Material</u>	<u>Special requirements</u>
UU-P-268	Paper, Kraft wrapping	For Navy, use type II grade C or D
PPP-P-291	Paperboard, wrapping and cushioning	
PP-F-320	Fiberboard	
PPP-C-795	Plastic film, flexible cellular	
PPP-C-843	Cellulosic	
PPP-C-850	Polystyrene expanded, resilient	For Navy, use grade SE
PPP-C-1120	Bound fiber	For Navy, use type II or IV, class C
PPP-C-1752	Polyethylene foam unicellular	
PPP-C-1797	Resilient, low density unicellular, polypropylene foam	
MIL-B-3106	Board, composition, water-resistant, solid	
MIL-R-5001	Rubber, latex foam	
MIL-R-6130	Rubber, cellular	For Navy, use grade A
MIL-C-17435	Fibrous glass	
MIL-R-20092	Rubber sheets and molded shapes, cellular, synthetic, open cell	For Navy, use class 5
MIL-P-26514	Polyurethane foam	
MIL-C-26861	Resilient type, general	
MIL-F-81334	Foam, plastic, flexible, open cell, polyester type, polyurethane	
MIL-F-87090	Foam, combustion retardant, for cushioning supply items aboard navy ships	

Additional types of cushioning materials may be used, provided they meet the requirements conforming to MIL-P-116.

3.8.1.2 Level C. Cleaning, drying, preservatives and methods of preservation (unit protection) shall be as specified for level A (see 3.8.1.1) except that unit containers (see 3.8.1.1.23) and intermediate containers (see 3.8.1.1.24) may be of the non-weather resistant domestic type, grade or class, with selection at the contractor's option.

3.8.1.3 Commercial. Commercial preservation shall be in accordance with ASTM D 3951.

3.8.2 Packing. Packing shall be level A, B, C or commercial as specified (see 6.2.1 and 6.4.1).

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3.8.2.1 General requirements.

3.8.2.1.1 Levels A, and B or C. Shipping containers shall be of a minimum weight and cube, consistent with the protection required. Containers listed herein shall not preclude the use of other containers not listed, provided they have been approved by the contracting activity (see 6.2.1). Packed detached components shall be included within the same container as the basic unit, except when minimum cube and tare weight are adversely affected they shall be packed separately. Unless specified (see 6.2.1), repair parts and tools shall be shipped separately and concurrently with the basic equipment. Wood, plywood, and wood cleated boxes used for the shipment of equipment, accessories, and others, exceeding 200 pounds gross weight shall be modified by the addition of skids, in accordance with PPP-B-601, PPP-B-621 or MIL-C-104. Crates shall be used for the shipment of individual items exceeding the weight limitations specified for wood or plywood type boxes. Open crates shall be used only for the shipment of items which are not readily susceptible to damage from outside forces and which are designed for outdoor installation and use which require only limited protection. Items shipped in open crates shall be shrouded with flexible waterproof barrier material, conforming to PPP-B-1055 or a reinforced plastic film, minimum 0.006 inch thickness. The multiple packing of items of different stock numbers will not be permitted in shipping containers, unless the items of each stock number are intermediate packed in fiberboard boxes, as specified in 3.8.2.2, for the level required. Upon approval of the contracting activity (see 6.2.1), weather resistant, triple-wall corrugated containers modified with reinforcing strength members and skidded, may be used for individual items weighing more than 200 pounds. This requirement is not applicable for level A packing applications (see table II and 3.8.2.1.1).

3.8.2.1.1.1 Clearance. Normally a minimum of 1-inch clearance is required between the container contents and the nearest framing member of the container sides, ends, and tops. Items which have fragile protrusions or items unit protected in a floating barrier bag (submethod IIa of MIL-P-116), require from 2 to 4 inches of clearances. Additional clearance may be required for shock mounted items. This clearance allows for distortion and vibration to which the container may be subjected during rough handling and transit.

3.8.2.1.2 Air shipments. Packing for air shipment shall be in accordance with MIL-A-25175.

3.8.2.1.3 Cushioning, anchoring, blocking, bracing, and waterproofing. Cushioning, anchoring, blocking, bracing, and waterproofing of container contents shall be in accordance with MIL-STD-1186, MIL-P-116, 3.4.4 herein, the applicable container specification and the appendix thereto (see 6.5).

3.8.2.1.4 Shipboard airborne and structureborne noise measurement controlled equipments. In addition to the preservation (see 3.8.1) and packing (see 3.8.2) requirements specified, equipments or accessories thereto which conform to MIL-STD-740 shall be shipped on mountings with captive features to provide shock protection conforming to MIL-STD-740.

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3.8.2.2 Basic equipment, accessories, repair parts and tools.

3.8.2.2.1 Levels A, B and C. Exterior (shipping and storage) containers shall conform to table II. Unless otherwise specified (see 6.2.1), the container selection under the level of packing specified, shall be at the contractor's option.

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TABLE II. Container selection.

Specification	Container	Packing application			Use criteria			
		Level A	Level B	Level C	Gross weight maximum (pounds)			
		(Style, type or class)			Under 100	100 to 200	200 to 1000	Over 1000
PPP-B-636	Box fiberboard	Not applicable	Weather resistant	Domestic	See note 1	See note 1	No	No
PPP-B-640	Fiberboard, corrugated, triple wall	Not applicable	Weather resistant	Non-weather resistant	Yes	Yes	See note 2	No
PPP-B-576	Wood, cleated veneer, paper overlaid	Not applicable	Class 2	Class 1	See note 3	Yes	See note 1	No
PPP-B-585	Box, wood, wirebound	Class 3	Class 2	Class 1	See note 3	Yes	See note 1	No
PPP-B-591	Wood, cleated fiberboard	Not applicable	Class 2	Class 1	See note 3	See note 1	See note 1	No
PPP-B-601	Wood, cleated, plywood	Overseas type	Overseas type	Domestic type	See note 3	Yes	See note 1	No
PPP-B-621	Wood, nailed and lock-corner	Class 2 overseas	Class 2 overseas	Class 1 domestic	See note 3	Yes	See note 1	No
MIL-C-9897	Slotted angle, steel or aluminum	Grade 1	Grade 2	Grade 2	See note 4	See note 4	Yes	Yes See note 1
MIL-C-3774	Wood, open, 12,000- and 16,000-pound capacity				See note 4	See note 4	See note 4	Yes See note 1

See notes at end of table.

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TABLE II. Container selection. - Continued

Specification	Container	Packing application			Use criteria			
		Level A	Level B	Level C	Gross weight maximum (pounds)			
		(Style, type or class)			Under 100	100 to 200	200 to 1000	Over 1000
MIL-C-104	Wood, lumber and plywood sheathed, nailed and bolted				See note 4	See note 4	See note 4	Yes See note 1
MIL-C-52950	Crate, wood, open and covered				See note 4	See note 4	Yes	Yes See note 1

## NOTES:

1. Maximum gross weight, container plus contents, shall not exceed the applicable requirements for style, type or class container selected for the applied degree of packing.
2. For weights greater than 200 pounds (see 3.8.2.1.7).
3. For weights under 100 pounds, container may be used, however, lighter weight, minimum cube and less expensive fiberboard containers should be given consideration for level B and level C shipments.
4. Not recommended for this weight category.

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3.8.2.2.1.1 Closures and caseliners.

3.8.2.2.1.1.1 Level A. Shipping containers shall be closed, strapped, banded, or reinforced in accordance with the applicable container specification or appendix thereto. Unless otherwise specified (see 6.2.1), shipping containers shall have caseliners conforming to MIL-L-10547. Waterproofing of products packed in crates shall be in accordance with the applicable crate specification and as specified herein. When containers are packed with products or interior packs meeting the following requirements, no caseliner will be required.

- (a) Items which are completely painted and have no unprotected critical surfaces.
- (b) Large items which are completely coated with paint or preservative type P-19, and where the critical interior surfaces are preserved.
- (c) Method IA and IC packages.
- (d) Method II packages when all materials exterior to the water-vapor barrier have water resistance equal to or exceeding the water resistance in accordance with PPP-B-636 fiberboard boxes, types V or W.
- (e) Intermediate packs (or unit packs when no intermediate pack is required) for which the container conforms to weather-resistant class in accordance with PPP-B-636, and is closed and sealed as specified in 3.8.2.1.1.

3.8.2.2.1.1.2 Level B. Shipping containers shall be closed, reinforced, or banded in accordance with the applicable container specification or appendix thereto except that fiberboard boxes in accordance with PPP-B-636 shall be closed, waterproofed, and reinforced in accordance with the requirements for method V of the appendix to the box specification. Waterproofing (caseliners) is not required for fiberboard boxes or containers with products or interior packs meeting the criteria specified in 3.8.2.1.1. The special permit as required in accordance with PPP-B-640 shall be furnished to the contracting activity, when the triple-wall, fiberboard box exceeds the size and weight limitations of the carrier's classification. Data on the triple-wall, fiberboard box proposed pack shall be furnished in accordance with the contract data requirements (see 3.5.1).

3.8.2.2.1.1.3 Level C. Shipping containers shall be closed, reinforced, or banded in accordance with the applicable container specification or appendix thereto, except that method I closure using pressure sensitive tape is applicable to boxes in accordance with PPP-B-636. Intermediate fiberboard boxes in accordance with PPP-B-636, closed, sealed, and banded as specified herein and used as shipping containers, need not be overpacked.

3.8.2.2.2 Commercial. Commercial packing shall be in accordance with ASTM D 3951.

3.8.2.2.3 Skids. When the weight of the shipping container exceeds 200 pounds gross weight or when the length and width is 48 by 24 inches or more and the weight exceeds 100 pounds, a minimum of two, 3 by 4 inch nominal wood skids, laid flat shall be applied in a manner and secured and which will support the items and facilitate the use of material handling equipment during transportation, storage and stowage.



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3.9 Palletized unit loads. When applicable (see 6.2.1), products packed as specified shall be palletized in accordance with MIL-STD-147.

3.10 Repair parts boxes. Repair parts boxes (see 3.8.1.1.25) shall require overpacking for shipment in accordance with the applicable degree of packing, as specified for the equipment acquisition.

3.11 Special instructions.

3.11.1 Batteries. Unless otherwise specified (see 6.2.1), all batteries shall be removed from the basic equipment and packaged and packed as specified in table I. The packing list shall indicate which container contains the batteries removed from the equipment.

3.11.2 Ram tensioner unit. Storage requirements for the ram tensioner unit requires vertical positioning on the base plate, to offset loading of the dynamic seals. For packing levels A, B and C in construction of the crate, the contractor shall provide one end of the crate (base end) so designed to permit the crate and contents to be stored in a vertical position, with no detrimental effect on the unit contained within.

3.11.3 Technical manuals. Technical manuals, which accompany shipments (see 3.12.2.5) shall be unit packed in a transparent waterproof plastic bag, minimum 4 mil thick. Closure shall be by heat sealing. Technical manuals shall not be placed within any flexible sealed barrier enclosing components. The copies of the manual shall be placed in the shipping container housing the main unit. Packing lists shall indicate which container contains the technical manuals and shall also state the approximate location therein. For ease of removeability, the location of the manual shall be such that it is readily accessible when the container is opened. Technical manuals, when shipped bulk quantities, shall not be individually wrapped, but shall be packed in accordance with the requirements of the applicable technical manual specification or packed in containers conforming to the requirements for level A, B, C or commercial, as specified (see 6.2.1).

3.11.4 Unpacking instructions. In addition to any special marking required (see 6.2.1), unpacking instructions shall be provided for complex equipment or systems and floating bag type packs. The instructions shall contain, but not be limited to, the following information:

"To unpack, remove the top and sides, leaving the unit resting on the bottom of the packing case. Remove the packing bolts that hold the unit on the base of the packing case and slip the unit off the base. In unpacking the item, the following precautions shall be observed to prevent possible damage:

- (a) Observe the arrows marked on the shipping container. These point to the cover which can be removed most readily.
- (b) Remove nails with a nail-puller only.
- (c) Remove screws with a screwdriver only.
- (d) Never pound or hammer the shipping container.
- (e) Keep all levers and crowbars away from the interior of the container."

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3.11.4.1 Placement of unpacking instructions. A set of these instructions shall be placed in a sealed, waterproof envelope prominently marked "UNPACKING INSTRUCTIONS" and firmly affixed to the outside of the shipping container in a protected location (preferably between the cleats on the end of the container, adjacent to the identification marking). If the instructions cover a set of equipment packed in multiple containers, the instructions shall be affixed to the number one container of the set or system.

3.11.5 Depreservation instructions. A set of instructions covering the depreservation of the equipment shall be furnished. Instructions shall show all information necessary for depreservation, such as, but not limited to: the addition of lubricants prior to operation, flushing of steam and hydraulic lines, removal of greasproof barrier from brakes, and the location of detached components. Instructions shall be packaged in a transparent waterproof plastic bag, minimum 4 mil thick. Closure shall be by heat sealing. The shipping container in which the instructions are packed shall be marked to so indicate.

### 3.12 Marking.

3.12.1 Standard markings. In addition to any special marking required (see 6.2.1) or herein, unit intermediate, and exterior shipping packs and palletized unit loads shall be marked in accordance with MIL-STD-129, markings for commercial preservation and packing shall be in accordance with ASTM D 3951.

#### 3.12.2 Special marking.

3.12.2.1 Method II. Method IIa packages shall have the following markings affixed adjacent to the specified method II markings: "STORE RIGHT SIDE UP - WARNING - SEE UNPACKING INSTRUCTIONS." When unpacking instructions are provided (see 3.11.4), shipping containers shall be stenciled as follows: "CAUTION - THIS EQUIPMENT MAY BE SERIOUSLY DAMAGED UNLESS UNPACKING INSTRUCTIONS ARE CAREFULLY FOLLOWED. UNPACKING INSTRUCTIONS ARE LOCATED (state where located)."

When practical, this marking shall be applied adjacent to the identification marking on the side of the container.

3.12.2.2 Ram tensioner. The ram tensioner container shall be marked with arrows and the following legend to indicate proper storage:

"FOR STORAGE, CONTAINER MUST BE IN A VERTICAL POSITION."

The location of the arrows and legend shall be in accordance with MIL-STD-129.

3.12.2.3 Structural marking. When applicable, structural markings "arrows, center-of-gravity, lift/sling points, etc." shall be in accordance with MIL-STD-129.

3.12.2.4 Asbestos items. An asbestos caution label shall be affixed to each interior (unit and intermediate) and exterior pack. The caution label shall conform to the OSHA Regulation, Part 1910, Section 145 and 1001 (yellow background with black letters). The caution label shall state the following:

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## "CAUTION

Contains Asbestos Fibers.  
Avoid Creating Dust.  
Breathing Asbestos Dust May  
Cause Serious Bodily Harm.

3.12.2.5 Technical manuals. Shipment of equipment which include technical data (3.11.3), shall have location of the information annotated on packing list. In addition, the shipping container housing the manuals shall be marked, "MANUALS ENCLOSED".

3.12.2.6 Noise measurement controlled equipments (see 3.8.2.1.4). Equipments conforming to MIL-STD-740 shall be stenciled in red on two sides and both ends with the following: "CRITICAL CLOSE TOLERANCE OPERATING EQUIPMENT. HANDLE WITH EXTREME CARE. DO NOT SUBJECT TO UNNECESSARY SHOCK OR JARS." The letters shall be a minimum 1-1/2 inches high, except, for small containers with insufficient space for this size letters, lettering shall be of such size as to be legible in normal handling. Structural markings (see 3.12.2.3) shall be applied.

3.13 Workmanship. Workmanship shall be such that, when the proper procedure is followed, materials and equipment being processed will be provided the required protection to prevent corrosion, deterioration, and damage during ship-service.

## 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.

4.1.1 Responsibility for compliance. All items must meet all requirements of sections 3 and 5. 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 assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.2 Classification. The inspection requirements specified herein are classified as follows:

- (a) First article inspection (see 4.4)
- (b) Quality conformance inspection (see 4.5).

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4.3 Inspection conditions. Unless otherwise specified (see 6.2.1), all inspections shall be performed in accordance with the test conditions specified in the applicable specification.

4.4 First article.

4.4.1 First article inspection. The contractor shall conduct inspection on one complete package, packed for shipment, to ascertain that the cleaning, drying, preservation, packing and marking of the items conform to this specification. The first article sample will not be required when such a pack has previously been inspected and accepted for the same method for an identical or similar item by the same contractor and satisfactory evidence can be furnished to the Government that the equipment or items have been prepared identically with the previously approved pack. First article inspection shall be repeated when changes are made in preservation and packing materials, processes, or design.

4.4.2 First article testing. When specified (see 3.3.1 and 6.2.1), a complete single item or equipment pack shall be subjected to the examination and tests in accordance with MIL-P-116, including rough handling tests. Method IC shall be tested for leakage in accordance with the hot water technique in accordance with MIL-P-116. Unless otherwise specified (see 6.2.1), cyclic exposure tests will not be required. Upon completion of the rough handling tests, the item shall be inspected, as applicable, in accordance with the initial acceptance limits of the item specification to determine freedom from operational malfunction.

4.4.3 Test results. Upon completion of first article testing when required, detailed test results (see 6.2.2) shall be prepared. Unless otherwise specified (see 6.2.1), the test report shall be in accordance with the contractor's format and shall contain as a minimum: subject including contract number; references as applicable; description and summary of each pack test; test sequences; interpretation of test results including failures and corrective actions taken on the package, contents, or both, as applicable; signatures and dates of tester, inspector and Government representatives.

4.4.4 First article test exceptions. First article testing will not be required when:

- (a) Commercial packaging is specified.
- (b) Detailed packing instructions are furnished by the contracting activity.
- (c) Previous submittal (see 4.4.1).

4.5 Quality conformance inspection.

4.5.1 Levels A and B.

4.5.1.1 Sampling. Sample items and packaging shall be selected in accordance with MIL-P-116 to determine compliance with section 3 herein.

4.5.1.2 Test and procedures. Tests of cleaning, preservation, interior packs, and packing procedures, shall be performed as specified in MIL-P-116.

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4.5.1.3 Examination. Samples selected in accordance with 4.5.1.1 shall be examined for the defects specified in table III for the applicable level.

TABLE III. Classification of defects.

Defects		Level of protection		
		A	B	C
<u>Critical</u>				
1	Items containing asbestos not packaged as specified (see 3.4.3.2).	X	X	X
<u>Major</u>				
101	First article sample not submitted for examination (see 3.3).	X	X	X
102	Materials not as specified (see 3.4).	X	X	X
103	Disassembly not as specified (see 3.6.1).	X	X	X
104	Removed hardware not reinstalled or secured to prevent loss (see 3.6.1).	X	X	X
105	Matchmarking and tags not provided (see 3.6.2).	X	X	X
106	Moving parts not properly lubricated (see 3.7).	X	X	X
107	Parts cleanliness do not meet specified requirement (see 3.8.1.1.1).	X	X	X
108	Improper application of preservatives (see 3.8.1.1.3).	X	X	X
109	Openings not properly closed (see 3.8.1.1.5).	X	X	X
110	Preserved surfaces not protected (see 3.8.1.1.4).	X	X	X
111	Gears not preserved or lubricated (see 3.8.1.1.7).	X	X	X
112	Clutches not coated with primer or not secured (see 3.8.1.1.8).	X	X	X
113	Hydraulic pumps not preserved as specified (see 3.8.1.1.11).	X	X	X
114	Material and methods of as shown in table I not properly applied.	X	X	X
115	Cylinders not placed in the retreated position (see 3.8.1.1.11.3).	X	X	X
116	Steam equipment not preserved as specified (see 3.8.1.1.12).	X	X	X
117	Hose and valves not processed as specified (see 3.8.1.1.13 and 3.8.1.1.14).	X	X	X
118	Bearing journals not lubricated as specified (see 3.8.1.1.15).	X	X	X
119	Drive belts not released from tension (see 3.8.1.1.16).	X	X	X
120	Unit and intermediate containers not of the weather resistant type or class (see 3.8.1.1.23 and 3.8.1.1.24).	X	X	X
121	Accessories not processed as specified (see 3.8.1.1.19 through 3.8.1.1.22).	X	X	X
122	Index list of repair parts missing or incorrect (see 3.8.1.1.26).	X	X	X
123	Noise measured equipment not mounted as specified (see 3.8.2.1.4).	X	X	X

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TABLE III. Classification of defects. - Continued

Defects		Level of protection		
		A	B	C
<u>Minor</u>				
201	Damaged or defective paint not corrected (see 3.7).	X	X	X
202	Excess lubricant not removed (see 3.7).	X	X	X

4.5.2 Commercial. Unless otherwise specified (see 6.2.1), sampling and inspection for commercial packaging shall be in accordance with the contractor's procedures.

## 5. PACKAGING

5.1 Not applicable to this specification.

## 6. NOTES

6.1 Intended use. The packaging requirements specified in this specification are intended to assure proper and safe delivery, storage, stowage, and transportation of equipment, accessories and supply support items for direct shipment to the Government activities; for material processed at a military activity; for a reference source in the preparation of section 5 of the commodity specifications; and for the preparation of packaging requirements in acquisitioning documents.

### 6.2 Ordering data.

6.2.1 Acquisition requirements. Acquisition documents should specify the following:

- (a) Title, number, and date of this specification.
- (b) When a first article sample is required (see 3.3).
- (c) When a dummy or simulated load may be used (see 3.3.1).
- (d) When drawings of the first article pack are required (see 3.5.1).
- (e) When preservation and packing data are required (see 3.5.2).
- (f) When packaging and transportation data required (see 3.5.3).
- (g) Level of preservation and packing required (see 3.8.1 and 3.8.2).
- (h) Selection of preservation submethod (see 3.8.1.1).
- (i) Preservation other than operating fluid (see note 1, table I).
- (j) Preservation compound when required with method IB or II (see note 3, table I).
- (k) Preservation other than P-2 required (see 3.8.1.1.3.1).
- (l) When reservoirs of hydraulic pumps and motors are not to be filled with approved operating fluid (see 3.8.1.1.11.1.1).
- (m) Method of preservation for engines other than specified (see 3.8.1.1.17.1).

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- (n) Preservation of engine repair parts, if other than specified (see 3.8.1.1.18).
- (o) Cleaning, oiling, and lubricating requirements for electrical components if other than specified (see 3.8.1.1.19.1).
- (p) Repair parts quantity per unit package if other than specified (see 3.8.1.1.20).
- (q) Unit containers other than as specified (see 3.8.1.1.23).
- (r) Quantity per intermediate container (see 3.8.1.1.24).
- (s) Intermediate container other than specified (see 3.8.1.1.24).
- (t) When gross weight of fiberboard boxes may exceed 20 pounds (see 3.8.1.1.24).
- (u) When repair parts boxes are required, and type (see 3.8.1.1.25).
- (v) Approval of non-listed containers (see 3.8.2.1.1).
- (w) When repair parts and tools are not to be shipped separately and concurrently with the basic equipment (see 3.8.2.1.1).
- (x) When triple-wall corrugated boxes, gross weight exceeding 200 pounds may be used (see 3.8.2.1.1).
- (y) When shipper container selection is other than contractor's option (see 3.8.2.2.1).
- (z) When caseliners shall not conform to MIL-L-10547 (see 3.8.2.2.1.1.1).
- (aa) When palletization is required (see 3.9).
- (bb) When batteries are not to be removed from equipment (see 3.11.1).
- (cc) Selection of packing levels for shipment of technical manuals in bulk quantities (see 3.11.3).
- (dd) Special marking required (see 3.11.4 and 3.12.1).
- (ee) When test conditions are other than specified (see 4.3).
- (ff) When a complete item or equipment first article pack is not to be subjected to examination and tests (see 4.4.2).
- (gg) When cyclic exposure tests are required (see 4.4.2).
- (hh) When the test report is in other than the contractor's format (see 4.4.3).
- (ii) When sampling and inspection for commercial packaging are other than specified (see 4.5.2).

6.2.2 Data requirements. When this specification is used in an acquisition and data are required to be delivered, the data requirements identified below shall be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved Contract Data Requirements List (CDRL), incorporated into the contract. When the provisions of DoD FAR Supplement, Part 27, Sub-Part 27.410-6 (DD Form 1423) are invoked and the DD Form 1423 is not used, the data specified below shall be delivered by the contractor in accordance with the contract or purchase order requirements. Deliverable data required by this specification are cited in the following paragraphs.

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<u>Paragraph no.</u>	<u>Data requirement title</u>	<u>Applicable DID no.</u>	<u>Option</u>
3.3.1	Notification of tests	DI-T-23731	----
3.4.2.1 and 3.4.3.3	Certificate of compliance	DI-E-2121	----
3.5.1	Drawings, engineering and associated lists	DI-E-7031	Level 2 for preliminary design - Level 3 for final drawings Design activity designation - Contractor Drawing number - Contractor Part list required Certification data sheets
3.5.2	Preservation and packing data	DI-L-7135	----
4.4.3	First article inspection report	DI-T-4902	----

(Data item descriptions related to this specification, and identified in section 6 will be approved and listed as such in DoD 5000.19L., Vol. II, AMSDL. Copies of data item descriptions required by the contractors in connection with specific acquisition functions should be obtained from the Naval Publications and Forms Center or as directed by the contracting officer.)

6.2.2.1 The data requirements of 6.2.2 and any task in sections 3, 4, or 5 of this specification required to be performed to meet a data requirement may be waived by the contracting/acquisition activity upon certification by the offeror that identical data were submitted by the offeror and accepted by the Government under a previous contract for identical item acquired to this specification. This does not apply to specific data which may be required for each contract regardless of whether an identical item has been supplied previously (for example, test reports).

6.3 First article inspection. Invitations for bids should provide that the Government reserves the right to waive the requirement for samples for first article inspection as to those bidders offering a product which has been previously acquired or tested by the Government, and that bidders offering such products, who wish to rely on such production or test, must furnish evidence with the bid that prior Government approval is presently appropriate for the pending contract.

6.4 Definitions or explanation of terms.

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



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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 world-wide 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.

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- (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 and supply terms.

6.4.2.1 Assembly. A number of parts or subassemblies or any combination thereof joined together to perform a specific function and capable of disassembly for example: pump - rotating element, fan assembly.

6.4.2.2 Critical items. Items meeting one or more of the following criteria:

- (a) Chemically critical. Items of such a nature that any degree of deterioration (in the form of rust, stain, scale, mold, fungi, or bacteria) when acted upon by oxygen, moisture, sunlight, living organisms, temperature, time, and other contaminants, will result in premature failure or malfunction of the item or equipment in which installed or to which the item is related.
- (b) Physically critical. Items having a surface finish of 63 micro-inches or less, and items requiring a high degree of cleanliness, free of contamination, special protection against shock, vibration, abrasion, or distortion.

6.4.2.3 Exterior pack. A container, bundle, or assembly which is sufficient by reason of 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.

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

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

6.4.2.6 Noncritical items. Items not meeting the criteria set forth for critical items.

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6.4.2.7 On board repair parts (OBRP). Assemblies, sub-assemblies, and parts carried on board a ship for maintenance and repair of shipboard equipment and components.

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

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

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

6.4.2.11 Repair parts. Those support items that are coded to be not repairable (for example, consumable items) (see MIL-STD-1561).

6.4.2.12 Spares. Those support items that are coded to be not repairable (for example, repairable items) (see MIL-STD-1561).

6.4.2.13 Support items. Items subordinate to, or associated with, an end item (for example, spares, repair parts, tools, test equipment, support equipment and sundry materials) and required to operate, service, repair, or overhaul an end item (see MIL-STD-1561).

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

6.5 Asbestos. It is the intent of the Government to eliminate the use of asbestos except in those cases that a suitable alternative material cannot be used to obtain the desired results. In those cases in which components or materials being packaged contain asbestos predominately in their make-up, such items are to be separately packaged and marked (see 3.4.3.1).

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

DSAM 4145.2, Vol. I, TM38-230-1, NAVSUP PUB 502, AFP 71-75, MCO P4030.31B, Preservation and Packaging of Material (Volume I) (National Stock Number 0715-010-0290).

DSAM 4145.2, Vol. II, TM38-230-2, NAVSUP PUB 503, Vol. II, AFR 71-16, MCO P4030.21C, Preservation Packaging and Packing of Military Supplies and Equipment (Volume II) (National Stock Number 0715-010-0280).

DSAM 4145.7, TM38-236, NAVSUP PUB 504, AFP 15-01-3, AFP 71-8, MCO P4030, 30B, Preparation of Freight for Air Shipment (National Stock Number 0715-010-0270).

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DSAM 4145.3, TM38-250, NAVSUP PUB 505, AFR 71-4, MCO P4030.19D, Preparation of Hazardous Materials for Military Air Shipment (National Stock Number 0715-010-0021).

Military standardization handbook, MIL-HDBK-304, Packaging Cushioning Design.

(Copies of the listed documents may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.)

6.7 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 changes.

Custodians:

Army - SM  
Navy - SH  
Air Force - 99

Preparing activity:

Navy - SH  
(Project PACK-N043)

Review activities:

Army - MI  
Navy - SA

User activities:

Army - ME, MC

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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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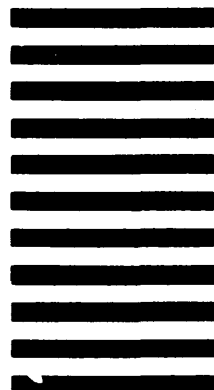
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## STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

*(See Instructions – Reverse Side)* ITEMS: PACKAGING OF

<b>1. DOCUMENT NUMBER</b> MIL-M-3184C	<b>2. DOCUMENT TITLE</b> EQUIPMENT AND PROVISIONED (REPAIR PARTS) MACHINERY: DECK AND VEHICLE MOUNTED WITH ASSOCIATED
<b>3a. NAME OF SUBMITTING ORGANIZATION</b>  	<b>4. TYPE OF ORGANIZATION (Mark one)</b> <input type="checkbox"/> VENDOR  <input type="checkbox"/> USER  <input type="checkbox"/> MANUFACTURER  <input type="checkbox"/> OTHER (Specify): _____
<b>5. PROBLEM AREAS</b> <b>a. Paragraph Number and Wording:</b>          <b>b. Recommended Wording:</b>          <b>c. Reason/Rationale for Recommendation:</b>          	
<b>6. REMARKS</b>          	
<b>7a. NAME OF SUBMITTER (Last, First, MI) – Optional</b>	<b>b. WORK TELEPHONE NUMBER (Include Area Code) – Optional</b>
<b>c. MAILING ADDRESS (Street, City, State, ZIP Code) – Optional</b>	<b>8. DATE OF SUBMISSION (YYMMDD)</b>