



Designation: ~~D3951-98~~ (Reapproved 2004) Designation: D3951 - 10

Standard Practice for Commercial Packaging¹

This standard is issued under the fixed designation D3951; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This practice establishes minimum requirements for packaging of supplies and equipment, exclusive of ammunition, explosives, or hazardous materials, as covered in Title 49 of the Code of Federal Regulations.

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1.2 The values stated in inch-pound units are to be regarded as standard. No other units of measurement are included in this standard.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

D996 Terminology of Packaging and Distribution Environments

D1974 Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes

~~D4169 Practice for Performance Testing of Shipping Containers and Systems~~ Practice for Performance Testing of Shipping Containers and Systems

D5118/D5118M Practice for Fabrication of Fiberboard Shipping Boxes

D5168 Practice for Fabrication and Closure of Triple-Wall Corrugated Fiberboard Containers

D5445 Practice for Pictorial Markings for Handling of Goods

D6039/D6039M Specification for Open and Covered Wood Crates

D6251/D6251M Specification for Wood-Cleated Panelboard Shipping Boxes

D6254/D6254M Specification for Wirebound Pallet-Type Wood Boxes

D6255/D6255M Specification for Steel or Aluminum Slotted Angle Crates

D6256/D6256M Specification for Wood-Cleated Shipping Boxes with Skidded, Load-Bearing Bases [/astm-d3951-10](#)

D6880 Specification for Wood Boxes

D7478/D7478M Specification for Heavy Duty Sheathed Wood Crates

2.2 Code of Federal Regulations:³

~~Title 49 Transportation (Parts 100 to 199)~~ Transportation (Parts 100 to 199)

2.3 Military and Federal Standards:⁴

MIL-STD-129 Military Marking for Shipment and Storage

MIL-STD-2073-1 Standard Practice for Military Packaging

FED-STD-123 Marking for Shipment (Civil Agencies)

2.4 International Standards:⁵

¹ This practice is under the jurisdiction of ASTM Committee D10 on Packaging and is the direct responsibility of Subcommittee D40.25 on Palletizing and Unitizing of Loads.

Current edition approved April 1, 2004. Published January 1999. Originally published as D3951-80. Last previous edition D3951-95. DOI: 10.1520/D3951-09 on Packaging and is the direct responsibility of Subcommittee D10.18 on Miscellaneous Packaging (Disbanded 8/2010).

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For Annual Book of ASTM Standards volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

⁴ Available from Document Automation and Production Service, Building 4/D, 700 Robbins Avenue, Philadelphia, PA 19111-5094, <http://assist.daps.dla.mil/quicksearch..>

⁵ Available from the International Plant Protection Convention at http://www.aphis.usda.gov/import_export/plants/plant_exports/wpm/index.shtml.

ISPM Publication No. 15 Regulation of Wood Packaging Material in International Trade (International Standards for Phytosanitary Measures (ISPM))

3. Terminology

3.1 Terminology found in Terminology D996 shall apply.

3.2 *Definitions of Terms Specific to This Standard:*

~~3.2.1 *safe delivery—in packaging*—delivery of a shipment to its destination with minimal damage to the package and no damage to the contents.~~

~~3.2.1 *CONUS*—Continental United States (excluding Hawaii and Alaska).~~

~~3.2.2 *immediate use*—used or consumed within seven days of receipt.~~

~~3.2.3 *safe delivery—in packaging*—delivery of a shipment to its destination with minimal damage to the package and no damage to the contents.~~

4. Significance and Use

~~4.1 This practice covers the requirements for the commercial preservation, packaging, packing unitization and marking for supplies and equipment. It includes the minimum requirements for physical and mechanical protection and provides for multiple handling, shipment by any mode, and storage periods for a minimum of 1 year in enclosed facilities without damage to the product. It also provides for package quantities suitable for redistribution without additional repackaging or marking.~~

~~4.1 This practice covers the requirements for the commercial preservation, packaging, packing (exterior container), unitization, and marking for supplies and equipment. It provides for multiple handling and shipment by any mode, and storage periods of a minimum of one year in enclosed facilities without damage to the product. It also provides for package quantities suitable for redistribution without additional repackaging or marking. Planned storage that exceeds one year requires more than minimum requirements for physical and mechanical protection.~~

~~4.2 This practice is applicable to Department of Defense shipments for:~~

~~4.2.1 Items intended for immediate use;~~

~~4.2.2 Items for not-mission-capable supply;~~

~~4.2.3 Items intended for depot operational consumption;~~

~~4.2.4 Small parcel shipments (CONUS), not-for-stock; and~~

~~4.2.5 Direct vendor deliveries (CONUS ONLY).~~

~~4.3 All other Department of Defense shipments shall be in accordance with MIL-STD-2073-1.~~

5. Requirements

5.1 *General*—The following requirements, unless specifically changed by the contract or order, shall apply. Suppliers are encouraged to use advanced packaging technology.

5.1.1 *Packaging*—Preservation, packaging, packing, and marking furnished by the suppliers shall meet or exceed the following minimum requirements:

5.1.1.1 *Cleanliness*—Items shall be free of dirt and other contaminants which would contribute to deterioration of the item or which would require cleaning by the customer prior to use. Coatings and preservatives applied to the item for protection are not considered contaminants.

5.1.1.2 *Preservation*—Items susceptible to corrosion or deterioration shall be provided protection such as preservative coatings, barrier protection, volatile corrosion inhibitors, or desiccated unit packs.

5.1.1.3 *Cushioning*—Items requiring protection from physical and mechanical damage or which are fragile shall be protected by wrapping, cushioning, pack compartmentization, cartonizing, or other means to mitigate shock and vibration to prevent damage during handling and shipment.

5.1.1.4 *Loose-fill Cushioning/Dunnage* —Loose-fill material shall be prohibited for all Department of Defense (DoD) and/or General Services Administration (GSA) shipments and shipments to aerospace facilities.

5.1.2 *Unit Package:*

5.1.2.1 *Unit Package*— A unit package shall be so designed and constructed that it will contain the contents with no damage to them, and with minimal damage to the unit pack during shipment and storage in the shipping container configuration, and will allow subsequent handling.

5.1.2.2 *Unit Package Quantity*—~~Unless otherwise specified, the unit package quantity shall be one each part, set, or assembly. Excepted are small lightweight items, for example, industrial hardware, which will be unit packaged in quantities that are standard in the trade and suitable for retail sales. Bulk packaging is specifically excluded unless specified in the contract or order.~~—Unless otherwise specified in the contract or purchase order, the unit package quantity shall be one each part, set, or assembly, except for small lightweight items, for example, industrial hardware, which will be unit packaged in quantities that are standard in the trade and suitable for retail sales. Single items weighing over 5 lb shall be individually packaged.

5.1.2.3 Bulk packaging shall be specifically excluded unless specified in the contract or purchase order.

5.1.3 *Intermediate Package:*

5.1.3.1 The use of intermediate packaging is encouraged particularly when such use enhances handling and ~~inventorying~~ storage.