



Designation: D3951 – 98 (Reapproved 2004)

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.

1.2 *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

D4169 Practice for Performance Testing of Shipping Containers and Systems

2.2 *Code of Federal Regulations:*

Title 49 Transportation (Parts 100 to 199)³

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.

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.

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, 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.

5.1.2 *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, 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.

5.1.3 *Intermediate Package:*

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

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

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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.