Designation: D6573/D6573M – 13 (Reapproved 2020)

Standard Specification for General Purpose Wirebound Shipping Boxes[1]

This standard is issued under the fixed designation D6573/D6573M; 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.

1. Scope

1.1 This specification covers the fabrication of new wirebound general purpose (GP) panelboard (hereafter referred to as wirebound boxes) shipping boxes intended for use as containers for domestic and overseas shipment of general materials and supplies, not exceeding 500 lb [226.8 kg] for Class 1 domestic, 400 lb [181.4 kg] for Class 2 overseas shipments or 300 lb [136.0 kg] for Class 3 extreme distribution hazard conditions or military contingency purposes.

1.2 Wirebound box performance is dependent on its fabricated components; therefore, a variety of types of load, classes, styles, and treatments reflecting varied performance are specified. This specification does not cover wirebound box performance under all atmosphere, handling, shipping, and storage conditions. Wirebound boxes in compliance with Hazardous Material Modal Regulations or United States Code of Federal Regulations (CFRs) are found in the Supplementary Requirements.

1.3 The use of other construction methods or techniques are acceptable and shall be permitted, provided the resulting packaging systems are of equal or better performance than would result from the use of these specified materials and procedures. The appropriate Practice D4169 distribution cycle(s) can be used to develop comparative procedures and criteria.

1.4 *Units*—The values stated in inch-pound units are to be regarded as standard. The SI values given in brackets are mathematical. The values stated in each system are not exact equivalents; therefore, each system must be used independently of the other. Combining values from the two systems may result in non-conformance with the standard. See IEEE/ASTM SI 10 for conversion of units.

1.5 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

A641/A641M Specification for Zinc–Coated (Galvanized) Carbon Steel Wire

D996 Terminology of Packaging and Distribution Environments

D3951 Practice for Commercial Packaging

D3953 Specification for Strapping, Flat Steel and Seals

D4169 Practice for Performance Testing of Shipping Containers and Systems

D4442 Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials

D4444 Test Method for Laboratory Standardization and Calibration of Hand-Held Moisture Meters

D6199 Practice for Quality of Wood Members of Containers and Pallets

D6253 Practice for Treatment and/or Marking of Wood Packaging Materials

D6254/D6254M Specification for Wirebound Pallet-Type Wood Boxes

F1667 Specification for Driven Fasteners: Nails, Spikes, and Staples

IEEE/ASTM SI 10 Standard for Use of the International System of Units (SI) (the Modern Metric System)

2.2 *Code of Federal Regulations:*[3]

CFR Parts 107–180, Title 49 Hazardous Materials Regulations

[1] This specification is under the jurisdiction of ASTM Committee D10 on Packaging and is the direct responsibility of Subcommittee D10.12 on Shipping Containers, Crates, Pallets, Skids and Related Structures.

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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 U.S. Government Printing Office, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401, www.access.gpo.gov.

2.3 *Federal Standard:*
Fed-Std-123 Federal Standard Marking for Shipment (Civil Agencies)[4]

2.4 *Military Handbook:*
MIL-HDBK-129 Department of Defense Handbook Military Marking[5]

2.5 *National Motor Freight Traffic Association Standard:*
National Motor Freight Classification[6]

2.6 *ANSI Standard:*
ANSI/ASQC Q91-1987 Quality Systems-Model for Quality Assurance and Design/Development, Production, Installation, and Servicing[7]

2.7 *Hardwood Plywood and Veneer Association Standard:*[8]
ANSI/HPVA HP-1-2004 American National Standard for Hardwood and Decorative Plywood

2.8 *National Institute of Standards and Technology (NIST) Standard:*[9]
PS 1-07 Structural Plywood
PS 20-05 American Softwood Lumber Standard

2.9 *International Standard:*[10]
International Standards for Phytosanitary Measures Publication No. 15 (ISPM 15) Regulation of Wood Packaging Material in International Trade

3. Terminology

3.1 *Definitions*—General definitions for packaging and distribution environments are found in Terminology D996.

3.2 *Definitions of Terms Specific to This Standard:* The wood box components discussed herein were selected on the basis of part function. Alternate names are sometimes used by the wood packaging industry and end-users.

3.2.1 *batten*—lumber reinforcement nailed or stapled to the end faceboards together to create rigidity.

3.2.2 *binding wire*—round steel wire stapled to the faceboards which ends in a loop, the prong of which is firmly anchored in a board or twisted to form a loop.

3.2.3 *cleat*—lumber pieces which form the wirebound box framework and to which the faceboards are stapled.

3.2.4 *end*—composed of faceboard to which liners, battens, or both are attached forming a subassembly.

3.2.5 *faceboard*—sheating materials used for the container faces (top, bottom, sides, and ends).

3.2.6 *liner*—thin wood board staples to the end to reinforce the end faceboard.

3.2.7 *lumber*—manufactured wood product derived from a log through sawing or planing.

3.2.8 *plywood*—panel built up of sheers of veneer called plies, united under pressure by a bonding agent to create a panel with an adhesive bond between plies.

3.2.9 *staple*—U-shaped piece of wire with pointed ends, driven astride the binding wires in fabricating the blank or attaching boards to battens.

3.2.10 *veneer*—thin layer or sheet of wood.

4. Classification

4.1 *Type of Load:*

4.1.1 *Type 1*—Easy load, one interior container that supports the top, bottom, and sides of the outer wirebound shipping box. Articles of moderate density packed in and completely filling one and only one interior box, which, in turn, completely fills and supports all the faces of the outer shipping box into which it is packed. As examples, canned and boxed articles, which are repacked in a fiberboard box which completely fills the outer shipping box. A single article of moderate density which contacts and completely supports all the faces of the shipping box and has sufficient strength, even though not boxed, to withstand the forces encountered in transportation and handling, but required the protection of the box to prevent scratching or marring. As examples, wood or metal chests, tool kits, and boxed sturdy instruments packed one in a shipping box.

4.1.2 *Type 2*—Average load, interior or intermediate containers that support and fill the voids of outer wirebound container. Contents are moderately concentrated articles, which may either be packed directly into the outer shipping box or subject to an intermediate stage of packing, such as wrapping or packing in interior boxes, or protected by other types of suitable interior intermediate stage of packing, such as wrapping or packing in interior boxes, or protected by other types of suitable interior packing. The contents or interior packing provide support for all the faces of the shipping box. As examples, goods in metal cans, which are packed in an inner container, bottles individually cushioned, hardware in cartons.

4.1.3 *Type 3*—Difficult load, interior contents that require a high degree of protection. Interior contents will not support outer wirebound shipping container top, bottom, or sides. Contents are articles, which are highly concentrated, required a high degree of protection, or do not support the faces of the shipping box. As examples, wrenches, long bolts, and rods, which can exert highly concentrated forces on faces of shipping box. Rivets, drop forgings, and bulk hardware which are packed loosely and according to no definite pattern and apply force on all faces of the shipping box, fragile articles and delicate instruments, which require special protection, valves, fittings, and machine parts which do not completely fill the shipping box.

4.2 *Class:*

4.2.1 *Class 1*—Domestic shipments capable of passing Practice D4169, distribution Cycle 1 testing as a minimum, with no maritime shipment testing required.

[4] Available from ASSIST Quicksearch, assist.daps.dla.mil/quicksearch.
[5] Available from ASSIST Quicksearch, assist.daps.dla.mil/quicksearch.
[6] Available from the National Motor Freight Traffic Association (NMFTA), 1001 N Fairfax St., Ste 600, Alexandria, VA 22314, www.nmfta.org.
[7] Available from the American National Standards Institute, 25 West 43rd St., New York, NY 10036.
[8] Available from Hardwood Plywood and Veneer Association (HPVA), P.O. Box 2789, Reston, VA 22090-0789, www.hpva.org.
[9] Available from National Institute of Standards and Technology (NIST), 100 Bureau Dr., Stop 1070, Gaithersburg, MD 20899-1070, www.nist.gov.
[10] Available from the International Plant Protection Convention (IPPC), www.ippc.int.

4.2.2 *Class 2*—Overseas shipments capable of passing Practice D4169 distribution Cycles 1 with 15, 16, or 17 as applicable to the type of shipping container selected.

4.2.3 *Class 3*—Extreme Distribution hazards or military contingency operations the wirebound container will be capable of passing Practice D4169 distribution cycle 18 testing as a minimum requirement.

4.3 *Style (based on the method of closure, see Fig. 1):*

4.3.1 *Style 1*—Twisted wire closure.

4.3.2 *Style 2*—Looped wire closure.

4.3.3 *Style 3*—Looped wire closure with wired ends.

4.4 *Treatment:*

4.4.1 *Grade A*—With preservative treatment.

4.4.2 *Grade B*—Without water preservative.

5. Ordering Information

5.1 Purchasers should cite the following information in procurement and purchase order documents:

5.1.1 Specification title, number, and date.

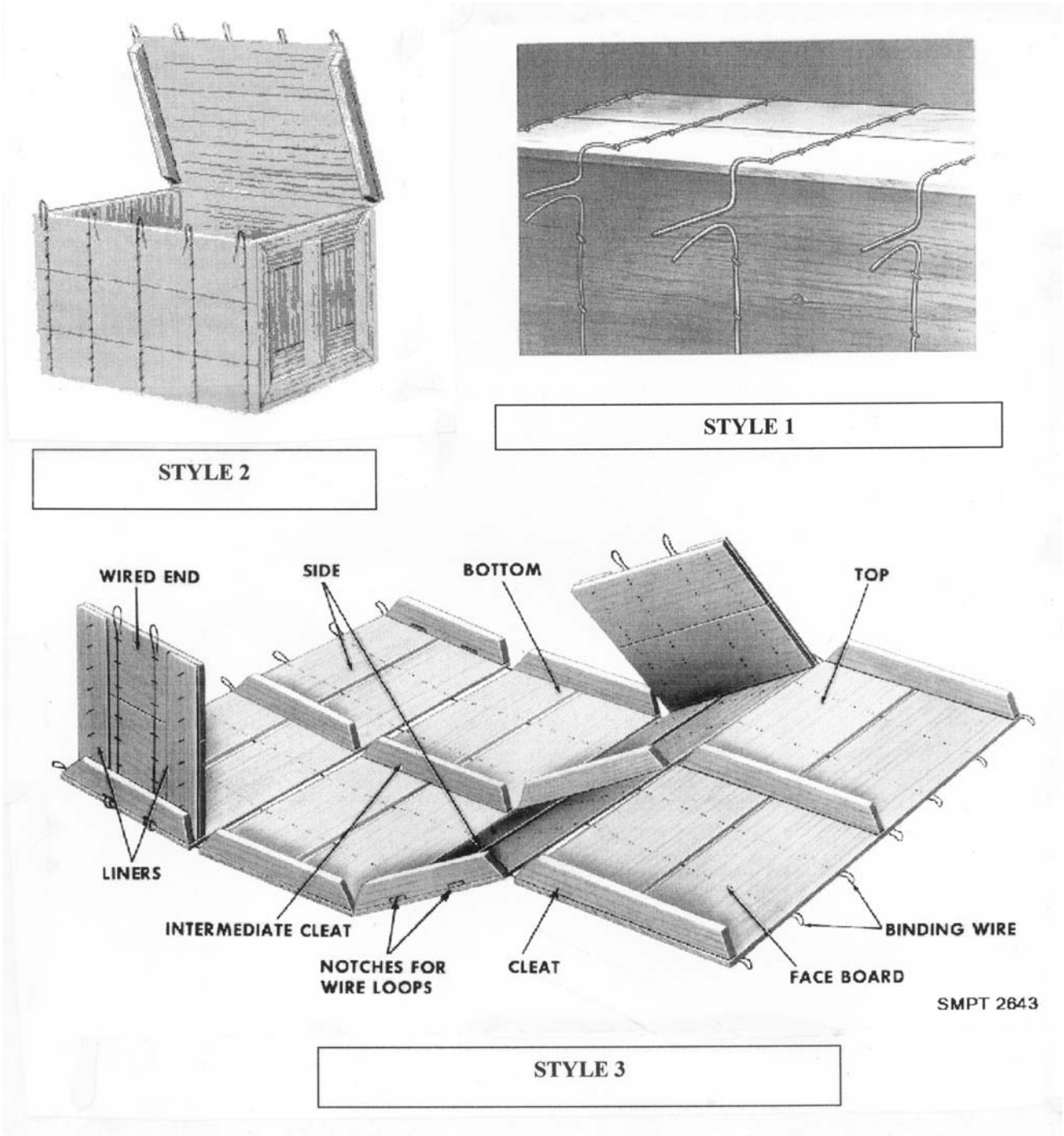

FIG. 1 Box Styles Based on Method of Closures