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.

Designation: D3950 – 23

Standard Specification for Strapping, Nonmetallic (and Joining Methods)[1]

This standard is issued under the fixed designation D3950; 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 U.S. Department of Defense.

1. Scope

1.1 This specification covers nonmetallic strapping and joining methods intended for use in closing, reinforcing, and bundling articles for shipment, unitizing, palletizing, and bracing for car loading and truck loading.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.3 The following safety hazards caveat pertains only to the test method portion, Section 12, of this specification: *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.*

1.4 *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]

D996 Terminology of Packaging and Distribution Environments

D3951 Practice for Commercial Packaging

D4332 Practice for Conditioning Containers, Packages, or Packaging Components for Testing

2.2 *Other Standards:*

ANSI/ASQC Z1.4 Sampling Procedures and Tables for Inspection by Attributes[3]

ANSI/ASQC Z1.9 Sampling Procedures and Tables for Inspection by Variables for Percent Nonconforming[3]

3. Terminology

3.1 *breaking strength, n*—the maximum load a sample of strap will bear when tested as described in Section 12, **Test Methods**, and by the procedure described in 12.6.1, *Breaking Strength*, expressed in units of force.

3.2 For general definitions of packaging and distribution environments, see Terminology D996.

4. Classification

4.1 *Types and Grades:*

Type I — Strapping, bonded rayon cord.
- *Grade 1*—Light duty.
- *Grade 2*—Regular duty.
- *Grade 3*—Heavy duty.

Type IA — Strapping, Bonded, Composite or Woven polyester cord.
- *Grade 1*—Light duty.
- *Grade 2*—Regular duty.
- *Grade 3*—Heavy duty.
- *Grade 4*—Extra heavy duty.
- *Grade 5*—Special duty.
- *Grade 6*—Special duty.
- *Grade 7*—Special duty.

Type II — Strapping, polypropylene plastic.

Type III — Strapping, nylon plastic.

Type IV — Strapping, polyester plastic.

5. Ordering Information

5.1 The inquiry and order shall indicate the following:

5.1.1 Type, grade, and dimensions required (see 4.1 and 7.1),

5.1.2 Length per coil (see 8.1),

5.1.3 Joining method (see 6.2 and Note 1), type and size required (if needed),

5.1.4 If an embossed finish on strapping is desired or allowed (see Footnote in Table 1, Table 2, and Table 3),

[1] This specification 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 American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, http://www.ansi.org.

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