



Designation: **D5570/D5570M – 10** D5570/D5570M – 10 (Reapproved 2015)

Standard Test Method for Water Resistance of Tape and Adhesives Used as Box Closure¹

This standard is issued under the fixed designation D5570/D5570M; 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 test method covers a procedure to determine the water resistance of an adhesive or tape as measured by the amount of tape or adhesive dissolved or dispersed in water.

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the 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

[D644 Test Method for Moisture Content of Paper and Paperboard by Oven Drying](#) (Withdrawn 2010)³

[D996 Terminology of Packaging and Distribution Environments](#)

[D1974 Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes](#)

3. Terminology

3.1 *Definitions:*

3.1.1 General definitions for packaging and distribution environments are found in Terminology [D996](#).

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *box closure*—the means of securing the flaps or covers of a box so that the box will not accidentally open during normal shipment, handling, and storage.

4. Summary of Test Method

4.1 *Procedure A*—The water resistance of a tape (gummed or pressure sensitive) is measured by immersing the tape in water at least 24 h at $73.4 \pm 4^\circ\text{F}$ [$23 \pm 2^\circ\text{C}$] and determining the percent of tape that is dissolved or dispersed.

4.2 *Procedure B*—The water resistance of an adhesive is measured by coating the adhesive on a paper surface, immersing in water at least 24 h at $73.4 \pm 4^\circ\text{F}$ [$23 \pm 2^\circ\text{C}$], and determining the percent of adhesive that is dissolved or dispersed.

5. Significance and Use

5.1 When a box becomes wet, the performance of the box and its closure are reduced. It is desirable to have box closure methods that retain an ability to keep the box closed when wet. Sealing or reinforcing methods sometimes are useful to improve performance of wet boxes and closures. Water resistance is sometimes a regulatory or contractual requirement.

¹ This test method is under the jurisdiction of ASTM Committee [D10](#) on Packaging and is the direct responsibility of Subcommittee [D10.27](#) on Paper and Paperboard Products.

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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 The last approved version of this historical standard is referenced on [www.astm.org](#).