



Standard Test Method for Rate of Absorption of Water by Bibulous Papers¹

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1. Scope

1.1 This test method covers the determination of the rate at which an unsized and absorbent paper will absorb water by measuring the time required for the paper to absorb completely a specified quantity of water (1-4).²

NOTE 1—This test method is related to TAPPI T 432 om-82, with which it is technically identical.

1.2 This test method is not intended for sized papers or those having an absorption time of over 120 s. Such papers should be tested in accordance with Test Method D779 or ISO 535.

1.3 For ink absorption of blotting paper, see Test Method D2177.

1.4 *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:*³

D585 Practice for Sampling and Accepting a Single Lot of Paper, Paperboard, Fiberboard, and Related Product

D685 Practice for Conditioning Paper and Paper Products for Testing

D779 Test Method for Water Resistance of Paper, Paperboard, and Other Sheet Materials by the Dry Indicator Method

D1193 Specification for Reagent Water

D2177 Test Method for Ink Absorption of Blotting Paper

¹ This test method is under the jurisdiction of ASTM Committee D06 on Paper and Paper Products and is the direct responsibility of Subcommittee D06.92 on Standard Documents Relating to Paper and Paper Products.

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² The boldface numbers in parentheses refer to the list of references at the end of this standard.

³ 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.

E122 Practice for Calculating Sample Size to Estimate, With Specified Precision, the Average for a Characteristic of a Lot or Process

2.2 *ISO Standard:*

ISO 535 Paper and Board—Water Absorption (Cobb Test)⁴

2.3 *TAPPI Standard:*

TAPPI T 432 om-82 Water Absorbency of Bibulous Papers⁵

3. Summary of Test Method

3.1 A measured drop of water is placed on the paper and the time to disappearance of the shine from the wet area is determined.

4. Significance and Use

4.1 The rate of water absorption is an extremely important property of most sanitary products such as paper toweling and tissues.

5. Apparatus

5.1 *Drop-Measuring Device*, for Delivery of 1-mL and 0.1-mL drops, with 1-mL capacity or more, for example, measuring pipet (5), buret, or hypodermic syringe graduated in divisions of 0.01 mL.

5.2 *Drop-Measuring Device*, for Delivery of 0.01-mL drops, for example, microburet (6), or syringe-style pipet, graduated in divisions of 0.001 mL.

5.3 *Specimen Support*—A nonabsorbent horizontal square surface, approximately 100 mm on a side and having at its center a hole approximately 40 mm in diameter.

NOTE 2—For a multi-ply specimen it may be necessary to modify the supporting surface by bending up two opposite edges to form a cylindrical trench. The curvature of the cylinder should be such that, when the specimen is held in place in the trench (for example, with weights near the ends), water applied to the top ply will cause it to expand downward and push against the underlying plies, wetting them as in normal use of the material.

5.4 *Timer*—Stopwatch or electric timer readable to 0.2 s or better.

⁴ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, http://www.ansi.org.

⁵ Available from Technical Association of the Pulp and Paper Industry (TAPPI), 15 Technology Parkway South, Norcross, GA 30092, http://www.tappi.org.