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AMERICAN NATIONAL STANDARDS INSTITUTE
AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS
METHODS 22-1967, 70B-1967, 70A-1964T, 21-1967, 35-1967, 42-1967, and 18-1967

Standard Methods of Test for WATER RESISTANCE OF TEXTILE FABRICS¹

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ASTM Designation: D 583 - 63

This Standard of the American Society for Testing and Materials is issued under the fixed designation D 583; the final number indicates the year of original adoption as standard or, in the case of revision, the year of last revision.

*Most of these methods have been approved jointly by the
American Association of Textile Chemists and Colorists
and the American Society for Testing and Materials.*

*[The committee responsible for this standard has voted its withdrawal.
In the absence of substantial reasons that it should be continued, the
Society will approve its withdrawal from publication in November, 1971.]*

Scope

1. (a) These methods cover procedures for determining the resistance of textile fabrics to external (surface) wetting, internal wetting (absorption), and penetration by water (Note 1).

NOTE 1.—Designations of equivalent methods issued by the American Association of Textile Chemists and Colorists and of those methods approved as USA Standard by the USA Standards Institute are noted after the title in each method.

(b) These methods are applicable to all fabrics, both treated and untreated, regardless of fiber composition.

(c) The procedures appear in the following order:

¹ Under the standardization procedure of the Society, these methods are under the jurisdiction of the ASTM Committee D-13 on Textile Materials, and are the direct responsibility of Subcommittee B-1 on Chemical and Performance Test Methods. A list of committee members may be found in the ASTM Year Book.

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Definitions

2. (a) *Water Resistance (Fabric).*—A general term denoting the ability of a

fabric to resist wetting and penetration of water.

(b) *Water Repellency (Textile)*.—The ability of a textile fiber, yarn, or fabric to resist wetting.

(c) *Fabric, Treated*.—A fabric to which a water-resistant or water-repellent finish has been applied.

(d) For definitions of other terms used in these methods, refer to Definitions of Terms Relating to Textile Materials (ASTM Designation: D 123).²

Reagent and Material

3. (a) *Water*, maintained at 27 ± 1 C (80 ± 2 F). Distilled water is required for the spray, dynamic absorption, static absorption, and impact penetration tests, but tap water free from residual surface active agents may be used in the rain, drop penetration, and hydrostatic pressure tests.

(b) *Blotting Paper, "White AATCC Textile Blotting Paper,"*³ conforming to the following specifications:

Property	Requirement	Method
Thickness...	0.026 to 0.030 in.	FS: UU-P-31b, Method 173 ⁴
Bursting strength...	45 points (minimum)	FS: UU-P-31b, Method 112 ⁴
Absorption...	50 $\pm$ 10 mm (each direction)	ASTM Method D 202 ⁵
Weight.....	230 $\pm$ 5 lb, 500 sheets 24 by 36 in.	FS: UU-P-31b Method 110 ⁴

Conditioning

4. Bring all test specimens and the blotters that are to be weighed from the

prevailing atmosphere to moisture equilibrium for testing in the standard atmosphere for testing in accordance with the Method of Conditioning Textiles and Textile Products for Testing (ASTM Designation: D 1776).² It is not necessary to test the specimens in the standard atmosphere provided the test is started immediately on removal of the specimen from the standard atmosphere.

Precision

5. The specific precision of the following tests is not known, but experience through the years has indicated that the numbers of specimens called for give satisfactory results.

RESISTANCE TO EXTERNAL (SURFACE) WETTING: SPRAY TEST

(AATCC Method 22-1967)
(Approved as American National Standard L14.60-1964)

Summary of Method

6. Water is sprayed against the taut surface of the test specimen under controlled conditions and produces a wetted pattern indicative of the relative repellency or resistance to external wetting of the fabric. The fabric is rated by comparing its wetted pattern with pictures on the standard rating chart.

Uses and Significance

7. (a) This method provides a qualitative measure of the resistance to wetting of the textile surface, regardless of its construction. The method is especially suitable for measuring the water repellency of finishes applied to fabrics, particularly plain-woven fabrics. The portability and simplicity of the instrument, and the shortness and simplicity of the test procedure make this method of test especially suitable for control of mill production.

² Appears in this publication.

³ Blotting paper conforming to these specifications may be purchased from Standard Paper Mfg. Co., Richmond, Va., by specifying "White AATCC Textile Blotting Paper."

⁴ Available from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

⁵ Annual Book of ASTM Standards, Parts 16 and 29.