

Tentative Method of Test for WATER VAPOR PERMEABILITY OF PAPER AND PAPERBOARD¹



A.S.T.M. Designation: D 783 - 44 T

ISSUED, 1944.²

This Tentative Method has been approved by the sponsoring committee and accepted by the Society in accordance with established procedures, for use pending adoption as standard. Suggestions for revisions should be addressed to the Society at 1916 Race St., Philadelphia 3, Pa.

Scope

1. (a) This method of test covers the procedure for determining the water vapor permeability of paper and paperboards under normal atmospheric conditions.³ It is considered generally suitable also for other sheet materials up to 1 in. in thickness.

Definition

2. Water vapor permeability is defined for this test as the weight of water transmitted per unit of time, per unit

area, measured while the specimen separates a dry atmosphere in a test cell from the standard atmosphere of 50 per cent relative humidity at a temperature of 73 F. on the other face.

Apparatus

3. The apparatus shall consist of the following:

(a) *Test Dish*.—An open mouthed cup or dish of such size and shape that it can be accommodated readily on the pan of an analytical balance. The area of the opening shall be as large as practicable, an area of at least 30 sq. cm. being preferred. The test dish shall be of such design that a wax seal can be made that will be impervious to leakage of water vapor and will define clearly the test area. Suitable designs for the dish with supporting rings and flanges are shown in Fig. 1. Other modifications of these designs may be made, providing the principle of preventing edge leakage by means of a complete wax seal is retained.

(b) *Template*.—A template for use in defining the test area and effecting the wax seal consisting of a circular metal

¹ Under the standardization procedure of the Society, this method is under the jurisdiction of the A.S.T.M. Committee D-6 on Paper and Paper Products.

² Accepted by the Society at annual meeting, June, 1944.

³ For further details on this method reference should be made to the following:

Allen Abrams and W. A. Chilson, *Paper Trade Journal*, Vol. 91, No. 18, October 30, 1930, p. 175; *Technical Association Papers*, Tech. Assn. Pulp and Paper Industry, Vol. 14, May, 1931, pp. 379-384.

Allen Abrams and G. J. Brabender, *Paper Trade Journal*, Vol. 102, No. 15, April 9, 1936, p. 32; *Technical Association Papers*, Tech. Assn. Pulp and Paper Industry, Vol. 19, June, 1936, pp. 121-130.

G. J. Brabender, *Paper Trade Journal*, Vol. 108, No. 4, January 26, 1939, p. 39; *Technical Association Papers*, Tech. Assn. Pulp and Paper Industry, Vol. 22, pp. 95, 251 (1939).

F. T. Carson, *Miscellaneous Publication M 127*, Nat. Bureau Standards, August 5, 1937.

F. T. Carson, *Paper Trade Journal*, Vol. 107, No. 18, November 3, 1938, p. 59; *Technical Association Papers*, Tech. Assn. Pulp and Paper Industry, Vol. 20, pp. 90-102 (1937).

G. J. Brabender, *Paper Trade Journal*, Vol. 110, No. 18, May 2, 1940, p. 27; *Technical Association Papers*, Tech. Assn. Pulp and Paper Industry, Vol. 23, p. 358 (1940).