

Tentative Method of Test for DEGREE OF WET CURL OF PAPER¹



A.S.T.M. Designation: D 826 - 45 T

ISSUED, 1945.²

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. This method of test covers the procedure for determining the maximum curvature developed and the time required to reach this maximum curvature by means of bringing one side of the test specimen in contact with water. The relative tendency of certain papers, especially printing papers, to curl under normal conditions of usage (Note) is indicated by the maximum curvature.^{3,4} The time required to reach maximum curvature is a measure of the relative degree of sizing, such as secured with rosin.⁵

NOTE.—The factors out of which curling troubles grow are many and complex. It is therefore necessary to use caution in interpreting curling data obtained by this test in connection with certain types of curling troubles. A high

wet curl test does not necessarily mean that the paper will, in every case, curl in practice.

Apparatus

2. (a) *Curl Tester*.—The curl tester (Fig. 1) consists of a float near the center of which is a rectangular wetting aperture approximately 2 in. in length (perpendicular to plane of figure) and having a width, L , which is adjustable from 0 to about 1 in. A stop, H , is provided to hold one end of the test specimen at a fixed angle, F . A scale, with stippled surface, graduated in degrees, is fastened to the float to indicate the movement of the pointed end of the test specimen.

NOTE.—The curl sizing tester is available for testing both the degree of curl and the rate of curl. For the latter purpose, the apparatus contains a built-in stop watch which starts automatically when the specimen is lowered to the water.

(b) *Stop Watch*.—A stop watch or other suitable timing device.

(c) *Water*.—A vessel containing water at 23 ± 2 C. Distilled water is preferable, but drinking water of reasonable purity may be used.

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 Committee E-10 on Standards, June 27, 1945.

³ F. T. Carson and V. Worthington, "Simplified Curl Tester for Paper," *Paper Industry and Paper World*, Vol. 22, No. 3, June, 1940, pp. 246-247.

⁴ F. T. Carson and V. Worthington, "Measuring the Degree of Curl of Paper," *Journal of Research, Nat. Bureau Standards*, Vol. 30, No. 2, February, 1943, p. 113. (*Research Paper RP1522*.)

⁵ F. T. Carson, "New Sizing Tester for Paper," *Paper Trade Journal*, Vol. 79, No. 17, October 23, 1924, pp. 44-45.