Designation: F 598 – 00

Standard Practice for Determining the Resistance of Carbonless Papers to Capsular Damage[1]

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1. Scope

1.1 The test procedures of this practice are applicable to any carbonless paper product that employs a coating of microcapsules bonded to one side of the paper wherein the active material within the capsules is a colorless reactant capable of generating color when the capsules are broken and the contained solution is simultaneously transferred to a reactive receptor surface capable of changing the chemical from a colorless to a colored condition.

1.2 The procedures are designed to demonstrate the extent of damage incurred by (*1*) controlling the rate of slippage of test units held in contact with each other under a calibrated weight and (*2*) by the controlled application of pressure to test units held stationary with respect to each other.

1.2.1 The first test procedure is designed to demonstrate the resistance to capsular damage related to plies slipping under pressure.

1.2.2 The second test procedure is designed to demonstrate the resistance to capsular damage related only to pressure, such as between plies within rolls, between sheets in a stack or due to nip effects in web processing, converting, or end-use equipment.

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 whoever uses this standard to consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*

D 585 Practice for Sampling and Accepting a Single Lot of Paper, Paperboard, Fiberboard, and Related Products[2]

D 685 Practice for Conditioning Paper and Paper Products for Testing[2]

D 774 Test Method for Bursting Strength of Paper[2]

F 549 Terminology Relating to Carbonless Copy Products[2]

2.2 *TAPPI Standard:*

T 425 Opacity of Paper (15°/Diffuse Illuminant A, 89% Reflectance Backing and Paper Backing)[3]

2.3 *ANSI Standards:*

IT 2.16–1995 [4]

IT 2.17–1995 [4]

3. Terminology Definitions

3.1 Refer to Terminology F 549.

4. Summary of Practice

4.1 *Test Under Dynamic Conditions*—A receptor (CF) test unit of fixed area is held in position under fixed pressure while a donor test unit of specified length is drawn under it by controlled mechanical means. The receptor coated side of the CF sample and the donor coated side of the CB sample must be in contact.

4.2 The degree of color development, as indicated by the contrast ratio between the CF test specimen and the background is used to calculate the damage factor.

4.2.1 Reversing the positions of the CF and CB test units will result in an invalid test. In a situation where the fixed area of CB test unit is affected by a strip of CF unit, an attenuation of the released reactant will occur along the length of the test area. The test must be conducted according to the conventions specified under 4.1 or the test conditions are not being met.

4.3 *Test Under Stationary Conditions*—CB and CF units of identical areas are placed face to face and subjected to controlled pressure without slippage. The degree of color development on the CF test specimen, as indicated by the contrast ratio between the test specimen, and the background is used to calculate the damage factor.

5. Significance and Use

5.1 The primary purpose of these tests is to obtain information from a statistical sampling of a lot or shipment of paper that will predict how well the whole lot will resist capsular damage from normal handling processes, either in manufacturing or in subsequent processing, storage, and use.

5.2 Other aspects of significance are covered in 1.2.

[1] This practice is under the jurisdiction of ASTM Committee F-5 on Business Copy Products and is the direct responsibility of Subcommittee F05.06 on Carbonless Copy Paper.

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[2] *Annual Book of ASTM Standards*, Vol 15.09.

[3] Available from the Technical Association of the Pulp and Paper Industry, P.O. Box 105113, Atlanta, GA 30348.

[4] Available from American National Standards Institute, 11 West 42nd Street, New York, NY 10036.

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