



Standard Test Method for Determining Variations in Hardness of Film Ribbon Pancakes¹

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1. Scope

1.1 This test method covers the determination of variations in hardness of film ribbon pancakes.

1.2 *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. Definitions

2.1 *pancake*—a section of ribbon usually wound on a core in such a manner to allow it to be inserted in an individual ribbon cartridge.

2.2 *hardness*—the ability of the pancake to resist vertical deflection when a load is applied axially to its core.

2.3 *core*—usually a cylindrical plastic tube on which a ribbon is wound.

2.4 *slitter*—a piece of machinery designed to slit the width of large ink-coated film rolls and wind the narrow film into individual pancakes.

3. Summary of Test Method

3.1 On rewinding an inked ribbon, each layer of inked film should be rewound with an equal force resulting in a uniform hardness of a pancake. However, the hardness nearer to the core is usually higher than nearer to the periphery.

3.2 To determine the variations in hardness, a pancake is put under a known vertical load until a part of it is telescoped. The loading is continued as other portions of the pancake telescope. The load and position, that is, diameter of telescoping, at each load level is noted. Load testing continues until the third telescoping is observed.

3.3 All tests must be performed in duplicate under the same conditions in order to compare results.

4. Significance and Use

4.1 This test method enables a comparison of variation in hardness between pancakes and allows slitter operators to adjust and maintain the desired rewinding force.

5. Interferences

5.1 Wide variations in environmental conditions (temperature, relative humidity) could affect the pancake hardness.

5.2 Pancake hardness will be affected by changes in pancake diameter, width, coating formulation, base film thickness, and base film composition. Hardness will also be affected by the physical characteristics of the core used for the pancake.

6. Apparatus and Materials

6.1 *Pancake Tester*²—See Fig. 1.

6.2 *Any Special Thrust Pads* required for the pancakes being tested.

6.3 *Pancakes* to be tested.

7. Test Specimen

7.1 The test specimen shall be an entire pancake which has not been physically distorted in the direction perpendicular to the axis of the core after it was produced on the slitter.

8. Conditioning

8.1 Although no special conditioning of pancakes is required, compare only tests run under the same relative environmental and lapsed time from rewinding.

9. Procedure

9.1 Shift the manual sliding valve (Fig. 1, Item 1) to the “OFF” position.

9.2 Push the piston rod (Fig. 1, Item 2) vertically upwards to the stop.

9.3 Shift the manual sliding valve to the “ON” position.

¹ This test method is under the jurisdiction of ASTM Committee F05 on Business Imaging Products and is the direct responsibility of Subcommittee F05.02 on Inked-Transfer Imaging Products.

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² The WEY Universal Pancake Tester, Type UPT 125/50 (with Instruction Manual), has been found satisfactory for this purpose. Available from S. M. Engineering, A. G., Roosstrasse 49, CH-8832, Woller AU, Switzerland.