



Standard Test Method for Determination of Abrasion Resistance of Images Produced from Copiers and Printers (Taber Method)¹

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1. Scope

1.1 This test method covers a procedure for determining the amount of image abraded from the surface of a document.

1.2 This test method may be used to evaluate the abrasion resistance of images produced by business imaging products, including nonimpact printers, thermal transfer printers, and copiers. The machine shall be capable of producing the specified image.

1.3 Testing focuses on determining the amount of imaged material removed, resulting from forces which impart a rubbing or grinding action principally on the top surface of the image.

1.4 Comparison may be made between various imaging devices or the image-producing components of an individual machine.

1.5 Other test methods employing the Crockmeter (Test Method F1319), Sutherland Rub Tester, and Gavarti GA-CAT may be employed to evaluate the smudge and abrasion characteristics. Results by these test methods are not necessarily equivalent to those obtained by this test method.

1.6 *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. Referenced Documents

2.1 ASTM Standards:²

F335 Terminology Relating to Electrostatic Imaging

F1319 Test Method for Determination of Abrasion and Smudge Resistance of Images Produced from Business

¹ This test method is under the jurisdiction of ASTM Committee F05 on Business Imaging Products and is the direct responsibility of Subcommittee F05.04 on Electrostatic Imaging Products.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

Copy Products (Crockmeter Method)

2.2 ANSI Standards:

PH2.17 Density Measurements—Geometric Conditions for Reflection Density³

PH2.18 Density Measurements—Spectral Conditions³

2.3 ASTM Adjuncts:

Abrasion Test Target⁴

3. Terminology

3.1 *Definitions*—General definitions related to electrostatic copying may be found in Terminology F335.

3.2 *abrasion resistance*—the ability of an image to withstand the frictional forces attempting to remove the surface material.

3.3 *smudge*—the tendency of an image to smear or streak onto the adjacent area when rubbed, involving the redeposition of abraded material.

3.4 *smudge resistance*—the ability of an image to withstand smudging.

4. Summary of Test Method

4.1 Test specimens are generated of an image described in this test method. Suitable hard copy targets for use in copiers and computer program diskettes for use in computer printers are available from ASTM. The specimens are abraded with a specified instrument and evaluated by visual comparison or reflectance measurements, or both.

5. Significance and Use

5.1 The degree of image abraded from a copy or printed image may be affected by various factors, including the type of machine, condition of the machine, supplies employed, time since imaging, and environmental conditions. As many as possible of these variables should be controlled during the test. If available, a control sample with known characteristics should be run along with the test samples.

³ Available from American National Standards Institute, 25 W. 43rd St., 4th Floor, New York, NY 10036.

⁴ Available from ASTM International Headquarters. Order Adjunct No. ADJF1478.