



Standard Test Method for Determination of Abrasion and Smudge Resistance of Images Produced from Business Copy Products (Crockmeter Method)¹

This standard is issued under the fixed designation F1319; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This test method describes a procedure for determining the amount of image transferred onto the surface of a white cloth by rubbing.

1.2 The test method can be employed to evaluate the abrasion and smudge resistance of business imaging products produced by impact printers, thermal transfer printers, and non-impact printers or copiers.

1.3 The test method can be used to evaluate the amount of material removed from the sample (smudge or crock). Testing focuses on determining the amount of material deposited on the crockmeter cloth or redeposited in a new location on the sample. The test method can also be employed to measure performance characteristics for a product. The user should select test equipment which is appropriate for measuring the abrasion to the samples. Samples are tested before and after rubbing and comparisons of results made. In this test method product performance evaluations are optional.

1.4 Other test methods employing the Sutherland rub tester, Taber Abrader and Gavarti GA-C.A.T. can be employed to evaluate the smudge and abrasion characteristics. Results by these units are not necessarily equivalent to those obtained with the Crockmeter.

1.5 *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
F360 Practice for Image Evaluation of Electrostatic Business Copies

F497 Practice for Use of the Electric and Electronic Typewriter as a Test Instrument

F1174 Practice for Using a Personal Computer Printer as a Test Instrument

F1175 Practice for Using the Computer Impact Print-Out Unit as a Test Instrument for Manifold Comparison

2.2 ANSI Standards:³

IT2.17-95 Density Measurements-Geometric Conditions for Reflection Density

PH2.18 Density Measurements-Special Conditions

3. Terminology

3.1 Definitions:

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

3.1.2 *crock*—material transferred by rubbing from an imaged sample onto a cloth patch.

3.1.3 *smudge*—the tendency of an image to smear or streak onto an adjacent area when rubbed. Smudge involves the redeposition of abraded material.

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

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.

Current edition approved Oct. 1, 2011. Published September 2012. Originally approved in 1990. Last previous edition approved in 2005 as F1319-94 (2005). DOI: 10.1520/F1319-94R11.

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.

³ Available from American National Standards Institute, 25 West 43rd Street, 4th floor, New York, NY 10036.