



Standard Test Method for Evaluating Thermal Paper Employing a Facsimile Thermal Printer as a Test Instrument¹

This standard is issued under the fixed designation F 1320; 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 covers a standardized procedure utilizing the facsimile thermal printer as an imaging device for measuring the performance properties of direct thermal paper.

1.2 This test method may also be used to evaluate some imaging properties of facsimile printers.

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 the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.* For a specific warning statement, see 9.1.

2. Referenced Documents

2.1 ASTM Standards:

F 335 Terminology Relating to Electrostatic Copying²

F 360 Practice for Image Evaluation of Electrostatic Business Copies²

F 556 Test Method for Curl of Carbonless Copy Papers²

F 909 Terminology Relating to Printers²

2.2 ANSI Standards:

PH2.17 Density Measurements—Geometric Conditions for Reflection Density³

PH2.18 Density Measurements—Spectral Conditions³

2.3 IEEE Standard:

167 A Facsimile Test Chart⁴

3. Terminology

3.1 Definitions:

3.2 *thermal facsimile printer*—a type of non-impact printer that uses special paper coated with materials which react to heat applied by electrical resistance elements; the heat causes the materials in the coating to form a visible image; the unit is used to transmit and receive information in hard copy form over telephone lines.

3.2.1 For definitions of other terms used in this test method, see Terminology F 335 and F 909.

4. Summary of Test Method

4.1 This test method consists of using a facsimile printer in copy mode under specified conditions to produce images for the evaluation of direct thermal paper on a comparative basis. The method is not intended for manufacturing control testing. The method also examines curl, feeding characteristics, coating residue, and possible operational problems which may be associated with thermal papers from different manufacturers.

5. Significance and Use

5.1 This test method will permit the user to make comparisons of image quality and machine performance for thermal paper. This test method is not intended for manufacturing control testing.

5.2 This test method is designed to test only thermal papers designed for use with facsimile machines. The test method is not appropriate for the evaluation of thermal papers designed for use with calculators, chart recorders, and other thermal printers.

6. Interferences

6.1 Some facsimile printers in different modes may operate at various speeds. The quality of the imaging and performance of the thermal paper can differ depending on the speed and mode of operation.

6.2 Facsimile printers default setting is recommended to eliminate variations in quality of output due to electrical and telephone line interference.

6.3 Densitometry readings can also be affected by voltage fluctuations requiring similar precautions to be taken as described in 6.2.

6.4 When making density readings with some densitometers, care must be taken that the unit does not damage the sample during the time required to make the measurement. Some units will cause the sample to darken (image).

6.5 Machine damage results may occur if the grade of thermal paper to be tested is not matched to the requirements of the facsimile unit given by the facsimile printer manufacturer.

6.6 When evaluating the curl characteristics of the thermal paper, differences in the diameter of the core and the amount of

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

³ Available from American National Standards Institute, 11 W. 42nd St., 13th Floor, New York, NY 10036.

⁴ Available from IEEE Service Center, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331.