Designation: F 396 – 00

Standard Practice for Comparing One-Time Noncorrectable Typewriter Ribbons[1]

This standard is issued under the fixed designation F 396; 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 practice provides information and techniques for evaluating several performance qualities of one-time noncorrectable typewriter ribbons on a comparative basis for general office use, but not for specialized applications such as optical character recognition (OCR), data terminals, etc.

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 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 1776 Practice for Conditioning Textiles for Testing[2]

F 221 Terminology Relating to Carbon Paper and Inked Ribbon Products and Images Made Therefrom[3]

F 550 Test Method for Lithographic Properties of Imaging Materials[3]

F 627 Practice for Testing Flake of One-Time Film Typewriter Ribbons[3]

2.2 *ANSI Standards:*

PH2.17 Density Measurements—Geometric Conditions for Reflection Density[4]

PH2.18 Density Measurements—Spectral Conditions[4]

3. Summary of Practice

3.1 This practice essentially consists of testing one-time noncorrectable ribbons under actual- and simulated-use type conditions, employing an automatic or robot typewriter, and several use-simulating techniques generally accepted in this industry. All tests must be run in duplicate under the same conditions so that comparative results are obtained.

4. Significance and Use

4.1 This practice can be used to evaluate various properties of one-time noncorrectable ribbons on a comparative basis. These properties include write, flake-off, heat stability, bleed-through, offset master erasability, reproduction, unintentional transfer, and general quality, that is, splices, skips, and holes in coating, offset to back of ribbon, and transfer to fingers.

4.2 This practice is suitable for comparative service evaluation and research and development. This practice may not be practical for manufacturing control because of time required to run some of the tests.

5. Apparatus and Materials

5.1 *Electric Typewriter*, which can be used in conjunction with a robot device (or can be programmed) that has been adjusted in accordance with the instructions supplied by the manufacturer.

5.2 *Reflection Densitometer*, meeting the geometric conditions of PH2.17 and the spectral conditions of PH2.18.

5.3 *Oven*, capable of maintaining 120 ± 2°F (49 ± 1°C) at 40 % relative humidity for 48 h.

5.4 *Magnifier*, 4×.

5.5 *Paper*, of the type to be used when ribbon is "in use."

5.6 *Reflectance Meter*, equipped with a 0.008-in. (0.2-mm) aperature.

5.7 *Sutherland Ink Rub Tester*.

5.8 *Polyethylene Foam*, 1/8-in. (3-mm) thick.

5.9 *Buehler Polishing Cloth*, No. 4C-7228 or equivalent.

6. Test Specimen

6.1 The test specimens shall be a portion of each of the ribbons not previously used or handled.

7. Conditioning

7.1 Condition in accordance with Practice D 1776.

8. Test Methods

8.1 *Write*:

8.1.1 Use the robot device to prepare a standardized number of lines of typing.

8.1.2 Measure the reflection density of each image in accordance with PH2.17 and PH2.18 or make a visual comparison.

8.1.3 Examine writes under a 4× magnifier and compare them for sharpness, uniformity, and voids.

8.2 *Flake-off*:

8.2.1 Test in accordance with Practice F 627.

8.3 *Oven Test (Effects of High Temperature)*:

8.3.1 Place a sample ribbon in an oven at 120 ± 2°F (49 ±

[1] This practice is under the jurisdiction of ASTM Committee F-5 on Business Copy Products and is the direct responsibility of Subcommittee F05.02 on Carbon Paper and Inked Ribbons.

Current edition approved Feb. 10, 2000. Published May 2000. Originally published as F 396 – 74. Last previous edition F 396 – 79(1995).

[2] *Annual Book of ASTM Standards*, Vol 07.01.

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

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

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