



Standard Practice for Using the Computer Impact Print-Out Unit as a Test Instrument for Manifold Comparison¹

This standard is issued under the fixed designation F1175; 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 covers a standardized procedure utilizing the computer impact print-out unit as an imaging device where the performance properties of carbonless paper, carbon paper, and similar image-producing products are measured. The printer can be either a high speed printer connected to a mainframe computer or a printer connected to a personal or mini-computer.

1.2 The values stated in inch-pound units are to be regarded as the standard. The SI values in parentheses are given for information only.

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.*

2. Referenced Documents

2.1 ASTM Standards:²

D585 Practice for Sampling and Accepting a Single Lot of Paper, Paperboard, Fiberboard, and Related Product (Withdrawn 2010)³

D685 Practice for Conditioning Paper and Paper Products for Testing

F221 Terminology Relating to Carbon Paper and Inked Ribbon Products and Images Made Therefrom

F549 Terminology Relating to Carbonless Copy Products

F909 Terminology Relating to Printers

3. Terminology

3.1 Definitions:

¹ This practice is under the jurisdiction of ASTM Committee F05 on Business Imaging Products and is the direct responsibility of Subcommittee F05.06 on Carbonless and Thermal 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.

³ The last approved version of this historical standard is referenced on www.astm.org.

3.1.1 For definitions of terms used in this practice, refer to Terminology **F221**, **F549**, and **F909**.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *continuous envelopes*—product for tests, produced with control punched margins so that they can be used on equipment with pinfeed platens. A horizontal perforation (between set perf) allows the forms to be folded, and subsequently separated into individual envelopes (see **Fig. 1** and **Fig. 2**).

4. Summary of Practice

4.1 This practice consists of using a computer print-out unit under specified conditions to prepare images which are used to evaluate carbon paper, carbonless paper and other types of manifold sets on a comparative basis.

5. Significance and Use

5.1 This practice is intended to provide a means of evaluating comparative image quality relative to carbonless paper, carbon paper, and similar image-producing products.

6. Interferences

6.1 Some printers vary in their impact pressure and printing speed. Comparison tests must be run on the same printer and program or portion of program for each part of the test. Some smaller printers will not be able to image multiple set forms.

6.2 Caliper variations between test manifold sets can affect image intensity and sharpness. If possible, measure caliper of manifold sets and set printer adjustments accordingly. Different caliper settings should be used when running a four-part as opposed to a six-part set. All similar multiple part sets should be gaged and printed in the same run. Record caliper and printer adjustment data.

NOTE 1—Some printers (for example, the IBM Model 3211) automatically establish the printing pressure by means of a “forms thickness sensor” button. See **13.1.1** to ensure that the test manifold set is properly positioned for evaluation.

6.3 Fluctuations of temperature and humidity will affect the paper used for image reception. Tests run on different days could show variations in results. All tests should be dated and temperature and relative humidity data recorded. Control sets should be included in all runs.

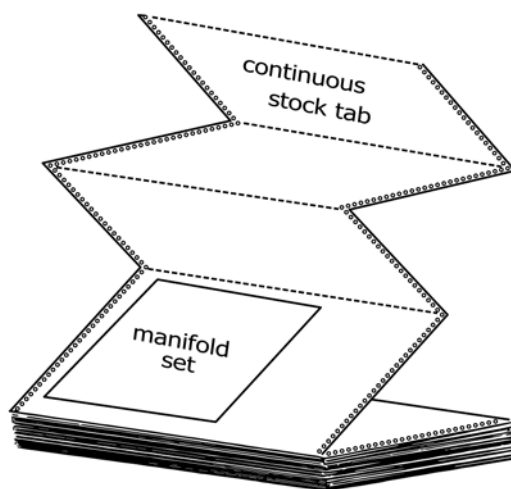


FIG. 1 Manifold Set Position

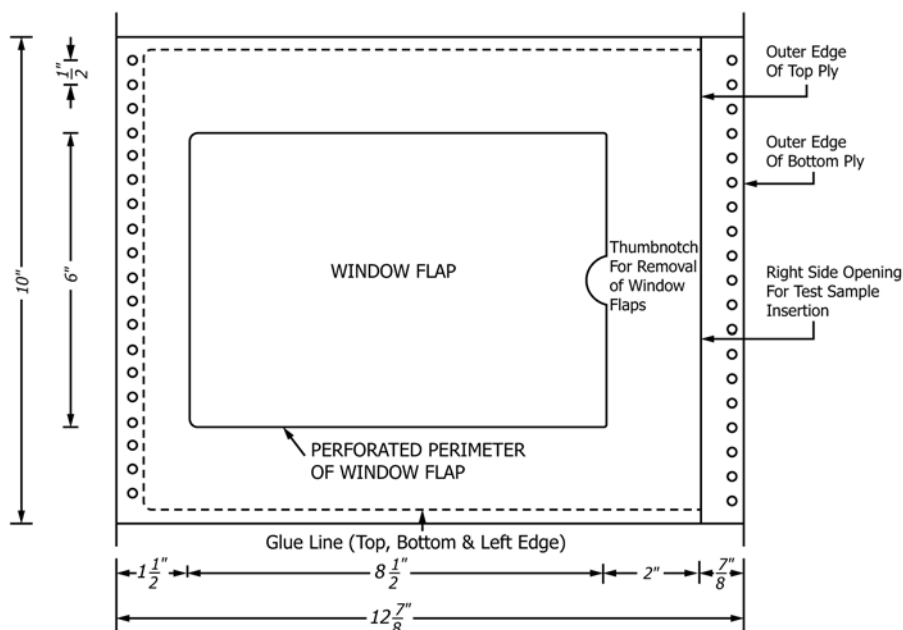


FIG. 2 Envelopes for Imaging Tests

6.4 Carbonless copy products image intensity development may vary with time depending on manufacture. Comparison tests, therefore, must include a control from the same manufacturer printed in the same run.

6.5 Image performance is a function of the number of plies, basis weight and type of paper used in the manifold sets. Form sets with differences in caliper would be expected to yield differences in image performance.

7. Apparatus

7.1 *Printer*, to be used to prepare images; a computer impact printer in normal use and adjusted to the manufacturer's specifications.

8. Materials

8.1 Use 15# (17 in. by 22 in. (500 sheets)) (56.4 g/m²) single-ply continuous computer stock tab forms bond (standard size 11 by 14 7/8 in. (279.4 by 377.8 mm)) or continuous forms test envelopes.

8.2 Test and control manifold sets cut to 8 1/2 by 9 in. (216 by 229 mm) or alternative convenient size, grain long. Sets must contain the same number of parts. Four or six-part sets are typically employed in tests.

8.3 *Transparent Adhesive Tape*—1/2 in. recommended but wider tape can be employed.