



Standard Practice for Amount of Ink Deposit on Fabric Type Ribbons¹

This standard is issued under the fixed designation F 1782; 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 the determination of the amount of ink deposit, sometimes known as ink content, on inked fabric ribbons.

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 the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.* See Notes 1 and 2 for specific precautionary statements.

2. Referenced Documents

2.1 ASTM Standards:

D 685 Practice for Conditioning Paper and Paper Products for Testing²

F 221 Terminology Relating to Carbon Paper and Inked Ribbon Products and Images Made Therefrom²

3. Terminology

3.1 For definitions of terms used in this test method, refer to Terminology F 221.

4. Summary of Practice

4.1 The amount of ink deposit is gravimetrically determined by analytically weighing a conditioned test specimen. The ink deposit is removed by the use of a suitable solvent(s) in an ultrasonic cleaner. The de-inked fabric sample is conditioned and reweighed. The amount of ink deposit is calculated.

5. Apparatus

5.1 *Analytical Balance*, with a sensitivity to 0.1 mg.

5.2 *Ultrasonic Bath*, with or without heater.

6. Reagents

6.1 Care should be taken to select the extraction solvent(s) so that only the ink is removed from substrates.

NOTE 1—**Precaution:** Vapors from solvents can be toxic when inhaled over prolonged periods. Some solvents commonly used may be listed as carcinogenic. Others are flammable and suitable precautions should be taken. Handle with care and use only in properly ventilated areas to avoid

breathing vapors. A fume hood is recommended.

7. Conditioning

7.1 Allow the test specimen to stabilize under room conditions for 15 min for routine testing.

7.2 Allow the test specimen to condition 1 h at $23.0 \pm 2.0^\circ\text{C}$ and $50 \pm 2\%$ relative humidity for a more precise determination (see Practice D 685).

8. Test Specimen

8.1 Cut a representative test sample of the desired size from the conditioned specimen.

9. Procedure

9.1 From a sample that has been conditioned in accordance with 7.1 or 7.2, discard at least two outer wraps of ribbon material if from a reel of inked fabric prior to sampling. If the sample to be checked is from a ribbon cartridge, pull out some of the ribbon in order to check the ink inside the cartridge.

9.2 For a narrow fabric ribbon sample, typically 1 in. or less in width, cut a 10 to 15 in. long section for ink percentage calculation. For wide fabric ribbons, typically 14 in. or greater in width, cut a 2 by 3 in. portion from the right and left sides for ink percentage calculation. This helps to determine if the fabric is inked evenly across the width of the fabric. For grams per square metre calculation, a popular scaling factor for the sample is $\frac{1}{200}$ of a square metre for ribbons $\frac{1}{2}$ in. (12.7 mm) or less and $\frac{1}{100}$ of a square metre for ribbons above $\frac{1}{2}$ in. (12.7 mm). Care should be taken to avoid contact of sample with ink absorbing surfaces. (Example: Cardboard, paper towel, etc.) Sheet mylar or similar surfaces are acceptable.

9.3 Weigh the sample in accordance with acceptable analytical procedure. Weigh to the nearest 0.1 mg. Record as inked weight (A).

9.4 Set up the ultrasonic bath by first filling the tank with a transfer medium (for example, warm tap water plus a wetting agent/detergent). Place two glass beakers (400 or 600 mL) of the desired solvent(s) in a beaker positioning cover to suspend the beakers in the bath. Plug in the ultrasonic bath and turn power on. If using a bath with a heater, turn the heat switch to on and allow the bath to stabilize to the desired temperature.

NOTE 2—**Precaution:** The temperature of the bath should not exceed the boiling point of the solvent.

9.5 Using tongs, remove the sample from the balance. Immerse the sample into the first beaker containing the solvent

¹ This practice is under the jurisdiction of ASTM Committee F-5 on Business Imaging Products and is the direct responsibility of Subcommittee F05.02 on Inked Transfer Imaging Products.

Current edition approved March 10, 1997. Published June 1997.

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