



Standard Practice for Determining the Stain Resistance of Images Produced by Ink Jet Printers¹

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1. Scope

1.1 This practice covers methods that can be used to determine the stain resistance of an image produced by an ink jet printer. Stain resistance is determined by placing a staining agent on printed patches and visually observing a change to the patches after the staining agent has been removed.

1.2 This practice can be used to evaluate the primary print colors (cyan, magenta, yellow and black), the secondary colors (red, blue and green) and composite black (cyan plus magenta plus yellow).

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:

F 909 Terminology Relating to Printers²

F 1125 Terminology of Image Quality in Impact Printing Systems²

F 1174 Practice for Using a Personal Computer Printer as a Test Instrument²

F 1623 Terminology Relating to Thermal Imaging Products²

F 1857 Terminology Relating to Ink Jet Printers and Images Made Therefrom²

3. Terminology

3.1 For definitions of terms, refer to Terminologies F 909, F 1125, F 1623, and F 1857.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *ink jet media, n*—recording elements used by ink jet printers to receive inks. The substrate may be paper, plastic,

canvas, fabric, or other ink receptive material. The substrate may, or may not be, coated with one or more ink receptive layers.

4. Significance and Use

4.1 This procedure may be used to determine how staining agents will affect color images produced by ink jet printers.

4.2 Five different staining agents are used to determine stain resistance, mustard (yellow), coffee (black), cola, fruit punch, and water. Additional stains may be used as appropriate.

4.3 The effect of the staining agent on the print patches is determined visually.

4.4 Test results are useful for specification acceptance between producer and user, for quality control, and for research and product development.

5. Interferences

5.1 Ink jet media and ink sets may be purchased from a variety of sources and may affect the stain characteristics produced by a given printing system. A variety of media types and ink sets may be used depending on the purpose of the test. The side of the media that should be used for imaging is the one recommended by the manufacturer/supplier.

5.2 Interpretation of results should be made by one evaluator.

5.3 Prints should be dry prior to testing since inadequate drying time may affect the results. Twenty-four hours should be sufficient for most inks and media.

5.4 All comparative tests should be performed under the same environmental and viewing conditions.

5.5 The following evaluations utilize digital test originals that are created using personal computer software. Always use the same originals when comparing printers, ink sets and substrates.

5.6 Visual interpretations of results may vary from one individual to another.

6. Apparatus

6.1 *Ink Jet Printer and a Personal Computer.*

¹ This practice is under the jurisdiction of ASTM Committee F05 on Business Imaging Products and is the direct responsibility of Subcommittee F05.07 on Ink Jet Imaging Products.

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