



Standard Practice for Preparing Prints of Paste Printing Inks Using a Hand Operated Laboratory Flat-Bed Press¹

This standard is issued under the fixed designation D6487; 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 procedure for preparing prints of paste inks using a hand operated flat-bed laboratory proof press. The initial method was developed by the National Printing Ink Research Institute.²

1.2 This practice is applicable to the preparation of single-color solid-area prints by the dry offset process (also known as Letterset) on a flat substrate such as paper or metal. It can readily be adapted to print by direct letterpress.³

NOTE 1—The proofing press described in this practice can also be used with printing gages in accordance with Practice D6846.

1.3 This practice is applicable primarily to lithographic and letterpress inks that dry by oxidation or penetration. With the addition of appropriate drying or curing equipment, it is also applicable to other systems such as heat-set or energy-curable.

1.4 The instructions in this practice are intended to minimize the within-print and among-operator variability inherent in hand operations.

1.5 This practice does not measure the actual film thickness on the print, but evaluates film thickness equivalence by visual or instrumental comparisons of reflection density.

1.6 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.7 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the users of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.* Specific precautions are given in Section 7.

¹ This practice is under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.56 on Printing Inks.

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² "The NPIRI Standard Procedure for Preparing Little Joe Prints," *American Ink Maker*, March 1994, pp. 42-50.

³ The apparatus used to develop this method was the Little Joe Offset Color Proofing Press.

2. Referenced Documents

2.1 ASTM Standards:⁴

D6073 Test Method for Relative Setting of Heatset Printing Inks

D6846 Practice for Preparing Prints of Paste Printing Inks with a Printing Gage

D7305 Test Method for Reflection Density of Printed Matter

2.2 ANSI Standards:⁵

PH 2.30 Viewing Conditions for Graphic Arts and Photography—Color Prints, Transparencies and Photomechanical Reproductions

CGATS.5 Graphic Technology—Spectral Measurements and Colorimetric Computation for Graphics Arts Images

3. Summary of Practice

3.1 Prints are prepared by metering the test ink onto a brayer, rolled out evenly, on the distribution plate according to a specified pattern, and then transferred to the printing plate. The substrate is clipped onto the impression plate, and the blanket cylinder is rolled over the inked plate six times followed by once over the substrate.

3.2 After the print is dry to the touch, it is evaluated versus the target reflection density instrumentally or by visual comparison with a standard reference print. Subsequent prints can be made if the target reflection density has not been achieved or if a visual assessment indicates that either more or less ink is needed.

4. Significance and Use

4.1 Laboratory proofing of ink is necessary to establish a reproducible prediction of print appearance and performance properties, most of which are highly sensitive to ink film thickness. The apparatus described in this practice has found wide use for routine control proofing because it provides an

⁴ 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.

⁵ Available from American National Standards Institute, 13th Floor, 11 W. 42nd Street, New York, NY 10036 or Committee on Graphic Arts Technical Standards, 1899 Preston White Drive, Reston, VA 20191-4367.

*A Summary of Changes section appears at the end of this standard