



Standard Terminology Relating to Print Problems¹

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1. Scope

1.1 This terminology standard gives definitions for problems that develop with printed matter as a result of deficiencies in the ink, substrate, press, or combinations thereof.

1.2 The definitions cover the three major printing processes and are given in the following sequence: lithography, flexography, and gravure. For further information see Refs (1-4) at the end of this standard.

2. Significance and Use

2.1 A common set of definitions is essential to improve communication and avoid misunderstanding among ink makers, paper makers, and printers.

2.2 The term “paper” in this standard also encompasses the term “paperboard”.

2.3 Definitions that are verbatim from one of the referenced sources are indicated by giving the acronym of the organization at the end of the definition.

3. Terminology

3.1 Definitions:

3.1.1 Lithographic Printing:

blistering, *n*—the formation of small air pockets under the printed paper surface.

DISCUSSION—It results from moisture being trapped under the dried ink film during heatset drying. This condition is more common with higher ink coverage and heavier basis weight papers.

blocking, *adv*—an undesired adhesion between sheets of printed material that might occur under moderate pressure or increased temperature, or both, while in storage or in use.

DISCUSSION—Damage to one or both surfaces may be visible upon separation and may be due to improperly dried ink or coating.

catch up, *n*—a condition that occurs when the non-image area of the plate becomes ink receptive. See **scum**. [GATF].

DISCUSSION—This condition results from the insufficient feeding of dampening solution.

coating pick, *n*—the removal of coating particles from the sheet surface that occurs when the tack of the ink exceeds the

surface strength of the substrate.

DISCUSSION—A loss in surface strength may occur during printing when the coating is resolubilized by the fountain solution.

dot distortion, *n*—an undesired change in shape of halftone dots during plate making or printing operations, or both.

dot doubling, *n*—the unintentional printing of two images slightly out of register from a single form.

DISCUSSION—Dot doublings can be the result of a mechanical problem due to undesired movement between the plate and the blanket.

dot gain, *n*—the increase in halftone dot size in relation to the dots on the lithographic film; it is the arithmetic difference between the dot area on the original film and dot area on the printed sheet.

DISCUSSION—Physical dot gain can be caused by a number of the processing steps in prepress or during actual printing. Factors that control dot gain on press are ink film thickness, amount of water feed, solid print density, ink holdout/absorbance characteristics of the paper, screen ruling, blanket release, pressure between the blanket and plate, and pressure between the blanket and paper. Optical dot gain results from light scattering in the paper. The dot gain value can be determined using a dosimeter that calculates the apparent dot size on the print as compared with the original dot size based on the density of the solid.

dot loss, *n*—the total or partial loss of the smallest dots on the sheets, usually in the areas of 25 % screen or less.

DISCUSSION—Dot loss can be due to plate or blanket buildup caused by an undesired reaction between the paper and fountain solution. (Also referred to as disappearing dot or vanishing dot.)

dot slur, *n*—dot gain that occurs in a pronounced direction and is not symmetrical.

DISCUSSION—Slur is caused by mechanical problems with the drive and speed of the plate and blanket cylinders.

embossing, *n*—the tendency of a paper to take a permanent pattern, either depressed or raised, as a result of contact with the blanket during printing. [TAPPI]

fiber pick, *n*—the delaminating, splitting, or tearing of paper surface fibers that occurs when the force between the paper and blanket exceeds the surface strength of the paper.

ghosting, chemical, *n*—the appearance of gloss or dull mirror images that are printed on the reverse side of the sheet.

DISCUSSION—This phenomenon is usually caused by chemical activity of the ink during the drying phase of oxidative inks.

ghosting, mechanical, *n*—the appearance of a phantom image

¹ These test methods are under the jurisdiction of ASTM Committee D-1 on Paint and Related Coatings, Materials, and Applications, and is the direct responsibility of Subcommittee D01.56 on Printing Inks.

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