



Standard Terminology Relating to Ink Jet Printers and Images Made Therefrom¹

This standard is issued under the fixed designation F 1857; 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

The definitions in this terminology relate directly or indirectly to business imaging hard copy printing using ink jet printers.

2. Terminology

2.1 Definitions:

backside density, *n*—the optical density of ink image on topside of a substrate as measured from the backside of the media on which it was printed.

banding, *n*—uniform density variations or voids in a given color which appear in the direction that the printhead travels.

bleed, *n*—ink feathering of one color into an adjacent color over time.

bleed through, *n*—the diffusion of ink through the substrate.

blocking, *n*—image is transferred upon contact from one substrate to another substrate which may cause the images or substrate coatings, or both, to stick to one another. See also **transference**, **offset**.

bronzing, *n*—an image which has a bronze sheen.

corona, *n*—chemical separation of ink dispersant and pigment caused by interaction with substrate which appears as an image with a dark center surrounded by a lighter shadow.

cascading, *n*—a condition where ink is absorbed into the substrate before it has time to spread, causing negative stitch lines or low density bands between print swaths in solid image areas.

circularity, *n*—ratio of a single ink dot height divided by its width with 1.0 being a perfect circle.

coalescence, *n*—the puddling or pooling of adjacent ink drops on the substrate before they can be dried or absorbed resulting in nonuniformity of color density.

cracking, *n*—a condition where ink that has been absorbed into a substrate causes the coating to shrink to a state much smaller than the original coating dimension causing fractures in the image area.

crystallization, *n*—a condition where ink evaporates and forms crystals.

curl, *n*—a phenomenon in which the edges of a paper substrate bend towards the center of the paper.

dry cockle, *n*—a wave pattern which is apparent after ink drying.

dry time, *n*—a measure of the rate of ink absorption into a substrate to the point at which no image transfer, smear, or surface damage occurs when in contact with another surface.

DISCUSSION—The dry time for text or lines is different than that of solid areas.

feathering, *n*—ink spread over substrate causing fuzzy edges, spidery lines and poor print quality. See also **wicking**.

halo, *n*—a shadow image created by ink interaction. See also **corona**.

head signature, *n*—a condition where one pass of jets overlaps the next pass causing positive stitch lines. See also **stitch lines**.

intercolor feathering, *n*—instantaneous ink spread into adjacent inks.

lightfastness, *n*—ability of an image to resist fading on exposure to different lighting conditions.

migration, *n*—ink spreading over a long period of time. See also **feathering**.

motting, *n*—non-uniformity of image density which follows patterns in the substrate or by non-uniform ink-substrate interaction.

offset, *n*—unintentional transfer of ink (as from a freshly printed substrate).

oil resistance, *n*—the ability of a substrate to resist oil present on human fingers.

residual density, *n*—optical density of image after exposure to light or water.

satellite, *n*—extraneous or undesirable ink droplets. See also **spatter**, **spray**.

show through, *n*—optical density of an image on the backside of a printed area.

smear fastness, *n*—the ability of an ink and substrate combination to resist ink transfer from a printed area to an unprinted area when swiped by objects or instruments.

snap, *n*—vivid color imagery, high chroma color.

spatter, *n*—a type of extraneous or undesirable ink droplet originating when a portion of an ink droplet strikes the intended area and is deflected to an unintended area.

spray, *n*—a type of extraneous or undesirable ink dot near the printed zones which originate from the printhead

starwheel, *n* (also called pick off) —when the feed mechanism of a printer digs into the inked surface.

streaks, *n*—a print defect which appears as light bands in the

¹ This terminology is under the jurisdiction of ASTM Committee F05 on Business Imaging Products and is the direct responsibility of Subcommittee F05.01 on Nomenclature and Definitions.

Current edition approved January 10, 2001. Published March 2001. Originally published as F 1857 - 99. Last previous edition F 1857 - 99a.

printed area in the direction of the printhead travel.

strike through, n—ink vehicle penetrates the substrate and is visible on the opposite side.

stitch, n—the image laid down in a single traverse of a printhead across the printer.

stitch lines, n—the relationship between consecutive passes of printhead when printing a solid image area.

transference, n—process by which blocking results.

water resistance, n (also called water fastness) —ability of an image to resist water damage.

weeping, n—a condition where undesired ink on the faceplate which contaminates other ink colors.

wet cockle, n—the wave pattern on paper substrate, which may be created by the ink solvent during printing caused as paper fibers expand relieving stresses.

wrinkles, n—a condition where ink being absorbed into a substrate coating causes it to swell and stretch to the point where it cannot recede back to its former dimensions, forming folds in the image area.

This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.

This standard is copyrighted by ASTM, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or service@astm.org (e-mail); or through the ASTM website (www.astm.org).