

Hughes Integrated Terminology

Analog – Conventional imaging of photopolymer through film in a vacuum using a UV-A lighting source.

Bar Code – A symbol consisting of a series of thin and thick lines used to encode product and other information. Barcodes are readable with an optical scanner.

Bar Width Reduction – A prepress function of decreasing the bar code image width to compensate for normal image growth as predetermined by press fingerprinting and production monitoring; analogous to dot gain for halftone dots.

Benchmark – A point of reference from which measurements and evaluations can be made. It is any standard against which products can be compared.

Bit Map – A computerized image consisting of dots where images are “mapped” directly from corresponding bits in memory.

Caliper – The thickness measurement of a single sheet of paper. Sometimes used to identify thickness of other printing materials such as plates, mounting tape, etc.

Cell Count – The number of cells per linear inch [or centimeter] in either a laser or mechanically engraved anilox roll.

Cell Volume – The volume delivery capability of a single anilox cell or group of cells in a given area.

Check Digit – Built into bar codes, an algorithm which verifies the valid combination of characters.

CMYK – Denotes Cyan, Magenta, Yellow, and Black in that order.

Color Correction – A process used to alter the colors in an image, done in order to compensate for limitations of the output device or to achieve a result desired by the customer.

Color Key – A proof consisting of acetate or polyester overlays. Each overlay carried the colored image from a film negative. Color breaks and traps can be judged, but exact color match to the final printed product cannot be made from the color key.

Color Separation – The process of exposing an original color image through RGB filters to produce complementary images that will be printed with CMYK inks.

Continuous Tone – An image that has not been screened and contains a range of light to dark color tones, but must be converted to halftone dots in order to be printed.

Contract Analog Proof – A proof that is made to manufacturer’s recommendations for exposing and processing by a specific analog proofing system, representative of what the finished product will look like before the design goes to press.

Contract Digital Proof – A proof that is profiled to a specific digital proofing system, representative of what the finished product will look like before the design goes on press.

Control Target – The standard set of graphic elements placed outside the live area of each of the pieces of film, used to monitor makeready, and if possible, the entire production run.

CTP – Acronym for Computer To Plate. Digitally imaged with a laser, exposed by a UV-A lighting source in presence of oxygen.

Cut-back Curve – Data that indicates the halftone dot areas need to be compensated for normal dot gain through the entire tone scale during the printing process.

Doctor Blade – A thin, flexible blade mounted parallel to an adjustable against an engraved roll for scraping off excess material.

Dot Gain – A measurement and calculation of the apparent increase in dot area from one medium to another. Dot gain [and loss] is normal and must be controlled throughout the prepress and printing process.

Dots Per Inch – A measure of resolution of an image or printed plate. Dots are also known as pixels.

Embossed – A finish or design created by compressing a material between two surfaces having the desired raised or depressed pattern. The process usually occurs between rollers.

Encapsulated Postscript [EPS] – A file format carrying a description of an image and an optional bitmap equivalent for screen display.

Engraving – A general term applied to any pattern that has been cut in or incised in a surface by hand, mechanical, laser, or chemical etching processes.

Face Printing – Printing on the outer surface of a transparent film, contrary to printing on the back of the film.

Flexography – A method of direct-rotary printing, using resilient raised-image printing plates, affixed to repeat plate cylinders, inked by a roll to virtually any substrate.

Font – A complete set of characters in one design, size, and style.

Four-color Process – Printing with yellow, magenta, and cyan color inks plus black by using screens to create all other colors.

Halftone – A pictorial that has been converted from a continuous tone image to dots that, when printed, give the visual illusion closely resembling the original.

Imagesetter – A high-resolution output device used to produce reproduction-quality copy for printing either as camera-ready artwork or photographic paper as film.

Impression – The image transferred from the printing plate to the substrate and the adjustment required to achieve that.

Ink Rotation – The sequence in which inks are printed. For process colors, it is commonly Y, M, C, K [see CMYK].

Layout – The preliminary arrangement of an artwork showing position, sizes, color, and other details for the final design.

Letterpress – A method of printing that uses hard-relief plates as an image carrier. The image area of the plate receives the ink that is then transferred directly to the substrate.

Line Copy – Copy made up of solids and lines in contrast to halftones or shadings made up of a series of dots.

Line Growth – The growth of a printed line as a result of pressure between the plate and the substrate.

Lines Per Inch – The number of dots per linear inch in a halftone. Resolution detail and dot gain increase as the number of lines per inch increases.

Lithography – A method of printing from a plane surface on which the image to be printed is ink-receptive and the non-printing area ink repellent.

Loupe – A small, hand-held magnifying device used to check the dot structure and line thickness of

the film and printed piece.

Low Density Polyethylene [LDPE] – A low-cost resin, LDPE film has a good moisture barrier, heat sealability, and strength. Extrusion LDPE has an excellent bond to paper and varying bonds to other substrates.

Machine Direction – The flow of material through a machine.

Make-ready – Techniques used in mounting plates to cylinders in order to achieve thickness uniformity or variation in thickness.

Mask – To block out part of an image to prevent reproduction or to allow for alterations.

Matrix – An intermediate mold, made from an engraving or type form, from which a rubber plate is subsequently molded.

Mechanical – Camera-ready paste-up of artwork and type on one piece of art board; may be accompanied by overlays.

Megabyte – A unit of measure equivalent to 1,024 kilobytes or 1,048,576 bytes commonly used to specify the capacity of computer memory.

Micro Dot – Typically used in video-mounting devices, micro dots are placed on the left and right sides of a printed material, and in the center of the web direction. When printed, the dots will overprint each other and appear to be an almost perfect dot.

Minimum Dot – The smallest dot size a press is capable of reproducing, usually determined by press characterization data.

Moiré – An interference pattern caused by the out-of-register overlap of two or more regular patterns such as dots or lines. In flexographic printing, it can be caused by incorrect relative screen of the anilox rolls and halftone plate.

Mold – Either a female form used for production of desired shapes, or the act of forming a matrix or rubber plate, using heat and moisture.

Mottle – non-uniform ink lay resulting in a speckled or indistinctly spotted appearance. Also known as orange peel, flocculation, or striations.

Mounting – The process of affixing plates on a cylinder or base in proper position to register color to color as well as to the product form to be printed.

Negative – A photographic image of originals on paper, film, or glass in reverse from that of the original copy. Dark areas appear light and vice versa.

Offset – The transfer of printing inks, or coatings, from the surface of a printed sheet to other surfaces.

Open Prepress Interface [OPI] – An extension of the PostScript page-description language, it is a work flow where the high-resolution images are stored in a central location on a file server, and the low-resolution files with the same name are sent to the individual workstation to be used for layout. When the completed file is sent for output, the high-res images are automatically swapped out with the low-res images.

Optical Density – The light-stopping ability of a film or printed image.

Optical Disk – A high-density storage device that uses a laser to burn a pattern of holes into a tellurium film on a disk's surface. One optical disk storage system can store the entire Encyclopedia Britannica if necessary.

Orange Peel – *[see Mottle]*

Overprint – The printing of one ink impression over another.

Pantone Matching System [PMS] – The brand name of a system for specifying colors; a standard in the printing industry.

PDF – [See *Portable Document Format*]

Photoengraving – A metal plate prepared photochemically, from which the matrix or rubber mold is reproduced.

Photopolymer Plates – A flexible, relief-printing plate used in flexography. Photopolymer plates require exposure to UV light during the platemaking process.

Pinholing – When printed ink fails to form complete coverage, evident by small holes in the printed area.

Portable Document Format – A file format invented by Adobe Systems as a solution for transporting files cross-platform. PDF's are independent of the original application software.

Preflight – A process of determining the completeness and correctness of an electronic design file prior to commencement of production.

Press Direction – The direction of paper parallel to its forward movement on the press.

Press Proofs – Printed sections of substrate material made on a press to allow for approval or final corrections before the print run is made.

Process Color – Cyan, magenta, yellow, and black inks used in four-color process printing; hue may be modified to meet specific needs.

Process Control – The procedure for examining a process that aims at evaluating future performance through the use of statistical quality control methods.

Process Printing – Printing from a series of two or more halftone plates to produce intermediate colors and shades. In the four-color process, yellow, magenta, cyan, and black are used.

Proof – A prototype of the printed job made from plates, film, or electronic data, for in-house quality control and/or customer inspection and approval.

Quality Control – The systematic planning, measurement, and control of the combination of personnel, materials, and machines with the objective of producing a product that will satisfy the quality and profitability of the enterprise.

Quiet Zone – Print-free zones or areas in a bar code that are used to separate the bars and spaces from any surrounding graphics or text.

Register – In printing, the alignment of two or more images when printed sequentially on top of each other.

Repeat – The printing length of a plate cylinder [circumference of the printing surface], determined by one revolution of the plate cylinder gear.

Resolution – A measure of sharpness in a digital image, expressed as dots, pixels, or lines per inch. Reverse Printing – Printing on the underside of a transparent film.

RGB – Red, green, and blue, the primary additive colors, which are the backbone of computer color display monitors and prepress color separation.

Roll-out – Fluid ink printed on a substrate using a Meyer rod applicator. Also known as bardown.

Run Target – The minimal set of graphic elements placed in the live image areas and used to monitor the production run process.

Scanner – An optical device that uses a laser beam to “read” the encoded data in a bar code by optically detecting the bars and spaces.

Screen Angle – The angle of the rows of dots in a halftone.

Screen Resolution – Either a measure of the number of colors that can be displayed on a monitor, such as 8-bit [256] or 16-bit [63,536]; or the number of horizontal and vertical lines on a raster display.

Step and Repeat – Positioning and exposing multiple complete images on film in preparation for platemaking.

Stickyback – The double-faced adhesive-coated material used for mounting elastomeric printing plates to the plate cylinder.

Substrate – The material which is printed upon, i.e., film, paper, paperboard.

Surface Print – Conventional flexo printing resulting with a right-reading image on the top surface of the web. [*See Reverse Print*]

Thumbnail – A rough, pencil drawing of a concept for a finished piece of artwork, to convey the positioning of relevant elements.

Tint – A means of making a given color appear lighter in value by printing it in a dot or line pattern of less than 100% coverage in any given area.

Trapping – The overlapping of various colors in a design to prevent their separating and not touching as a result of registration variables during printing.

Truncation – The process whereby a bar code is compressed in the height dimension beyond the allowable height and width specification.

Ultraviolet [UV] Curing – Conversion of a wet coating or printing ink film to a solid film by the use of ultraviolet light. U.P.C. – [*See Universal Product Code*]

Vector – A line between two points. Vectors are created and displayed on the screen with drawing software. Vector drawings can be processed as a series of points and connections that are compact for a computer to store and manipulate.

Vignette – A halftone image in which the background gradually fades away until it blend into the unprinted substrate or a solid print. Also called a “fade”.

Viscosity – A measure of a fluid’s resistance to flow which influences the amount printed.

Web – The paper, foil, film, or other flexible material from a roll, as it moves through the machine in the process of being formed or in the process of being converted, printed, etc.