



# Digital Printing Glossary

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## 1 2 3

### 4-Colour

A printing process that uses black (K) in addition to the primary colours (CMY)

### 6-Colour

A printing process that uses black (K), light cyan (Lc) and light magenta (Lm) in addition to the primary colours (CMY).

### 8 bit

Information coded in 8 bit (1 byte) can take  $2^8 = 256$  different values (0 to 255); in 8-bit-colour each pixel can show 256 colours or shades of grey.

### 16 bit

Information coded in 16 bit (2 byte) can take  $2^{16} = 65536$  different values (0 to 65535); in 16-bit-greyscale each pixel can show 65536 shades of grey.

### 24 bit RGB

In 24-bit-RGB 8 bits are assigned to each of the components red, green and blue of the pixel. The colour of each pixel can be coded on 16.7 million (or simply "millions of") different levels.

### 32 bit CMYK

In 32-bit-CMYK, 8 bits are assigned to each of the components Cyan, Magenta, Yellow and Black of the pixel. The colour of each pixel can be coded on 4.3 billion different levels (which does not mean 4.3 billion different colours can be shown); indeed black is not a primary colour.

## A

### Accelerated Weathering

Laboratory test designed to simulate and accelerate the destructive action of natural weathering on inks and media. Includes exposure to artificially produced components of natural weather such as UV light, temperature variations and water spray, which are repeated in cycles at defined intervals.

### Additive Colours

Red, green and blue; also called additive primary colours. When red, green and blue light comes together in equal proportions, the result is white light.

### Airbrush Printer

A large, heavy digital printer for printing directly onto billboards, large banners, mesh etc. that uses compressed air to drive ink through the printheads.

### Aliasing

The stair-stepped pattern in a bitmap image when the resolution is too low for the size of the output; also called "jaggies".

### Anti-aliasing

The smoothing of the rough edge pattern by averaging and blending of the boundaries and increasing the resolution.

### Anti-graffiti

Laminate with a hard smooth surface to facilitate removal of paints and marker inks

### Aqueous Inks

Water based inks; inks that use water as carrier for the dyes or pigments as colorants

### Aspect Ratio

The relation of height to width of a picture

## B

### Backlit

Semi-translucent polyester film, coated for inkjet printing, for use in light boxes.

### Banner

See Scrim

### Banding

Break up of graduated colours into larger blocks (bands) of single colour instead of a smooth transition; caused by insufficient colour ranges (less than 24-bit colour).

### Basis Weight

Weight of a media determined by the weight in pounds (lb) of 500 basic size sheets (1 ream) in or weight in gram of 1 square metre ( $g/m^2$ ).

### BAT (*Bon à tirer*)

The final proof accepted by the end-user that is used as the standard for comparing printouts. Normally printers require a signed BAT before production printing to confirm an order.

### Binder

Non-volatile ingredient of an ink; it binds the pigments together to form the ink film and bonds that film to the media to which it is applied.

### Bitmap

An image made up of individual pixels (rather than vector coordinates); developed by Microsoft; the file extension is .bmp

**Black**

Absence of light or no light reflected; apparent colour when an object absorbs all wavelengths of light rather than reflecting some.

**Bleeding**

Spreading of ink into the paper or on the surface causing diffusion of the surroundings of shapes and indistinct edges.

**Block-out**

Banner substrate or self-adhesive film that is totally opaque and does not let any light pass.

**Blooming**

Overexposure in digital devices; results in loss of detail and distortion at colour boundaries.

**Brightness**

Lightness value of a pixel ranging from 0 (black) to 255 (white). Also the light reflectivity of a printing media; different brightness levels change the appearance of colours and thus require adjustments in calibration.

**Bubble Jet**

Thermal inkjet printing systems associated with low cost desktop printers. The term is also used by Canon to describe thermal inkjet.

## C

**Calibration**

Optimising settings for a printer/ink/media combination to known specifications in order to achieve accurate and consistent reproduction of the final print.

**Calliper**

Total thickness of a film or paper; measured in  $\mu\text{m}$  (micron = thousandth of one millimetre) or mil (thousandth of an inch).

**Carrier**

Liquid substance in which ink pigments are suspended or dyes are dissolved. The carrier can be aqueous, solvent or eco-solvent and evaporates after printing.

**Chrominance**

Signal that describes hue and saturation; difference between 2 colours of equal brightness.

**Characterisation**

Description of the colorimetric response of a digital device through the creation of an ICC profile.

**CIE**

*Commission International de l'Eclairage*, an international organisation that developed colour definition standards, endorsed by Adobe Systems.

**CLUT**

*Colour Look Up Table*, a correspondence chart for converting colours from one device to another, such as from RGB (on screen) to CMYK (to be printed), compensating for the output characteristics of each device.

**CMS**

Colour Management System; software/hardware set up that creates colour profiles to describe and correct colour representation in a chain of devices to ensure predictable, accurate colour reproduction.

**CMYK**

Subtractive colour coding system used in inkjet printers for combining primary colours (Cyan, Magenta, Yellow and Black) to produce a full colour image.

**Coating**

Inkjet receptive layer on a film or paper that fixes inks

**Cockle**

Puckering or warping of an image after printing due to uneven surface, excessive humidity or oversaturation of ink.

**Cold Lamination**

Application of a clear self-adhesive film (PVC or polyester) to protect a print or other substrate; may contain UV-filters; uses pressure sensitive adhesives. Cold lamination is appropriate when heat would adversely affect the substrate. The surface finish of the lamination film will determine the appearance of the print: gloss film for crisp colours, satin for a silky shine, matt for non-reflective applications. Prints must be completely dry before lamination to avoid bubbles due to trapped moisture.

**Colorants**

Substances such as dyes and pigments that make up colours in inks.

**Colorimeter**

Optical device that measures colour values of reflected or emitted light by filtering into red, green and blue.

**ColorSync**

System extensions (CMS) developed by Apple Computer that manage the colour description of different devices working together.

**Colour Gamut**

The toner range of colours that can be reproduced by a digital device

**Colour Management**

Coordination and control of colour representation in a chain of input, display and output devices.

**Colour Profile**

See ICC Profile.

**Colour Separation**

Process of creating separate patterns of films for each colour component (one for each of cyan, yellow, magenta and black) for printing.

**Continuous Inkjet**

Process where ink is forced through a printing nozzle at a steady flow. The droplets are electrically charged and either directed onto a substrate or deflected away into a collection system.

**Contour Cutting**

Cutting around outlines of a printed image on a self-adhesive media with a printer capable of "print-and-cut".

**Contrast**

A measure of the ratio of brightness between the lightest and the darkest areas in an image.

**Cropping**

A process whereby a portion of an image is removed, usually from the outside of the image, to eliminate unwanted areas

**Curl**

Bending that occurs spontaneously at the edges of a media when laid on a flat surface; may be caused by atmospheric humidity or by oversaturation with ink

**Cyan**

The "blue" colour in 4-colour CMYK printing; commonly know as process cyan.

## D

**Densitometer**

Device used to measure the percentage rate of light that is reflected or transmitted by the surface of a substrate thus indicating the absorption rate.

**Dithering**

Method for simulating shades of grey of colour by only limited number and by varying size and shape of pixels.

**Die-Cutting**

The use of a sharp, formed piece of metal to cut out contours in a substrate, for example in self-adhesive vinyl to make stickers.

**Dielectric Media**

Specially treated substrates that hold an electric charge for printing on an electrostatic printer.

**Digital Printer**

Any printer capable of transforming digital data files into material copies. The most common printing technologies are thermal inkjet, piezo-electric inkjet, thermal transfer, electrostatic, off-set and laser.

**Dimensional Stability**

The ability of vinyl or paper to retain its original dimensions under stress or changes in moisture or temperature.

 **$D_{max}$** 

Highest density one can reach for a substrate on a printing system (printer and ink). Values higher than  $D_{max}$  do not show on the image.

 **$D_{min}$** 

Lowest density one can reach for a substrate on a printing system (printer and ink), normally white. Values lower than  $D_{min}$  do not show on the image.

**Dot**

Smallest single ink mark or spot on the printing substrate

**DPI**

Dots per inch; measure to describe the resolution as the number of separate dots printed along one linear inch. Sometimes incorrectly used as the unit of the resolution of a digital picture (number of pixel per inch).

**Driver**

Extension file of a computer system controlling an external device such as a printer.

**Drop**

Small packet of ink ejected by a print head before it hits the substrate.

**Drop on Demand (DOD)**

Inkjet printing process where discrete droplets are expelled through a nozzle.

**Drying Time**

Time required for a print to become touch dry.

**Dye Inks**

Organic colorants in inks; dyes have the ability to completely dissolve in a liquid (as opposed to pigments which are insoluble); dyes are brighter



and have a higher saturation but are less stable over time; mainly used for indoor applications.

### Dye Sublimation

Colour printing technology in which the images are printed in reverse on a carrier and then transferred to the final substrate; heat or pressure activated.

## E

### Eco-solvent Inks

Inks that contain weaker and less solvents than pure solvent inks. In addition, they are cheaper but not necessarily more environment-friendly than pure solvent inks. Mutoh says their Eco-Solvent Plus ink is a solvent-based ink, not containing any dangerous solvents nor spreading any VOCs (volatile organic compounds) into the environment. Roland makes a similar claim for their Sol Ink. Eco-solvent inks use slow-drying liquids as the carrier fluid. Therefore, printers that use these inks often have heaters fitted to aid with ink drying.

### EPS

Encapsulated Postscript; graphic file format that includes 2 images, a resolution independent description of the page layout and content, and a low resolution bitmap picture used to preview the high resolution image; developed by Adobe Systems.

## F

### Fading

Reduction of colour density over time mostly due to exposure to UV rays, environmental pollutants and abrasion by dust. Magenta and yellow fade faster than black, which is very stable. Lamination with a UV filter will considerably slow down the process.

### Feathering

The spreading of ink into a non-printed area due to the capillary action of the fibres of the substrate causing blurred images.

### Filler

Material added to an ink to increase opacity; cheaper than pigment. Normally this is chalk or clay.

### Floor Graphics

Digital images applied on floors protected by a tough grained laminate.

### Foil

Wax-based or resin-based colour ribbon for thermal-transfer printing; the thin plastic film travels over heated print head and is placed on a

substrate by a combination of heat and pressure from the print head.

### Food Grade

Inks that comply with laws and regulations for use on food packaging or marking of food products

### Foot

Unit of length, 12 inches; 1ft = 30.48cm

### Full Bleed

Printed picture or background that extends to the final trim edge of the media

## G

### GA Ink

Dye ink with wide colour gamut for graphic art applications made by Encad

### Gamma

Measure of the extent of how compressed or expanded the dark and light shades become in an image.

### Gamut

The range of colours that can be reproduced by a printer

### GCR

Grey Component Replacement; colour separating process that replaces the black obtained through portions of cyan, magenta and yellow by true black; this achieves more economical ink consumption and avoids the risk of ink quantities not being absorbed by the substrate. In addition this allows to obtain a better neutralisation of the grey tones and achieve a higher  $D_{max}$ .

### GIF

Graphic Interchange Format; a graphic file format that allows exchange of image files across platforms; developed by CompuServe.

### Gloss

Property of a smooth surface with a shiny appearance; different gloss levels are measured as the percentage of light refracted from a surface at certain angle

### Grey Balance

Amount of cyan, magenta and yellow required to obtain a neutral grey.

### GO Ink

Pigmented outdoor ink with high durability and UV-resistance made by Encad

### Grammage

See Basis Weight



## Greyscale

Range of neutral colours; at 8 bit a file can have 256 levels of grey (including black and white).

## GX Ink

Archival dye ink with high UV-resistance made by Encad

## H

### Halftone

Process using a series of dots of various sizes within a fixed grid to simulate shades of grade.

### Halo

Lightening of black ink when it is printed near another colour

### Head Crash

Accidental contact of an inkjet nozzle or the complete head with a substrate during printing.

### Hexachrome

A colour matching system that allows the combination of 6 colours (CMYK, orange and green) in order to reproduce a larger gamut of colours; developed by Pantone Inc.

### Hi-Fi

6-colour printing used to obtain a more subtle rendition of light tones beyond that of traditional 4-colour processes by adding light cyan and light magenta.

### Hi-Fi Jet

Range of piezo inkjet printers made by Roland DG

### Hot Lamination

Application of a clear layer to protect a print or other substrate; may contain UV-filters; uses heat to activate the adhesive and thus cannot be used on heat sensitive substrates. Prints must be completely dry before lamination to avoid bubbles due to trapped moisture.

### HSV

Hue, Saturation and Value; a colour model in which colour is described in terms of chromatic colour, its intensity and its variation from light to dark.

### Hue

One of the components of colour represented by angle of a 360° colour wheel.

### Humectant

Soluble component of inkjet inks that is used to preserve the moisture content of the inks.

## I J

### ICC

International Colour Consortium; group of companies standardising the format for colour profiles and cross platform colour management systems; includes Adobe, Agfa, Apple Computer, Microsoft amongst others.

### ICC Profile

Colour profile conforming to ICC specifications.

### Inch

Unit of length, one twelfth of a foot; 1in = 2.54cm

### Ink

Ink is composed of a carrier (water or solvent), colorants (pigments or dyes) and a binder (to fix the inks); may also contain alcohols.

### Inkjet

Printing process where ink is projected as dots onto a substrate in a pattern to form an image. The most common technologies are thermal inkjet that heats ink in the printhead to the boiling point and piezo-electric inkjet that applies an electric charge to a piezo-crystal which in turn changes its shape and thus expels the ink through the nozzles.

### Intensity

Degree of saturation or reflection of light

### Interpolation

Process used to artificially increase or decrease the number of pixels of an image, thus improving apparent resolution.

### Jagging

See Aliasing

### JPEG/JPG

*Joint Photographers Expert Group*; graphic file format that compresses full colour bitmap graphics to obtain smaller files; the process loses some information and thus slightly degrades the image quality.

## K L

### L\*a\*b\*

Colour based on values of light (L), red-green (a) and yellow-blue (b).

### Lay Flat

Release liner that does not change when exposed to changes in humidity.

### Laminate

Thin clear (transparent) plastic film applied to a media (vinyl, paper etc.) providing protection



against humidity, abrasion and other wear; also enhances existing colour, providing a gloss, satin or matt surface appearance.

**Lamination**

Process of bonding a laminate to a substrate by application of pressure and/or heat for protection or appearance.

**Large Format Printing**

Printing on sheets larger than A3 or on rolls from 36in (914mm) wide

**Laserjet**

A range of laser printers made by HP

**Levels of Grey**

Number of shades of grey between white and black

**LFP**

See Large Format Printing

**Light Fast**

Property of an ink or colorant that retains its original colour on exposure to light under defined conditions.

**Light Magenta/Light Cyan**

Modified forms of the corresponding primary colours; help to achieve a more subtle rendition of light tones and more natural looking continuous tone prints on 6 colour printers.

**Light Solvent**

See Eco-solvent Inks

**Line Speed**

Speed of a substrate as it passes in front of the inkjet printheads

**Liquid Laminate**

Clear coat applied to a printed surface as a protection against humidity and environmental aggression; can be applied with a brush, as a spray or in a laminator

**Luminance**

The brightness of an image

**Luminosity**

Brightness of a single colour

**M**

**M1 Fire Rating**

French standard for inflammability; M1 products are non-flammable, i.e. combustion is slow and without flames.

**Magenta**

The purple-red colour in 4-colour CMYK printing; commonly called process magenta

**Media**

The materials to be printed on: paper, vinyl, polyester, banner, canvas, fabric etc. Come in rolls of various widths and lengths or as sheets.

**Megapixels**

Maximum total number of pixels of a device; calculated by multiplying the number of pixels per row with the number of rows.

**Metre**

Basic unit of length; 1m = 3.28ft

**Micron (µm)**

One thousandth of a millimetre (100µm = 3.9mil)

**Mil**

One thousandth of an inch (1mil = 25µm)

**Millilitre**

Liquid volume equivalent to one thousandth of a litre (1ml = 0.03381 fluid ounces)

**Millimetre**

One thousandth of a metre (1mm = 0.039 inch)

**Mild Solvent**

See Eco-solvent Inks

**Mirror Image**

Reversing an image to be looked at through a clear or backlit film, or for transfer prints that are applied backwards (on the side of the light source) onto the substrate

**Moiré**

Wavy pattern that occurs when colour separations are conflicting or overlapping.

**Monochrome**

One colour; commonly refers to printing in black on white

**Mottle**

Uneven print density due to inaccurate dot placement in areas of solid colours.

**NO**

**Nozzle**

Tiny hole in the orifice plate of the print head from which the ink is expelled.

**Opacity**

Percentage of resistance of light passing through a substrate; measurement for the capacity of



underlying colours or images to show through a media.

### **Opaque**

Light blocking substrate; one side does not show through to the other

### **Optical Resolution**

The maximum actual (true) resolution of a scanner without interpolation

## **P**

### **Pantone**

Colour matching system identifying over 3000 colours and part of numerous colour management systems; owned by Pantone Inc.

### **Pass**

Travel of a print head assembly over a substrate; one-pass printers use an assembly of several head to deposit all colours in one run; multi-pass printers require a separate run for each colour.

### **PDF**

Portable Document Format; graphic file format that allows distribution of unalterable documents with the original formatting including pictures and fonts across platforms; developed by Adobe Systems Inc.

### **Perforation**

Sequence of holes, evenly spaced or in regular patterns, along the edge of a media for use on sprocket fed printers.

### **Permanent Adhesive**

Adhesive that creates a permanent bond between a printing media and a substrate; difficult to remove after application without leaving adhesive residue on the substrate.

### **Photo Paper**

Medium to heavy strength paper with a gloss, satin or matt inkjet receptive coat for high-resolution colour images.

### **PICT**

Graphic file format containing both vector and bitmap graphics up to 24 bit; mainly used on Macintosh computers.

### **Piezo-electric**

Printing technology that uses an electric charge on a piezo-electric crystal to control the flow of ink droplets through the nozzle. The piezo crystal expands and contracts and each time expels an ink droplet. Since the ink does not need to be boiled, as is the case on thermal heads, the piezo printers are more reliable. Also since there are no heating elements the print heads themselves

need to be replaced less often. Epson, Mimaki, Mutoh and Roland manufacture piezo printers.

### **Pigment Inks**

Colorants in inks; pigment particles in the liquid medium form a suspension and do not dissolve in a liquid (as opposed to dyes); pigments are more stable over time. Pigments are often based on naturally occurring (inorganic) minerals such as metal oxides or charcoal.

### **Pinholes**

Tiny round spots that are not covered by ink

### **Pixel**

Stands for PICture ELeMENT; the smallest discrete point of a bitmapped image.

### **Pixelisation**

Effect that occurs when pixels of an image are enlarged to increase the picture size with a lower PPI; may result in aliasing

### **POS**

*Point of Sale*, advertising at the sales counter of retail shops and stores with direct customer exposure; sometimes also called POP (Point of Purchase).

### **Postscript**

A text based language used to describe how objects and text appear on a page; allows for proportional scaling; developed by Adobe Systems

### **PPI**

Pixels per inch; number of pixels in a line of one inch; indicator for the resolution of an image; the higher the number the greater the resolution.

### **Pre-press**

All processes performed on a printing order before it goes to the press to be printed: copy writing, page layout, scanning, artwork, colour proofing etc.

### **Primary Colours**

Set of basic colours that make up other colours; additive colours are red, green and blue, together they make up white light; subtractive colours are cyan, magenta and yellow, together they make up black; real black is often added in printing to obtain a richer black.

### **Print Spooler**

Holding area such as memory space or hard disk space where data files wait before they are sent to a printer.

**Printer-cutter**

Inkjet printer that also cuts contours. Roland and Summagraphics manufacture printer-cutters.

**Print Head**

Component on inkjet printers that forms the ink droplets and drives them onto the substrate; comprises inkfeed, transducer (thermal or piezo) and nozzle. A printer can have 64 or 128 nozzles that can expel ink simultaneously. The major print head manufacturers are Brother, Epson, Spectra and Xaar.

**Print Zone**

Area of a media that the printer is capable of printing on leaving unprinted blanks along the edge

**Process Black**

Black that is obtained by combining cyan, magenta, yellow and black

**Process Colours**

Ink colours that combine and thus can reproduce any other colour; normally cyan, magenta and yellow; black is often added to save consumption of the basic colours.

**Profile**

Settings of a colour management system that contain the colour reproduction characteristics of each device (scanner, printer etc).

**Proprietary**

Media or software designed for use with one specific device or brand only.

**PVC**

*Polyvinyl Chloride* commonly called vinyl; soft thin plasticised film, mostly white or clear in a variety of surface finishes (gloss, satin, lustre, matt). For printing applications normally self-adhesive; available coated or uncoated; clear versions also used as laminates.

## Q R

**Queue**

See Print Spooler

**Print Spooler**

Holding area such as memory space or hard disk space where data files wait before they are sent to a printer.

**Raster**

Image made up of individual pixels.

**Reflective**

Ability of a surface to effectively bounce back most or all of the wavelengths of incoming light

**Removable Adhesive**

Low tack adhesive that does not create a permanent bond between a printing media and a substrate; remains easy to remove for a defined duration after application and does not leave any adhesive residue on the substrate.

**Render**

The actual and final display of an image or print after transmission or transformation.

**Repellency**

Ink does not adhere evenly to the media and tends to pearl off; may be due to improper handling of the media (fingerprints) or when inks do not match the printing surface; often occurs on substrates with a high gloss finish.

**Resampling**

Changing the resolution of a picture file without changing its size

**Reticulation**

Defect in which the ink recedes in certain areas due to incompatibility of the surface energy of ink and substrate.

**Resolution**

Number of dots or pixels per linear unit of length (inch or millimetre)

**RGB**

Additive colour coding system used for digital images for display on a monitor for combining primary colours (red, green and blue) to produce a full colour range. Before printing these colours must first be translated into the CMYK system to maintain the colour replication of the printed image.

**RIP**

Raster Image Processor; software/hardware combination that converts files containing text and images into data usable by a printer.

## S

**Satin**

Silky surface appearance; also called lustre

**Saturation**

A measurement of the purity of a colour; the white content of a pure chromatic colour is 0%.

**Scanner**

A device that captures a digital image of a real object or picture; from an analogue picture the scanner produces a digital file.



**Scrim**

Loosely woven polyester fabric coated or laminated with soft PVC; can be opaque (frontlit) or translucent (backlit)

**Server**

Computer used for a specific task such as storing shared programs or files; also computers used for calculation intensive and time consuming large format colour printing.

**Silkscreen Printing**

A printing technique involving the forced passage of a paint-like ink through a web or fabric stretched on a frame, to which a stencil has been applied, with the help of a rubber squeegee. The stencil openings determine the form and dimensions of the graphic.

**Secondary Colours**

Colour obtained by mixing 2 or 3 primary colours.

**Sharpen**

Improve the rendering of detail by increasing the local contrast of an image.

**Shelf Life**

The period of time that a product will keep in good workable condition when stored upright in the original sealed packing under defined storage conditions.

**Silvering**

Small bubbles with a silvery shine between a laminate and a substrate due to insufficient adhesion.

**Smoothing**

Averaging values of a pixel with those of neighbouring pixels.

**Solvent Inks**

Liquid component of ink that uses solvent to carry colorants; solvent inks are more aggressive and affect the surface of the substrate; normally water resistant and more durable than aqueous inks. Solvents also have the benefit of softening up the media surface, which helps colour pigments to bond; thus they can print directly onto vinyl film or vinyl banner; also referred to as "true solvent" or "hot solvent". As solvent printers emit VOCs production sites must be ventilated.

**Spectrophotometer**

Device for measuring the relative intensities of the light and the colorimetric values of a digital print.

**Spooler**

See Print Spooler

**Spot Colour**

Colours that print as solid blocks without combining with other colours.

**Spot White**

White ink that is used as an independent colour for printing white text or graphics on a coloured surface or as block-out on a transparent or translucent media.

**Stiffness**

The stiffness of a plastic or paper the force needed to bend a sheet to a defined angle. Stiffness together with thickness can affect the runability of a printing media in the printer. Paper and polyester are normally stiffer than vinyl.

**Substrate**

The material that the process is applied to. Also called target surface; in case of digital printing it is the media.

**Subtractive Colours**

Cyan, Magenta and Yellow; transparent colours that are combined to reproduce all other colours; black is sometimes added to obtain true, "blacker" black. See CMYK and GCR.

**Surfactant**

A component in inkjet inks that reduces the surface tension of the liquid

**Swath**

A single pass of the printhead assembly over the substrate

**T**

**Tensile Strength**

Property that describes the strength of a material; the maximum force per unit width that can be applied to a sheet or strip before it breaks. The higher the tensile strength, the stronger the media.

**Thermal Inkjet**

Printing process where ink is heated to boiling point and through expansion is then projected from the head onto the substrate. Thermal print heads are cheaper but need to be replaced more often than piezo heads. Canon, Encad and Hewlett-Packard are manufacturers of thermal inkjet printers.

**Thermal Transfer**

Printing process where heat is used to transfer resin dyes from a carrier foil onto a substrate.

**TIFF**

Tagged Image File Format; image file format used for high-resolution bitmaps; usable across



platforms; developed by Aldus (now belongs to Adobe Systems).

### **Tiling**

Dividing very large images into smaller sections for ease of handling and printing.

### **Tint**

Reduction in the saturation of a colour by adding white content.

### **Topcoat**

The ink receptive coating applied to the surface of vinyl or other printing substrates during the manufacturing process in particular to substrates that are not ink receptive by themselves. The topcoat ensures ink adhesion and prevents bleeding and dispersion.

### **Translucent**

Diffuse transmission of light. No clear image contours can be seen.

### **Transparent**

Transmission of light or certain colours with no or minimal diffusion or scattering.

### **Tunnelling**

Delamination in the shape of waves of straight tunnels due to insufficient adhesion or tensions in the substrate or laminate.

### **TWAIN**

Communication protocol between digital imaging devices (scanners, cameras etc.) and PCs.

## **U V**

### **UV Curing Inks**

Inks that cure and create a bond to the substrate through polymerisation effected by ultra-violet irradiation from lamps on either side of the printhead assembly; commonly found on flatbed printers.

### **UV Filter**

Laminate with added UV inhibitors that reduce a certain amount of UV light to prevent rapid fading of colorants.

### **UV Inks**

Inks containing pigments that resist fading under UV light and have longer outdoor durability.

### **Vinyl**

Self-adhesive PVC film, top-coated for aqueous inkjet printing, uncoated for solvent and eco-solvent printing.

### **Viscosity**

Measurable resistance to flow in fluid or semi-fluid substances; increases with decreasing temperature.

### **VOC**

*Volatile Organic Compounds*, petroleum-derived chemicals used as carriers in solvent inks; they evaporate easily and are considered toxic.

### **Volatile**

Ingredient of an ink or an adhesive subject to evaporation at relatively low temperatures.

## **W X Y Z**

### **Waterfast**

A printed image with colorants not easily dissolved by water.

### **Waterproof**

Substrate resisting dissolution and decolourisation when immersed into water

### **Water Resistant**

Property of a printed substrate coated to resist dissolution and decolourisation when sprayed with water.

### **White Ink**

Used to enhance an image and add contrast; commonly used to print on clear substrates and on UV-curing printers.

### **White Point**

The lightest tone in an image

### **Wicking**

Absorption of ink along the fibres of paper, also called spider web effect



<b>Conversion Table</b>	
<b>US Size</b>	<b>Metric Size</b>
15 inch	380mm
20 inch	500mm
24 inch	615mm
30 inch	750mm
34 inch	870mm
36 inch	914mm
40 inch	1000mm
42 inch	1060mm
44 inch	1118mm
48 inch	1230mm
50 inch	1270mm
52 inch	1320mm
54 inch	1370mm
60 inch	1520mm
63 inch	1600mm

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