
**Graphic technology — Vocabulary —
Part 2:
Prepress terms**

*Technologie graphique — Vocabulaire —
Partie 2: Termes de préimpression*



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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ISO 12637-2 was prepared by Technical Committee ISO/TC 130, *Graphic technology*.

ISO 12637 consists of the following parts, under the general title *Graphic technology — Vocabulary*:

- *Part 1: Fundamental terms*
- *Part 2: Prepress terms*
- *Part 3: Printing terms*
- *Part 4: Postpress terms*
- *Part 5: Screen printing terms*

Introduction

Documentation gives rise to numerous international exchanges of both intellectual and material nature. These exchanges often become difficult, either because of the great variety of terms used in various fields or languages to express the same concept, or because of the absence of, or the imprecision of, useful concepts.

To avoid misunderstandings due to this situation and to facilitate such exchanges, it is advisable to select terms to be used in various languages or in various countries to express the same concept, and to establish definitions providing satisfactory equivalents for the various terms in different languages.

This part of ISO 12637 contains terms and definitions associated with the prepress stage of printing.

Graphic technology — Vocabulary —

Part 2: Prepress terms

1 Scope

This part of ISO 12637 defines a set of prepress terms which may be used in the drafting of other International Standards for graphic technology. In order to facilitate their translation into other languages, the definitions are worded so as to avoid, where possible, any peculiarity attached to one language.

2 Terms and definitions

2.1

aliasing

jagged or staircase effect in a raster image, caused by an insufficient number of image elements

NOTE See also ISO 12651:1999, definition 4.38.

2.2

assembly

placing digital, film or paper elements together in order on a suitable substrate or file

NOTE See also ISO 12637-1:2006, definitions 2 and 3.

2.3

bit-mapped image

image represented by an array of picture elements, each of which is encoded as a single binary element

NOTE 1 See also ISO 12651:1999, definition 4.02.

NOTE 2 This is representation of characters or graphics by individual pixels, or points of colour/no-colour arranged in a row and column order (analogous to a graph paper grid). Each pixel is represented by either one bit (black and white printing) or up to 32 bits (higher quality colour printing). Physically the bit map exists only as digital information in the computer memory until transformed into an image on a monitor or print output device.

2.4

bleed

additional printing area outside the nominal printing area necessary for the allowance of mechanical tolerance in the trimming process

[ISO 15930-3:2002, definition 3.1]

2.5

blind exchange

exchange of compound entities that requires no exchange of technical information between sender and receiver in order to render the printed page as intended by the sender

2.6
colour electronic prepress system
CEPS
electronic, computer-based, image manipulation system used to prepare digital data files of material for graphic arts printing production

NOTE This term is used by the printing industry to describe a class of equipment, used from 1980 to approximately 1995, which ushered in the electronic revolution in the printing and publishing industry.

2.7
characterization
relationship between input/output device-dependent and device-independent values

2.8
characterized printing condition
characterization of tone values in relation to colour definition in the various printing processes

2.9
choke
process whereby background colour is expanded to overlap image perimeter to ensure that there is no visible gap between the two

NOTE See also **trapping** (2.138).

2.10
chromaticity diagram
graphical representation of two of the three dimensions of colour

2.11
CIE chromaticity coordinates
trichromatic coefficients
ratios of each of the tristimulus values of a colour to the sum of the tristimulus values

NOTE In CIE (Commission Internationale de l'Eclairage) systems, these coordinates are designated X, Y and Z. See also **CIE chromaticity diagram** (2.12).

2.12
CIE chromaticity diagram
two-dimensional diagram representing visible colours in terms of the CIE chromaticity coordinates, which are derived from the standard 1931 CIE XYZ tristimulus values

2.13
CIELAB colour space
rectangular opponent-type colour space derived from non-linear transformations of the 1931 CIE XYZ system and expressed by the colour coordinates L^* , a^* , b^* approximately uniform with respect to colour differences, where L^* represents relative lightness, a^* represents redness or greenness and b^* represents yellowness or blueness

2.14
CIELUV colour space
rectangular opponent-type colour space derived from non-linear transformations of the 1931 CIE XYZ system expressed by the colour coordinates L^* , u^* , v^* approximately uniform with respect to the perception of colour differences, where L^* represents relative lightness, u^* represents redness or greenness, and v^* represents yellowness or blueness

2.15
CIE standard illuminants
illuminants A, D50, D65, etc., defined by the CIE in terms of relative spectral power distribution

2.16**CIEXYZ tristimulus values**

values of x , y , z components of a colour obtained by multiplying the relative power of a CIE standard illuminant, the reflectance or transmittance of the object, and the CIE standard observer functions \bar{x} , \bar{y} and \bar{z}

2.17**CMYK**

abbreviation for cyan, magenta, yellow and black process colours

2.18**colorimeter**

instrument for measuring colour values, such as the tristimulus values of a colour stimulus

2.19**colour characterization target**

standard colour reference used for establishing the relationship between a printed image and the input values of that image

2.20**colour correction**

photographic, electronic or manual procedure used to enhance original colour and to compensate for the deficiencies of the process inks, colour separation and defects in the original

2.21**colour difference**

distinction between two colours observed or measured under standard conditions

2.22**colour encoding**

generic term for a quantized digital encoding of a colour space, encompassing both colour space encodings and colour image encodings

[ISO 22028-1:2004, definition 3.7]

2.23**colour gamut**

solid in a colour space, consisting of all those colours that are either present in a specific scene, artwork, photograph, photomechanical or other reproduction; or capable of being created using a particular output device and/or medium

[ISO 22028-1:2004, definition 3.8]

2.24**colour image encoding**

digital encoding of the colour values for a digital image, including the specification of a colour space encoding, together with any information necessary to properly interpret the colour values such as the image state, the intended image viewing environment and the reference medium

[ISO 22028-1:2004, definition 3.9]

2.25**colour profile**

data file that provides colour management systems with the information necessary to convert colour data between native device colour spaces and device-independent colour spaces

2.26**colour rendering**

mapping of image data representing the colorimetric coordinates of the elements of a scene to output-referred image data representing the colorimetric coordinates of the elements of a reproduction

NOTE Adapted from ISO 22028-1:2004, definition 3.11.

2.27

colour separation

(process) act of separation by which a multi-coloured original is split into the separate colour files or films associated with the printing colorants for process colour printing

2.28

colour separation

(product) set of data files or films created by the process of **colour separation** (2.27)

2.29

colour sequence

order in which the colours are stored in a data file

2.30

colour space

geometric representation of colours in space, usually of three dimensions

[ISO 22028-1:2004, definition 3.13]

2.31

colour space encoding

digital encoding of a **colour space** (2.30), including the specification of a digital encoding method, and an encoding range

NOTE Adapted from ISO 22028-1:2004, definition 3.14.

2.32

colour value

set of numeric values associated with each of the pixels in one of the colour spaces

2.33

complementary colours

two colours that, when mixed in appropriate ratios, produce an achromatic colour

NOTE In graphic arts processes the complementary pairs are yellow and blue; magenta and green; cyan and red.

2.34

complete exchange

exchange of compound entities in which all elements and element resources are present as part of a single exchange and all of the information needed to process the composite entity is either in the composite entity or is specified within the applicable standard and its normative references

[ISO 15930-1:2001, definition 3.5]

2.35

composite

unit of work with all text, graphics and image elements prepared for final print reproduction

2.36

compound entity

unit of work with all text, graphic and image elements prepared for final print reproduction and that may represent a single page for printing, a portion of a page or a combination of pages

[ISO 15930-1:2001, definition 3.6]

2.37

continuous tone

image that has not been screened and has infinite tone gradations between the lightest highlights and the deepest shadows

2.38**contrast**

⟨image⟩ relationship or degree of tonal gradation between the lightest and darkest areas in an original or reproduction

2.39**control patch**

area produced for control measurement purposes

[ISO 12647-1:2004, definition 3.8]

2.40**control strip**

array of control patches

NOTE Adapted from ISO 12647-1:2004, definition 3.9.

2.41**copperplate engraving**

generic term of intaglio printing where plate making occurs without using a photomechanical process

NOTE An engraving process using steel instead of copper is known as steel plate engraving.

2.42**copy**

any graphic material provided for reproduction including text, images and line art

2.43**core density**

⟨half-tone film⟩ transmittance density in the centre of an isolated opaque image element such as a half-tone dot or line

[ISO 12647-1:2004, definition 3.10]

2.44**CtP**

abbreviation for computer to plate, the method of making plates direct from digital data

2.45**density**

weight of tone or colour in any image, measurable by a densitometer

NOTE See also ISO 13656:2000, definition 3.6.

2.46**device-dependent colour space**

colour coordinates defined by the characteristics of an imaging device

2.47**device-independent colour space**

colour coordinate system defined in terms of the amounts of visual stimuli colour capabilities independent of the specific device characteristics

2.48**device link profile**

data file in a device-independent colour space which provides information necessary to convert colour data into a device-dependent colour space

2.49**digital proof**

soft or hard copy proof produced from digital data on a display or on a substrate

2.50

dithering

digital pixel averaging used to add detail or increase the tonal gradation by increasing the number of pixels within a cell

2.51

dot fringe

soft edge occurring around a halftone dot that reduces contrast

2.52

dot percentage

percentage of an area covered by half-tone dots of each colour, ranging from 0 % to 100 %

2.53

doubling/slur patch

control patch for assessing actual rolling conditions on press and for identifying press roller problems

NOTE Adapted from ISO 13656:2000, definition 3.7.

2.54

em

typographic measure, whose width is equal to the point size of the type in use, that serves as the base of the set-width horizontal spacing system

2.55

en

typographic measure which is equal in width to half an em of the same point size

2.56

Encapsulated PostScript

EPS

image description format conforming to Adobe Document Structuring Conventions (DSC)

2.57

extended gamut

colour gamut (2.24) extending outside that of the standard sRGB CRT display

NOTE See also IEC 61966-2-1.

[ISO 22028-1:2004, definition 3.19]

2.58

font

collection of characters in one typeface and size

2.59

gamma

⟨display⟩ slope of the relationship between the input and reproduced luminance of an image reproduction system

2.60

gamma

⟨photography⟩ measure of the amount of contrast that is characteristic of a particular film, paper or processing technique

2.61

gamut mapping

mapping of the colorimetric coordinates of the elements of a source image to colorimetric coordinates of the elements of a reproduction to compensate for differences in the source and output medium colour gamut capability

NOTE Adapted from ISO 22028-1:2004, definition 3.22.

2.62**grey component replacement****GCR**

removing appropriate amounts of individual colorants that together are equal to grey and replacing these multiple colorants with an appropriate amount of black

2.63**global colour change**

change in the relationship of colours in an image applied consistently to all parts of the image as contrasted to a local colour change where selected spatial areas of an image are changed separately from the rest of the image area

[ISO 12640-1:1997, definition 3.6]

2.64**glyph**

recognizable abstract graphic symbol that is independent of any specific design

[ISO/IEC 9541-1:1991, definition 3.12]

2.65**glyph metrics**

set of information in a glyph representation used for defining the dimensions and positioning of the glyph shape

[ISO/IEC 9541-1:1991, definition 3.16]

2.66**gradation**

staged change in tones from highlight to shadow

2.67**half-tone**

image composed of dots which can vary in screen ruling (number per centimetre), size, shape, or density, thereby producing tonal gradations

[ISO 13656:2000, definition 3.11]

2.68**half-tone dot**

individual element of a half-tone image, which may be square, round, elliptical or a variety of other shapes

2.69**hard copy**

printed image on a substrate

2.70**hard copy proofing system**

system for simulating a printed image using a printing device which may be different from that used for production

[ISO 12646:2008, definition 3.1.6]

2.71**International Colour Consortium profile****ICC profile**

collection of transforms, encoded as specified in the ICC profile specification which is used to convert image data between device space and profile connection space

2.72

image area

space intended for or occupied by a reproduction of an image

2.73

image element

any component of an image

2.74

imposition

positioning pages in a printing forme in order to ensure correct sequence when the resulting print work is converted to final page form

2.75

input colour scanner

device capable of converting the light reflectance or transmittance of a photographic (or other hardcopy) sample into an electronic signal, where the electronic signal is arranged to have an organized relationship with the spatial areas of the image evaluated

[ISO 12640-1:1997, definition 3.7]

2.76

input-referred image data

image data that is either scene-referred or original-referred

2.77

job definition format

JDF

XML-based file format for **job ticket** (2.78) specifications, combined with a message description specification and a message interchange protocol, for the integration of processes in prepress, printing and post press

2.78

job ticket

electronic specification of processes for production

2.79

layout

composition of image and non-image elements

2.80

line art

image that has no tonal gradation

2.81

line engraving

printing forme or process in which the image area is etched or engraved using mechanical or chemical means

2.82

medium black point

lowest luminance neutral that can be produced by an imaging medium in normal use, measured using the specified measurement geometry

NOTE It is generally desirable to specify a medium black point that has the same chromaticity as the **medium white point** (2.83).

2.83

medium white point

neutral colour with the highest luminance that can be produced by an imaging medium in normal use, measured using the specified measurement geometry

[ISO 22028-1:2004, definition 3.30]

2.84**mid-tone balance control patch**

half-tone control patch, containing all three chromatic process inks, used for assessing the balance between the inks in which the cyan tone value is normally in the range between 40 and 60 and the magenta and yellow tone values are selected to approximate an achromatic colour

NOTE Adapted from ISO 13656:2000, definition 3.15.

2.85**moiré**

interference patterns that can appear at regular frequencies when two or more patterns (half-tone screens, subject content, scanning raster, etc.) interact with each other

2.86**monitor profile**

colour profile specifically derived for a visual display unit (VDU) such as a CRT display or LCD flat panel display

2.87**open prepress interface****OPI**

protocols that allow low-resolution proxy images to be converted to final resolutions for page layout

2.88**open screen volume**

volume of the screen opening if no stencil is applied

2.89**orientation**

specifies the origin and direction of the first line of data with respect to the image content as viewed by the end user

NOTE The codes used to specify orientation are contained in ISO 12639.

[ISO 12640-1:1997, definition 3.8]

2.90**page element**

substructure of a compound entity relative to the current processing environment, such as a block of text, a contour picture or an outline graphic that, by itself, comprises the smallest logical component of a compound entity

2.91**pagination**

making up into page format

2.92**profile connection space****PCS**

abstract colour space used in ICC colour management to connect the source and destination profiles

NOTE Adapted from ISO 15076-1:2005, definition 4.12.

2.93**portable document format****PDF**

file format used for exchange of documents and defined in the *Adobe Portable Document Format*

NOTE Adapted from ISO 15930-1:2001, definition 3.16.

2.94

PDF/X

file format for reliable exchange of print-ready data

NOTE See also ISO 15929.

2.95

pica

typographic linear measure equal to 4,216 mm (0,167 in), composed of 12 points

2.96

pixel interleaving

colour data organized such that the cyan, magenta, yellow and black colour values for one pixel are followed by the same sequence of colour values for the next pixel

[ISO 12640-1:1997, definition 3.10]

2.97

point size

typographic unit of linear measurement

2.98

preview image

preview consisting of a **raster image** (2.106) representing a composite, at a resolution suitable for viewing on a computer display

NOTE Adapted from ISO 15930-1:2001, definition 3.19.

2.99

primary colour

unitary colours from which all other colours are created (in additive and subtractive colour theory)

2.100

print substrate

material bearing the printed image

[ISO 12647-1:2004, definition 3.32]

2.101

printing tone value

printing dot value

(of a data set) digital value corresponding to the percentage area on a printing forme that is intended to accept ink for transfer to the final sheet

NOTE Adapted from ISO 12639:2004, definition 4.1.6.

2.102

process colours

cyan, magenta, yellow and black

NOTE Adapted from ISO 12647-1:2004, 3.33.

2.103

profile

device profile

digital representation of the relation between the device-specific colour signals (e.g. monitor drive voltage) and the colour coordinates of the profile connection space (PCS)

NOTE See also ISO 12646.

2.104**proof**

hard or soft copy reproduction made using various technologies to simulate an intended printing output

2.105**raster data**

set of digital picture elements arranged in a grid pattern

NOTE See also ISO 12651:1999, definition 4.08.

2.106**raster image**

image formed by a set of picture elements arranged in a grid pattern

[ISO 12651:1999, definition 4.07]

2.107**reference material**

material or substance one or more of whose property values are sufficiently homogeneous and well established to be used for the calibration of an apparatus, the assessment of a measurement method, or for assigning values to materials

[ISO 15790:2004, definition 3.1.10]

2.108**register**

accuracy by which the required position of the reproduction details in a sequence of operations is achieved

2.109**register marks**

small reference patterns, guides or set of fine-line crosses or other suitable devices added outside the image area to provide points for alignment and registration of subsequent colours in prepress, printing and post press operations

2.110**relative density**

density with respect to a reference such as the film base or the unprinted print substrate

NOTE See also ISO 12647-1:2004, definition 3.39.

2.111**repurposing**

adapting content that has been prepared for one publication channel for use in another publication channel having a different rendering capability

NOTE Examples include commercial printing to newsprint, publication printing to internet, etc. where an appearance match is not necessarily required or desired.

2.112**resolution**

amount of detail with which an image is rendered or captured

2.113**retargeting**

converting image data encoded by one printing system to produce the best visual match in a different printing system having an adequate colour gamut capability

2.114**RGB**

abbreviation for red, green, blue

2.115

raster image processor

RIP

processor that creates a bit-mapped image from any other form of electronic file

2.116

RIPing

process of creating a bit-mapped image from any digital file

2.117

sampling aperture

aperture

area of the sample that contributes to the measurement

[ISO 13656:2000, definition 3.25]

2.118

scaling

resizing

determining the final size of an image that needs to be enlarged or reduced to preserve the appropriate resolution

2.119

scanner

device in which light, reflected from or transmitted through, a document, is converted into analogue signals corresponding to the transmittance or reflectance (in specific wavelength regions and organized into a regular row-column arrangement of data), which is usually converted into digital data prior to being recorded

2.120

scanner resolution

number of sampling dots (picture elements) or lines per unit length used to scan a document

[ISO 12651:1999, definition 4.68]

2.121

scanning

process of capturing an image prior to digitization

2.122

screen angle

angle which the principal axis of the screen makes with the reference direction

2.123

screen frequency

screen ruling

number of image elements, such as dots or lines, per unit of length in the direction that produces the highest value

[ISO 12647-1:2004, definition 3.42]

2.124

secondary colour

colour produced by the mixture (either additive or subtractive) of two primary colours

2.125

softcopy

representation of an image produced using a device capable of directly representing different digital images in succession and in a non-permanent form

NOTE The most common example is a monitor.

[ISO 3664:—, definition 3.15]

2.126**soft proof**

simulation or prototype of an image made electronically and viewed on a video display terminal

2.127**spot colour**

colour created from a single ink, which is not one of the process colours

2.128**sRGB**

standard set of red, green, blue primary colours that represent the process average of CRT displays

NOTE See also IEC 61966-2-1.

2.129**steelplate engraving**

generic term of intaglio printing where plate making occurs without using a photomechanical process

NOTE An engraving process using copper instead of steel is known as copper plate engraving.

2.130**stochastic screening**

half-tone process that uses the variation of spacing of tiny dots, of uniform size and density, to render tones

2.131**Tag Image File Format For Image Technology****TIFF/IT**

format for exchanging raster-based data

NOTE See also ISO 12639.

2.132**tone**

degree of lightness or darkness in any given area of an image

2.133**tone value**

<data file> proportional printing value encoded in a data file and interpreted as defined in the file format specification

[ISO 12647-1:2004, definition 3.45]

2.134**tone value**

<film> percentage of the surface occupied by the image area

2.135**tone-value increase****dot gain**

difference between a tone value on the print and the tone value on the half-tone film or in the digital data file

[ISO 12647-1:2004, definition 3.48]

2.136**tone-value sum**

sum of the tone values of all four process colours at a given image spot

NOTE Adapted from ISO 12647-1:2004, definition 3.49.

2.137

transparent colour

attribute within the TIFF/IT file format data encoding that signifies that the underlying image (if any) shows through

NOTE A clear run is where no colour is present and the underlying image (if any) shows through. The colour 'white' signifies that no underlying image will show through, only the underlying substrate (paper).

2.138

trapping

technique that minimizes misregistration effects of abutting colours on press by slightly overlapping their printing areas

NOTE See also **choke** (2.9).

2.139

typesetting

composing typing into words and lines in accordance with the manuscript and typographic specifications

2.140

typography

process of designing, specifying, composing, printing or otherwise working with type faces by means of analogue and or digital technologies

2.141

under colour removal

UCR

removing appropriate amounts of individual colorants that together are equal to black and replacing them with an appropriate amount of black

2.142

vector data

image data stored as a set of instructions and parameters representing geometric shapes, such as straight lines, circles, arcs, etc.

2.143

veiling glare

light, reflected from an imaging medium, which has not been modulated by the means used to produce the image

[ISO 22028-1:2004, definition 3.42]

2.144

viewing flare

veiling glare (2.143) that is observed in a viewing environment but not accounted for in radiometric measurements made using a prescribed measurement geometry

[ISO 22028-1:2004, definition 3.43]

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