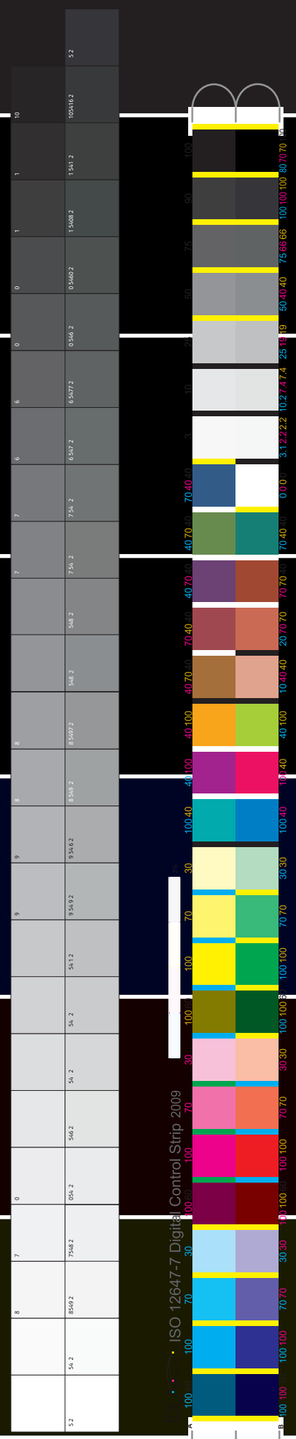

ISO 12647-7 Digital Control Strip 2009

100% Black

Warm Black 100% Black, 70% Cyan, 35% Magenta, 40% Yellow

Cool Black 100% Black, 35% Cyan, 60% Magenta, 60% Yellow

Registration Black 100% Black, 100% Cyan, 100% Magenta, 100% Yellow

100% Black and 100% Cyan

100% Black and 100% Magenta

100% Black and 100% Yellow

100% Black and 50% Cyan, 50% Magenta, 50% Yellow

Printed on a Xerox 700i by CommunityPrintersandStationers.com Tel. 250-782-7108 2012/10/09

Rich black
From Wikipedia, the free encyclopedia

This article is about the ink mixture created by combining black and some other color.

(February 2012)

Rich black, in printing, is an ink mixture of solid black over one or more of the other CMYK colors,[1] resulting in a darker tone than black ink alone generates in a printing process.

A typical rich black mixture might be 100% black, 50% of each of the other three inks. Other percentages are used to achieve specific results, for example 100% black with 70% cyan, 35% magenta, and 40% yellow is used to achieve "cool" black. "Warm Black" is 35%C 60%M 60%Y and 100%K. The colored ink under the black ink makes a "richer" result: the additional inks absorb more light, resulting in a closer approximation of true black. While in theory an even richer black can be made by using 100% of each of the four inks, in practice the amount of non-black ink added is limited by the wetness that the paper and printing process can handle. (A safe and practical rule of thumb is that ink coverage should not exceed 240% on normal papers. Papers that "pick", for example low end recycled, should be even less coverage.) Wetness is not a problem with laser printers, however, and registration black (or "400% black") produces very striking results in laser prints. Interesting effects can also be achieved with a laser printer by combining 100% black and 100% of cyan, magenta, or yellow.

Rich black is often regarded as a color that is "blacker than black". While this is nonsense from the point of view of color theory, the difference can often be seen in the printed piece. The difference can also be apparent in backlit (also known as "translite") pieces, where rich black more thoroughly blocks the light from coming through.

The use of rich black has to be based on a full understanding of the printing conditions, including the inks, printing press and especially the paper. If too much ink is used on poor quality paper such as newsprint, this may cause the paper to literally fall apart. In addition, excessive amounts of ink may not have a chance to fully dry before the printed result comes into contact with other pages. The additional ink used to create rich black also results in higher printing costs.

Care must be taken when using electronic design programs; for example, when managing a CMYK document in Adobe Photoshop, "black" may or may not equal 100%K depending on the CMYK profile specified in the image's settings, and Photoshop will represent the various tones using RGB values close to black; whereas in an RGB document, "black" always equals RGB value (0,0,0).

Another reason to use rich black for small areas of black is to avoid trapping issues. Rich black is often used for text printed over a picture or colored background, because otherwise any slight mis-registration between printing plates would produce a white or colored halo around the text, making it much harder to read.

In some cases the process of preparing a work to print may include conversions to CMYK from RGB or other color spaces. The amount of black mixed with C,M,Y inks can be expressed as a process of under color removal or under color addition, though increasingly the entire conversion process is done using an ICC profile which expresses both the conversion and the under color handling

This folder was printed on our new Xerox 700i with Adobe APPE processor , the 1st unit in the Peace River Area with GRACol color certification. It has the additional benefit of being able to print this 300 gsm card double sided in 1 pass, in addition to including Folding, Stapling, 3 hole punching and Inserting capabilities in line.

There is a set of grayscale bars on the back, the outside edge row printed in Black only, the inner 2nd row printed using the 3 color inks and appear as black. The other item on the back is a control strip, measured with a Spectrometer this is less than a Delta 3 variation average from the digital artwork. It also corresponds visually very closely to a monitor that has been calibrated to 5000K graphics standard using a Spectrometer. You may download the same file from our Facebook page to compare on your monitor and to print out. In order to read the control strip it must be printed at 100% size.