

Color Guide

This guide shows the difference between the RGB and CMYK color gamut's, clarifying why CMYK should be used for commercial print documents and finally showing how to check the color settings in the most commonly used software packages.

What We'll Be Covering

When ordering from Inteleprint, please remember that we don't check documents color set up and our online design tool routinely changes all colors to CMYK. In most cases, this can cause visible color conversion.

Colour Gamut Differences

With the RGB colour, the graphics are created from Red, Green, and Blue, with CMYK the shades are made up from Magenta, Cyan, Black, and Yellow.

CMYK colours are subtractive, in simple words the starting work is white, and colors are added to block out parts of the spectrum. RGB colours are additive meaning that the starting point is a blank computer screen and colours are combined gradually to create the resulting image.

Why Do Print Files Need to Be CMYK?

The RGB color gamut is much bigger than the CMYK gamut. i.e., some colours can be developed in RGB that are not available in CMYK. This issue is most ostensible with very sharp colours such as fluorescent green or orange. Commercial presses print onto white paper using CMYK colours, to get good results files should be developed with this in mind. Below are examples of files succumbed in RGB colour that have been automatically transformed into CMYK before printing.

Converting RGB Files To CMYK And Re-Balancing Colour

Using software like photoshop is possible to settle the colour balance after the conversion to more closely match the planned colour output. If using the RGB elements, i.e., images in the design stage it is worth changing the aspects into CMYK and re-balancing the colours during the design process.

The above pictures show the primary image on the left in RGB, and then the CMYK converted the image on the right.

Creating Files In CMYK

When creating any file for print, it is essential to set up and design the document in CMYK colour. This will save any issues trying to settle shades afterward which can be very hard but not impossible. Not all software can develop files in CMYK colour made. For example, Microsoft Word and Powerpoint are only able to make documents in RGB which must be changed before printing. If you send us a standard Powerpoint or Word files, we will convert them into CMYK pdf and will send you a proof of the check.

The following software is displayed in this guide: Adobe Photoshop, Adobe InDesign, Adobe Illustrator and Microsoft Publisher.

1. Adobe Photoshop – Colour settings in photoshop are determined when the file is created, the screen below shows the correct colour settings. You can also check colour settings what a file is open by clicking on the picture, the method as demonstrated by the second image below.
2. Adobe InDesign – Within the design, the colours are changed when the document is exported to pdf. Selecting pdf/x -1a:2001 preset will make sure that the papers are CMYK.
3. Adobe Illustrator – In the Adobe Illustrator the colour mode is set when the file is created. When saving as a pdf select pdf/x-1a:2001 from the drop-down presets list.
4. Microsoft Publisher – When the file is open click document – info – commercial print settings – select color mode. This will let you set the colour mode that you would like the document to be placed in.

Other Software

The software shown above signifies the most commonly used desktop application for creating print files however documents can be developed in many other packages. If using other software key settings are as following:

- Colour mode CMYK (Sometimes called process colours)
- Colour profile: Fogra 39 (ISO 12647-2:2004).
- Where possible export as a PDF/x-1a:2001.

Do's And Don'ts

Finally, a couple of tips to help you understand the issue and assist in checking.

- Do use printed CMYK colour swatches to check colours if not sure.
- Do check the proofs on a screen using a colour adjusted monitor (if possible). Be aware that with uncalibrated screens colours will differ from monitor to monitor.
- Do print samples using a commercial proof printer with result profile set to Fogra39.
- Do use Acrobat pro result preview tool to check the colours when output to Fogra39.
- Don't check colours contrary to desktop printer models as their outlines will usually try to match RGB colours as contrasting to production the true CMYK colours.