

# Understanding Preflight

## What is Preflighting

The term "Preflight" is derived from the aero industry and refers to the list of checks carried out before an aeroplane was deemed fit to fly. In printing terms, preflighting is the process of checking that the digital data required to print a job is all present and valid.

## Who should preflight?

The earlier in a process that problems are detected, the easier and cheaper it is to fix them. This means that designers should preflight their content before supplying to their printer. If files are received from agencies or advertisers, then these should be preflighted prior to taking into the final publication document.

Pensord always preflights incoming data to ensure that it is fit for the printing process. This final check is a safeguard for customers who may not have their own in-house preflighting service.

## What can I use to Preflight?

There are some very good products on the market including Acrobat Professional, Enfocus Pitstop, and Markzware for checking PDFs. These can work as server-based applications for high volume PDF production or can be included as a plug-in to Adobe Acrobat to allow single user preflight capabilities.

## PDF Preflight settings

Most modern applications have in-built pdf profiles as standard and contain a description of their suitability for different types of application. If you in any doubt about what settings to use for print purposes then use the PDFX1a-2003 standard. This will ensure a robust PDF suitable for most printing requirements.

## Page specific settings

- Page dimensions are described internally in PDF files using the so-called page boxes. Since it is not always possible to make sure that the PDF TrimBox actually equals the finished trim size of a publication, GWG sets no rules for the correct use of these boxes. They do recommend to check that no CropBox is present and that there are no page elements beyond the MediaBox. The first requirement ensures that users see the full page in Acrobat while the latter makes sure there is no unwanted material present in the PDF.
- The page size and orientation (as defined by the TrimBox) for all pages of a PDF file should be equal.
- Sloppy designers sometimes leave empty pages in their design. When each section of a book is a separate PDF file and one of these accidentally contains an empty page at the end, this can completely screw up the job. To avoid this, check that there are no empty pages in the file.
- When PDFs are used for advertising, it makes sense to only allow 1 single ad page per PDF. This ensures that agencies do not group multiple ads in a single file, making it too easy to accidentally place an incorrect ad.

## Images

- Images need to have a certain minimum resolution to be printed at a good quality. The required resolution depends on the type of printing. That is why the preflight process should check if all image resolutions exceed a minimum threshold value. Pensord rejects files containing colour and grayscale images with a resolution below 144 ppi for commercial offset work. For 1-bit images anything below 400 ppi is considered unacceptable. Many preflight applications can already give a warning when the image resolution gets dangerously close to these minimum values.
- Images that have a resolution that is too high lead to bloated files that take longer to transmit or process. For commercial print using offset presses, the maximum resolution is set to 450 ppi for colour or greyscale images with 300 ppi being the norm.

- By checking if white line-art is set to overprint, you avoid that such images disappear on the final output.
- Theoretically it is possible to put images that use 16 bits per channel in a PDF file. This leads to bloated files that may cause rendering issues on older RIPs, without any real-world advantage in printing quality. Preflight can make sure no 16-bit images are allowed.

## Artwork

- If a design contains very thin lines, these may disappear on the printed result. Therefore it is best to check the minimum line weight, which depends on the intended printing process. For newsprint and commercial offset printing, a minimum line thickness of 0.125 points is required. For screen printing 0.15 points is required.

## Colour

- Check if grayscale objects aren't set to overprint. Overprinting grayscale objects can lead to excessive ink build-up, not to mention that the graphic sometimes becomes so dark that it cannot be distinguished from the background anymore.
- Total ink coverage is another important aspect of preflighting. As a general rule, newspaper jobs shouldn't have any object in them for which the ink coverage exceeds 245%. For commercial printing on offset web presses the ink coverage of any element should not exceed 305% while for sheetfed presses or screen printing that percentage is 340%. If CMYK text contains over 85% black ink, the total ink coverage of the text should not exceed 220% (newspaper) or 280% (web or sheetfed offset and screen printing).
- Even worse than having to cope with heavy ink coverage is dealing with text or other objects that are 100% of each printing colour. Having to print 100% cyan on top of 100% magenta, yellow and black leads to smudging and the need to frequently stop and clean the press. Hence the recommendation that any object inside the TrimBox should not use the separation colour space 'All'.
- When a job is meant to be printed with spot colours, it is obviously that spot colours are allowed in a PDF file. Next to the presence of spot colours, it is best to put restrictions on their names (no confusing mix of suffixes, such as a file containing 'Pantone 638 C', 'Pantone 638 CVC' and 'Pantone 638 CVU') and colour definitions (A PDF might contain a spot colour which is defined as being 43C & 68M on one page and 40C, 63C, 2Y, 4K on another).