Global Graphics

PDF/X Overprint control strip

GLOBAL GRAPHICS®
software

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The PDF/X standards are becoming increasingly popular methods for the delivery of graphic arts content from one company or site to another. A file prepared in accordance with the standards is likely to be processed through a prepress workflow with no errors and with a more predictable result than a general PDF file.

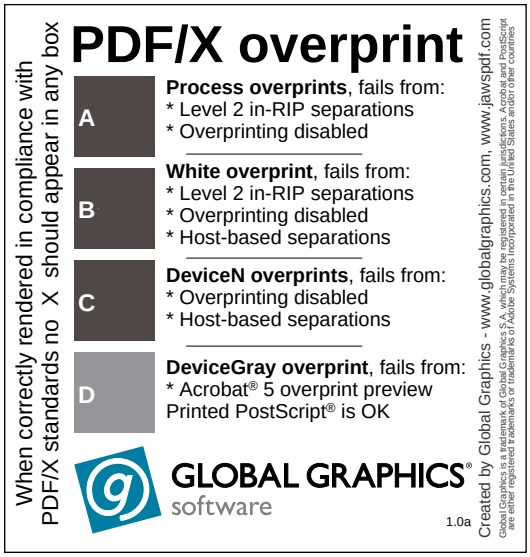
Part of the reason for that predictability is that the PDF/X standards are not just file formats - they also specify correct rendering behavior of the files in the RIPs driving proofing printers, image setters and CTP devices.

The Global Graphics PDF/X overprint control strip is designed to help determine whether jobs have been correctly rendered, and therefore whether a proof and final press sheet are likely to match.

It is supplied as an EPS file that can be placed outside the trim or bleed area of every job you make in a design application. When the job is later converted to one of the PDF/X conformance levels and then proofed or printed, the strip will allow you to check quickly and easily whether or not the rendering process in that proofing or prepress system has been configured in conformance to the PDF/X standards. The EPS file may also be placed on a press sheet, e.g. by an imposition application.

Two versions of the control strip are supplied. Both perform the same tests and display the results in the same way, but the 'basic' version is much larger and includes more explanatory text than the 'expert' version.

Basic (actual size):



Expert (150% size):

If rendering is performed according to the PDF/X standards the strip will appear as above, with all of the four patches labeled 'A' to 'D' as a flat color. The same strip may be used in exactly the same way to

validate rendering of both PDF/X-1a and PDF/X-3, and should be usable with the PDF/X-2 standard in the future.

If the rendering has not been correctly configured then one or more of the test patches will fail, and will appear in a different color, and/or will show a clear letter 'X'.

Color management in some proofing printers may lead to a faint X being visible in one or more of the test patches. This indicates that it should not be used for color-critical proofing of overprinting objects, but does not mean that they are not PDF/X compliant.

The patches may be viewed either as a composite or as separations. If a clear 'X' is visible on any separation then the patch has failed, but a separation that does not show an 'X' does not necessarily mean that it has passed the test - all separations should be examined.

The control strip may be scaled to fit the requirements of any particular job without affecting its performance.

Common causes of error

Failures, where a clear 'X' is visible, can be interpreted as follows. This information may look very technical, but the detail is required so that it can be used in conjunction with the documentation for your proofer or prepress system to re-configure it to be compliant.

It's not possible to give a complete listing of the probable cause of any specific failure, but the most common explanations are summarized on the output of the 'basic' version of the file.

A. The rendering system did not overprint process colors, even with OPM set to 1.
   This patch will fail in a PostScript Level 2 language compatible RIP if it is performing in-RIP separations according to the Adobe® specification. Some Adobe Level 2 RIPs may not fail on this patch, and many from other vendors (including the Jaws® RIP and the Harlequin® RIP) can be configured in such a way that they may either succeed or fail.
   It will also fail on a device (whether printer, plate setter or on-screen preview) that does not support overprinting at all.
B. The rendering system treated overprinting white objects as a special case and did not effectively discard them as required by the PDF specification as referenced in the PDF/X standards.
   This patch will fail in a Level 2 RIP that follows the Adobe specification for in-RIP separations, and on devices that don't support overprinting at all, in exactly the same way as A.
   It will also fail if you print separated PostScript from most design applications.
C. The rendering system is not displaying overprints between DeviceN color spaces correctly.
   This patch will fail if the device does not support overprinting at all, and when printing separated PostScript from most design applications.
D. The rendering system is not displaying overprints between a Black Separation space and DeviceGray correctly.
   This patch fails on-screen in Adobe Acrobat 5 when overprint preview is turned on. The PostScript generated if the job is printed from Acrobat is correct, but it's likely that incorrect output would result from printing directly to non-PostScript printers from Acrobat.
   Designs containing combinations of objects that will trigger this situation are rare.

Application and workflow notes

Configuring the conversion from PostScript to PDF

The tool used to convert from PostScript to PDF must be correctly configured to retain overprints. If this is not done several patches may indicate a failure because of inappropriate encoding in the PDF file itself, rather than incorrect rendering.

Adobe Acrobat Distiller® versions 4 and 5, make sure that "Preserve Overprint Settings" is checked (Color tab).

Jaws PDF Creator™ versions 2.11 and 3.0, make sure "Preserve Overprint" is checked (General:Advanced dialog).

Applications that do not show overprints

Patches A, B and C will normally fail for on-screen previews of PDF files in applications which cannot preview overprints or where that preview mode has been switched off:

This applies to Adobe Acrobat Reader®, Jaws PDF Editor™ and all versions of Adobe Acrobat before 5 at all times, and to Adobe InDesign and Adobe Acrobat 5 when overprint preview is disabled.

Exporting PDF to EPS & PostScript level.

Your prepress workflow may include a conversion from PDF to EPS, especially if you're using standard design tools to composite a number of partial page submissions together. You should ensure that the files are exported to at least PostScript Level 2, and preferably PostScript LanguageLevel 3 EPS files. PostScript Level 1 cannot carry the overprinting information required for the patches, or for many print jobs. The level you select must obviously be chosen in the context of the software used later in the workflow.

The same guidelines should be followed if printing from PDF to PostScript rather than exporting.

Any applications and tools that can only process PostScript Level 1 should now be regarded as obsolete and upgraded – it's extremely unlikely that it can be configured to render files reliably in conformance with PDF/X. Upgrades for applications and tools that can process PostScript Level 2, but not PostScript LanguageLevel 3 should also be given serious consideration.

Composite vs. Separated workflows

You may place a PDF/X file containing the patches on a page in a design application and print from there to a proofer or RIP using PostScript. Most major design applications do not create separated PostScript correctly under these circumstances; you are much more likely to achieve correct output if you generate composite PostScript and use in-RIP separations instead.

Note that some major design applications do not generate correct composite PostScript for all aspects of elements created within that application itself. Some care must be taken to design and construct a page on which all elements can all be printed correctly.

Harlequin RIP

Patch B (white overprint) will fail when performing in-RIP separations in a Harlequin RIP when using the default configuration, and when not using a RIP version that includes explicit support for PDF/X1a:2001 or PDF/X-3:2002. By default the RIP treats white objects that have been set to overprint as a special case – it essentially ignores the overprint request so that the white object doesn't just disappear. This means that the default in-RIP separations from a Harlequin RIP exactly match the output you would have produced if you'd printed directly from almost all design applications with separations turned on. The PDF/X standards were written to the least common denominator of RIP capabilities, which means that the Harlequin output must be downgraded to match what other RIPs can do in order to be compliant

If you're using a 'Classic' edition of version 5.3 or 5.5 of the Harlequin RIP, you can make it PDF/X compliant, by opening the Edit Page Setup dialog and clicking on the Color Options button. Make sure that the Drop white objects checkbox is selected.

If you're using a Harlequin RIP from an OEM who provides a different interface you'll have to ask that OEM how to make this same change.

Printing directly from design applications

The control strip is intended for use in workflows where PostScript is generated from a design application and then converted into a PDF(/X) file. It is not designed to work in a situation where the file is printed directly from design application to printer using only PostScript. The test file will make its best attempt to display the probable final result after the file has been converted to PDF, but this is not always possible. When it is not possible a solid rectangle will be shown with the text "Non-PDF workflow" on it. Even if test patches are shown they should be treated as inconclusive.

The job in which the patches are placed should print without error on any PostScript Level 2 or higher printer, to allow proofing of the page before conversion to PDF.

Once the PDF file has been made and transmitted, the processing workflow may take many forms, including conversion back to PostScript. Processing as PostScript after the PDF stage will not, in itself, cause any patches to fail, unless those steps are not correctly configured to be PDF/X compliant.

Color managed PDF/X-3 files

The patch is designed to be used when CMYK colors remain as CMYK in the PDF file. If your workflow converts CMYK to Lab or ICCBased color spaces inside the PDF the patches will typically report that overprinting is not supported (patches A, B and C will fail). Even though the failure does not, in this case, show a deficiency in the rendering process, it does show that overprints in other CMYK elements of the layout are also unlikely to be rendered as expected.

If you're using PDF/X-1a rather than PDF/X-3 then any conversions to Lab or ICCBased color spaces would mean that the file is not compliant anyway.

Fonts

All of the text on the control strip has been converted to curves. While this is likely to reduce the apparent quality, especially at low resolution, the strip itself will not be within the live area of the real job and therefore the quality should not be a problem. The text will remain legible at normal proofing resolutions, and being converted to curves avoids the requirement to embed fonts that would not otherwise be required in a PDF/X file. It also avoids pre-flight issues around small or reversed-out type.

Spot colors

For compatibility with the greatest number of workflows, the control strip does not include any test patches using spot colors.

Support

Global graphics does not provide any formal support for the control strip. Issues arising from use with Harlequin or Jaws RIPs should be addressed to your normal support route for those products. Comments and suggestions regarding the control strip itself may be sent direct to pdfxoverprint@globalgraphics.com, but no guarantee of a response can be given. If you would like to distribute the control strip via your web site, or discuss the possibility of versions in additional languages please use the same email address.