



Migrating from FOGRA39 to FOGRA51

Never change a running system?

FOGRA39 represents a well-known and established industry standard both for data exchange and commercial offset printing (on premium coated paper). The corresponding ICC-profile "ISOCoated V2" - or ISOCoated V2 bas from basiccolor or CoatedFOGRA39 from Adobe - proofed to result in acceptable and state-of-the-art separations.

However a closer look reveals that using FOGRA39 for print conformance evaluation, most colour protocols - both using conventional and digital printing substrates - are showing a big red "X". This is mostly due to the paper white point (CIELAB (M0, wb)=95 1 -2), which does not reflect typical paper shades having higher amounts of optical brightener agents (OBA). This was made obvious in proofing environments, where rigorous colour aims need to be matched. In particular Validation Printing (Design Proofs) applications needed to pick a special ("exotic") substrate to hit the aims. These papers were not representative for typical creative workflows. FOGRA51 allows for using substrates that are commonly used - and meeting the rigours tolerances a high level of colour communication can be achieved.

FOGRA51 - data separation and print conformance excellence

With the release of FOGRA51 and it's corresponding ICC profile (PSO Coated V3) now both aims can be achieved successfully. However changing "the" reference challenges both designers and print service providers and raises a lot of practical questions.

1. How do I explain the change to non-print experts?

As with FOGRA51 all new Fogra standards are based on M1 ("real D50") and allow both compliance with the latest ISO standards and a high quality of colour communication. Using FOGRA51 an outstanding proof to print match can be achieved. The FOGRA51 proofs serves as the colour reference interface for the colour dictator in the different workflows.

2. Do I need new measurement devices?

Following the principle "to measure as you see" each print shall be measured by using the same measurement condition as used by creating the reference. Hence for measuring FOGRA51 onwards at least one M1 capable device needs to be present.

3. Do I need new viewing cabinet?

You need a ISO 3664-2009 compliant viewing scenario to judge proofs and prints correctly. Only then you can be assured that the right amount of UV is present and the OBA present in your proofs and production stock will be excited the same way. Combining M1 measurement and M1 viewing allows for the outstanding colour communication. This means a predictability for the designer and the security for print service provider that a instrumental match also matches visually.

4. How big is the difference between FOGRA39 (ISOcoated_v2) and FOGRA51 (PSOcoated_v3)?

Not big, indeed. The average colour difference is barely noticeable ($\Delta E_{00}=1,6$). Depending on the image content it can easily be that you need a closer look to tell them apart. The same applies for the data separation with both profiles, since the gamut mapping and separation parameters are very similar.

5. As a designer, when and how do I change?

It is recommended to familiarize with the new profile as soon as possible. This means to download the profiles from the ECI-webpage and the recipes and preflight tools from the Fogra webpage. It also means to be able to create FOGRA51 based proofs either by updating your proofing hard- and software or by asking your proofing service provider. The details of how to implement and use the profile for image separation (in Photoshop) or layout conversion (in InDesign or Quark) can be found in this chapter. The paramount factor is the communication with your print partners! The rule of thumb is: If the printing condition is not precisely known upfront use PSOCoated V3. If it is known, use the relevant Fogra standard. This idea is depicted in Fig. 1.

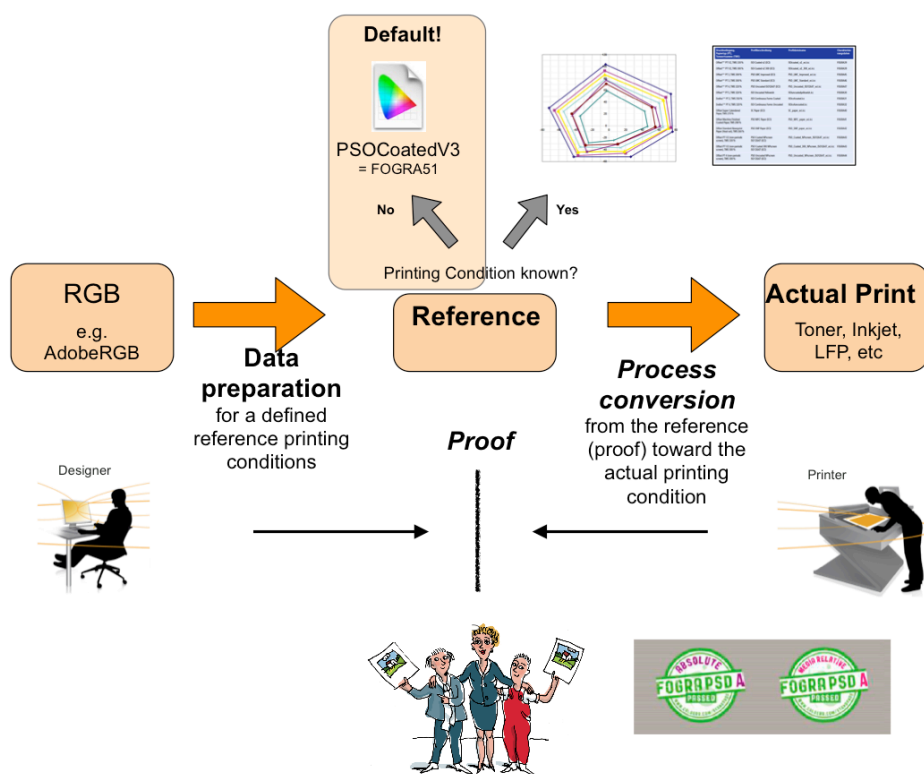


Fig. 1: How design and print work together. The key question is the knowledge of the final printing condition. If it is not known (common practice), it is recommended to use PSOCoated V3. Otherwise use the pertinent Fogra standard. It is the print service provider responsibility to consume the incoming data, normalize it and do the necessary process conversions (colour transforms). The contract proof or validation print service as the reference between design and print.

6. As a print service provider, when and how do I change?

It is recommended changing with the publication of the PSD 2016 handbook. Other than offset printers (who "only" have to adapt plate curves), digital printing service providers have to check normalization and machine profiling. Normalisation refers to make the incoming data print ready, hence PDF/X-1a (V.1) or X4 (V.2) with FOGRA51 as the output intent. Here the workflow tools need to be updated and unprofiled CMYK (as is) will now be interpreted as FOGRA51 and not FOGRA39 anymore. This includes updating the device link profiles. Machine profiling requires to characterize (profile) your machine combinations with M1. Incoming FOGRA39 artwork will be honoured by normalising it to FOGRA51 (e.g. by using the ECI FOGRA39-to-FOGRA51 device link profile). The quality of the normalisation can be tested by comparing the FOGRA39 proof of the original document with a FOGRA51 proof of the converted document.



Following the PSD principles ("Printing the expected") a print service provider is able to communicate colour in a professional way. It is recommended to proactively inform the print buyers & designers about the "new" Fogra standard. Show your colour competence!

7. Do I have to convert "old" FOGRA39-based (CMYK) data?

It depends. For colour critical artwork it is recommended to convert the legacy data by means of a colour server and dedicated device link transforms. In many cases you might be quite happy when using FOGRA39 artwork in your FOGRA51 design by inspecting the resulting FOGRA51 proof print. Redo an old job can be done by restoring the settings used to make the old job (if available) or more commonly to normalise the data to FOGRA51 and print accordingly.

8. Does a print shop needs a colour server software (functionality)?

Yes! Orchestrating the plethora of incoming data requires a colour server that uses static or dynamic device link profiles. Picture by picture adjustments, e. g. made in Photoshop, are subject for niche applications with specific focuses.

9. How about proofing?

Making FOGRA51 proofs requires mostly software and a hardware updates. In particular a OBA-rich proofing substrate should be used and a M1-based measurement device (either built in such as the ILS30 from Epson or an external measurement device). For FOGRA52 proofs an OBA-rich substrates with a matte surface is recommended.

10. How about print conformance?

There are many reasons for checking print quality on a regular basis. Either the print buyer requests a conformance protocol or your internal quality management policy expects quality tracking. In all cases the PSD print check is the right solution. You can find the details in chapter 6. Please note the new tolerances for the "A, B, C-tolerance bands".

11. Any other question?

Don't hesitate to use the Digital Printing Working Group mailing list at <http://lists.fogra.org/listinfo/dpwg>