ECI offset profiles 2009

June 2009

New characterization data and ICC profiles for standard printing conditions

As of June 2009, new Fogra characterization data sets, as well as ECI offset profiles are available, which replace existing versions.

The characterization data sets "FOGRA45" for heatset web offset printing on improved LWC paper (light weight coating), and "FOGRA46" for heatset web offset printing on standard LWC paper, are based on print runs conducted by the ECI web offset working group.

For offset printing on uncoated white paper a new profile based on "FOGRA47" has been introduced.

Why two characterization data sets and ICC profiles for web offset printing on LWC paper?

Due to the yellowish paper shade, the characterization data set FOGRA28 and the ICC profile "ISO Web Coated" do not reflect the paper tone and colour appearance of heat set web offset printing on today's most commonly used LWC papers.

In order to create a successor for "ISO Web Coated", four European web offset printers conducted a test print series on a selection of typical LWC papers.

Based on a comparison of the printed results it was obvious that a single ICC profile is not sufficient to represent the colour appearance of all LWC papers. Today's most commonly used LWC papers can be devided in the two groups "standard" and the more frequently used "improved" papers.

For that reason the ECI, bvdm and Fogra recommend to generally use the new profile "PSO LWC Improved (ECI)" for colour conversion and proofing as successor for "ISO Web Coated". The intended use of the second new profile "PSO LWC Standard (ECI)" is proofing for heatset web offset printing on slightly yellowish LWC paper only.

Specific characteristic of "Uncoated" – why characterization data and ICC profile with CIELAB values different from common measurements

Ideally process control and quality assurance for proofing and production printing use identical CIELAB coordinates. As helpful mean to implement the international printing standard, the characterization data should contain the aim values of the international standard ISO 12647-2.

As a prerequisite the CIELAB values of the paper tone and the printing inks, measured on typical paper, comply with the aim values of the standard ISO 12647-2 (print process control) and the respective Fogra characterization data set (proofing).

For the paper types 1+2 for offset printing on gloss and matt coated paper, the CIELAB values measured in daily production comply with the aim values (FOGRA39, "ISO Coated v2"). If these aim values are matched in a metered evaluation by proof and production print, the two match visually as well.

Due to a significantly higher degree of optical brighteners, this does not apply to offset printing on uncoated white paper (paper type 4). The paper shade of typical uncoated white paper shows a b* value of -6 and more if measured under standard compliant conditions (without UV or polarized filter). This corresponds to a blueish colour with the consequence of unfeasible proofing results with regard to the paper shade simulation and pastel colours.

In order to facilitate proof prints properly matching the production printing, the CIELAB values of the new characterization data set for offset printing on uncoated white paper (FOGRA47) deviate from the blueish colour measurement of typical uncoated white paper.

Recommendations for "Uncoated" proofs

Another specific characteristic applies to proofing for offset printing on uncoated stock: Using a semi-matt proofing substrate, commonly used for "coated" proofs, will yield a poor visual proof to print match even in the case of an excellent metered proof evaluation.

The use of uncoated proofing stock results in the best possible metered match with the aim values of the characterization data set and the best possible visual proof to print match.

Which profile should I use?

In general, the ECI, bvdm, and Fogra recommend using the ICC profile which matches the intended printing condition, for colour conversion as well as for proofing. You will find an overview of all ECI offset profiles for standard printing conditions on page 4.

Some paper manufacturers and suppliers provide information regarding recommended characterization data sets (Fogra number) and ECI offset profiles according to the paper stock.

The ECI offset profile "ISO Coated v2 300% (ECI)" is a good choice in cases where the intended printing condition is not yet known. The advantage of the version of the coated profile with a maximum total ink coverage of 300% is it's higher flexibility regarding the use for sheetfed and web offset printing.

Prepress data prepared with this profile can be converted to many other printing conditions with good results, however, the best possible results will be achieved with cmyk prepress data prepared with the profile that matches thatprinting condition exactly.

Where can the profiles be obtained? From which date are they valid?

The new ECI offset profiles can be freely downloaded from the ECI website (www.eci.org). The characterization data sets "FOGRA45" through "FOGRA47" can be downloaded also free of charge from the Fogra website (www.fogra.org).

The ECI, bvdm and Fogra recommend the immediate use of the new characterization data sets and profiles.

“Offset” package 2009 – Overview

Pro□les for sheetfed and heatset web o□set printing according to ISO 12647-2:2004 and ISO 12647-2:2004/Amd 1:2007

Profile file name	Profile name	Printing condition	Characterization data
ISOcoated_v2_eci.icc			

Profile file name	Profile name	Printing condition	Characterization data
PSO_MFC_paper_eci.icc	PSO MFC Paper (ECI)	Paper type MFC, Machine finished coating • Tone value increase curves B (CMY) and C (K) as de□ned in ISO 12647-2:2004	FOGRA41L
PSO_SNP_paper_eci.icc	PSO SNP Paper (ECI)	Paper type SNP, Standard newsprint, heatset web offset printing • Tone value increase curves C (CMY) and D (K) as de□ned in ISO 12647-2:2004	FOGRA42L
PSO_Coated_NPscreen_ ISO12647_eci.icc	PSO Coated NPscreen ISO12647 (ECI)	Paper type 1 and 2, gloss and matte coated • non-periodic screening (NPscreen), 20 µm • Tone value increase curve F (CMYK) as de□ned in ISO 12647-2:2004	FOGRA43L
PSO_Coated_300_ NPscreen_ISO12647_eci.icc	PSO Coated 300% NPscreen ISO12647 (ECI)	Paper type 1 and 2, gloss and matte coated • non-periodic screening (NPscreen), 20 µm • Tone value increase curve F (CMYK) as de□ned in ISO 12647-2:2004	FOGRA43L
PSO_Uncoated_NPscreen_ ISO12647_eci.icc	PSO Uncoated NPscreen ISO12647 (ECI)	Paper type 4, uncoated white offset • non-periodic screening (NPscreen), 30 µm • Tone value increase curve F (CMYK) as de□ned in ISO 12647-2:2004	FOGRA44L

Tone value increase for the 40% control patch:
Curve ***A: 13%*** • Curve ***B: 16%*** • Curve ***C: 19%*** • Curve ***D: 22%*** • Curve ***F: 28%***

The bvdm "Media Standard Print" (free of charge download from www.bvdm.org) provides aim values for the whole range; from 0 up to 100 percent in 5% steps.