

Fogra characterization data
for heat set printing on improved newsprint stock and offset printing with additional surface finishing:

FOGRA48, FOGRA49, FOGRA50



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In the light of the established collaboration between Fogra, the German Printing and Media Industries Federation (bvdn) and the European Color Initiative (ECI) the Fogra characterization database has been extended to three newly developed sets of characterization data.

While FOGRA48 addressed heat set printing on improved newsprint stock FOGRA49 and FOGRA50 cover standardized offset printing based on FOGRA39 with additional surface finishing namely matt and glossy laminated sheet-fed offset prints using OPP films.

The new printing condition FOGRA48 and the associated ICC profile "PSO INP Paper (ECI)" for heatset web offset printing on improved newsprint are based on a test print series conducted by the ECI web offset working group (WOWG). Several European web offset printers contributed print samples on typical improved newsprint papers. Upfront the working group had agreed upon aim values for the solid coloration and the tone value increase (TVI) of the printing inks cyan, magenta, yellow and black. As for all other offset profiles provided by the ECI, the aim values for the TVI are taken from the international standard ISO 12647-2:2004. For the dot gain of cyan, magenta and yellow curve C (19%) applies, and curve D (22%) for black, measured in a 40% patch of a control strip. With the new profile the ECI completes the range of standard profiles for web offset papers.

The characterization data for lamination are based on test prints of the ECI coating working group, which included several types of coated paper and cardboard, as well as different lamination films and machines. Based on measurements before and after lamination, typical colour changes have been determined and applied to the FOGRA39 data set. This ensures an optimal correspondence between un laminated and matte (FOGRA49) or glossy (FOGRA50) laminated data sets. In addition, the Fogra research project (no. 32.152) examined the effect of varnishing, which leads to similar, but smaller colour shifts than film lamination. The resulting varnished gloss depends strongly on paper and ink gloss and affects saturation and contrast. Since there are considerable differences in these material properties, no standard data sets for varnishing are made available as "FOGRAxx data".

However for individual high-quality production, the varnish data sets are available on the Fogra project web page. This applies also to UV varnish, which has about half the effect of film lamination. Here, FOGRA49 and FOGRA50 might serve as a rough estimate of what to expect. Again, for high-quality varnished jobs it is preferable to establish individual characterization data. This could be done by appropriate data adjustments based on the newly provided data sets.

Usage in practice (pre-press)

A colour-accurate proof or softproof using e.g. FOGRA49 represents the expected result of a standardized offset print on coated paper (FOGRA39) with subsequent matte film lamination. By comparing FOGRA39-based proofs with FOGRA49 or FOGRA50, it is easy to check whether undesired colour changes must be expected (so that job data may need readjustment). For more details please refer to the documentation on the ECI web page.

Usage in practice (printer)

As before, the printer must measure and achieve his established aim values for standardized printing on the un laminated print (paper type 1/2, 60-80 lines/cm, TVI curve A for CMY (13%) and B (16%) for black). Production-based differences to FOGRA39 in paper white, solid coloration, and tone value increase are carried forward by lamination. Therefore it is not meaningful to use measurements on laminated prints for process control.



**Usage in practice
(surface finisher)**

Colour changes during lamination depend only on the materials. Glossy films are very similar, but matte films can have quite different values of haze / opacity. The average matte film given by FOGRA49 leads to a lightness increase

of $\Delta L^* = 6$ in the solid black patch and is well suited for typical production. A clearer film will cause less lightening; a matter film will cause more. Therefore, individual film types can be classified by measuring solid black before and after

lamination (on the same patch on the very same sheet, before and after).

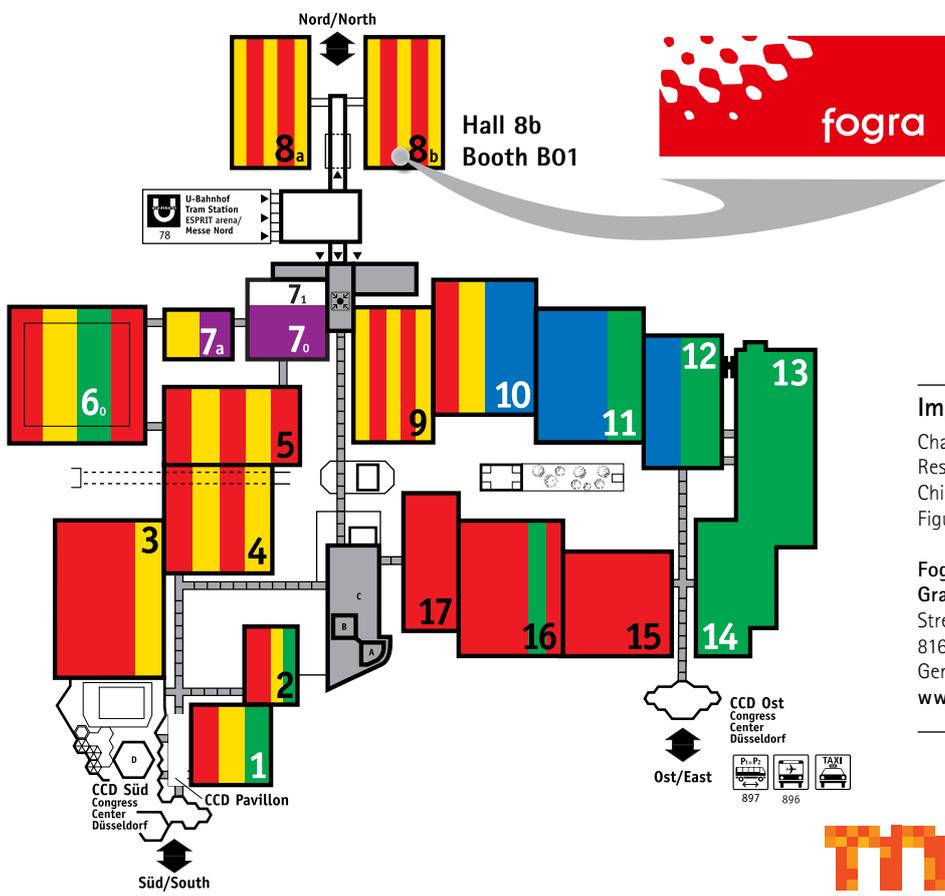
For detailed information on the new printing conditions see table below.

Download: www.fogra.org/en/fogra-standardization/fogra-characterizationdata

	Description	Substrate	Internal profile name (www.eci.org)	Screening	Backing	TVI-curve	Additional surface finishing
FOGRA48	Web offset printing (heatset)	Improved newsprint (INP)	PSO_INP_Paper_eci.icc	According to 60/cm	white	C (CMY) and D (K)	none
FOGRA49	Offset printing sheet-fed	Coated paper (Paper type 1/2)	PSO_Coated_v2_300_Matte_laminate_eci.icc	According to 60/cm - 80/cm	white	A (CMY) and B (K)	Matte OPP film lamination
FOGRA50	Offset printing sheet-fed	Coated paper (Paper type 1/2)	PSO_Coated_v2_300_Glossy_laminate_eci.icc	According to 60/cm - 80/cm	white	A (CMY) and B (K)	Glossy OPP film lamination

Table: Detailed information on the printing conditions FOGRA48, FOGRA49 and FOGRA50.

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