

ECI Gravure Profiles 2019 Process Standard Rotogravure (PSR)

December 2019

Gravure PSR V2-M1 – as of December 2019

New characterisation data and ICC profiles for standard printing conditions

New characterisation data and ICC profiles for publication gravure printing have been available since February 2018. The Working Group Gravure of the European Colour Initiative (ECI), supported by the bvdM, ERA, Fogra and gmg, has updated the printing conditions for gravure printing. The table 1 contains an overview of the profiles.

ECI PSR V2 profiles are valid for the following printing conditions in accordance with International Standard ISO 12647-4:2014 Gamut type 2.

The gravure printers agreed in June 2016 to update the existing standard printing conditions (PSR v2). As well as taking account of the new standards for measuring conditions and viewing conditions, customer demands for a better match between proof and print were also recognised.

Since summer 2016, the ECI Working Group Gravure, headed by Thomas Hebes (Prinovis GmbH & Co. KG, Nuremberg), has been working to improve the existing standard for paper types "SC Standard" (super calendered),

"SC Plus" (whiter super calendered), "LWC" (improved LWC paper).

The LWC Plus profile was introduced in 2018 as the first to be converted to the new measuring condition M1. SC, SC-Plus, LWC and News Plus are the next paper classes to follow in 2019. The paper "SC Plus" class behaves similarly to SC Standard, and so the standard is being based on it. However, the significantly whiter paper shade and the OBA (optical brightening agent) content as compared with SC Standard papers - as with LWC-Plus - are being taken into account. The printing condition "PSRgravureMF" published in 2004 has now been completely recreated with the PSR gravure inks and integrated into the PSR_V2_M1 profile family.

For uniformity reasons, all profiles were created with the same version of the Heidelberg ColorToolBox, therefore a PSR_LWC_PLUS_V2_M1_v2.icc has been created.

The characterisation files are available as the ISO subsets. The ISO sup-set are available in one resolution, with 1617 colour fields for characterisation of 4-colour process printing (IT8.7/4).

Table 1: Standard gravure printing conditions 2019 (bvdM/ECI/ERA/Fogra)

Paper type	Profile	Characterisation data*3	Year of issue
LWC Plus	PSR_LWC_PLUS_V2_M1_v2.icc	PSR_LWC_PLUS_V2_M1.txt	2018
LWC Standard *1	PSR_LWC_STD_V2_M1.icc	PSR_LWC_STD_V2_M1.txt	2019
SC PLUS *1	PSR_SC_Plus_V2_M1.icc	ECI_PSR_SC_Plus_V2_M1.txt	2019
SC Standard *1	PSR_SC_STD_V2_M1.icc	PSR_SC_STD_V2_M1.txt	2019
News Plus *2	PSR_MF_V2_M1.icc	PSR_MF_V2_M1.txt	2019

*1 Characterisation Data made using M1 and replaced the former PSR_V2.icc measured in Mo.

*2 The old PSRgravurMF profile has been completely revised and integrated into the PSR_V2_M1 profile family.

*3 The characterisation data printed patches were measured on a backing of unprinted sheets of the same paper (SB=substrate backing)

The ICC profiles have a maximum area coverage of 360 %, and a maximum black of 85 % with a black start at approx. 25 % with a medium GCR except the PSR_MF_V2_M1. This ICC profile has a maximum area coverage of 280% due to the paper type.

The profiles and characterisation data are available for free download on the ECI website www.eci.org.

Special characteristics of LWC Plus

Due to the lack of a colour standard for the LWC-Plus paper class in the paper industry, the paper colours of different manufacturers may differ markedly. For this reason, an average shade of the LWC-Plus papers available on the market in 2016 was chosen. Typical state of the art LWC-Plus paper with this range of paper weight from 50 g/m² to 70 g/m² are checked against this profile:

Proofing

Proof production can take place not only via ICC-based proofing systems but also with manufacturer-specific proofing calibrations. These profiles may result in higher accuracies due to multiple iterations and additional features, e.g. simulation of print behaviour, im-

proved sharpness adjustment. These profiles are available directly from the respective proof system manufacturers.

Which profile should I use?

The profile to be used depends primarily on the paper to be printed. In addition to the supported papers, there are numerous further paper classes or grades that make the topic more complex. Generally we recommend you to follow the technical specifications of your client, e.g. technical specifications for advertisement production.

What is fluorescence level?

Describes the amount of optical brightening agents (OBA) inside of a paper. It is categorized in ISO 15397. The used figure is ΔB . Different levels of OBA are listed in the table "Description of OBA levels according to ISO 15397 below

Table 2: Description of OBA levels according to ISO 15397

Description of OBA level	
$0 \leq \Delta B < 4$	Faint
$4 \leq \Delta B < 8$	Low
$8 \leq \Delta B < 14$	Moderate
$14 \leq \Delta B < 25^*$	High

** categorie for higher values are recommended but not published*

Here is an overview of the classification of gravure papers incl. fluorescence level and the recommended application areas of the respective PSR standards.

Uncoated papers:

Paper type	Definition	ISO Brightness	fluorescence level (ΔB ISO 15397)	PSR Standard
N-ST (News Standard)	Standard newsprint without adaptation to gravure	58-59	faint	
N-P (News Plus)	Improved newsprint for gravure	68-76	faint	PSR_MF_V2_M1 <i>PSR V2-M1</i>
DIR (Directory)	uncoated directory paper	56-71	faint	
SC-B (SC-B)	only calendered, high content of recycled fibre	65-69	faint	
SC-STD (SC Standard)	super calendered magazine paper	67-68	faint	PSR_SC_STD_V2_M1 <i>PSR V2-M1</i>
SC-P (SC Plus)	Optically improved SC paper	72-75	moderate	PSR_SC_PLUS_V2_M1 <i>PSR V2-M1</i>
SC-80 (SC 80)	Highly opt. improved SC-paper, partly matt	79-82	low	

Coated papers:

Paper type	Definition	ISO Brightness	fluorescence level (ΔB)	PSR Standard
LWC-B (LWC B)	Light weight coated, High content of recycled fibre, film coated	72	low	
LWC-STD (LWC Standard)	Light weight coated, "catalogue" brightness	67-72	faint	PSR_LWC_STD_V2_M1 <i>PSR V2-M1</i>
LWC-STD Mag (LWC Standard)	Light weight coated, "magazine" brightness	72-76	faint	
LWC-P (LWC Plus)	Optically improved LWC-paper	78-87	moderate	PSR_LWC_PLUS_V2_M1_V2 <i>PSR V2-M1</i>
MWC-90 (MWC 90)	Medium weight coated; double coated, very high brightness, optical brighteners	90-92	low	
HWC-WF (HWC woodfree)	Heavy weight coated, 2-3 times coated offset paper, optical brighteners	>92	moderate	"House standards" or PSR_LWC_PLUS_V2_M1_V2