COLORSOURCE

27 rue Pierre Brossolette
91430 IGNY - FRANCE
Tel/Fax: +33 1 69 41 01 62
Mobile: +33 6 24 54 10 13
E-mail: wme@color-source.net
http://www.color-source.net

February 2007

THE POINT ABOUT 2007 ISO 12647 STANDARDS FOR CMYK PRINT AND PROOF WORKS

COLORSOURCE

2007 ISO 12647 STANDARDS
FOR CMYK PRINT AND PROOF WORKS

You will find in this document the appropriate information to update and supplement your ISO CMYK I.C.C. profiles, to control color proofs simulating the new CMYK ISO reference frames by using freeware, and also the appropriate download links. The useful technical information is currently dispersed between BVDM, Fogra, IFRA and ECI Web sites, and the official ISO standards in constant evolution are available on the ISO web site.

The 2007 launch of new ISO CMYK profiles, coming to supplement or TO MODIFY the existing set, and also the ISO compatible much more universal and reliable quality control solution proposed by Colorsource, made a summary of present situation quite necessary.

The widely used "ISO Coated" CMYK I.C.C. profile is modified and replaced by a new "ISO Coated v2" profile showing an average deviation of 2 Lab (Delta E2000) with up to more than 8 Delta E for some CMYK values. Using the new ISO Coated profile for color separations and color proofing is recommended from April 2007.

1) Interest of ISO standards for CMYK print and proof works, and brief history:

ISO 12647 standards bring to the Market standardized CMYK chromatic responses for main classical CMYK print works:

> ➢ This allows all prepress actors to carry out good color separations and color proofs anticipating well the final print runs, as long as their Print House can set their printing press to match relevant ISO CMYK profiles.

> ➢ This discharges the Print House from any responsibility with respect to prepress, if a print run matching the relevant ISO CMYK standard does not produce the expected results.

Matching ISO standards requires using standardized papers, standardized CMYK process inks, and matching the arbitrary ISO solid ink densities and dot gain curves. This generally requires using specific curves for engraving the printing plates, cylinders or other printing forms.

First published ISO standards were too complex. They specified as many as 4 different CMYK ISO profiles only for traditional sheet fed offset printing on thick matte or bright coated paper:

- One profile for 150 lpi positive plates, with characterization CMYK test chart measured on white background (SB for "Self Backing")

- One profile for 150 lpi positive plates, with characterization CMYK test chart measured on black background (BB for "Black Backing")

- One profile for 175 lpi positive plates, with characterization CMYK test chart measured on white background (SB for "Self Backing")

- One profile for 175 lpi positive plates, with characterization CMYK test chart measured on black background (BB for "Black Backing")

In order to make it easier, this printing configuration was later simplified into one single ISO profile for 150 lpi positive plates, with characterization CMYK test chart measured on white background, given that measuring charts on white background avoids non realistic darkening of measurements, and that the optical dot gain increase when using 175, 200 lpi or stochastic screenings can always be compensated by using suitable plates engraving curves.

COLORSOURCE

2) CMYK printing processes standardized by the ISO today:

Sheet fed offset printing: 4 printing conditions according to ISO standard 12647-2,

All positive plates, 150 lpi:

➢ Standard papers 1 and 2: Coated matte or bright papers above 70 g/m2.

➢ Paper type 3: LWC (Light Weight Coated paper)

➢ Paper type 4: Uncoated white

➢ Paper type 5: Uncoated yellowish (recycled)

Continuous offset printing: 4 printing conditions according to ISO standard 12647-2:

➢ Standard papers 1 and 2: Coated matte or bright papers above 70 g/m2, positive plates, 150 lpi

➢ Standard papers 1 and 2: Coated matte or bright papers above 70 g/m2, negative plates, 150 lpi

➢ Paper type 4: Uncoated white, positive plates, 135 lpi

➢ Paper type 4: Uncoated white, negative plates, 135 lpi

Printing conditions	ISO profile internal name	File name	Characterization file
Offset 150 lpi standard papers 1 and 2	ISO Coated	ISOcoated.icc	Fogra27L
Offset 150 lpi paper type 3	ISO Web Coated	ISOwebcoated.icc	Fogra28L
Offset 150 lpi paper type 4	ISO Uncoated	ISOuncoated.icc	Fogra29L
Offset 150 lpi paper type 5	ISO Uncoated Yellowish	ISOuncoatedyellowish.icc	Fogra30L
Continuous offset 150 lpi paper type 2	ISO Continuous Form Coated	ISOcofcoated.icc	Fogra31L
Continuous offset 135 lpi paper type 4	ISO Continuous Form Uncoated	ISOcofuncoated.icc	Fogra32L

New 2007 profiles and 2007 modifications of existing CMYK ISO profiles:

➢ Standard papers 1 and 2: Coated matte or bright papers above70 g/m2.

The "ISO Coated" profile is replaced by a new "ISO Coated v2" profile.

Some other ISO profiles will be updated in 2007.

➢ SC Paper (Super Calendared): Creation of a standard profile for continuous offset on SC paper.

Printing conditions	ISO profile internal name	File name	Characterization file
Offset 150 lpi standard papers 1 and 2	ISO Coated v2 (ECI) and ISO Coated v2 300% (ECI)	ISOcoated_v2_eci.icc and ISOcoated_v2_300_eci.icc	Fogra39L
Offset 150 lpi SC paper (Super calendared)	SC Paper (ECI)	SC_paper_eci.icc	Fogra40L

COLORSOURCE

Newspaper printing: 1 printing condition according to ISO standard 12647-3:

➢ 100 lpi with dot gain 26% at 40% (different value in USA).

Printing conditions	ISO profile internal name	File name	Characterization file
Continuous offset 100 lpi on newspaper with dot gain 26% at 40%.	ISO Newspaper 26	ISOnewspaper26v4.icc	IFRA26

Gravure printing: 4 printing conditions according to ISO standard 12647-4:

➢ Paper LWC: Light Weight Coated paper

➢ Paper SC: Super Calendared

➢ Paper MF: Machine Finished

➢ Paper HWC: (High Weight Coated) Enhanced LWC with brighter white and more weight.

Printing conditions	ISO profile internal name	File name	Characterization file
Gravure LWC 51 g/m2	PSR LWC	PSRgravureLWC.icc	PSRgravureLWC_ECI2002.txt
Gravure SC 52 g/m2	PSR SC	PSRgravureSC.icc	PSRgravureSC_ECI2002.txt
Gravure MF 55 g/m2	PSR MF	PSRgravureMF.icc	PSRgravureMF_ECI2002.txt
Gravure HWC 70 g/m2	PSR HWC	PSRgravureHWC.icc	PSRgravureHWC_ECI2002.txt

Important notes about published ISO CMYK profiles:

a) The downloadable characterization measurements files only contain the D50 apparent colors of measured characterization test charts.
    They thus contain neither the solid process inks densities nor the dot gain curves the final print should match. However using C, M, Y and K process inks XYZ measurements allows estimating the dot gain curves, but better is worth referring to published ISO standards.
    The ISO target dot gain curves for offset prints are given later in this document.

b) The measurements files are generally available in form FOGRAxx.txt and/or FOGRAxxL.txt:

    The "xx" version (e.g. FOGRA 39) refers to the 1485 patches CMYK ECI 2002 test chart measurements file, when the "xxL" version (e.g. FOGRA 39L) refers to a larger 1617 patches test chart. Using too many characterization patches on a printing press is useless. Better is worth averaging the measurements files of many smaller sized test charts.

c) The ISO profiles are essentially good in their direction "CMYK to Lab" when used as source profiles for soft or hard proofing. However be careful with files maximal ink coverage! A good proof on monitor or paper does not mean that according CMYK printing forms will print well.

d) The ISO profiles are not optimized in their direction "Lab to CMYK", when used for producing color separations.

e) The new ISO Coated v2 profile shows some efforts to allow better results when used as a color separation profile:

It can be downloaded in two forms:

- ISOcoated_v2_eci.icc giving a maximal total ink coverage of 330%

- And ISOcoated_v2_300_eci.icc giving a maximal total ink coverage of 300%

These two profiles are of course identical in their "CMYK to Lab" direction, in absolute or relative modes.

Please note that you can always compute yourself these ISO profiles by using the published characterization files or profiles, in order to optimize their ink preferences, and in order to use the best available algorithms for perceptual and saturation rendering intents of their "Lab to CMYK" direction.

3) Visual differences between the old and new CMYK offset ISO Coated profiles:

Characterization files show an average Delta E2000 of **1.33**, up to an average **3.82** on the 10% worst patches, and reaching to a maximum **8.23** Delta E2000.
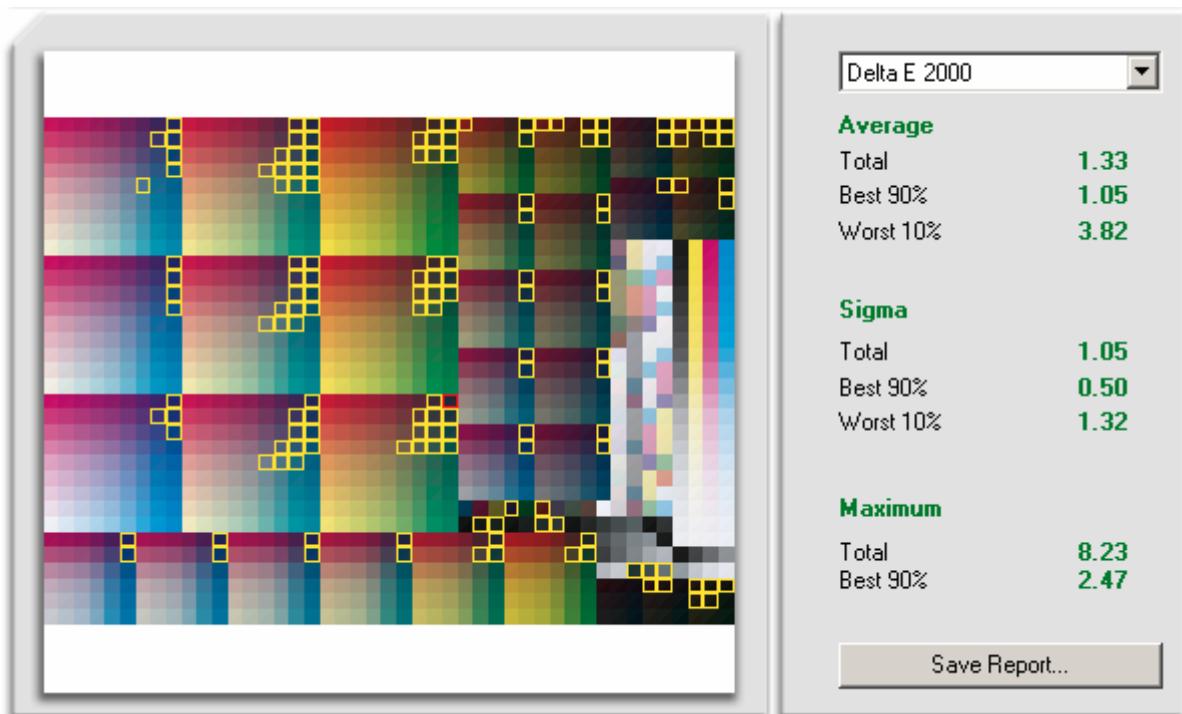
4) How to get a printing press matching ISO standards?

Using process inks not fully meeting ISO standards fortunately does not have too much incidence on printed colors of most images, but be careful with saturated flat CMYK colors (blue etc). Use standard inks if possible.

You then have two main working methods:

a) The first way is to set the press in order to match each process color ISO target density curve, and check that red green and blue trapping color angles are matched, if necessary by acting slightly on the process inks densities values.
Actually, matching ISO target dot gains curves generally requires a specific engraving curve for each printing plate.
This method offers the advantage of being very simple, and allows harmonizing the print densities and colors of all presses. It gives good results, although many parameters affecting the press chromatic response cannot be fully taken into account by this simple densitometric calibration process.

b) The second way is to make the offset press SIMULATE the ISO standards (e.g. simulation of the ISO Coated color proof by the offset press), by changing the input ISO CMYK color separations into new C'M'Y'K' color separations specifically optimized for each printing press.

This method, which does not necessarily exclude the densitometric calibration process describes in a) but can use non ISO target dot gain curves, is without any doubt the best method for CMYK publishing works, since the offset press truly simulates Customer's proofs in this case, when a simple densitometric press calibration cannot perfectly take into account all variables such as inks, moisture and real paper coating.

This meets the request of all Customers since the origin of color printing: Customers ALWAYS ask the Print House to simulate the colors of their proofs, whether they are good or bad proofs, as long as they have been visually accepted.
Moreover color separations received with bad 370% ink coverage will be changed into new color separations with appropriate press optimized ink settings.
By extent, this method allows the Print House to receive files no longer in form of CMYK PDF, but in form of Lab or "Large gamut RGB" PDF files, which are converted on site into "ISO proof CMYK" and then into "Press C'M'Y'K'", thus allowing much more productive workflows when a Customer and a Print House regularly work together.

In both above described ways of matching ISO CMYK Standards, it is possible to compute each plate appropriate engraving curve in order to match relevant ISO target dot gain curves:
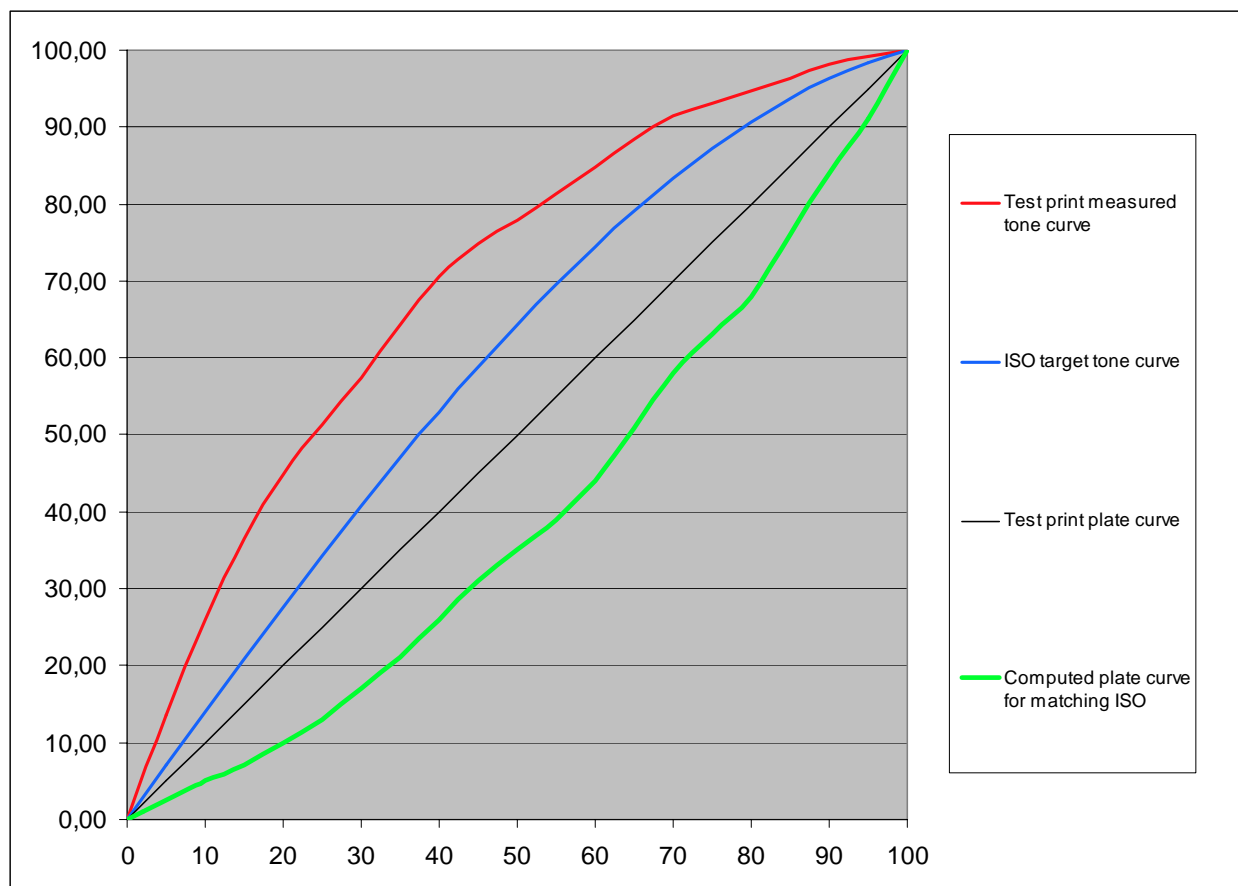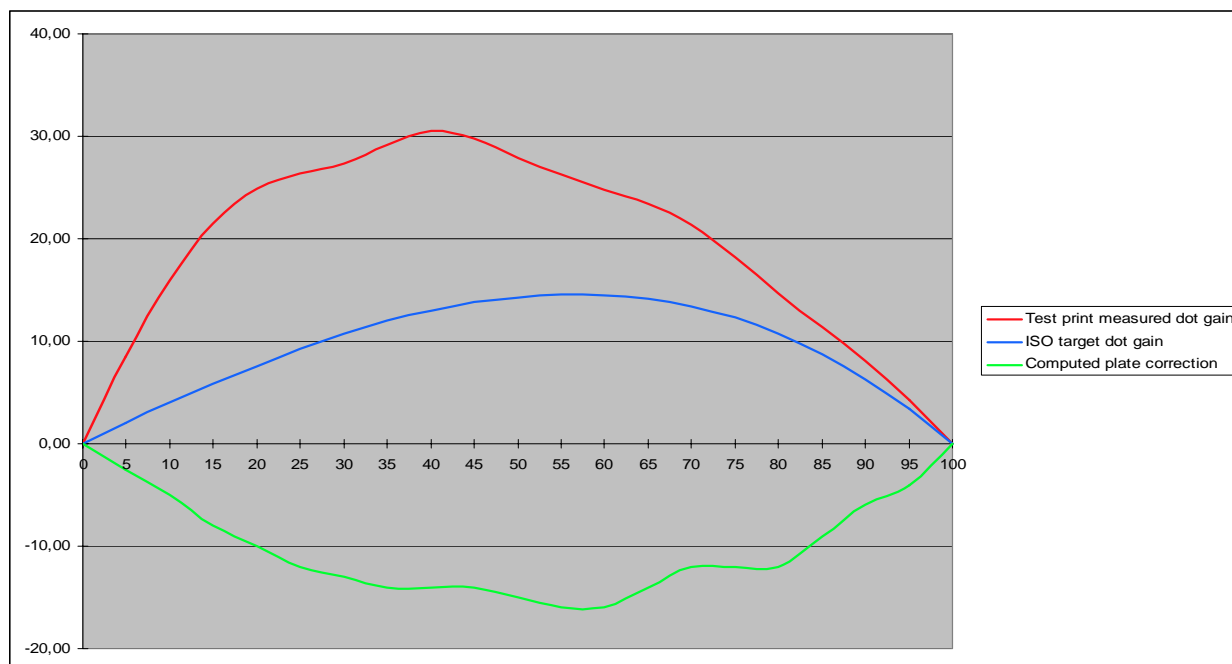
It is enough to produce a test print with "straight plates" (file x% gives x% on the plate), then measure the test print dot gain curves, and then use a software (or a Colorsource spreadsheet) that computes each plate engraving curve for matching the ISO target dot gain curves.

Colorsource spreadsheet also allows making test prints with flattened plates, in order to cope with too high initial dot gain of some print processes. (e.g. when using stochastic screening)

**5) Reference ISO dot gain curves for offset printing:**

For offset printing, ISO generally specifies identical target dot gain curves for the three C, M and Y layers, and a higher dot gain curve for black ink. These curves named A to F are unfortunately neither contained in published ISO profiles, nor in published characterization measurements files:
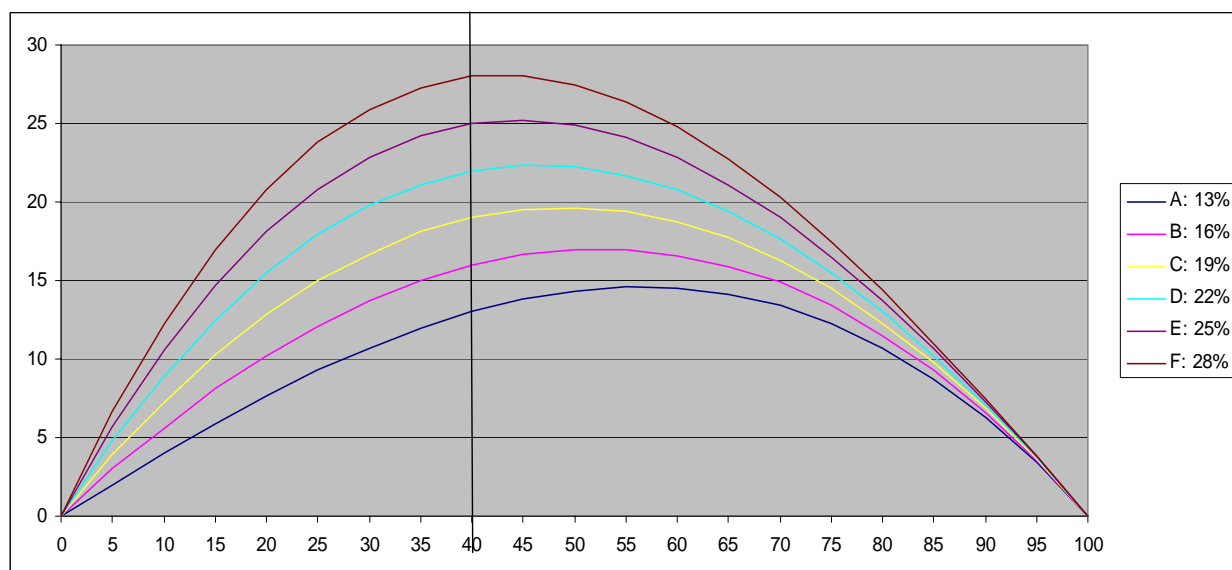
File %	A: 13%	B: 16%	C: 19%	D: 22%	E: 25%	F: 28%
0	0	0	0	0	0	0
5	2	3	3,9	4,8	5,7	6,7
10	4	5,6	7,3	8,9	10,6	12,3
15	5,9	8,1	10,3	12,5	14,7	17
20	7,6	10,2	12,8	15,5	18,1	20,8
25	9,3	12,1	15	17,9	20,8	23,8
30	10,7	13,7	16,7	19,8	22,8	25,9
35	12	15	18,1	21,1	24,2	27,3
40	**13**	**16**	**19**	**22**	**25**	**28**
45	13,8	16,7	19,5	22,4	25,2	28
50	14,3	17	19,6	22,3	24,9	27,5
55	14,6	17	19,4	21,7	24,1	26,4
60	14,5	16,6	18,7	20,8	22,8	24,8
65	14,1	15,9	17,7	19,4	21,1	22,7
70	13,4	14,9	16,3	17,6	19	20,3
75	12,3	13,4	14,5	15,5	16,5	17,5
80	10,7	11,5	12,3	13	13,7	14,4
85	8,7	9,3	9,8	10,2	10,7	11
90	6,3	6,6	6,9	7,1	7,3	7,5
95	3,4	3,5	3,6	3,7	3,8	3,8
100	0	0	0	0	0	0

For example:

➢ Curve A defines ISO Coated target dot gain for layers C, M and Y (standard Papers 1 and 2, 150 lpi)
➢ Curve B defines ISO Coated target dot gain for BlacK layer.
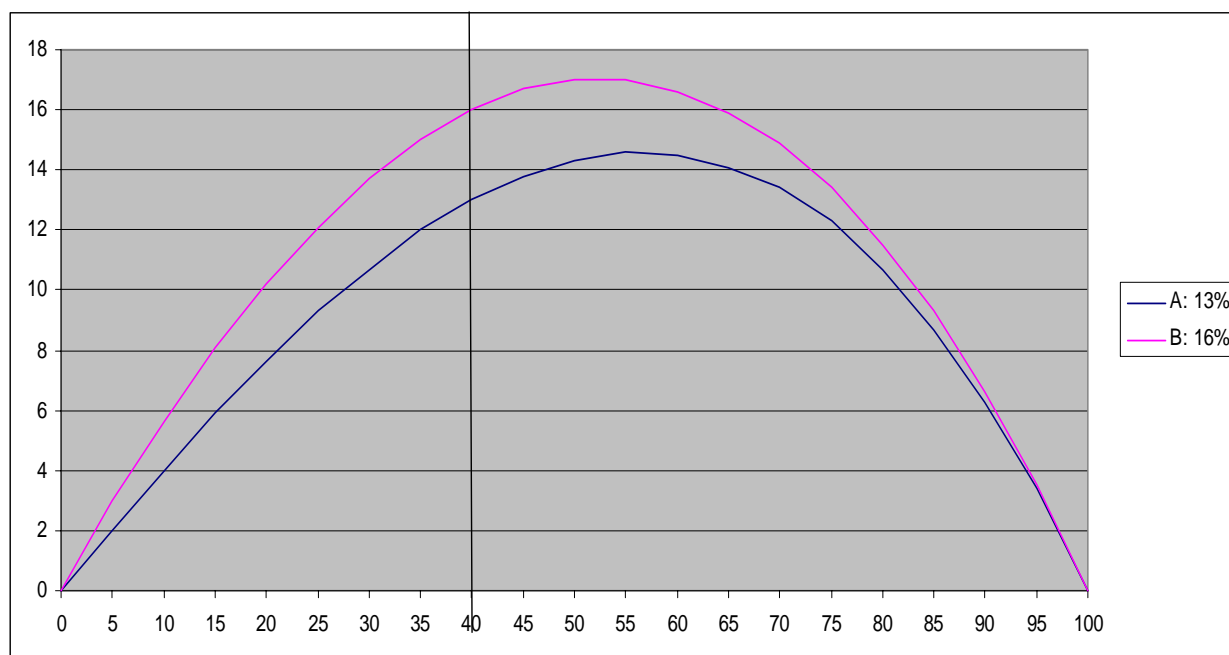
COLORSOURCE

Sheet fed offset printing: 4 printing conditions according to ISO standard 12647-2,

All positive plates, 150 lpi:

- ➢ Standard papers 1 and 2: Coated matte or bright papers above 70 g/m2
- ➢ Paper type 3: LWC (Light Weight Coated papers)
- ➢ Paper type 4: Uncoated white
- ➢ Paper type 5: Uncoated yellowish (recycled)

Continuous offset printing: 4 printing conditions according to ISO standard 12647-2:

- ➢ Standard papers 1 and 2: Coated matte or bright papers above 70 g/m2, positive plates, 150 lpi
- ➢ Standard papers 1 and 2: Coated matte or bright papers above 70 g/m2, negative plates, 150 lpi
- ➢ Paper type 4: Uncoated white, positive plates, 135 lpi
- ➢ Paper type 4: Uncoated white, negative plates, 135 lpi

Printing conditions	File name	CMY dot gain	K dot gain
Offset 150 lpi standard papers 1 and 2	ISOcoated.icc	Curve A	Curve B
Offset 150 lpi paper type 3	ISOwebcoated.icc	Curve B	Curve C
Offset 150 lpi paper type 4	ISOuncoated.icc	Curve C	Curve D
Offset 150 lpi paper type 5	ISOuncoatedyellowish.icc	Curve C	Curve D
Continuous offset 150 lpi paper type 2	ISOcofcoated.icc	Curve C	Curve D
Continuous offset 135 lpi paper type 4	ISOcofuncoated.icc	Curve D	Curve E

New 2007 profiles and 2007 modifications of existing profiles:

Printing conditions	File name	CMY dot gain	K dot gain
Offset 150 lpi standard papers 1 and 2	ISOcoated_v2_eci.icc and ISOcoated_v2_300_eci.icc	Curve A	Curve B
Offset 150 lpi SC paper (Super Calendared)	SC_paper_eci.icc	Curve B	Curve C

Newspaper printing: 1 printing condition according to ISO standard 12647-3:

- ➢ 100 lpi with 26% dot gain at 40% (different value in USA).

Printing conditions	File name	CMY dot gain	K dot gain
Continuous offset 100 lpi on newspaper with 26% dot gain at 40%.	ISOnewspaper26v4.icc	Curve E (26% with 1% margin)	Curve E (26% with 1% margin)

COLORSOURCE

Gravure printing: 4 printing conditions according to ISO standard 12647-4:

- ➢ Paper LWC: Light Weight Coated paper
- ➢ Paper SC: Super Calendared
- ➢ Paper MF: Finished machine
- ➢ Paper HWC: (High Weight Coated) Enhanced LWC with brighter white and more weight.

Printing conditions	File name	CMYK dot gains
Gravure LWC 51 g/m2	PSRgravureLWC.icc	17% dot gain at 40%: according to ISO standard 12647-4: 2005 for engravings between 150 and 200 dpi
Gravure SC 52 g/m2	PSRgravureSC.icc	Idem. See ISO standard 12647-4: 2005
Gravure MF 55 g/m2	PSRgravureMF.icc	Idem. See ISO standard 12647-4: 2005
Gravure HWC 70 g/m2	PSRgravureHWC.icc	Idem. See ISO standard 12647-4: 2005

See the useful links at the end of this document to download BVDM MediaStandard_2006.pdf complete document.

6) Available tools for visual monitoring of ISO CMYK print works gray balance:

BVDM and ECI propose PostScript and PDF control bars (control strips) allowing visual detection of press trichromatic CMY balance drifts by D50 light visual comparison between three gray patches K30%, K50% and K70% and their respective CMY% trichromatic color equivalents.

The visually C%M%Y% equivalent of a K% black of course depends on each ISO CMYK profile, and can be easily computed by using this profile. Using the benefits of this visual control thus requires using a specific control bar for each ISO CMYK print process.

See the useful links at the end of this document.

7) Available tools for controlling color proofs simulating CMYK ISO standards:

UGRA/FOGRA MediaWedge2 control bar is composed of 46 CMYK patches (2 lines of 23 patches for fast measurement by line scanning using the Eye-One Pro spectrophotometer, or any other appropriate device).

The colors which should be found when measuring MediaWedge2 are known in advance, because they only depend on the CMYK ISO profile being simulated by the proof.

You can download and install on a Mac or PC GretagMacbeth ProfileMaker software: The ProfileMaker software module MeasureTool can measure Fogra MediaWedge2 for free (without Dongle).

For example, choosing the file named "2x_MW2_FOGRA27L_SB.txt" in the charts measurement menu allows controlling a proof simulating ISO CMYK reference FOGRA27 (i.e. "ISO Coated" prints).

After having recorded this measurement file, MeasureTool offers to generate a PDF diagnosis file.

COLORSOURCE

Colorsource web site offers two files named: 2x_MW2_FOGRA39L_SB_CS.txt and 2x_MW2_FOGRA40L_SB_CS.txt allowing respectively controlling your proofs simulating the new reference frames ISOcoated_v2_eci.icc (new ISO Coated profile, based on FOGRA39) and SC_paper_eci.icc (ISO profile for continuous offset on SC paper, based on FOGRA40).

These files are to be installed in directory: ProfileMaker 5.xx/ Reference data/ Other

See the links at the end of this document for this download.

Fogra MediaWedge 2 color differences between "ISO Coated" and "ISO Coated v2"
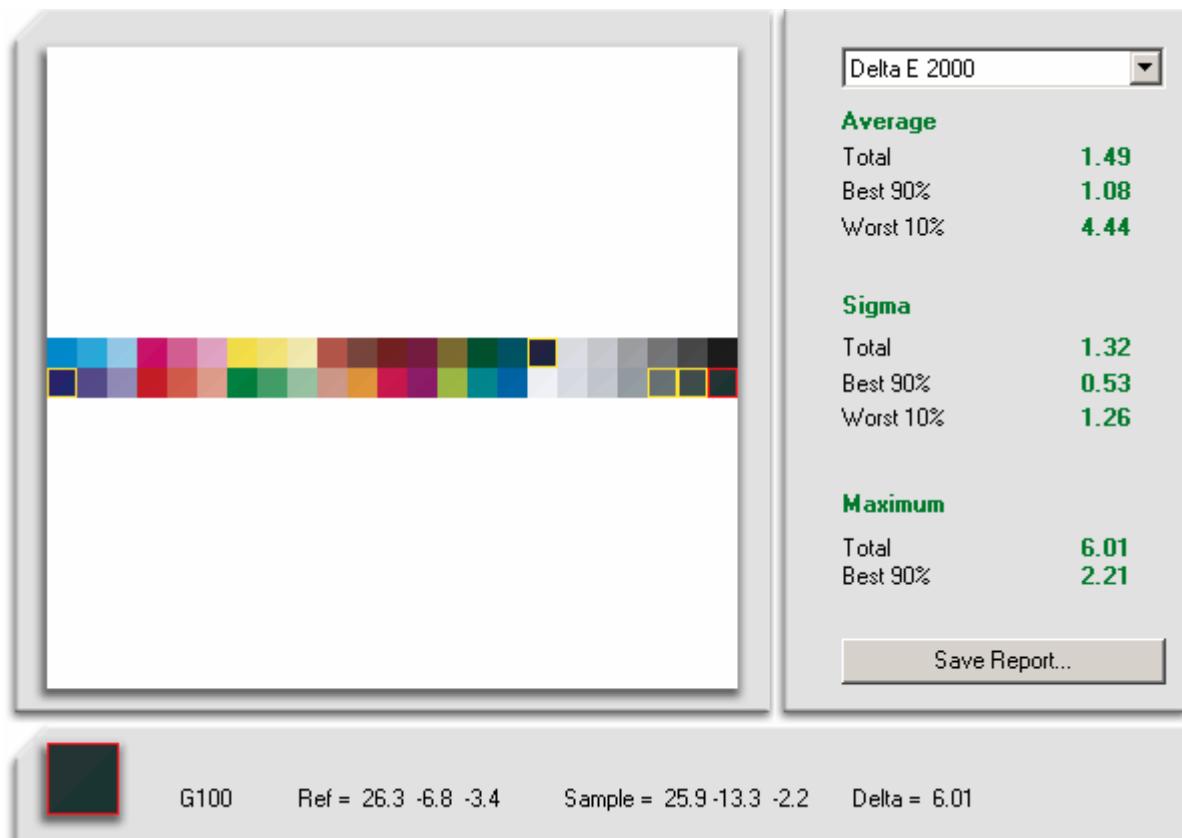
Change of 4.35 Lab (E2000 Delta) on blue: more violet according to the new ISO Coated profile.

8) What does offer Colorsource universal color quality control solution, for significantly improving ISO/ BVDM/ FOGRA/ UGRA/ ECI quality control processes?

This simple compilation of up to date information about ISO standards and ISO profiles took me several hours.

Colorsource quality control system will bring many obvious advantages to all Producers and Customers of Graphic industries:

COLORSOURCE

a) For controlling CMYK print works meeting ISO standards:

An alphanumeric identifier on the print work will allow any user of the document to immediately get on Internet complete information about this document, including for example:

> ➢ ISO printing condition (ISO Coated, or ISO Coated v2 or another ISO CMYK reference frame?),
> ➢ ISO reference densities and colors,
> ➢ ISO measurement conditions for these colors and densities,
> ➢ Reference dot gain curves,
> ➢ And more generally all production recommendations.

This will allow a much easier and faster use by all Producers and Customers of any old, present and future standard, with no more risks of ambiguity and confusion.

> ➢ Reference measurements file of the control bar,
> ➢ All special tints in a spectral definition format for comparing Customer's specified tints with tints formulated by the Print House

For a same CMYK ISO standard (e.g. ISO Coated v2), different identifiers will allow identifying several types of control bars corresponding to as many sets of reference values, or for allowing using more easily various measuring instruments.

b) For controlling CMYK prints not meeting ISO standards:

Colorsource system will allow any qualified Print Producer to reference any printing condition which cannot be standardized, because for example it uses special process inks (e.g. for printing chocolate or coffee packs) or because it makes use of non ISO print media. The qualified Producer is the only one able to specify what he considers as being the optimal printing conditions.

This will allow:

> ➢ Print Houses to classify and document well all their "special in house printing standards" for better organizing their production and better managing their own internal quality controls.
> ➢ Customers or Partners to check if a printed product does match the "in house standards" which has been optimized and documented by its Producers.

Colorsource system will allow Print Producers to automatically generate a control bar optimized for both quantitative and visual monitoring of any print process and it will allow the Producer and his Customers and Partners to easily check this control bar.

c) For controlling all print processes using any number of process colors with or without a CMYK base, and for controlling all digital prints:

See above paragraph.

d) For controlling CMYK prints simulating an ISO CMYK reference frame without matching the according ISO target density curves:

For example within an RGB PDF production workflow, with flattened web press plates ensuring a lower dot gain for optimizing ¾ tones color reproduction.

See above paragraph.

COLORSOURCE

e) For controlling CMYK proofs meeting ISO standards and using the FOGRA MediaWedge 2 control bar:

An alphanumeric identifier on the proof will allow any proof user to immediately get on Internet complete information concerning this proof, including for example:

For controlling the proof:

Reference measurements file the control bar

For a same ISO standard (e.g. ISO Coated v2), several identifiers will allow identifying different layouts of MediaWedge 2 allowing the use of various measuring instruments and will allow using nonstandard reference files taking in account the color appearance effects.

For producing the print run simulating the proof:

➤ Type of ISO CMYK print simulated by the proof (ISO Coated, or ISO Coated v2 or another ISO CMYK reference frame?)
➤ ISO reference densities and colors,
➤ ISO measurement conditions for these colors and densities,
➤ Reference dot gain curves,
➤ All special tints in a spectral definition format (They are generally not OK on the proof, at least spectrally!) authorizing good ink formulation by the Print House.

And more generally all ISO standard recommendations for producing the print run which will simulate the ISO proof.

This will allow a much easier and faster use of proofs by Producers, Customers and Partners. This will allow a much easier and faster use by all Producers and Customers of any old, present and future standard, with no more risks of ambiguity and confusion.

Please note Fogra MediaWedge 2 control bar shows important limitations:

➤ It assumes that a good proof matches the absolute XYZ colors of the print work, which is wrong in the general case. (See Colorsource links at the end of this document).

➤ It does not allow visual monitoring of the proofing printer CMY trichromatic balance drifts.

The standardization organizations suggest such control bars for visual monitoring of ISO print works (see paragraph 6). But digital printers used for proofing cannot be standardized, and thus the best control bars can only be defined by their Users and this becomes a very simple and fast process thanks to Colorsource solution.

This is why Colorsource system offers, as for controlling any other kind of print work, to generate an automatically optimized control bar for both quantitative and visual control of any proof, and allows all Producers and Customers to easily check this optimized control bar.

f) For controlling proofs simulating non standard print processes:

For producing the proof:

Automatic control bar generation allowing both visual and quantitative monitoring of the proofing printer (using any number and any kind of process colors), generation of an identifier specific to this control bar, and indexing its reference values, measurement and lighting conditions, plus coordinates of the Producer etc.
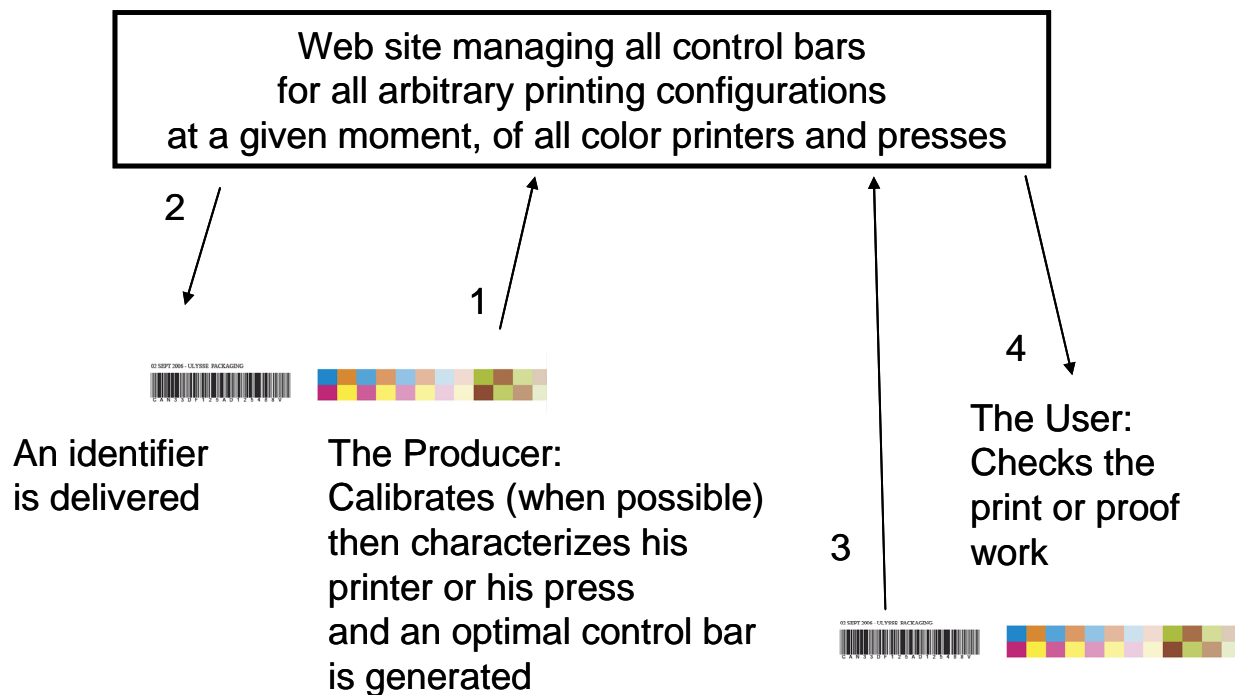
For controlling the proof:

The identifier allows fast quantitative checking of this specific control bar.

For producing the print run simulating the proof:

➢ Profile of the non standard print process simulated by the proof, using itself any number of process colors - standardized or not - and of special tints - Pantone or others -
➢ Reference densities and colors,
➢ Measurement conditions for these colors and densities,
➢ Reference dot gain curves,
➢ And more generally all necessary data and recommendations for a good print run.

This will allow a much easier, faster and reliable use of any proof. Colorsource system also allows simulating proofs controlled and measured bad, but visually accepted.

Web site managing all control bars
for all arbitrary printing configurations
at a given moment, of all color printers and presses

2

1

4

An identifier
is delivered

The Producer:
Calibrates (when possible)
then characterizes his
printer or his press
and an optimal control bar
is generated

3

The User:
Checks the
print or proof
work

Colorsource quality control system is the only one taking well into account that among all manufacturing industries, Graphic Industries offer by far the widest variety of unique products, and that it will never be possible standardizing everything.

It allows all qualified Producers to set, document and communicate their own in house production standards.

It offers the greatest flexibility for accurate color and technical communication between all Players.

By using a simple identifier, Colorsource unifies control bars generation and their control process, for all traditional and digital prints and proofs, and this whether standardization is possible or not.

COLORSOURCE

9) Where to find and download more complete information?

- ➢ **BVDM web site:** http://www.bvdm.org

Download page: http://www.bvdm.org/Aktuelles/Downloads.php

See in particular "MediaStandard_2006.pdf" on which this document is based.

ECI_bvdm_Gray_Control_Strip_2007_.zip contains sample control bars for visual monitoring of ISO prints trichromatic CMY gray balance, this process not being applicable to the ISO digital proofs without Colorsource solution.

- ➢ **Fogra web site:** http://www.fogra.org

Characterization files by D50 colorimetric measurement CMYK ISO presses:

http://www.fogra.org/index_icc_en.html

See also the comments about new profiles based on Fogra39 and Fogra40 files at following address:

http://www.fogra.org/rss/blog0033.html

- ➢ **ECI web site:** http://www.eci.org

Download page: http://www.eci.org/eci/en/060_downloads.php

All ISO profiles can be downloaded by Users not equipped to compute them by using FOGRA measurements files. But be careful with inking settings and the quality perceptual rendering intents.

ISOnewspaper26v4.icc profile is also available by à link to IFRA web site:
http://www.ifra.com/website/website.nsf/html/CONT_CONS_DL?OpenDocument&CTDL&D

Old ISO CMYK profiles corresponding to old versions of ISO standards are available as archive files.

- ➢ **IFRA web site:** http://www.ifra.com

Profiles for American, Indian press and rest of the world (ISO to date) are available on page:

http://www.ifra.com/website/website.nsf/html/CONT_CONS_DL?OpenDocument&CTDL&D

COLORSOURCE

> ***ISO TC130 web site: (graphic technologies) download of up to date the ISO standards:***

> *http://www.iso.ch/iso/en/stdsdevelopment/techprog/workprog/TechnicalProgrammeTCDetailPage.Tec
> hnicalProgrammeTCDetail?COMMID=3376*

> ***Colorsource web site:*** *http://www.colorsource.org*

"2x_MW2_FOGRA39_et_40.zip" file containing the reference files:

2x_MW2_FOGRA39L_SB_CS.txt
2x_MW2_FOGRA40L_SB_CS.txt

For controlling your proofs with Fogra MediaWedge 2 control bar, by free use of MeasureTool software:

> *ISOcoated_v2_eci.icc (proofs simulating new ISOCoated profile)*
> *SC_paper_eci.icc (proofs simulating ISO profile for continuous offset on SC paper),*

http://www.color-source.net/fr/Documentations/Infos_clients/2x_MW2_FOGRA39_et_40.zip

Downloading ProfileMaker 5.x for MacOSX and Windows for using MeasureTool:

http://www.gretagmacbeth.com/index/products/products_color-mgmt-spec/products_professional-
cm/products_pm5publish/products_pm5-publish_sw.htm?

PDF describing Colorsource solution and a few practical applications:

http://www.color-
source.net/en/Docs_Formation/Colorsource_Solution_for_Print_and_Proof_control_en.pdf

PDF summarizing frequently asked questions about Colorsource solution:

http://www.color-source.net/COLORSOURCE_CQCP_US_FAQS.pdf

Wilfrid Meffre
wme@color-source.net

P.S.: Thank you to notify me any mistake which would have slipped into this document!