SLOVENSKI STANDARD
SIST ISO 12647-2:2005/Dodatek 1:2010

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Grafična tehnologija - Vodenje procesa izdelave rastriranih barvnih izvlečkov, preskusnih in proizvodnih odtisov - 2. del: Procesi v ofsetnem tisku DODATEK 1

Graphic technology - Process control for the production of half-tone colour separations, proof and production prints - Part 2: Offset lithographic processes AMENDMENT 1

Technologie graphique - Maîtrise de procédé pour la fabrication des séparation de couleur en ton tramé, des épreuves et des tirages en production - Partie 2: Procédés lithographiques offset AMENDEMENT 1

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Graphic technology — Process control for the production of half-tone colour separations, proof and production prints —

Part 2:
Offset lithographic processes

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Technologie graphique — Maîtrise de procédé pour la fabrication des séparation de couleur en ton tramé, des épreuves et des tirages en production —

Partie 2: Procédés lithographiques offset

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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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Foreword

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

Amendment 1 to ISO 12647-2:2004 was prepared by Technical Committee ISO/TC 130, *Graphic technology*.

Graphic technology — Process control for the production of half-tone colour separations, proof and production prints —

Part 2:
Offset lithographic processes

AMENDMENT 1

Page 4, Subclause 4.2.4

Replace subclause 4.2.4 with the following text:

4.2.4 Screen angle (film or printing forme)

For half-tone dots without a principal axis, the nominal difference between the screen angles for cyan, magenta and black shall be 30°, with the screen angle of yellow separated at 15° from another colour. The screen angle of the dominant colour should be 45°.

For half-tone dots with a principal axis, the nominal difference between screen angles for cyan, magenta and black shall be 60°, with the screen angle of yellow separated by 15° from another colour. The screen angle of the dominant colour should be 45° or 135°.

NOTE See Note 2 in 4.2.3.

Page 4, Subclause 4.3.2.1

Replace subclause 4.3.2.1 and Table 1 with the following text:

4.3.2.1 Print substrate colour

The print substrate used for proofing should be identical to that of the production. If this is not possible, the properties of the print substrate should be a close match to that of the production in terms of colour, gloss, type of surface (coated, uncoated, super-calendered, etc.) and mass-per-area. Press proofing should be carried out on the closest match selected from five typical paper surface types whose attributes are listed in Table 1. For off-press proofing the print substrate should be selected to conform as closely as possible to the attributes listed in Table 1 of the paper type representing the envisaged production paper. The type of paper shall be stated.

Page 5, Table 1

Replace Table 1 with the following Table 1.

Table 1 — CIELAB coordinates, gloss, ISO brightness and tolerances for typical paper types

Paper type	Requirement				Additional information	
	L^* [a]	a^* [a]	b^* [a]	Gloss [b]	ISO brightness [c]	Mass per area
	1	1	1	%	%	g/m^2
1: Gloss-coated, wood-free	93 (95)	0 (0)	–3 (–2)	65	89	115
2: Matte-coated, wood-free	92 (94)	0 (0)	–3 (–2)	38	89	115
3: Gloss-coated, web	87 (92)	–1 (0)	3 (5)	55	70	70
4: Uncoated, white	92 (95)	0 (0)	–3 (–2)	6	93	115
5: Uncoated, slightly yellowish	88 (90)	0 (0)	6 (9)	6	73	115
Tolerance	± 3	± 2	± 2	± 5	—	—
Reference paper	94,8	–0,9	2,7	70 to 80	78	150

Values in brackets pertain to measurement on the white backing specified by CGATS.5 [5] and are given as additional information.

For prints on papers whose surface properties are identical to those of paper types 1 to 5 but whose mass per area is appreciably higher, the CIELAB colour coordinates given in parentheses should be used.

NOTE 1 In terms of gloss and colour, the paper types listed in Table 1 are representative of the range of print substrates used for the processes covered in this part of ISO 12647, with the following exceptions:

— the paper types 1 and 2 are not typical for web-fed magazine printing except for covers;

— paper types 3 and 5 are not typical for four-colour business forms printing.

NOTE 2 If the final product is subjected to surface finishing, this might severely affect the print substrate colour. See also Note 2 in 4.3.2.2.

NOTE 3 The parameters of the reference paper specified in ISO 2846-1[1] have been included in Table 1, for information only, in order to provide a connection to this related International Standard. Note that some values differ slightly from ISO 2846-1 due to the black backing used for the purpose of this part of ISO 12647. Original values of ISO 2846-1[1] are $L^*/a^*/b^*$ = 95,5/–0,4/4,7 as measured on substrate backing.

NOTE 4 The mass per area specified for paper type 3 represents a compromise between web production papers with typically 60 g/m^2 to 65 g/m^2 and a well-known web proofing paper with 90 g/m^2. When measured with black backing, the difference between similar papers of 70 g/m^2 and 90 g/m^2 corresponds to ΔL^* = 0,7.

NOTE 5 Although less commonly used, some web papers in the mass per area range of type 3 papers have b^* values in the range 0 to –3.

[a] Measurement in accordance with ISO 12647-1: D50 illuminant, 2° observer, 0/45 or 45/0 geometry, black backing.

[b] Measurement in accordance with ISO 8254-1, TAPPI method.

[c] ISO 2470:1999, substrate backing.

Page 6, Subclause 4.3.2.3

Replace subclause 4.3.2.3 with the following text:

4.3.2.3 Ink set colours

For the five paper types defined in 4.3.2.1, the CIELAB colour coordinates of the process colour solids on the proof shall agree with the aim values specified in Table 2, within the deviation tolerance specified in Table 3. The colour coordinates of the two-colour overprints and the three-colour overprint, both without black ink, should agree with Table 2.

The deviation of the process colour solids of the OK print of the production run is restricted by the condition that the colour differences between proof and OK print shall not exceed the deviation tolerances specified in Table 3. If no conforming proof is supplied, the colour values of Table 2 shall provide the aim.

The variability of the process colour solids in production is restricted by the following condition. For at least 68 % of the prints, the colour differences between a production copy and the OK print shall not exceed, and should not exceed one half of, the pertinent variation tolerances specified in Table 3.

NOTE 1 Conformance to the CIELAB values given in Table 2 usually requires the use of an ink set that conforms to ISO 2846-1[1] and the printing sequence cyan, magenta, yellow.

NOTE 2 The distribution of ΔE^*_{ab} values is not gaussian but skewed. For reasons of consistency, the variation tolerance is defined here as the upper limit for 68 % of the production copies. This is in analogy with a gaussian distribution where 68 % are within plus or minus one standard deviation of the mean.

NOTE 3 Comparison of the values of Table 2 for black and white (in parentheses) backing shows that the colour coordinates a^* and b^* remain largely the same. However, the L^* values are between 2 and 3 higher, depending on paper opacity.

NOTE 4 Density values can be very valuable for process control during a print run, where the instrument, the ink and the print substrate remain the same, see ISO 13656[3]. However, in a general situation, density values do not define a colour to the required degree. Therefore, for the purpose of this part of ISO 12647, reflection density values are only recommended for the determination of tone values. Following ISO 13656[3], the production press operator first achieves the correct colour of the solids on the press, then reads the densities with the instrument from the OK print. The densities are then used as aim values for process control during the production run.

NOTE 5 If the final print is subjected to surface finishing, the final colours might deviate appreciably from those of the unfinished print. See also Note 2 in 4.3.2.1 and Note 2 in 4.3.2.2.

NOTE 6 The secondary colours red, green and blue depend on conditions that include the printing sequence, the rheological and transparency properties of the inks, mechanics of the press and the surface characteristics of the print substrate. Thus, conformance of the primaries C, M and Y to Table 2 is not sufficient for the conformance of the secondary colours to Table 2.

NOTE 7 Tolerances for special (spot) colours and for package printing need be lower than those given in Table 3, especially the colour difference attributable to differences of L^*.

NOTE 8 The goal is that primary colour solids of digital-proof prints agree with Table 2 within one half of the deviation tolerance specified in Table 3. Current digital proof technology is capable of working within such tolerances. However, the level of inter-instrument agreement between different models of measuring equipment (currently available) precludes the inclusion of such a provision.