

**Overview: Revision of the newspaper printing standard**

Project ISO 12647-3:2004

Status: 02 September 2004

The final release of the revised newspaper printing standard is expected for the end of 2004. Minor changes are possible. We accept no responsibility for the accuracy and finality of the values included in this table.

**Parameters**

The standard applies for the following printing and proofing processes

**Specifications**coldset offset printing on standard newsprint  
coldset offset proofing on standard newsprint  
newspaper proofing by special proofing processes  
(e.g. ink jet)**Original copy**

Original copy must be supplied as

Data format

Colour-binding proof

sets of digital data

PDF/X (ISO 15930)

must contain a control element to allow verification of the suitability of the proof for newspaper printing by means of measurement

Min. tonal value of a paper original (monochrome printing)

5%

**Colour separation**

Total ink coverage

Max. black (K)

Colour reproduction

should not exceed 240%, max. 260%

min. 85%

Grey Component Replacement (GCR)

**Screen**

Type of screen

dot shape

first dot link-up

second dot link-up

Screen ruling

Screen angles

Cyan

Magenta

Yellow

Black (K)

Smallest dot with use of FM screening

elliptical

At 40% ; +/- 5%

not more than 20% above the 1st dot link-up

40 lines/cm ; +/- 2 lines/cm (100 lpi ; +/- 0.8 lpi)

15°

75°

0°

135°

40 µm

**Films for platemaking**

Imager resolution

Film density (above fog density)

Fog density of film

Permitted variation tolerance of fog density

Permitted register inexactness of colour-separated films

Max. edge effect for AM screen

Max. edge effect for FM screen

Recommended : 500 lines/cm (1270 dpi)

At least 472 lines/cm (1200 dpi)

At least 3.5<sup>1)</sup>

max- 0.15

max. 0.10

max. 0.02% of the image size (diagonal)

6 µm

4 µm

**Printing plates**

Max. tonal variation across the plate

Permitted register fault for a set of plates

+/- 2% (plus device-dependent measuring imprecision)

max. 0.02% of the image size (diagonal)

**Newsprint**

Colour of newsprint

Black measuring background<sup>2)</sup>, normativeWhite measuring background<sup>3)</sup>, informative

Tolerances colour of newsprint

Proofing

Target tolerance in production printing

Max. Tolerance in production printing

Variance within a print run

L\*

a\*

b\*

82.0

0.0

3.0

85.2

0.9

5.2

3

2

2

3

1

1

4

2

2

2

2

2

**Printing inks<sup>2)</sup> (black background, normative)**

Cyan (C)

Magenta (M)

Yellow (Y)

Black (K)

C + Y

C + M

M + Y

C + M + Y

C<sub>54%</sub> + M<sub>44%</sub> + Y<sub>44%</sub> + K<sub>100%</sub>

L\*

a\*

b\*

57.0

- 23.0

- 27.0

54.0

44.0

- 2.0

78.0

- 3.0

58.0

36.0

1.0

4.0

53.0

- 34.0

17.0

41.0

7.0

- 22.0

52.0

41.0

25.0

40.0

0.0

1.0

34.0

1.0

2.0

<b>Tolerances in colour printing<sup>4)</sup></b>		<b>Deviation ΔE</b>	<b>Variation ΔE</b>	
Cyan (C)	normative	5	4	
Magenta (M)	normative	5	4	
Yellow (Y)	normative	5	5	
Black (K)	normative	5	4	
C + Y	for information	8	7	
C + M	for information	8	7	
M + Y	for information	8	7	
<b>Printing inks<sup>3)</sup> (white background, for information)</b>		<b>L*</b>	<b>a*</b>	<b>b*</b>
Cyan (C)		59.1	- 23.9	- 27.1
Magenta (M)		55.5	47.6	0.7
Yellow (Y)		80.4	- 1.4	61.6
Black (N)		36.8	1.5	4.5
C + Y		54.9	- 34.3	17.5
C + M		42.4	7.0	- 22.7
M + Y		53.8	44.8	26.0
C + M + Y		40.4	0.1	0.4
C <sub>54%</sub> + M <sub>44%</sub> + Y <sub>44%</sub> + N <sub>100%</sub>		34.5	0.4	1.8
Colour characterisation data in accordance with ISO 12642 (IT8.7/3) are published on the internet; for information.				
<b>Printing</b>				
Printing sequence		CMYK or KCMY		
Tonal range		3% to 90%		
Register fault		should not exceed 0.15 mm; max. 0.30 mm		
<b>Total dot gain<sup>5)</sup></b>		<b>For the 26% curve (%)</b>	<b>For the 30% curve (%)</b>	
Input tonal value 10%		11.1	14.1	
Input tonal value 20%		19.0	23.4	
Input tonal value 30%		24.0	28.5	
Input tonal value 40%		26.1	30.5	
Input tonal value 50%		26.0	29.5	
Input tonal value 60%		23.9	26.1	
Input tonal value 70%		19.8	21.0	
Input tonal value 80%		14.3	15.2	
Input tonal value 90%		7.6	7.8	
Dot gain with FM screen in tonal patch 50%		43		
<b>Tolerances for max. dot gain</b>		<b>Proofing</b>	<b>Production printing</b>	
Deviation in 40% or 50% tonal patch		4%	5%	
Deviation in 75% or 80% tonal patch		3%	4%	
Variance in 40% or 50% tonal patch		-	5%	
Variance in 75% or 80% tonal patch		-	3%	
Midtone spread		5%	6%	
<b>Grey balance, for information</b>		<b>Cyan</b>	<b>Magenta</b>	<b>Yellow</b>
The stated CMY combined prints should produce a neutral grey in each case.		10%	8%	8%
The reference grey is determined by the paper and darkest black (240%).		20%	16%	16%
		30%	24%	24%
		40%	33%	33%
		50%	42%	42%
		60%	52%	54%
Recommended composition for a grey balance control element, for information		30%	24%	24%
<b>Densities<sup>6)</sup>, for information</b>		<b>Status E, with pol.filter</b>	<b>Status T, without pol. filter</b>	
Cyan (C)		0.90	0.90	
Magenta (M)		0.90	0.90	
Yellow (Y)		0.90	0.85	
Black(K)		1.10	1.05	
Paper		0.00	C = 0.23 ; M = 0.24 ; Y = 0.27 ; K = 0.22	
<sup>1)</sup> According to the standard, the density at the centre of the halftone dot is 2.5. It is practicable to measure the film density on a larger patch. If this solid density of the film reaches or exceeds 3.5, it can be stated that the density at the centre of the halftone dot is at least 2.5. <sup>2)</sup> Inks according to ISO 2846-2, measuring conditions : 45°/0° or 0°/45°, D50/2°, black backing. <sup>3)</sup> Inks according to ISO 2846-2, black background, see ISO/WD 13655. <sup>4)</sup> Inks according to ISO 2846-2, measuring conditions: 45°/0° or 0°/45°, D50/2°, black backing. Min. 68% of all production copies should lie within the /M variation tolerances. <sup>5)</sup> Max. dot gain = tonal difference between the digital file and the printed result. <sup>6)</sup> Black backing in accordance with ISO 5-4.				