
Rules of acceptance and execution of orders for printing services:

1. Printing process in PNB Print is adjusted to ISO 12647-2 standart.
2. PNB accepts files in PDF format (version 1.4 and later) using *Press Quality* settings.
3. Each component (cover, content pages, tip-in pages, endpapers etc.) should be in an individual file. Exceptions are endpapers if they are printed from the block. Pagination of each component should start with 1 and continue with sequential increase.
4. PDF files should be submitted in original size. PDF file should contain TrimBox corresponding to the cuttable edition format.
5. PDF file should be created without *Bleed Marks*, *Registration Marks* и *ColorBars*. *Crop Marks* should be located 3 mm from the edge (*Offset* setting).
6. *Bleed* should be at least 3 mm. Texts and important objects should be located at least 3 mm from the edge.
7. It is recommended to create files of more pages per file (32, 64, 128 or the whole job in a single file) but its size not exceeding 500 Mb. Pages in the file should follow in sequence, including white pages if such are necessary.
8. Filenames in the same edition should have the same pattern and numbering so that the page sequence could be identified. The filename should use digits and Latin letters, for example, 1-23_gramata.pdf.
9. In case errors are found, a new file should be submitted under a modified filename. If more pages are amended, then only sequentially following pages should be in the same file. File with amended pages should contain indication of page to be amended, for example, 20_gramata_NEW.pdf
10. Cover files should be submitted according to the technological drawing that is prepared by PNB and sent out for each cover. For softcovers, white field for glue should be provided on the inside (back size + 3 mm from each cover side).
11. UV varnish, hot foil stamping and blind embossing elements should be prepared in separate files as 100% Black. Text in these files should be converted to outlines.
12. PDF file should contain all fonts that are used.
13. ICC colour profile should not be included in PDF file.
14. PDF file should be *Composite*. PDF file should not contain RGB, *SPOT* objects except jobs printed with the use of respective Pantone inks.
15. If Opaque *SPOT* inks (silver, golden, etc.) are used in the job, the printing sequence should be necessarily indicated.
16. When converting into CMYK colour system, ICC profile of appropriate paper type should be used. ICC profiles and total ink coverage (TIC) are shown in Table 1.
17. Other compatible ICC profiles can be used if customer has positive experience with them and maximum TIC value is not exceeded.
18. Resolution of CMYK and *Grayscale* pictures should be 300 to 350 dpi, *Bitmap* – 600-800 dpi.
19. CMYK grayish backgrounds or pictures should contain black ink as the main component. To get more Black in light areas of pictures special ICC profile can be used, for example: coated_FOGRA39_GCR_bas.icc.
20. Fine black elements (lines, text) should contain only one ink, 100% black. Fine color elements should not contain more than 3 ink components.
21. Line width should not be smaller than 0.2 mm for fine white on 4-colour dark objects.
22. UV varnish provided for varnishing of printed elements should be in precise correspondence with them. If the foil embossing must fit with the printed elements, then the foil file should be 0.4 mm bigger than printed elements.
23. Minimum thickness of the foil embossing line is 0.15 mm. Minimum space between elements is 0.25 mm.
24. Minimum thickness of blind embossing elements is 1 mm and 1 mm space between the elements.
25. For 3D foil embossing minimum line thickness should be 0.8 mm. Minimum space between the elements is 1 mm at 0.1 mm coincidence with foil embossing elements.
26. *Overprint* customer settings are retained for all colours as well as *Overprint Black* setting is applied for all 100%*Black* Objects and removed overprint from white objects.
27. Upon special requirements of *Overprint* or *Trapping*, PNB repro specialists should be informed upon submission of order.
28. When preparing print ready files, white text on colour background may not be smaller than 8 points while tricolour text on white background may not be smaller than 6 points. It is not recommended to use 4-colour text that is smaller than 10 points.

Table 1. Recommended ICC profiles and TIC

Paper grade	ICC profile	TIC, %
For Sheetfed printing:		
Gloss Coated(1)	ISOcoated_v2_eci.icc	330
Matt, Silk or Satin Coated (2)	ISOcoated_v2_300_eci.icc	300
Uncoated (4, 5)*	PSO_Uncoated_ISO12647_eci.icc	260-300**
For Heatset printing:		
Gloss Coated(1)	ISOcoated_v2_eci.icc	330
Matt, Silk or Satin Coated (2)	ISOcoated_v2_300_eci.icc	300
Uncoated (4, 5)*	PSO_Uncoated_ISO12647_eci.icc	260-300**
LWC Improved, Heatset (3)	PSO_LWC_Improved_eci.icc	300
LWC Standard, Heatset (3)	PSO_LWC_Standard_eci.icc	300
MFC (Machine Finished Coating)	PSO_MFC_Paper_eci.icc	280
Super calendered	SC_Paper_eci.icc	270
INP (Improved Newsprint)	PSO_INP_Paper_eci.icc	260
SNP (Standard Newsprint)	PSO_SNP_Paper_eci.icc	260

*ICC profiles supplied by paper manufacturers can be used for uncoated papers, for example: AP_Munken_Lynx_260v4.1.icm
 AP_Munken_Polar_260v4.1.icm
 These profiles assume printing with enlarged ink densities and result will slightly differ from ISO 12647-2.

**TIC 300 % for uncoated paper should not exceed 10 % of picture

area. Note.

There is not ready full set of ICC profiles for working according to ISO 12647-2:2013 standard but customers can use if they want available new ICC profiles:

PSOcoated_v3.icc
 PSOuncoated_v3_FOGRA52.icc

In this case Project Manager and Prepress Department has to be informed about ICC profile used for preparing the job.

Product Quality. Sheet-fed and web-offset printing:

Colour control during printing is conducted by CMYK color Lab values and Tone Value Increase (TVI) measurements accordingly to the tables Nr.1, Nr. 2 and Nr.3

Table Nr. 1. CIELAB coordinates of colours for the printing on different types of paper grades accordingly to ISO 12647-2 standard

Colour	Paper grade											
	1, 2			3			4			5		
	Coordinates			Coordinates			Coordinates			Coordinates		
	L	a	b	L	a	b	L	a	b	L	a	b
Cyan	55	-37	-50	58	-38	-44	60	-26	-44	60	-28	-36
Magenta	48	74	-3	49	75	0	56	61	-1	54	60	4
Yellow	89	-5	93	89	-4	94	89	-4	78	89	-3	81
Black	16	0	0	20	0	0	31	1	1	31	1	3

Colour deviation tolerance for the table 1: $\Delta E^*ab \leq 5$

Table Nr.2. Printed product quality parameters.

Type of paper	Color densities*			
	C	M	Y	K
1. Gloss coated paper > 80 g/m ²	1,55	1,50	1,45	1,85
2. Matt coated paper > 80 g/m ² (silk, satin, matt)	1,45	1,40	1,35	1,75
3. Web offset paper ≤ 80 g/m ² (LWC)	1,40	1,35	1,25	1,70
4. Non coated, white paper	1,00	0,95	0,95	1,25
5. Non coated, yellowish paper	1,00	0,95	0,90	1,25

Accepted color density variation from above values - CMYK ± 0.1
 Variations from standard densities may occur if the job is printed accordingly to previously printed sample or client's color proof
 Register accuracy - 0.1 mm
 Front and back side match – up till 1.0 mm
 *Density parameters measuring fresh ink. Density may decrease by 0.1 after the ink has dried. Measurement conditions: Status E (DIN), polarized filter.

Printed product quality parameters in post press processes.

Parameters	Value tolerance
Shift of folding	± 1.0 mm
Cross register accuracy of the cover and text sheets	± 1.0 mm
Allowed spine tear off (head or tails) after cutting of the block	up to 1.5 mm
Loose/split sections of the block	Not allowed
Shift of the cut format	± 1.0 mm
Degree of cut block curvature	up to 1.5 mm
Acceptable amount of faulty copies in the run:	
Lower than 2000 copies	1.5 %
2001 - 3000 copies	1 %
3001 – 5000 copies	0.75 %
5001 - 10000 copies	0.5 %
over 10 000 copies	0.2 %

Table 3. Tone Value Increase 50 % control patch (TVI) on different types of paper grade

Paper type	1, 2		3		4, 5	
Colour	CMY	K	CMY	K	CMY	K
TVI (curve)	14 (A)	17 (B)	17 (B)	20 (C)	20 (C)	22 (D)

Tone Value Increase tolerance – 4 %.

Deviations from the ISO standard recommendations are permitted if:

- the job is printed accordingly to previously printed sample or client's colour proof
- the customer participates in the printing process and requires a colour correction
- the job is printed on uncoated paper according to Munken site's recommendations;
- additional surface coating is applied - varnishing, laminating