

Exclusive and premium quality production is our primary objective which guides us in finding the right solutions to any challenging situation presenting a combination of complex mechanical, physical and chemical principles. The present document serves as the guidance for avoidance of any aesthetic inconsistencies in our projects as we propose respective solutions and inform on the necessities.

Repro:

1. Please make sure to consider the general technical requirements to file preparation when designing your publications:

1.1. Acceptable files:

1.1.1. Versions **PDF 1.3 – PDF 1.6** (*Exception: PDF 1.3 file version must be used, if the layout is prepared using Corel publishing software*), **PDFX1a, PDFX3**: centred, composite, without mirroring, bleeds not less than 3 mm, with crop marks.

1.2. File submission:

1.2.1. The files shall be submitted to the Contractor via the file submission portal at <https://insite.lrytas.lt> (or <https://insite.printincmyk.eu> for the cases where the Contractor must remain anonymous).

1.2.2. The accounts and user manuals are created and sent by the Contractor's prepress staff.

1.3. The files are submitted one page per file. If agreed with the responsible Contractor's employee, all pages may be submitted in a single file, provided that the file does not exceed 1 Gb.

1.4. For perfect bound products, the cover layouts must be provided as spreads 4-1 and 2-3, with backbone. Width of the backbone is specified by the responsible Contractor's employee. For stitched products, the covers must be delivered in separate files.

1.5. For corrected files, the file name must be the same as the file name used in the Insite prepress system (or the same as the name of the file delivered earlier by the alternative method). If corrections are made to a file which has already been confirmed, suffix "new" or "new" with the correction version must be added, if the file is corrected more than once. For example, "Tele_001new", "Tele_013new3". Corrected pages are delivered in separate files.

1.6. All the colours used in the publication must be in CMYK colour space, except for the prints where special paint is used, e.g. Pantone, partial varnishing. The number of basic colours in the file must correspond to the number specified in the order.

1.7. Trim box size must correspond to the publication size after trimming, and bleeds must be located beyond the Trim box. Page orientation in the file must correspond to the orientation in the printed publication.

1.8. All the important content must be positioned in the file at the following minimum distances:

1.8.1. for wire staple bound (saddle stitched) publications: 3 mm from the cut and stitch line;

1.8.2. for hot melt (perfect bound) publications: it is recommended to position all the important content at the distance of at least 7 mm from the gluing line between cover 2nd and 3rd cover pages and the first internal pages, as well as on the first four and last four pages of the perfect bound product. On the following pages, the text must be positioned at least 5 mm from the gluing line.

1.9. All fonts and objects used must be embedded in the delivered file, i.e. the file must not contain any links or OPI objects. The fonts transformed disproportionately in the layout must be converted into curves.

2. Publication layout requirements:

2.1. Small black objects and black text with font size less than 14 pt must be assigned with the “overprint” attribute. If the Customer wishes to eliminate the “overprint” attribute for black color, the responsible Contractor’s employee must be informed in writing.

2.2. The partial varnishing colour is provided with the “overprint” attribute. Pantone colour shall be reversed in relation to other colours (if Pantone needs to be printed over CMYK, the responsible Contractor’s employee shall be notified).

2.3. Using composite colours for small objects is not recommended. See the table below for the typical examples of small objects in commercial and newspaper print:

Printing type	Commercial	Newspaper
Minimum size of the font with composite colour	8pt	10pt
Minimum size of the reverse font on composite colour background	8pt	10pt
Minimum width of the line with composite colour	0.45pt (0.15mm)	0.75pt (0.27mm)
Minimum width of the reverse line on composite colour background	0.75pt (0.27mm)	1 pt (0,54mm)

2.3. If the Customer has submitted proof prints for any part of the publication, the proof prints shall comply with the requirements of the printing process standard ISO 12647-7 and emulate the same print that the ICC colour profile for the respective part refers to, as specified in the Prepress Specifications in the Printing Annex for the respective publication.

2.4. The responsible Contractor’s employee shall be notified in advance on any changes to the print layout design software or its version, or on replacement of the designer.

2.5. The Contractor shall not be liable for any technical errors in layout design preparation for printing made by the layout designer (non-compliance with the above specifications) or errors made by software developers and resulting from the use of by unregistered software.

2.6. Colour separation for the publication parts and image resolution are selected according to the paper grade used for printing of the respective publication.

2.7. Name and grade of the paper are specified in the respective Annexes to the Contract.

The colour separation parameters and image resolution presented in the Table are recommended by the ECI organization and are in line with offset printing standard ISO 12647-2(3). Names of the reference files distributed by FOGRA Institute are also provided for designing own profiles in line with the ISO offset printing standard.										
Paper grade	HWC (WFC)	MWC	LWC Improved	LWC Standart	MFC	LWU	SC	INP	SNP	Uncoated
Image resolution	250-300	250-300	250-300	250-300	220-250	220-250	220-250	220-250	220-250	220-250
ICC profile	ISO Coated v2 eci	ISO Coated v2 eci 300	PSO LWC Improved eci	PSO LWC Standart eci	PSO MFC Paper eci	PSO MFC Paper eci	SC Paper eci	PSO INP ec	PSO SNP Paper eci	PSO Uncoated ISO12647 eci
The ICC profiles shall be downloaded from: http://www.eci.org/_media/downloads/icc_profiles_from_eci/eci_offset_2009.zip										

3. The layout designer is advised to consider the link between sizes of different types of objects and color composition. For small texts (up to 14 pt), lines (up to 0.5 pt), black colour composition C0/M0/Y0/K100 is recommended, and assigned "Overprint" attribute is mandatory. For larger fonts (starting with 16 pt) and black areas larger than 2 cm², composite black colour (for example, C40/M30/Y30/K100 or similar composition) is recommended, and the composition proportions for the grey colour balance specified in the ISO12647-2 standard shall be maintained.

Printing:

1. Due to its characteristics, *silk* and *matt* paper is inclined to slight smudging in the subsequent binding processes. Use of protective varnish is recommended.
2. In printing using a combination of different technologies (cover – sheet, internal pages – roll (heatset) printing), the cover becomes shorter due to the process specifics. The Customer is therefore advised to consider this shortening in the design. Shortening of the cover will be less apparent visually, if similar colour tone and design is used between the first page of the page block (i.e. signature page) and cover.
3. Paper used for printing absorbs moisture and paint due to its properties. After taking in the water and paint, the fibre expands, which results in visible cockling. In heatset printing, after the paint is applied on the paper, the drying process takes place in the dryer, where up to 150 °C temperature is built up by means of the gas (the exact temperature depends on the type and mass per unit area of the paper). During the process, paint/wetting liquid is applied on the printed signature, and the printed signature immediately enters the high-temperature drying section (dryer), then proceeds into the cooling section and is cooled down to 23 °C. At this temperature, the paper is subjected to drying by vaporization of moisture and paint solvent, and the paper completes absorbing the paint. The cockling of the paper resulting from the heatset printing technique is inevitable due to the natural effect of the fast technological process and chemical laws on the end product.
4. Paper grain direction determines the aesthetic properties, binding, paging quality of the publication. Certain publication formats, such as A5, A3, *landscape* A4, certain *delta* (195x195 mm) formats, are against the grain due to the *long grain* type printing of the roll printing machine and the model of the folding machine. We

therefore advise consulting with the responsible employees of the printing house who will provide full information about the effect of the grain direction on the designed publication.

Processing:

1. The UV varnish is prone to cracking at the crease-line and folds due to paper fibre deformation paint film and UV varnish layer. To reduce the effect of this factor, lamination, partial UV varnishing are recommended.
2. Lamination results in certain change in the colour, and the layout designer needs to select the appropriate colour separation (ICC) profile designed for the projects which involve lamination.

Saddle stitching:

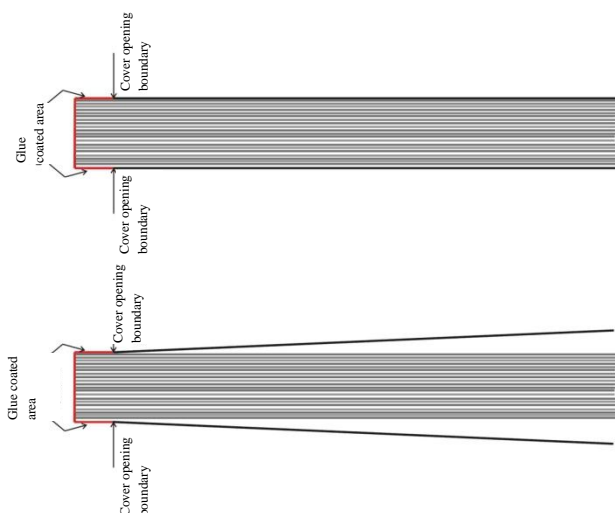
Recommendations on preparation of the publications for saddle stitching (staples):

1. During the layout design process, it is advised that the letters/small segments are positioned without crossing the folding limits, or the limits are located between the letters.
2. There must be no compensation allowance for the crossover images on the two-page spreads.

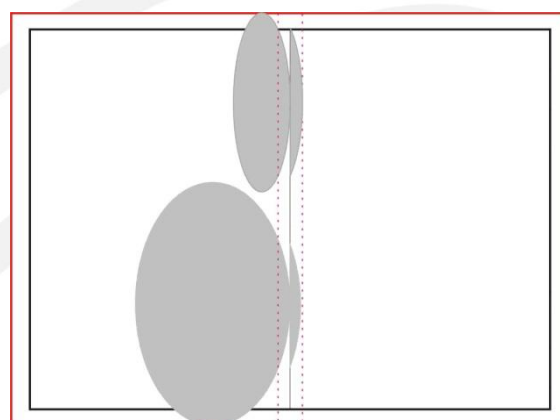
Perfect binding:

Please consider the following recommendations regarding the specifics of the perfect binding process:

1. Area for binding the first and the last pages of the page block to the cover pages is 6 mm. If the project contains any images crossing the cover and inner page spreads, it is advised to position the crossing images 7 mm to each side.



Bonding limits on the outside



Bonding limits on the inside, between the spreads

2. It is advised that the crossover images inside the publication are positioned 2-3 mm to both sides (compensation allowance must be provided).
3. Minimum boundary for text position to the binding line is 5 mm. This will protect the text position close to the backbone. It is recommended that the text on the first and last four pages is positioned at least 7 mm to the binding line.

4. Before deciding on the paper for the project, we recommend consulting with the responsible employees at the printing house for avoidance of potential creasing resulting from different specifications of the paper.

Production deviation and tolerance limits

The printing house follows the ISO quality standards to produce the premium quality products. Nonetheless, there is a certain degree of deviations and tolerance inherent to production due to the continuous and speedy mechanical process. Our company maintains its production control system which effectively reduces the number of inferior products, but it cannot completely eliminate minor deviations.

1. Properties of the paper products from different suppliers may differ despite the equivalent specifications declared. We therefore do not assume any liability for the raw material provided by the Customer and the effect of the raw material on the printing process. In case of any issues related to the raw material supplied, the responsible employee at the printing house will contact the Customer to notify on potential deviations or arising issues.

2. Folding tolerances ± 1 mm, fluttering, and minor colour deviations may occur as a result of roll paper overlaying in the printing process.

3. Colour alignment accuracy in printing with offset sheet machine or heatset printing machine:

Type of printing	Mass per unit area	Tolerances
Offset printing	<80 gr	0.10 mm
	>80 gr	0.08 mm

4. Folding tolerances in relation to the crop marks for printing with the heatset printing machine:

Format	Folding tolerances in relation to the crop marks , mm									
	A3		A4		A5		A6		Delta	
Mass per unit area of the paper	Saddle stitching	Perfect binding	Saddle stitching	Perfect binding	Saddle stitching	Binding	Saddle stitching	Perfect binding	Saddle stitching	Perfect binding
$\leq 80 \text{ gr/m}^2$	± 1.0	± 0.8	± 1.0	± 0.8	± 1.5	± 1.3	± 1.7	± 1.5	± 1.7	± 1.5
$> 80 \text{ gr/m}^2$					± 1.5	± 1.5				

5. Folding tolerances for printing with the heatset printing machine and using the rotating blades:

Format	Number of pages	Tolerances
A3	4-8	± 2 mm
A4	8-16	± 1 mm
A5	16-32	± 1 mm

6. Tolerances for the perfect bound *in-line* publications:

- ✓ binding area boundary ± 2 mm on each side;
- ✓ glue application area – 10 mm each on the upper and bottom part (for the blades to not approach the glue);

7. After the dryer stage, silicone emulsion is applied on the paper to protect the prints in case of contact and against smudging and other factors which may occur in the folding machine. Residual silicone which is

eventually absorbed and becomes unnoticeable is determined by the amount of the image and total degree of colour overlay for the printed signature.

8. Tolerance for the CMYK component colours 100 %, up to $\Delta E-5$.

9. Tolerance for the Pantone system colours 100 %, up to $\Delta E-3$.

10. For saddle stitched or hot melt (perfect bound) publications, permissible deviation from the crop contour is ± 1.5 mm, publication format accuracy $\pm 2-4$ mm. This tolerance also includes the paper shortening factor. Please note that the shortening tolerance of different paper grades is also different, for example, for the INP grade, paper shortening up to ± 4 mm may occur.

11. During the hot melt (perfect binding) process, glue may enter between the printed signature into the block by 5 mm.

12. Staple position in relation to folding ± 1 mm.

13. Alignment of the cover page and inner pages of the block ± 1 mm.

14. Folding may deviate by ± 1 mm due to the use of the folding machines.

15. The following tolerances apply to decoration of the publications:

- ✓ Partial UV, foiling, embossing - ± 0.8 mm;
- ✓ Die cutting ± 0.5 mm
- ✓ Lamination and flood UV coating – at least 98 %.