PRODUCT QUALITY SPECIFICATIONS

for use in DIMOGRAF Printing Office

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1. General Remarks

Scope of the document:

The document defines general quality standards and parameters for the products manufactured in DIMOGRAF Printing Office.

2. Basic definitions

Functionality – the capability of using the product in accordance with the purpose

In case of a book, the product lacking the functionality is meant to be:

- a book, which is incomplete, i.e. does not include the most of ordered elements;
- a book, which cannot be used in a standard way, i.e. cannot be read, browsed through, riffled.

Inconsistency – non-compliance with the requirement, with no restrictions to functionality

Defect – non-compliance with the requirement, with restrictions to functionality

Proof – comparative printout with the purpose of simulating the realistic printing process as far as possible in a way imitating the results achieved with the use of printing machine. It represents the basic colouristic guideline - most often provided by the customer, it may also be manufactured after Customer's order by the DIMOGRAF Prepress.

"Colour OK" sheet – template selected from the manufacture printed matter as far as possible colouristically compliant with the proof, signed by the Customer, Shift Officer or authorized Operator. The comparative material, achieved with the use of printing machine, constitutes the realistic, achievable colour standard for the operator and constitutes a reference standard for the whole printing facility.

ΔE – the difference in optical density between the standard and the sample – averaged value being a resultant of differences measured for the individual process colours

n – the number of admissible printout or mechanical non-compliances on one single page

Max dim. of 1mm^2 – maximum acceptable coverage area for the printout non-compliances on one single page

Max dim. of 1mm – maximum acceptable length for the printout non-compliances (e.g. dashes) or mechanical non-compliances (e.g. with excessive tear marks) on one single page
Control field – tonal or multicolour fields provided on printing sheet for the purpose of controlling the printout quality – control fields enable visual as well as instrumental (densitometric or colorimetric measurement) control of printout quality
Densitometer – the device used for measurement of optical density with the support of photoelectric sensors sensing the incoming light – densitometer measures the colour areas, but only in a case of optical density, not their colours – the measurement result in the form of optical density is just the unit of thickness of applied ink
Acetone test – test performed to check the correctness of varnish hardening , the assessment of UV varnish response to acetone
Hardness tester – the device used for assessing the varnish hardness

3. Print

3.1 Colour standard

The basic colour standard is the certified proof created in accordance with the 12647-7 ISO standard. Lack of proof's certification disables the usage of colour standard as a template material. Printouts and materials other than the certified proof (including the standards from different printing offices) are not acceptable as colour standards.

In case of lack of certified proof, the colouristic standard is believed to be a standard in understanding of 12647-2:2013 ISO standard.

In case of print acceptance by the Customer, the sheet accepted and signed by the Customer is becoming the standard material used for printing. Given sheet is becoming a reference standard for other printing sheets.

Refinement of printer's proof may have an impact on colour. The printing office does not bear the responsibility for colour change developed as a result of refinement - lamination, varnishing.

3.1.1. Methods of colour control

The visual assessment is recognized as the basic method of colour control.

The measurement of control strip is recognized as the support method of colour control (recommended for the purpose of visual assessment verification). The measurement of control strip is becoming the basic control tool for print correctness in case of lack of proof.

COLOUR VISUAL ASSESSMENT

Printed sheets shall be compliant with the standard or their colour may slightly differ from the standard: proof, sheet accepted by the customer or 12647-2:2013 ISO standard (in case of ISO standard, the admissible deviations are regulated by the provisions of the same standard).

Printing sheets shall be colouristically accepted with the standard sheet signed by the printer or customer.

ACCEPTABLE	UNACCEPTABLE
Colour compliant with the proof or sheet acceptable by the customer or slightly diverging from it.	The colour significantly diverging from the proof or sheet acceptable by the customer.

MEASUREMENT OF CONTROL STRIP
The colorimetric measurement shall be considered as a support method for colour assessment. It is becoming the basic tool in case of lack of proof or non-certified proof and print compliant with the 12647-2:2013 ISO standard.

3.2 Colour standard – special colours

The standard, actual Pantone or HKS colour guide is the basic colour standard for printouts in special, metallic and fluorescent colours.

The standard sheet is signed by the customer or printer based on the visual assessment of conformity of a copy to the Pantone colour guide. After signing the standard sheet, it is becoming the basic colour guideline for printing copies. Standard sheet and printing sheets shall be acceptable with the colour standard (Pantone or HKS colour guide).

ACCEPTABLE	UNACCEPTABLE
Colour according to or slightly diverging from the standard	Colour significantly diverging from the standard

Refinement of the print copy may have an impact on the special colour. The printing office does not bear the responsibility for colour change developed as a result of refinement - lamination, varnishing.

ADDITIONAL REMARKS

Metallic pigments on reaction with the solution moisturising the printing machine can become "more mat" that may bring the effect of "dimmed" colour. Unprotected metallic ink coat is not resistant to abrasion and scars. Metallic inks are suitable for printing the raster surfaces and smaller dash elements to small extent. Varnishing with the use of UV varnish may inconveniently change the impression of "metallicity"; there exists a possible of varnish coat chipping off due to smaller adhesion of varnish - metallic ink relation.
Fluorescent inks are characterized by the low photostability. They are irresistible to the use of spirit, solvent varnish and alkali. The printing office is not responsible for the colour change of these inks created by the light influence, reaction with the UV solidified varnish and after foil lamination. These inks are suitable for raster surface printing of fine dashed elements to smaller extent. Achieving the desired visual effect may require high application of the ink, what in turn may lead to abrasion of raster part.

3.3 Image register

Colour images shall overlap. Shifting the colour images against each other (loss of image register) shall not exceed the admissible tolerance range.

ACCEPTABLE	UNACCEPTABLE

Loss of register <=0.2 mm	Loss of register >0.2 mm

3.4 Fold

Lateral as well as vertical fold (trimming off) shall run across the folding line. Admissible horizontal and vertical fold offset against the designated line shall fall within the tolerance range.

ACCEPTABLE	UNACCEPTABLE
Offset <=1.5 mm	Offset > 1.5 mm

3.5 Image and mechanical incompatibilities

The sheet shall be free from image incompatibilities reducing functionality such as:

MOIRE PATTERN / BLURRING / DOUBLING / IMAGE PICKING
IMAGE SHIFTS / TONING / WASHOUT / WATERY INK / CRACKS /
PLATE SCRATCHES / RUNS / HOLES / STAINS / IMPS / SMUDGES /
LITTER

The sheet shall be free from mechanical incompatibilities reducing the functionality such as:
TEARS / CRACKS / DOG EARS / "RUNNERS" / CREASES / OVERLAPS /
FOLDS / SCRATCHES / SOILING / IMPRINTS

3.6 Surface finish

Varnish/foil shall be placed evenly over the entire surface of the sheet. The sheet surface shall be even and smooth, without any perceptible unevenness. Sticking the sheets together and ink back-splitting are unacceptable.

Additionally, with UV varnish coating the unacceptable features are:

- discolouration resulting from 10-second reaction to acetone
- shine less than 750 in case of UV varnish coating
- poor varnish hardness (varnish chips off under pressure of 2N, testing with the use of hardness tester)

3.6.1. Varnish applying

Varnish should be applied evenly and without any defects. Matching deviations are acceptable if they are the result of changes of linear dimensions of a sheet after printing and during applying of varnish:

TYPE OF PAINT	ACCEPTABLE	UNACCEPTABLE
Offset varnish	<= 0.5 mm	> 0.5 mm
UV varnish	<= 0.5 mm	> 0.5 mm
Spot UV varnish	<= 1mm	> 1 mm

3.6.2. Glitter varnish

Projection accuracy resulting from changes of linear dimensions of a sheet after printing and during applying of varnish should be within the acceptable tolerance range.

ACCEPTABLE	UNACCEPTABLE
Offset <=0.5 mm	Offset > 0.5 mm

4. CUTTING

The following section refers to cutting the product to the final format using auxiliary machines with average precision of cutting.
The tolerances defined in item 9.2 and 9.3 shall be used for cutting the sheets with the use of paper cutter characterized by high precision of cutting.

4.1 Format

The cutting format is defined in the contract by providing the physical dimensions of the product, expressed in millimetres: both length and width
Deviation of the copy format from the specified net format shall fall within the admissible tolerance range.

ACCEPTABLE	UNACCEPTABLE

Deviation from the format <=1,5 mm	Deviation from the format > 1,5 mm

4.2 Rectangularity

Cut, perpendicular edges of the product shall form a 90^0 angle.
Rectangularity offset measured relative to the back shall fall within the admissible tolerance range.

ACCEPTABLE	UNACCEPTABLE
Offset <=1 mm along the section of 100mm	Offset > 1 mm along the section of 100mm

There shall be no pages that have been torn, jagged edges and burrs in the final product.

5. FOLDING

The guidelines for the fold position are included in the contract.
The master folding method is a dummy.
The fold shall occur on the designated folding line.
Admissible horizontal and vertical offset of the fold from the line shall fall within the tolerance range

ACCEPTABLE	UNACCEPTABLE
Offset <=1,5 mm	Offset > 1,5 mm

The format after folding is defined in the contract by stating the physical dimensions of the entire folded section and dimensions of individual pages, expressed in millimetres.
The tolerance for the format and rectangularity is the same as in item 9.2 and 9.3.
Additional unacceptable non-compliances of folding:
jagged edges, burrs, paper cracks, other mechanical non-compliances.

6. DIE-CUTTING / EMBOSSING

The guidelines for the positions of die-cut/ embossed elements are included in the contract.

Additional master die-cutting/ embossing method may be a dummy.
Offset of the die-cut / embossed element against the specified location shall not exceed the admissible tolerance range.

ACCEPTABLE	UNACCEPTABLE
Offset <=1 mm	Offset > 1 mm

7. PERFORATION

Guidelines for the position of perforation are included in the contract.
The perforation shall be carried out on the designated perforation line.
The perforation offset against the specified line shall not exceed the admissible tolerance range.

ACCEPTABLE	UNACCEPTABLE
Offset <=1 mm	Offset > 1 mm

Additional unacceptable non-compliances of perforation:
paper cracking outside the perforation line when tearing off, inability to tear off along the perforation line, loss of perforation continuity, torn perforation in different places

8. STITCHING

8.1 Parts arrangement

The basic standard for parts arrangement is the description of copy contents formulated in the contract. Parts arrangement in the book must be correct, i.e. with order, position and orientation of all forms and other additional elements compliant with the contract (glued inserts, overlays, stickers, inserts, onserts)

ACCEPTABLE	UNACCEPTABLE
Appropriate parts arrangement	Inappropriate parts arrangement

8.2 Format

The format is specified in the contract by stating the physical dimensions of the product expressed in millimetres: length and width.
Offset of the printing book format from the specified net value format shall fall within the admissible tolerance range.

ACCEPTABLE	UNACCEPTABLE
Offset from the format <=1,5 mm	Offset from the format >1,5 mm

8.3 Rectangularity

Cut, perpendicular edges of the product shall form an angle of 90^0
Offset from the rectangularity is measured with relation to the book spine.

ACCEPTABLE	UNACCEPTABLE
Offset <=1mm along the section of 100mm	Offset > 1mm along the section of 100mm

8.4 Position of staples

Normally staples shall be placed at 1/4 of book spine length, measuring from the top edge to the bottom edge of the book and shall not be shifted forward or backward in the book.
The admissible vertical and horizontal offset of staples shall fall within the tolerance range.

ACCEPTABLE	UNACCEPTABLE
Vertical offset <= 5mm	Vertical offset > 5mm
Horizontal offset <= 1mm	Horizontal offset > 1mm

Additional unacceptable discrepancies of stapling:

- too strong clamp of staples - cutting through the paper or too loose clamp of staples - pages falling out.
- Legs of staples overlap or distance between the ends of legs is more than 3 mm.

9. GLUING

9.1 Parts arrangement

The basic standard for parts arrangement is the description of copy contents formulated in the contract. The book must have an appropriate parts arrangement, i.e. in accordance with the contents card - the order, position and orientation of all forms and other additional elements (glued inserts, overlays, inserts, onserts).

ACCEPTABLE	UNACCEPTABLE
Appropriate parts arrangement	Inappropriate parts arrangement

9.2 Format

The format is defined in the contract by stating the physical dimensions of the product expressed in millimetres: length and width
Offset of the printing book format from the specified net value format shall fall within the admissible tolerance range.

ACCEPTABLE	UNACCEPTABLE
Offset from the format <=1mm	Offset from the format >1mm

9.3 Rectangularity

Cut, perpendicular edges of the product shall form an angle of 90 degrees. Offset from the rectangularity is measured with relation to the book spine.

ACCEPTABLE	UNACCEPTABLE
Offset <=0.5mm along the section	Offset > 0.5mm along the section

of 100mm	of 100mm

9.4 Side gluing

The standard width of side gluing is equal to 6 mm, however this value can vary depending on the parameters of the product. The standard width of side gluing is equal to 6 mm, however this value can vary depending on the parameters of the product.

ACCEPTABLE	UNACCEPTABLE
Variation within a copy <=1 mm	Variation within a copy >1mm

9.5 Book back gluing

The thickness of book back gluing for the glued binding may vary depending on the parameters of the product. The requirement for considering the parameter as conforming is good strength of gluing (refer to item 9.6)

Manual Assessment

The strength of the copy is good when the selected pages taken from the beginning, middle and end of copy are torn out only when strongly pulled, and repeatedly turning the pages from one side to another does not result in weakening the page.

10. HARD AND SOFT COVER

The tolerances in spine dimensions result from fluctuations in the thickness of the manufactured paper sheets and also the technological processes used. These tolerances are for information purposes only.

Spine dimension [mm]	Tolerance [mm]
10< spine ≤ 20	±1

20< spine ≤ 30	±1.5
30< spine ≤ 40	±2
40< spine ≤ 50	±2.5

11. INSERTING

Inserting guidelines regarding
- the insert location in the copy
- position and orientation on the page
- placement methods (type of glue, tape)

The insert offset against the specified page location shall not exceed the admissible tolerance range.

ACCEPTABLE	**UNACCEPTABLE**
Offset <= 5mm	Offset > 5mm

Additional unacceptable inserting non-compliances:
- lack of or greater amount of inserts
- location other than specified
- placement method other than specified
- soiling of copy pages with glue
- damage to inserts
- insufficient adhesion strength - insert falls out while browsing the copy

12. FOIL WRAPPING

The strength of the seal is verified manually. The strength of the seal shall be deemed as correct when both sealed edges are capable of withstanding the load of entire package, even in case of shaken with moderate force.
Additional unacceptable foil wrapping non-compliances:
- mechanical damage of copy
- jerked foil
- holes in the foil
- no seal continuity (hole in the seal)

13. PACKAGING AND SHIPPING

The packaging method shall be adapted to the type of product, so as to provide protection against the potential damage during storage and transport. The product shall be marked in such a way as to allow its unambiguous identification.

14. SHIPMENT ACCEPTANCE CRITERIA

When defining the product conformity level with the Dimograf requirements, the given rules described in "Control Plans" of departments are used i.a.w. the following appendices:
Appendix 1 - Printing Office
Appendix 2 - Bookbindery
Appendix 3 - Quality Control

15. TECHNOLOGICAL LIMITATIONS

HARDCOVER

BLOCK ATTACHMENT
Block format at least 70x100 mm
Block thickness at least 2 mm
Thickness of the book with a cover at least: 6 mm

Block formats and block/book thickness, max.:

Max. block dimensions (mm, base x height)	Max. block thickness (mm)	Max. book thickness (mm)
280x375**	60*	68*
285x375**	40	48
300x375**	30	38
305x370**	30	38

* for a book with a block base below 100 mm, the maximum block thickness is 30 mm, and the thickness of the book with a cover is 38 mm
**book with height more than 352 mm needs to be prepared in different way (approval of such specification made by production department is required before preparing an offer)

HARDCOVER BINDINGS

	Minimum	Maximum
Format of open cover	155x100 mm	670x390 mm**
Offset width	4 mm*	15 mm
Width between boards (front/back boards of the cover)	14 mm	120 mm
Wrapping width	8 mm	15 mm
Casewrap width	223 mm	708 mm
Casewrap height	130 mm	428 mm
Width of linen on spine (in case of quarter-bound book)	70 mm	165 mm
Thickness of solid cardboard (cover and spine)	1 mm	4 mm
Thickness of the backlining from roll	0.3 mm	0.6 mm
Cardboard thickness	65 mm	328 mm
Cardboard height	100 mm	390 mm
Backlining width	6 mm	90 mm
Width mirror gluing	195 mm	670 mm
Height mirror gluing	130 mm	390 mm
Casewrap material (bookbinding casewrap)	115 g/m2	---
Casewrap material (chalk overlay paper)	130 g/m2***	170 g/m2***

* - minimum offsets depend on cardboard thickness and spine width:
4 mm – 1-2.8 mm cardboard (note the minimum width between the boards)
5 mm – 2.9-3.5 mm cardboard (note the minimum width between the boards)
6 mm – 3.6-4 mm cardboard (note the minimum width between the boards)
** - the cover must be smaller for our hard binding machines (max. 660x385 mm)
*** - casewrap on chalk overlay paper requires enrichment with film (in the absence of film, we are not in any way liable for the ripping or cracking of the casewrap, rubbing off of paint on

columns...). The basis weight of casewrap on chalk overlay paper depends on the enrichment:
130-170 g – matte/gloss film,
150-170 g – Velvet film, structural films, Scuff Free film

INTEGRATED COVER BINDINGS (CASEBOARD MADE OF THIN MATERIAL + PAPERBOARD INSTEAD OF CARDBOARD - LOWER GRAMMAGE)

	Minimum	**Maximum**
Format of open cover	215x140 mm	580x305 mm
Offset width	4 mm	15 mm
Width between boards	14 mm	120 mm
Wrapping width	8 mm	15 mm
Casewrap width	223 mm	708 mm
Casewrap height	130 mm	428 mm
Type/Thickness (of cardboard) ***	Mercado 300g Ensocoat 2S 300g	Mercado 300g Ensocoat 2S 300g
Board thickness (e.g. Alaska, Arktika paperboard)	230 g/m2	350 g/m2
Thickness of the backlining from roll	0.3 mm	0.6 mm
Cardboard thickness	100 mm	283 mm
Cardboard height	140 mm	305 mm
Backlining width	6 mm	90 mm
Casewrap material (bookbinding casewrap)	115 g/m2	---
Casewrap material (chalk overlay paper)	130 g/m2**	170 g/m2**

* - minimum offsets depend on spine width;
*** - casewrap on chalk overlay paper requires enrichment with film (in the absence of film, we are not in any way liable for the ripping or cracking of the casewrap, rubbing off of paint on columns...). The basis weight of casewrap on chalk overlay paper depends on enrichment:
130-170 g – matte/gloss film,
150-170 g – Velvet film, structural films, Scuff Free film
*** - other materials can be used after confirmation made by Production Manager

INTEGRATED BINDING (CARDBOARD CASEWRAP)

Block format at least 81x127 mm (Note: we will not make covers for this format!)
98x136 mm (we *will* make covers for this format)
Maximum block format: 280x300 mm
Book thickness at least: 6 mm **(min. block thickness dependent on cover thickness)**
Maximum book thickness: 60 mm **(max. block thickness dependent on cover thickness)**
Cover material: SBS cardboard with basis weight 230-260 g/m2 recommended,
(if the customer desires chalk overlay paper for the cover, please apply **Quatro Silk 300 g/m2** in requests for quotation and calculations**)**
The cover must necessarily be enriched with film from the outside

INTEGRATED BINDING WITH FLAPS

Block format at least 100x140 mm
Maximum block format: 210x300 mm
Book thickness at least: 11.5 mm **(min. block thickness depending on cover thickness)**
Maximum book thickness: 50 mm **(max. block thickness depending on cover thickness)**
Minimum flap length: 50 mm
Maximum flap length: 100 mm
Cover material: SBS cardboard with basis weight 230-260 g/m2
The cover must be enriched with film from the outside.

PAPERBACK

	Collator	**Casebinding machine**	**Three-side trimmer**	**Frontal cutting***	**Cover feeder (gross size of whole cover)**
Formats Minimum	100X105 mm	75X105 mm	75x100 mm	100x125 mm	230x105mm
Maximum formats	320x460 mm	320x383 mm 190x490 mm	305x420 mm	350x470 mm	700x460 mm (without flaps) 1000x420 mm (with flaps)
Minimum thickness	--------	2 mm	2 mm	2 mm	--------
Maximum thickness	6 mm (fold thickness)	60 mm	80 mm	50 mm	--------
Maximum cover paper	--------	300 g/m2	--------	300 g/m2	--------

- cardboard					
Maximum cover paper - chalk overlay	--------	350 g/m2	--------	350 g/m2	--------
Minimum cover paper	--------	150 g/m2	--------	150 g/m2	--------
Maximum waste to be cut on three-knife (on each side)	25 mm				

* pertains to bindings with flaps

SADDLE STITCH BINDING

Minimum format	60x120 mm
Maximum format	300x360 mm
Maximum thickness of closed book	8 mm**
Maximum number of straight staples in one pass through line	4*
Maximum number of safety or V-shape staples in one pass through line	2

* the machine has 2 heads for small staples + two heads for large staples (2 large and two small staples can be stapled in one pass with preservation of minimum spacing between staples: 78 mm between large staples and 48 mm between small staples)

** in case of sadle-stitched products with more than 4 mm thickness (closed book) there can small tearings of cover in spine appear – it is inevitable in case of using inline three-knife

FOLDING

Maximum sheet format	780x1200 mm
Minimum sheet format	170x250 mm
Minimum folding length	60 mm
Maximum paper thickness for “32” or “24” fold (vertical)	145 **µm**
Maximum paper thickness for “16” or “12” fold (vertical)	170 **µm**
Maximum paper thickness for “8” fold (vertical)	200 **µm**

NOTE: For a horizontal layout of the product, we use “8” as the basic fold. For paper with a thickness up to 150 µm, in horizontal product layout, “12” and “16” folds may also be used under the assumption of a decline “in the head” of at least 12 mm.

THREAD SEWING

Minimum fold dimension depending on the collating method	75x120 mm – manual collation 100x105 mm – Kolbus or Wohlenberg collation 100x150 mm – collation on UNIPLEX line

Maximum fold dimension depending on the collating method	320x440 mm – Kolbus or Wohlenberg collation 320x420 mm – collation on UNIPLEX line

PLASTIC SPIRAL THREADING

Plastic spiral available in 7 standard colours: transparent, white, black, green, blue, red, yellow (other colours available on order – waiting time approx. 4 weeks). In the case of plastic spiral, packing in heat-shrink film is ruled out due to spiral deformation.

Maximum height of book-block (coil)	420 mm
Minimum height of book-block (coil)	80 mm
Maximum book-block thickness	30-45 mm*
Minimum book-block thickness	2 mm
Book-block thickness in case of coil perforation 4:1**	26 mm
Book-block thickness in case of coil perforation 3:1***	26,1 – 45 mm

* depends on height of book-block

** for 4:1 perforation, these are oval holes 4x5 mm

*** for 3:1 perforation, these are round holes with a diameter of 5 mm

METAL SPIRAL THREADING

Maximum length of side threaded with spiral	350 mm
Minimum length of side threaded with spiral	148 mm
Minimum block thickness	4 mm
Maximum block thickness	22 mm

WIRE-O SPIRAL (WITHOUT HANGER)

	MINIMUM	**MAXIMUM**
BLOCK THICKNESS	2 mm	25 mm
LENGTH OF SIDE THREADED WITH SPIRAL	50 mm*	450 mm

* for lengths below 100 mm, manual spiral clamping is required (quotation on individual basis)

WIRE-O SPIRAL (WITH HANGER)

	MINIMUM	**MAXIMUM**
BLOCK THICKNESS	**2 mm**	**7 mm**
LENGTH OF SIDE THREADED WITH SPIRAL	**50 mm***	**1000 mm****

* for lengths below 100 mm, manual spiral clamping is required (quotation on individual basis)

** maximum distance between hangers 800 mm, quotation on individual basis required for length of side threaded with spiral above 800 mm

DRILLING

Hole diameter range from 3 to 9 mm

HEAT-SHRINK FILM PACKING

Maximum height of stack/package 255 mm
Maximum width of stack/packabe 400 mm
Maximum film width mm 550*
* film width is most commonly matched according to the formula:
Stack width + stack height + 100 mm

ENRICHMENT

	Gloss film Matte film UV lacquer Special matte film (for maps)	**Velvet film Scuff Free film Structural films**
Minimum basis weight	90 g/m2	150 g/m2
Minimum margins on sheet (on left and right side) for enrichment 1/0	5 mm*	5 mm*
Minimum margins on sheet (on left and right side) for enrichment 1/1	8 mm*	8 mm*

* white field outside of the declines

Additional notes:

1. Enrichment with films from the Achilles company extends production time by 1 to 4 weeks (depending on availability of film).

2. Special UV lacquer for absorbent materials may be applied to uncoated paper (quoted on an individual basis due to the high price). Production time, depending on the demand for lacquer, may be extended by an additional 4 weeks (depending on the availability of lacquer).
3. Due to its properties (limited lifetime where it is suitable for production), special matte film for maps is only ordered for special orders (waiting time for film delivery is 6-8 weeks).

Printing – paper/substrate formats

Machine	Maximum number of colours	Possibility of reversing in machine?	Maximum format of paper for printing	Minimum format of paper for printing	Maximum surface of substrate without reversal in machine	Maximum surface of substrate with reversal in machine
XL 106-8-P	8	TAK	750 x 1060 mm	340x480 mm 410x480 mm*	740 x 1050 mm	730 x 1050 mm
SM 102-4 VP	4	TAK	720 x 1040 mm	400x480 mm	700 x 1020 mm	700 x 1020 mm
SM 102 ZP	2	TAK	720 x 1040 mm	400x480 mm	710 x 1020 mm	700 x 1020 mm
XL 75-5	5	NIE	530 x 750 mm	280x350 mm	510 x 740 mm	

* 340x480 mm – without reversal in machine or 410x480 mm – with reversal in machine

Printing – paper thicknesses

Machine	Maximum number of colours	Possibility of reversing in machine?	Maximum sheet thickness	Minimum sheet thickness
XL 106-8P	8	YES	0.8 mm	0.03 mm*
SM 102-4	4	YES	0,6 mm	0.03 mm*
SM 102 ZP	2	YES	0.6 mm	0.03 mm*

XL 75-5	5	NO	0.8 mm	0.03 mm*

* for paper with a thickness below 0.06, it is necessary to consult the production department prior to the issue of a quotation to the customer

Technological remarks

1. Using UV coating on creases, on places where grooves are burned or on spine edges (the places most exposed to tension) can cause cracking as these are the places which are most exposed to tension. In these places, we suggest using a 1 mm knockout.
We do not take responsibility for cracked coating when it is used in the aforementioned places without the use of a knockout.
2. In the case of flat colour printing on a chalk overlay paper, impressions are often left on the adjacent pages. We suggest using the additional protection of offset coating in these cases or removing the flat colour from the page adjacent to a blank page.
With offset papers, please use mass coloured papers or remove flat colour from the page adjacent to a non-printed page in the block.
3. The use of black flat colour on the cover results in significant susceptibility to visible scratches. In this case, we recommend refinement in the form of scratch-resistant Scuff Free matte foil.
4. When making solid paperboard boxes or stands, please apply refinement in the form of glossy foil or Scuff Free foil to avoid any mechanical damage from the manufacturing process.
5. In the case of a glued or sewn soft cover with flaps, please apply Scuff Free matte foil instead of regular matte foil to protect the cover against potential scratches during the manufacturing process.
6. In the case of hard covers, the dimensions of the cover are larger than those of the text block by what are known as turn-ins. Typically, in our printing house, the size of the top, bottom and fore-edge turn-in is 3 mm.
7. The spine dimension of a ready book can differ from the nominal value within the tolerance limits included in the quality specifications of the product.

When placing an order, all the above reservations should be taken into account. In case of any doubts, please don't hesitate to contact us.
In case of non-compliance with the mentioned technical conditions, we cannot guarantee that the order will be the best quality.