Technical requirements for design

Bleed in case of adhesive binding	During design the clean format must be added 5 mm of bleed on **each side**. The bleed must be symmetrical and the design must be placed in the middle of the page.
Bleed in case of wire binding	During design the clean format must be added 5 mm of bleed on **three outside edges**.
Pictures in an adhesive-bound magazine extending over two pages	It must be taken into account that the inside of the front and back cover are glued to the content page with a strip of adhesive of about **5 mm** wide. This method is called "hinge binding". This binding method adds crease to the first and last cover page. This also makes inside cover pages shorter by hiding 5 mm of image under the glue. Hence, in order to achieve a correct continuous picture extending **from the inside of the cover to the first content page**, both sides of the picture must be moved **5 mm** towards the outer edge. See more info here: link. The same moving method can be used in thick magazines (if more than 100 pages) in case of two-page pictures on the middle content pages, but the moving distance largely depends on paper type and thickness (hence generally the moving is not needed for content pages).
The placing of design elements	Texts and other critical design elements (borders, lines etc) must be placed at least **4 mm** from the trimmed edges. See more info: link. In case when the magazine is glued (perfect binding is used) the content pages are not fully visible in the **area near the inside binding**. Hence, important designs elements should not be positioned near the binding area where these elements can be hided when magazine is not fully flattened. See more info: link.
Online-adhesive magazines	In the design it must be taken into account that the middle **strip of adhesive** which connects the pages covers about **1 mm** of the inner edge of the page. No need for white line. Avoid the **cross-over text** but instead use large characher kerning between center letters or position the "space" between words. See sample.
Overprint	Colored and white objects (except 100% black) must not have a defined overprint mode. See sample. **Black overprint** must be added to the design elements and texts (100% K) on colored background. **Non-overprinted black** – CMY:1%, K:100% - must be used on black surfaces on which overprinting must be avoided (e.g. the black frame covering the edge of a picture). Black overprint is added automatically at a printing house to improve

printing quality.

Trapping of objects	In the contact point of objects of different color the edge of the darker object has to cover the contour of the lighter object with **0.15-0.4mm trapping**. Trapping is added automatically at a printing house to improve printing quality.
Small texts	Avoid using of **8 point or smaller texts** (or text height less than 2 mm, or**minimum line width less than 0.2 mm**) which knock out inside a colored surface nor consisting of several colors. The minimum height of **italic or serif type** in colored objects must be at least 8 points. To ensure contrast the reverse type must not be placed **within screened areas** less than 50% or in yellow background.
White texts	For **the white text on dark background** (aka **reverse or negative text**) the background color should recommendedly be solid 100% black or classical rich-black (CMY:50:40:40 and K:100%). In these conditions white trapping (a.k.a. keep-away trapping) is added automatically at the printing house to improve printing quality. Additionally, for the sake of quality, add the outline (stroke) under the white text **with the color of non-overprinting black (CMY:1% K:100%) with stroke size of 0.25 pt**.
Line-art	The minimum width in case of **line-art** has to be at least 0.15 mm. Line-art must not use more than two colors which are overprinted.
Pictures with pure tones	To get the best printing result, the color pictures must be processed into**pure and bright colors**, by removing the "staining tones" from the pictures. To achieve pure tones, it is recommended that yellow is removed from the blue tones, magenta from green, cyan from yellow tones etc making sure that the details of the picture do not suffer in the process.
Color space of all pictures and vector objects – heatset printing	**CMYK** Pantone tones, RGB, Lab etc are automatically converted to CMYK which may remarkably distort the tones requested by the client.
Color space of all pictures and vector objects – covers, inserts, etc in sheed-fed printing	**CMYK + Pantone tone(s) specified in the written order.** Other Pantone tones, RGB, Lab etc are automatically converted to CMYK which may remarkably distort the tones requested by the client. Use this color chart for choosing **spot color**. Read these remarks when ordering the **varnish**.
The use of black color	In the design the use of **4-color black** (rich black) must be avoided in case of small black texts and line objects. For small black texts use only

	black ink color (**100% K**) In case of large black areas 4-color black (for example **C:40, M:30, K:100**) must be used.
Metallic and florescent (neon) colors:	If using PMS metallic (Pantone 871) or florescent colors (Pantone 801) in the design, there should be know that these inks are not transparent but**opaque** and will be printed as last inks. In case of designing of black texts on top of objects of metallic or neon colors, the **non-overprinting black color of CMY:1%, K:100%** should be used. If usual black color of only 100% K is used, then black ink is covered with opaque spot-color and the black object will not be visible.
Black-and-white vector objects	Black-and-white vector objects must not contain CMYK or RGB color tones
The limits for the reproduction of an integrated and uniform screen (i.e tone values) on a paper	Tone value reproduction limits are **3% - 97%** No significant image parts shall rely on tone values outside of the above tone value reproduction limits.
Maximum summarized raster percent (TIL – total ink limit)	**Depends on paper type** (see the requirements arising from the paper used). In case of pictures it is ensured by the use of the right ICC profile, in case of vector graphics the fulfilment of the requirement must be ensured by the designer.
Resolution power of the pictures in design	**Double screen frequency** (see the requirements arising from the paper used). The smaller decreases the quality of pictures, the bigger does not improve the quality, but increases the size of the files and makes their processing slower.
A digital increase of the resolution of low resolution pictures to the required level	Bal Media considers such transformation a deliberate activity by the designer. The automatic inspection of the files will not detect it.
Insert perforation	**Perforation line** must not be drawn in the design, but if necessary, it must be designed with spot color (e.g. *Perforation*) and it must be defined to overprint. The typical distance of the perforation line of a coupon from the inside gutter is **15 mm**.
Continuous and broken perforation	**Continuous perforation** runs in a straight and unbroken line from one page edge to the other and is performed with the perforation wheel-knife of the folding machine. **Broken and special perforation** is performed with die-cut form. Cardboard is also perforated with a die-cut form. In case of die-cut a

	special form should be prepared and the whole process may take longer.
Dye-cut line	**Dye-cut line** must be designed with spot color (e.g. *Dye-Cut* or *Perforation*) and it must be defined to overprint. See more guides: 1 and 2. Special dye-cut forms must be designed with different colors: knife = red line, grease = green line, perforation = yellow line. There should be avoided double lines and dotted lines.
Folio design	**Folio object** must be designed with **spot color** (e.g. *Folio*) and it must be defined to **overprint**. Folio will be added on top of background image without white knockout holes. The thin line with folio or (knockout) line in the folio background should be at least **0.3 mm width** (recommended **width 0.5 mm**). Color object on folio background (like color knockout text) must have **0.25 mm trapping** (e.g. text should be extended with **overprinted outline**). The correctness of positioning of folio is 1 mm, therefore avoid **thinner than 3 mm lines** (outlines) around the folio object. Folio will be added with hot glue and pressure, therefore the **pressure marks** can be slightly visible on the opposite side of paper.
Spot UV varnish	**Spot UV varnish object** must be designed together with CMYK layout with spot color (e.g. *SpotUV*) and it must be defined to overprint. See more guides here. The minimum width of lines or knockout (holes) of objects has to be **at least 1 mm**. It must be taken into account that UV varnish is **yellowish** and can distort background color tones. Also **mattee varnishes** (and laminate) can decrease brightness and glossyness of color tones. When choosing additional spot colors, it must be taken into account that most varnishes in case of some specific Pantone inks, due to the chemical reaction, will dramatically change color tone. For example **Pantone Purple** will turn to pink when covered with UV-varnish. The same happens with all inks containing **Pantone Purple, Rhodamie Red, Violet, Reflex Blue, Blue 072, Warm Red and Red 032**.
Barcode	Barcode should be designed for the sake of readability with **100% of black** color in **vector graphics**. Barcode should be precisely readable, therefore the **EPS file format** is the best (because no blurry edges) but TIF format is also suitable when the image resolution is high (300 dpi) and edges are contrasted. We recommend to use Free Online Barcode Generator.

The requirements arising from the paper used – heatset printing

Paper type	Screen frequency (lpi)	Total ink limit (total)	ICC profile for converting pictures to CMYK

	Screen frequency (lpi)	Total ink limit (total)	ICC profile for converting pictures to CMYK
Coated papers – WFC, MWC, LWC	150	300%	PSO_LWC_Improved_eci.icc
Machine finished coated paper - MFC	133-150	280%	PSO_MFC_Paper_eci.icc
Woodfree uncoated papers - WFU	133	280%	PSO_Uncoated_ISO12647_eci.icc
Supercalendered papers - SC	133	270%	SC_paper_eci.icc
Improved newsprint - INP	133	260%	PSO_SNP_Paper_eci.icc

The requirements arising from the paper used – sheet-fed printing

Paper type	Screen frequency (lpi)	Total ink limit (total)	ICC profile for converting pictures to CMYK
2 and 3 times coated papers – WFC	175	330%	ISOcoated_v2_eci.icc
Coated papers – WFC, LWC	150	300%	ISOcoated_v2_300_eci.icc
Uncoated papers – WFU	133	280%	PSO_Uncoated_ISO12647_eci.icc
Cardboard – coated side	150	300%	ISOcoated_v2_300_eci.icc
Cardboard – uncoated side	133	280%	PSO_Uncoated_ISO12647_eci.icc

Requirements for files

File format	PDF should accept standard **PDF/X:1-a (2001)**
The preparing of PDF-files	Based on the instructions.
Unseparated PDF file	PDF files must be unseparated (**composite**)
One PDF-file page = one document page	Each PDF page must only contain **one document page**, i.e. 1-up single page. The **reader's spread layout is not recommended**. *NOTE: Prepress software requires one PDF file for each page. If you sent PDF of double-page ad, we have only one PDF file for two pages. That's why software have to use the same file for both pages and why it show the same page twice. Later, on imposition stage, both double-pages will be cut to single page size: only right side will remain for right-side page and only left side will remain for left-side page. These two pages side by side will form the complete double-page and thus only one complete design will be in final print product.* PDF file can be **multi-page document**, but single page PDF files are preffered for easily isolate any problems and or corrections.

Cover files	The **reader's spread layout** is not recommended. The spread pages may be only used when the cover design is with continous background image. The back/spine of the publication must be designed **in separate PDF file**(due to different page size). **Spine width** can be calculated and value should be agreed with Sales Manager.
Cover in Portal	In our prepress and web approval system Apogee Portal, there is not possible to show correctly the pages in the form of readers spread (double-pages). Therefore **we do not recommend to combine the cover pages as spreads**. Create the cover pages **as 5 separate pages -** cover page 1, cover page 2, cover page 3, cover page 4 and spine (spine is on **5th** position). If the spine is just white area without design, the spine is combined with first cover page or you do not have the spine then **leave the 5th position empty**.
Special covers	If the cover has additional pages like inside or outside (front or back) **flaps**, then prepare them as separate PDF pages - flap front (OF) and flap back (IF). Please note that size of flap page is different - see specs here. If you use Portal, then place them after main cover pages and spine - for example place them onto **as 6th (for front side) and 7th position (for back side)** (in case of two flaps - 8th and 9th position). For naming the cover pages it is recommended to use page numbers or descriptive abbreviations: **FC** or **OFC** - *Outside Front Cover*, **IFC** - *Inside Front Cover*, **IBC** - *Inside Back Cover*, **BC** or **OBC** - *Outside Back Cover*,**FF** or **OF** - *Outside Flap*, **FB** or **IF** - *Inside Flap*. (... taken from "*Printing Dictionary" by* Prepressure.com) The flap design measurements: see specs **here**. The width of flap page is**15 mm** less smaller than cover page.
The names of PDF-files	**The name of the PDF file** of every printed matter must include the name of the job and its page number(s) (e.g. print008.pdf – page 8 of printed matter called "Print"). The using of "underscore symbol" ("_") as the separator of job name and page number is recommended: *003_Magazine10-2011.PDF* or*003_Magazine10-2011.new.PDF* Multi-page files should have page number range in it's filename.*EXAMPLES: 003-005_Magazine10-2011.PDF* or *Magazine10-2011_003-005.new.PDF* Wrongly named files can create misunderstandings and faulty production.

Finality of the PDF-file	PDF files **must be final**, i.e. all advertisements and other elements must be installed into the PDF fail sent to the printing house.
Design format	**1 : 1** (design and end result are the same size)
Technical marking	In general, PDF files **must not include** any technical marking – measurement scales for inks, names of colors, registration marks or crop marks. *In some cases the color of crop marks (i.e. Registration color or 400% of CMYK) can create the false-alarm about exessive ink amount (i.e. warning of "Too high Total Area Coverage").* The crop marks (and also marks designating the perforation line) in the bleed area must **not be closer than 3 mm**to the clean publication format (TrimBox). Read more about PDF boxes.
Fonts	All fonts used in design **must be included** in the PDF files sent to the printing house.
The changing of files	If the client makes amendments to the files sent to Bal Media, he/she must **immediately notify** the prepress department or the sales manager. Otherwise Bal Media will not guarantee that the amendments will be printed.
The confirming of softproofs	Softproofs must be confirmed **in writing** (using for example an e-mail)

Requirements for color proofs

Bal Media does not accepts the print samples of other printers or other color prints that do not comply with the following conditions. Bal Media accepts only the color proofs of the client which base on the following conditions:

- one and the same ICC color profile has been used in preparing proofs and files which conforms to the printing paper used;
- it is possible to verify the accuracy of the color tones on the color profile:
- o each color proof has a color strip conforming to the requirements of ISO12647-7:2007, for example UGRA/FOGRA Medienkeil v2.0 or v3.0;
- o in case of some other control strip the respective CMYK values must be added to the measurement field;
- o ICC color profile name must be marked to each color proof;
- o if a non-standard ICC profile is used, it must also be sent to Bal Media
- the results of the verification of proofs conform to ISO 12647-7:2007 requirements.

See more information about certified contract proofs at IDEA.
See samples of our in-house contract proofs.

Printing quality

To ensure printing quality Bal Media is entitled to make the following unavoidable printing changes to the client's files:

- the adding of overprint to black ink (100% K);
- the adding of trapping to the contour of objects of different color;
- a decrease in the maximum summarised raster percent (total ink limit) to the amount suitable for the printing paper;
- conversion of RGB and Pantone tones to the CMYK color space (except if the client has ordered Pantone additional color).