

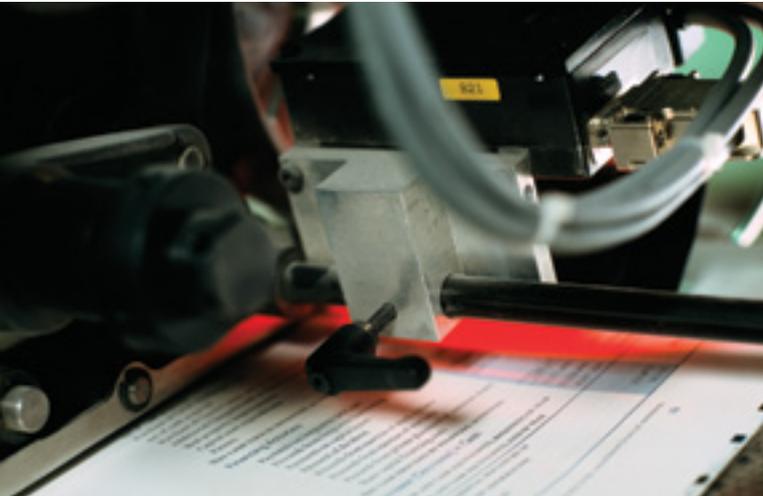
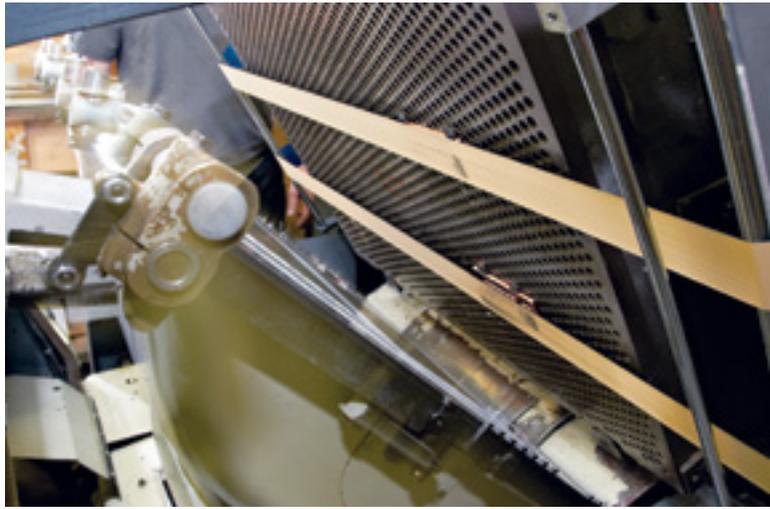
Designers' Guide

Your Finishing & Binding Handbook



General Binding & Finishing Guidelines

Things you need to know to create a flawless project.



For Embossing/Debossing & Foil Stamping: make sure that your inks, varnishes and coatings are compatible with the processing (e.g. wax-free).

- The ink and varnish or coating must be completely dry on the paper before we can begin processing your job.
- A purchase order, job sample and press sheet must be provided with each job before the project can be started.

- If your embossing, debossing or foil stamping requirement is for fine detail work, please discuss with your production coordinator early on in the process.
- Any areas that are to be glued (for perfect binding, folding, and/or assembling) must be free of inks, coatings and/or varnishes.
- We require a press sheet before the die cutting die can be built unless the same file to build the die is used for printing.

Lay-Flat Binding and PUR

What designers need to know about Lay-Flat Binding and PUR adhesive.

1. What is Lay-Flat Binding?

Inside text pages are bound to mull paper using PUR adhesive. The book block is then adhered to the inside front and back covers of the book by gluing the text block to the cover with an EVA hot melt side glue. This allows the pages to lay flat without cracking the spine because the pages are not glued to the spine.

2. When to use Lay-Flat Binding?

Lay-Flat Binding is an excellent choice for books that are used often and frequently and that need to Lay-Flat for easy reading (books such as reference books, computer and/or other technical manuals, catalogs, cook books, etc.).

Lay-Flat Binding is an excellent, cost effective alternative to mechanical binding, particularly for medium to large size runs because the process is more automated and is accomplished on our high speed perfect binder.

3. Some design considerations for Lay-Flat:

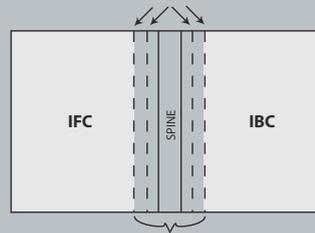
- Grain direction parallel to the spine or the book will 'fight' laying flat;
- A book that is not too thin or too narrow (thin and/or narrow books don't want to lay flat);
- Because the book block is adhered to the mull paper and then the inside cover, make sure that you allow design margin or 'space' (see the illustration for details).

PUR's flexibility makes it ideal for heavy-use, long-life applications.

Be creative AND ask your print sales representative to consult with the bindery about the job BEFORE you finish and submit the artwork.

Cover Knock-Out

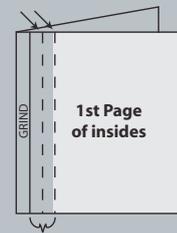
double hinge scores
1st score $\frac{1}{4}$ " from spine
2nd score $\frac{7}{16}$ " from spine



inks and coatings must be "knocked-out" $\frac{3}{8}$ " from spine

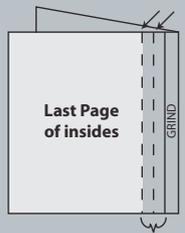
Insides: Side Glue Allowance

Side glue allowance $\frac{7}{16}$ " from grind



Inks & coatings "knocked-out" $\frac{3}{8}$ " from grind

Side glue allowance $\frac{7}{16}$ " from grind



Inks & coatings "knocked-out" $\frac{3}{8}$ " from grind

4. What is Polyurethane Reactive Glue (aka PUR)?

PUR adhesives are pre-polymers which, when exposed to air humidity and/or paper humidity after application, undergo a cross-linking reaction.

The pre-polymers wet out and penetrate paper well, contributing to high adhesion and thus high page pulls.

The real benefit:

PUR is a cross-linked adhesive that seeps into paper fibers to provide a bind that is as much as three times as strong as standard EVA Hot Melt while using a thinner film (than EVA) and therefore providing more flexibility in the spine.

PUR shows a high inherent strength, resulting in extremely durable adhesive films.

The real benefit:

Not only are these films resistant to attack by printing ink oil and solvents (which would cause pages to fall out), they also provide good aging resistance.

Perfect Binding

What designers need to know about Perfect Binding.

1. When to Specify PUR

- Heavy ink usage and/or inks bleeding into the gutter of text pages
- UV coated papers
- Mixed papers and/or other substrates
- Very thin books (approaching $\frac{1}{16}$ ") and thick books (greater than $\frac{1}{2}$ ")
- Oversize books (larger than 9 x 12")
- Landscape-format books
- Heavyweight paper stocks (100 lb text and higher)
- Wrong grain stocks (we always recommend that grain direction be parallel to the spine, especially on thick or cover-weight stocks, however PUR can bind wrong grain stocks)
- Books that will need to last for a long time, e.g. reference books
- Books that will have high usage, e.g. catalogs
- If the book is exposed to extreme temperatures (cold or hot), PUR will hold the bind

2. How to achieve a great Perfect Bound book:

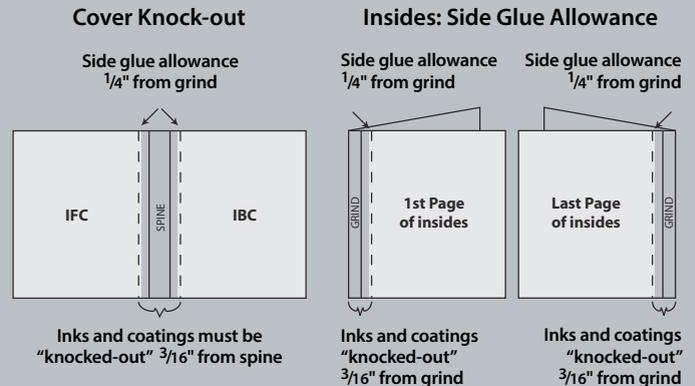
- Plan to varnish, coat or laminate outside covers to protect the print from marking as the cover travels through the mechanical process.
- Design lay-out for right grain (parallel to spine) cover & text.
- Design/plan for knock-out of ink and/or varnish in the glue area of the cover and hinge (see knock-out requirements).
- For cover lay-outs, include a margin of $\frac{1}{8}$ " at the head and foot for glue trap (cover must overhang text) – this is necessary to 'catch' the excess glue.
- All signatures must jog to either head or foot.

Bindery and Finishing Processes: Environmental Impact

Paper is a recyclable, renewable and sustainable resource. Print also gets higher (and repeat) responses and influences buying decisions more successfully than many other online tactics and strategies. There are many papers available today that are certified as being produced within a managed forest stewardship environment.

Finishing services, such as Foil Stamping, Die Cutting, Embossing,

- Consider effect of design: For example, when front cover and first sheets in the book are designed to be smaller in width than the balance of pages in the book to create a "staggered" pages effect (e.g. front cover & 8pps are 8" width & balance of 80pps are 8 ½" width), this design could cause a chipping or tearing effect at the front and/or back, due to uneven thicknesses on the height of a book pile when run through the three-knife trimmer. A solution to minimize chipping or tearing is to trim one book at a time but that adds cost and time to the project.
- Line-up of print from inside front/back cover to page #1 or last page in the book. Layout consideration has to be made for both the spine grind and the $\frac{1}{4}$ " hinge scores on the front and back cover in order to make the lineup work.
- Plan for $\frac{1}{4}$ " side glue and hinge score inside front and back cover. Additional $\frac{3}{16}$ " for Lay-Flat (total $\frac{7}{16}$ "). Also consider need for grind margin and side glue when design crosses over pages.



Folding, Cutting, Gluing and Packaging, enhance the marketing or communications message and still enable the finished product to be recycled. Binding services, such as stitching, perfect binding, or coil binding, bind the pages or the product together and are typically a small enough percentage of the overall piece that recyclability is not affected or is minimal (e.g. the coil can be removed from the book before recycling).

Superior Quality — Award Winning Work

Committed to providing quality finishing & bindery services.



Talk to your PBS production coordinator for more information.

Make sure that there is time in the production schedule to allow all inks, varnishes and coatings to fully dry; products with heavy ink coverage and/or with darker, denser inks, need more drying time and/or more solvents.

Matte & Dull coated papers may mark as they travel through the bindery and finishing equipment. We recommend matte and dull coated papers be 'hit' with aqueous coating or varnish, especially if the book has heavy ink coverage. Otherwise there could be marking, chalking or offsetting in the finishing and bindery processes. Paper grain parallel to the spine enables all bound books to lay better, whether perfect bound or stitched.

When should you select Lay-Flat binding?

Lay-Flat binding is an excellent choice for books that are used often and frequently and need to Lay-Flat for easy reading (such as reference books, computer and/or other technical manuals, catalogs, cook books, etc.). Lay-Flat binding is also a cost-effective alternative to mechanical binding, particularly for medium to large size runs.

How to ensure good registration for foil stamping and/or embossing?

Identify your gripper edge and side guides and include that rule-up with the file. Design the image on your sheet as close as possible to the gripper edge and side guides (centering a smaller image on a larger sheet may result in the need for additional cutting before stamping and embossing, and consequently result in a negative effect on registration). If you require the sheet to be cut prior to stamping or embossing, please recognize that there may be an effect on registration; depending on stock density and thickness.

Why does an embossed image on white, unprinted paper sometimes look darker?

This is called burnishing which occurs through a combination of pressure, high heat and paper stock. It can be controlled to some degree however it is a by-product of the embossing process. To minimize this effect, we often recommend using a pearl foil in combination with embossing/debossing on white, unprinted paper; it really helps the embossed or debossed image 'pop'.

What is Square Backing? It is the square backing of a stitched book.

When to use Square Backing? Square backing can make a stitched book look like a perfect bound book. It is an economical alternative to perfect binding, particularly for smaller quantities. Square backing can be done in-line to our Duplo™ stitcher or off-line.

Can you foil stamp over a printed area?

To foil stamp over a printed or inked area you need to ensure that wax-free inks and varnishes are used so that the foil will adhere properly. Additionally, rubber based inks do not dry completely and therefore will not hold the stamp well. Inks must be allowed to dry and solvents allowed to evaporate from the printed sheets prior to stamping as the chemistry of solvents will resist the foil.

Do you get a better result embossing on coated or uncoated paper?

The design drives the result: if you have a design with intricate detail, a coated paper works well unless the embossing height is high - which might result in the paper cracking (as coated product has less fiber and is more susceptible to cracking if 'strained' too much). For very deep embossing, we recommend a longer-fiber, uncoated paper.

How can we eliminate the burnishing or marking that laser cutting, etching or rasterizing creates?

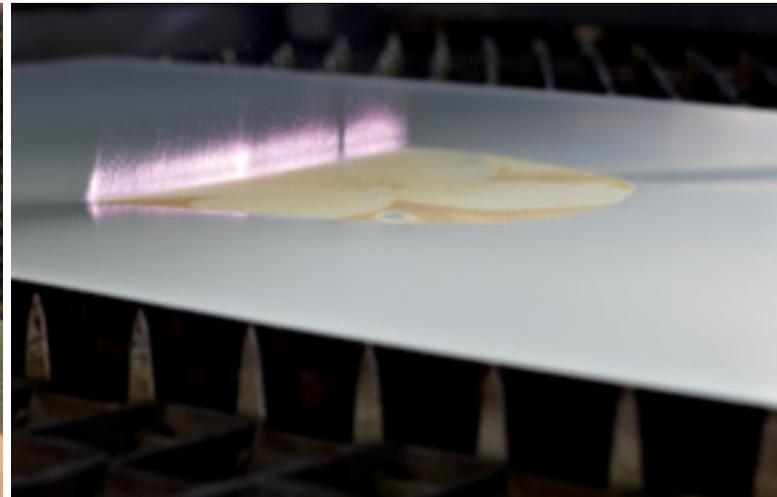
The burnishing is caused by the laser actually burning the design into the sheet; it is often more apparent on coated papers than uncoated papers (because there is less fiber in coated product). It is a natural by-product of the laser process however that effect can be minimized by laser cutting or etching on printed paper rather than on white, unprinted areas. Other ways to minimize the effect is to have the laser cut on the less sensitive side of the sheet (e.g., the backside rather than the topside) or to 'mask' the area being cut by applying a low tack removable adhesive material overtop of the area to be laser cut; and pull that mask off after cutting.

The overall bulk of the square back, stitched book is reduced by at least one third, ensuring that flat books are easy to handle, stack, pack and store. This process is ideal for thicker books (up to ¼" thick).

The stitched square spine allows better presentation — on tables, desk tops, counters — because of the 'flattened' and square back.

General Die Making & Finishing Guidelines

Die Cutting, Foil Stamping, Embossing, Paper Laser Cutting, Etching or Rasterizing.



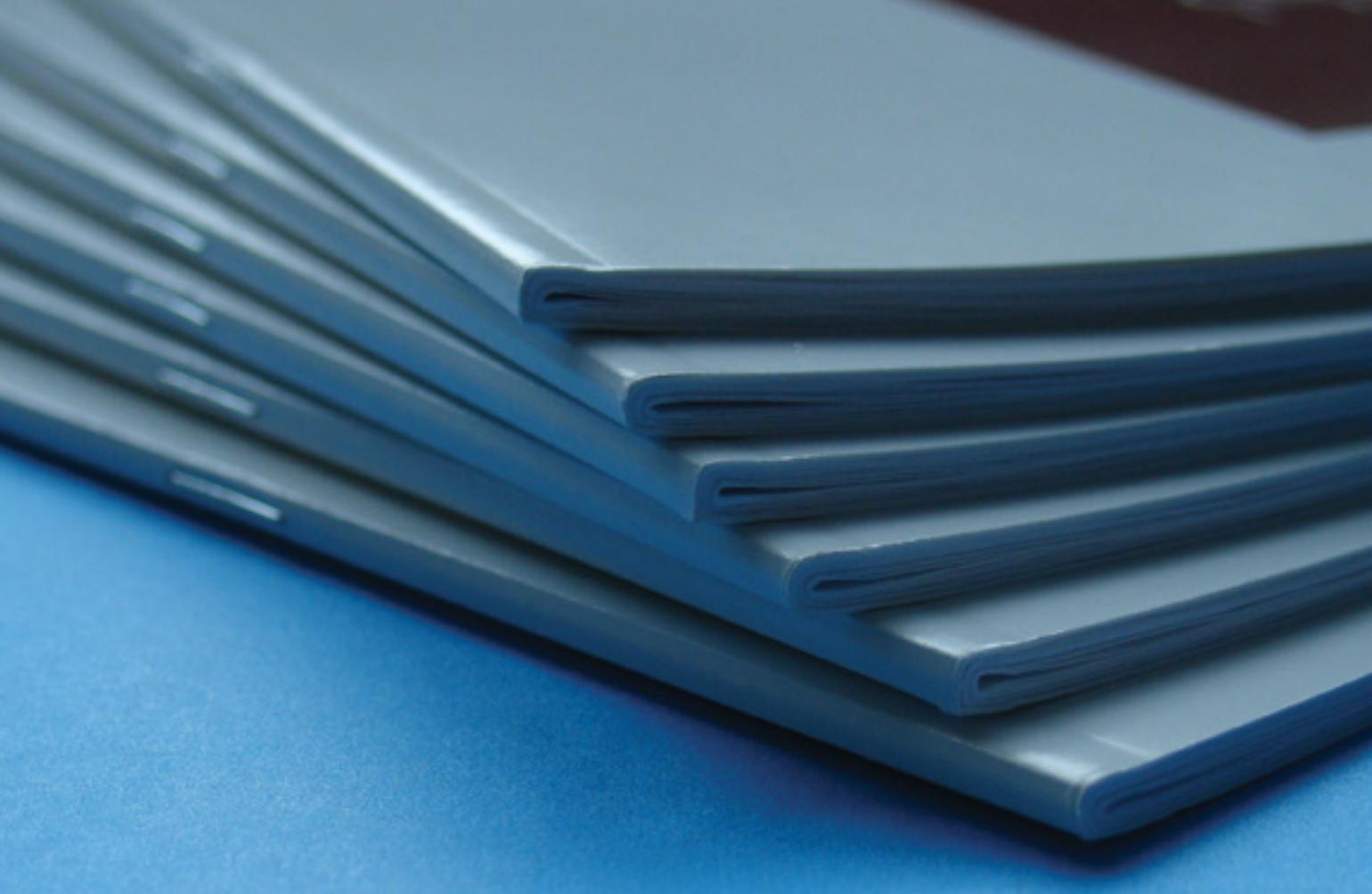
To save production time, send us your electronic files ahead of time and our production coordinators will ensure that your foil and/or emboss dies are ready and waiting for you.

- Provide enough overs to make 'count': this is particularly important when a number of finishing and bindery processes are involved — overs are required at the various processes for making ready and running.
- Make sure your art is $\frac{3}{4}$ " from the gripper edge.

- Avoid reversing-out areas that are to be foil stamped.
- Paper Laser Cutting or Etching or Rasterizing is ideal for fine, detailed and intricate designs. You can have one or thousands of sheets cut. Cutting with a laser beam is actually 'burning' of the design or image: you can cut through the paper; you can choose to etch or engrave by using the laser to 'sculpt' the paper; or you can create a rasterized image (from fine to coarse) by cutting the image on a dots per inch format.

Contact PBS
Integrated Bindery & Finishing Solutions

Contact The Die Shop
Steel Rule Die Making Solutions



Phone 604.873.4291
T.free 1.888.873.4291
Fax 604-875-8006
T.free fax 1.866.875.8006

Perfect Bind or Stitch
Mechanical Bind
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Laser Cut, Etch or Raster

Emboss or Deboss
Foil Stamp
Die Making - Steel Rule Dies
Die Cutting

Packaging
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