



## The 4 P's of Printing

How paper, processes, presses and products shape your decisions





## What to Know Before You Buy

Printed materials are all around us and it can be easy to overlook the decisions made each time ink is applied to paper. The reality is, printing is complicated and there are many things to consider when purchasing print services.

For your reference, we have summarized “The 4 P’s of Printing” and explain how each of them factors into your print procurement decisions:

1

### Paper

Page 4



2

### Processes

Page 6



3

### Presses

Page 8



4

### Products

Page 12







1

## Printing Papers

When it comes to commercial printing paper, the range of options is nearly endless. Each type of paper offers performance characteristics that would make it the perfect choice for certain printing projects — and a poor choice for others. These are the key distinctions you need to know.

### Uncoated Paper Stock

Uncoated paper has a simple, natural feel and texture to it. The primary advantage of this paper is its ability to absorb ink, which makes it perfect for projects that require easy handling such as:

- Books
- Business cards
- Business communications (e.g., direct mail letters)
- Documents that require signatures or will be written upon later

#### TIP: THE UNCOATED AESTHETIC

Uncoated paper is often used if there is a concern about the finished piece appearing too “slick” or expensive. Items printed on uncoated paper naturally have a more relaxed vibe, which may be exactly the brand impression you wish to make.

### Coated Paper Stock

Coated paper is exactly what it sounds like — it has a coating that makes the surface smoother and more even. The “polished” surface means that coated paper does not absorb ink as readily as uncoated paper. This makes coated paper ideal for printing highly detailed images and graphics such as:

- Magazines and catalogs
- Photographs
- Posters
- Wall calendars

#### TIP: CONSIDER THE COST

Coated paper creates beautiful results but is generally more expensive than uncoated paper. Be sure to consider if the performance characteristics of coated stock are worth the extra cost.

## Paper Grades and Weights

Printing paper comes in a variety of grades and weights based on the physical characteristics of the paper stock. These grades and weights indicate which types of applications are best suited to each paper option.

- Paper grades normally range from A to F, with A being the highest quality.
- The grade indicates how the paper looks and feels, as well as its thickness and weight.
- The thickness and weight, in turn, influence print quality, ink absorption and other performance characteristics.

### BOND PAPER

Typically used for letterhead and stationery because of its smooth finish and high opacity.

### COVER PAPER

More rigid, making it ideal for things like book covers and postcards.

### PAPERBOARD

The heaviest and stiffest of the paper grades; the paper of choice for things like folded cartons.



#### DID YOU KNOW?

Paper weight is measured in pounds corresponding to the weight of 500 sheets of that paper, each cut to the standard size for that type of paper.



## Paper Textures

The surface texture of paper impacts the look and feel of your printed item. The choice is usually based on a combination of personal preference and practicality. Some common textures are as follows:

### SMOOTH

Also known as wove; used for printing high-quality images with fine details.

### LAI

Has evenly spaced lines running across its surface; commonly used for stationery products and business cards.

### LINEN

Similar to laid but has a woven texture that feels luxurious to the touch; frequently used for business stationery items.

### EGGSHELL

Has tiny peaks and valleys on the surface, similar to the surface of an eggshell.

### FELT

A soft surface resembling wool fabric gives printed images a softer look and a “rustic” aesthetic.

## Paper: The Performance vs. Price Trade-off

When it comes to printing paper, there is no such thing as a “best” product. It’s all about weighing the performance characteristics and prices of the different paper stocks available and selecting the one that fits your printed piece — and the type of printing press technology being used.

## Printing Processes

Whether you're printing brochures, business cards, restaurant menus or something else, it's helpful to understand the different types of printing processes that may be used. Spot-color printing and full-color printing are two primary choices and each has its own advantages and limitations.

### Spot-Color Printing

Spot-color printing, also known as solid color printing, uses pre-mixed ink in specific color shades. These pre-mixed colors are usually Pantone Matching System colors (PMS). Each color is printed separately by the printing press using its own plate.

Spot-color printing enables the creation of consistent and accurate colors every time, making it ideal for logos and marketing materials that require precise color matching. It can also be done on a wide variety of substrate materials including paper, paperboard, plastic, metal and more.

However, the biggest disadvantage of spot-color printing is a lack of flexibility. It's generally not an economical printing process for designs that require multiple colors or shades like those found in photographs. In those situations, full-color printing is a better option.



#### DID YOU KNOW?

Iconic consumer brands sometimes use custom spot-color mixes that don't align to a given PMS color.

### Full-Color Printing

Full-color printing, also known as four-color printing or CMYK printing, uses four ink colors — cyan, magenta, yellow and black — to produce a full spectrum of colors. These four colors are applied in various combinations and densities to create the required shades and hues.

Full-color printing produces gradients and subtle color changes much better than spot-color printing. This makes it an ideal choice for photographs, illustrations and complex designs. If your business relies heavily on printed materials like brochures and catalogs, you should definitely consider four-color process printing.

However, the cost per piece of full-color printing is typically higher than spot-color printing, especially for smaller runs. It can also be more difficult to match exact colors as there are slight variations in color output from printer to printer. If your brand image hinges on accurate reproduction of a signature color, a spot-color application may be necessary.

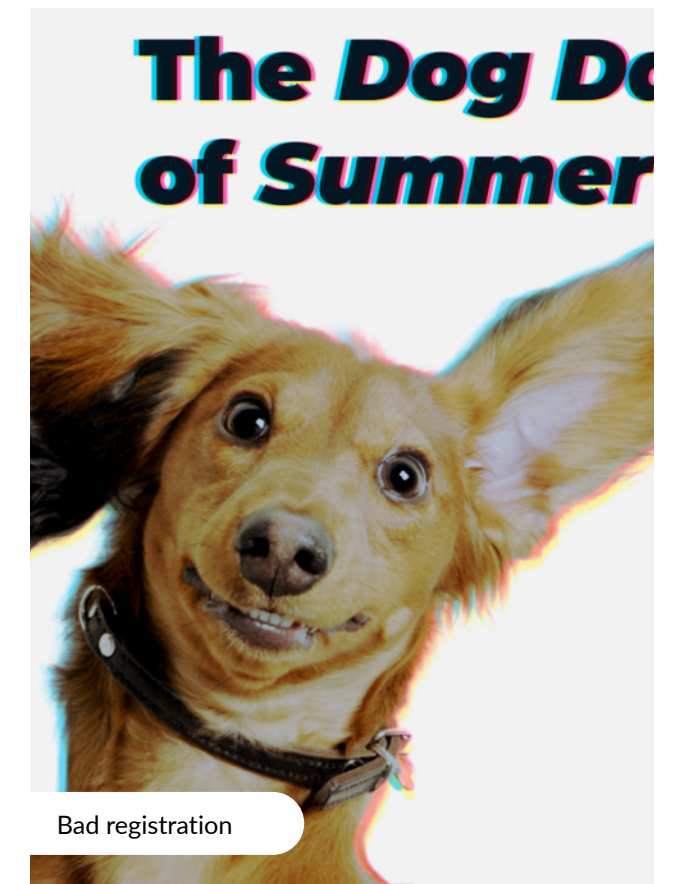
## A Word About Registration

No discussion of spot versus full-color printing is complete without mentioning the concept of registration. In simple terms, print registration refers to the precision with which an ink color is placed on paper in relation to the other ink colors. This, in turn, influences how accurately an image is rendered on the finished piece.

For a simple, one-color printed piece, registration is a non-issue. However, as the number of ink colors increases, the need for precise registration soars. When using the four-color process, even a tiny variation in the registration of the cyan, magenta, yellow or black inks will cause the finished image to become blurred or muddy-looking.



Good registration



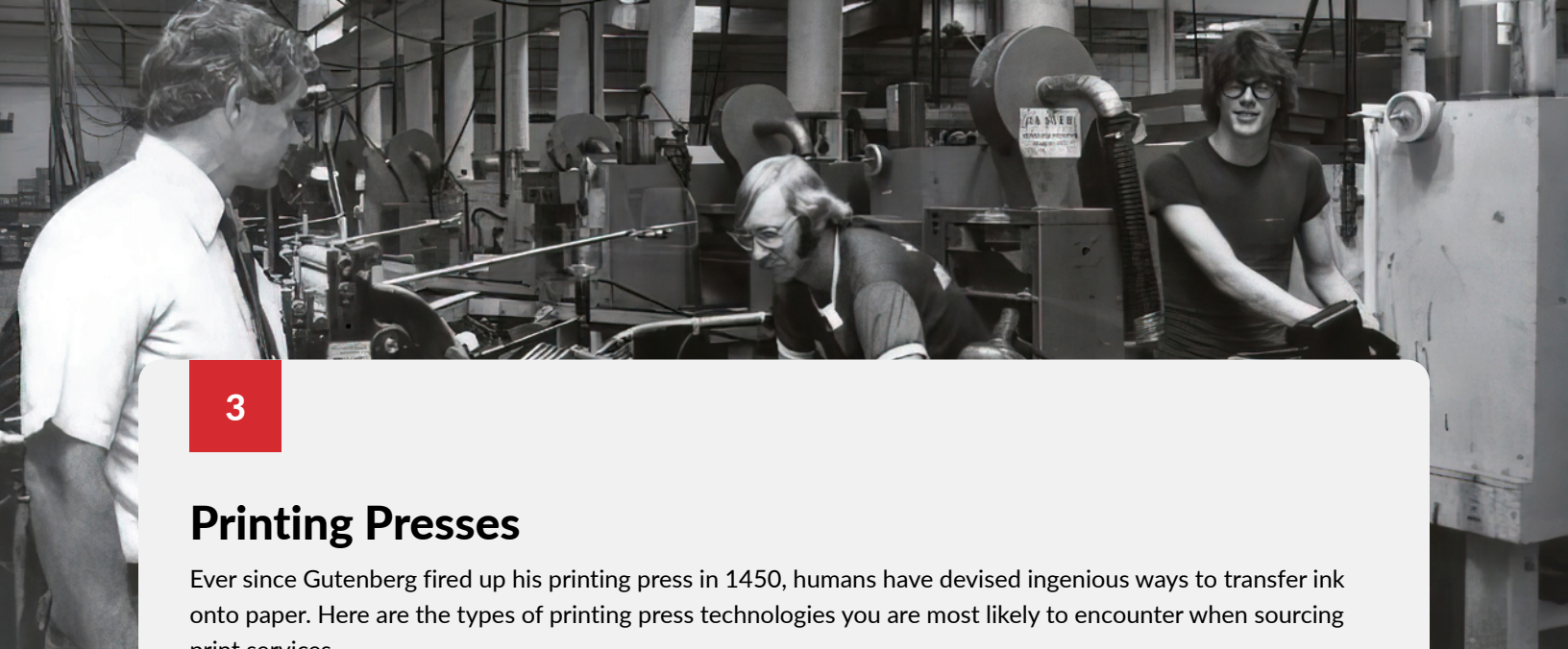
Bad registration

## Process: Let the Design Decide for You

The choice of spot-color printing versus full-color printing ultimately depends on the design requirements and budget of your project.

- Spot-color printing is ideal for designs that require consistent, accurate colors. This is especially true if you will be attempting to match a signature color on a variety of substrates.
- Full-color printing is a better option for designs that require multiple colors, gradients and subtle color changes. It is generally more expensive but offers greater flexibility overall.





3

## Printing Presses

Ever since Gutenberg fired up his printing press in 1450, humans have devised ingenious ways to transfer ink onto paper. Here are the types of printing press technologies you are most likely to encounter when sourcing print services.

### Letterpress

The letterpress is the oldest printing technology in existence. Artwork and text are converted into a rigid material such as metal. The raised surfaces are then coated with ink and “pressed” onto the paper.

#### PROS

- Printing done via letterpress results in a high-quality, handcrafted look with a slight impression or debossing where the ink was laid onto the paper. It is the quintessential printing press for business cards and letterhead stock.
- The inks used are typically water-based, making the letterpress environmentally friendly.

#### CONS

- Printing via letterpress is labor intensive and relatively slow. If you’re in need of a higher volume of output, you will likely find other methods to be faster and more cost-effective.

### Flexography

A flexographic or “flexo” printing press is essentially a modern interpretation of the letterpress, re-engineered for volume and speed. With flexo printing presses, a flexible photopolymer printing plate is attached to a rotating cylinder. Similar to a letterpress, only the raised surfaces of the printing plate are inked. The print substrate is then fed between an impression cylinder and the inked plate cylinder, resulting in the ink being transferred to the substrate.

#### PROS

- Flexo printing presses are able to print on a wide range of materials. Paper, plastic, foil, paperboard cartons, flexible packaging materials and more can be printed at high speed using a flexographic press.
- Flexo presses accommodate eco-friendly, fast-drying water-based printing inks.

#### CONS

- Flexographic printing is not as precise as other technologies. Highly detailed images can generally be reproduced more clearly using other presses.
- Setup times and setup waste are high, as are the costs of the printing plates used. For these reasons, flexo printing is most commonly used in the consumer packaged goods industry for high-volume items like product labels and packaging.



### Offset Lithography

Offset lithography and flexography are similar in that ink is applied to a printing plate. However, with lithography, the ink from the printing plate is first transferred to a rubber blanket and then to the print substrate. Thus, the printing plate never comes into direct contact with the print substrate itself.

#### PROS

- When used to print large quantities, offset lithography is an economical print technology for things like books, brochures and magazines.
- It reproduces images clearly and is also well-suited for materials that involve large amounts of text.

#### CONS

- The setup of a litho print job is complex and time-consuming. When the cost of plates and cleanup between jobs is added in, offset lithography is generally economical only for large print runs — assume 5,000 to 10,000 pieces and up depending on the press.
- Lithography requires the use of oil-based inks and solvents, making it less environmentally friendly.



### Digital Printing Presses

A digital printing press functions much like the color printer in your home office, only on a larger scale and at a faster speed. Unlike a letterpress, flexo press or offset litho press, there is no physical plate to transfer the print impression onto the print substrate. Rather, the image is directly transferred to the substrate either through the spraying of tiny ink droplets or the fusing of toner onto the surface using heat.

#### PROS

- Digital printing presses require no printing plates and virtually no setup or cleanup between print jobs. This makes them faster and more cost-effective for smaller print runs.
- Digital printing presses consume no water, produce little waste and are environmentally friendly.
- The technology is fully digital in nature. Things that are impossible on a litho or flexo press — like variable messaging, 1:1 personalization and data-driven artwork — are easy for a digital printing press. It’s the technology of choice for fast-turn, low-volume print runs or wherever personalization is required.

#### CONS

- Digital printing presses cannot reproduce metallic effects, and opacity can be an issue depending on the print job.
- They are not (yet) able to reproduce color as accurately as a traditional ink-based printing process. If precise reproduction of a signature color is required, you should explore one of the other printing technologies.





## Presses: Match the Technology to Your Need

There are many printing technologies in use today and each serves a specific purpose.

- A letterpress is ideal for business cards and letterhead.
- Flexography is the printing technology of choice for product packaging.
- Offset lithography is unbeatable for things like magazines and books — if the print volume justifies the high setup costs.
- Digital presses are quick to set up, environmentally friendly, allow 1:1 personalization and make small print runs economical. However, color reproduction is not a strong suit.
- Print embellishments create effects that no single print technology could deliver on its own.

## Don't Forget the Finishing

Printing is about much more than just ink or toner. Various other steps may be incorporated to produce the finished printed piece.

### Die-Cutting

A die is a thin, razor-sharp steel blade that allows multiple pieces of paper to be formed into a specific shape. Custom dies can be used to shape the entire piece, create perforations or cut elaborate shapes from within the printed piece.



### Embossing and Debossing

Embossing uses a metal die to raise the surface of the paper. Debossing uses a similar die to recess the image into the paper. These techniques can be done “blind” without the use of ink, or registered in harmony with a printed color in the raised or recessed surface.



### Foil Stamping

Heated metal dies can be used to apply shiny foil to paper, creating an elegant look. The bright, reflective effect of foil allows designs and messaging to be imprinted on top of dark paper stocks.



### Spot Matte or Gloss

High-gloss and matte-finish coatings can be applied over the top of a printed piece in precise locations to create eye-catching visual effects. It is ideal for drawing added attention to a specific area.







4

## Printed Products

Effective print procurement requires a thoughtful balance between price and quality. This fourth “P” takes everything we’ve learned thus far and condenses it into some easy-to-remember tips so you’ll know what to look for when purchasing printed materials.

### Business Stationery and Letterhead Stock

For business stationery and letterhead products, your primary concern should be building your brand with everyone who comes into contact with those items. Focus your attention on the paper stock used. Whether you choose laid, linen, wove or something else, you need to make a positive first impression, and low-quality paper does the exact opposite.

Then, consider how your signature brand colors can best be reproduced in print on that paper stock. Make sure your print partner uses a printing press technology that will enable your signature colors to be reproduced accurately.

#### TIP: SUSTAINABILITY IS IN STYLE

The latest trends in stationery are for sustainable paper selections and textured finishes. Look for a printing company that uses high-quality paper made from sustainable sources.

### Business Cards

Even in a digital-first marketing environment, billions of business cards are printed every year, and that will not change anytime soon. Business cards are a tangible, tactile way to create a lasting impression with potential clients.

When looking for a print provider to create your business cards, make sure they offer a wide variety of paper weights and finishes to choose from. Here again, the right paper stock makes all the difference.



#### DID YOU KNOW?

Research shows that a colorful business card is 10 times more likely to be retained by the recipient than a plain white business card.



### Envelopes

Envelopes work hard but are often overlooked. The right envelope stands out in the mailbox and elevates your brand image. It can also improve response rates for direct mail campaigns.

When buying print services, make sure the printer offers a variety of sizes and styles of envelopes for different uses. Avoid the urge to splurge on top-notch letterhead and business cards while going cheap on the envelopes used to deliver them.

#### TIP: ASK ABOUT COLOR MATCHING

Don’t assume that all of your custom-converted envelopes will be printed the same way at the same time. Ask your print vendor how they intend to ensure a precise color match on all envelope sizes and styles produced.



### Marketing Materials

To be effective, marketing materials like brochures and flyers need to be special enough to attract attention and invite the recipient to start reading. However, even the most beautifully written and designed brochure can damage your brand if poorly printed.

First, engage a professional graphic designer who can show work samples that demonstrate a gift for branding, fonts, colors and imagery. Then, work with a print provider who offers the expertise in die-cutting, embossing, spot gloss and other finishing techniques necessary to make the designer’s vision come to life.

#### TIP: MAKE SURE THE PRESS FITS THE PROJECT

Choose a print provider who can accommodate your desired size, paper stock and finish quality using the appropriate production technology. Beware of vendors who try to justify using a printing press that’s a bad fit for your requirements simply because it’s easier for them to produce.





# Learn More

Taylor has more than 100 years of experience in document production and we apply that expertise each day on behalf of our customers. To learn more about The 4 P's of Printing, please contact your Taylor representative.



1725 Roe Crest Drive, North Mankato, MN 56003  
800.631.7644 | [taylor.com](http://taylor.com)

© 2023 Taylor #4630