



SPECIALTY  
PRINTING &  
PROCESSING

# Screen Printing vs. Digital Printing: Five Key Decision Factors



# Screen Printing vs. Digital Printing: **Five Key Decision Factors**

Screen printing and digital printing processes are both widely used today for countless applications, such as labels, product identification, graphic overlays, specialty signage, and so much more. Often, the processes are interchangeable. In other cases, they are not. When it comes to deciding which one is best for a particular application, how do you choose? Let's look at the key considerations that you need to make.

## **1. Environment**

The use environment of the end product is a significant consideration. For instance, is the product intended for indoor or outdoor use? Generally speaking, screen printing utilizes UV-resistant inks and tends to hold up better outdoors. Conversely, for many indoor applications, digital printing is preferable.



Another environmental factor is exposure to friction and wear. More specifically, is the printing on a surface that people are likely to touch? If so, digital ink will likely wear or fade over time, while screen printing can take a beating. Note that in some cases, using UV inks with digital printing can protect your design against the sun's harmful rays. If the printing is on the second surface, such as the bottom of a polycarbonate overlay, the polycarbonate itself will protect it, leaving no concerns of wear over time. The goal is to get it as thin as possible if it's not going to be a big bump. The thinner you can keep it without engineering a recess, the better.

## 2. Material

The material upon which you are printing will play an integral part in deciding which process is best. In the case of specialty commercial printing, we're talking about either metal or plastic. For metals such as aluminum, stainless steel, powder-coated steel, and copper, screen printing is usually the ideal approach for its strong adhesion and durability characteristics. Common applications include identification plates, advertising items, various industrial components, containers, enclosures, and more. While digital processes can print on metal, the durability and fade resistance are often less than what screen printing provides. However, priming and proper UV inks, protective coatings, or lamination can remedy this in certain cases.



For many plastic products, including those made of polyester, polycarbonate, or vinyl, you can use either screen or digital printing. In these situations, factors beyond the material become more important, such as environment, artwork complexity, the size of the art, and the imprintable area.

## 3. Shape/Geometry

This is another category that covers multiple attributes. It considers the shape of the product, the overall surface area, and the accessibility of that surface (which could be limited either by its size or complexity). Let's imagine something that fits in your hands or on your desktop. Based on its size, either method could likely print it if it's relatively flat and not too thick. Other factors will weigh more heavily in the decision of which process is best.

However, when shapes are more complex, this restricts the ability to print using a digital process. For instance, we imprint brochure holders for municipal buses. Their bulky shape makes it difficult, if not impossible, to print digitally, so

we screen print them. To do so requires a jig and fixture designed specifically for this part, but it gets the job done.

In other cases, such as identification plates, branding, or overlays, digital is often better than screening. It tends to be less expensive and, when you properly laminate or coat, it reduces concerns for the print's durability. For overlays, the printing will be on the bottom of the material, so wear due to surface exposure is not an issue.

Thickness is a factor, as well. For instance, a part that's 5 inches thick typically can't fit under a digital printer, so you must screen it. At Specialty Printing & Processing, however, we do have the capability to go up to almost 6 inches with our digital equipment.



# 4. Artwork Quality & Complexity

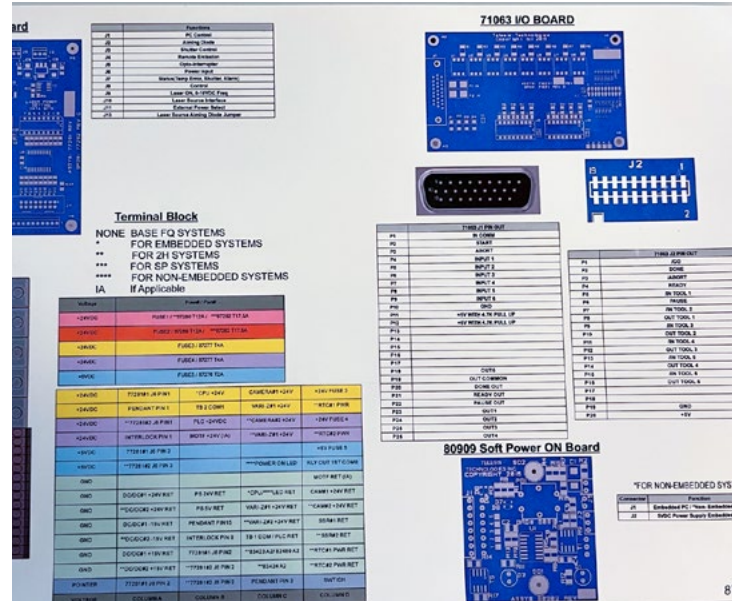
In cases where you could use either screen or digital printing, artwork quality and complexity may be determining factors. This includes color requirements, the level of detail in the art, and certain quality concerns such as color accuracy or consistency.

Let's start by reviewing how color relates to each process. With screen printing, every color has its own screen, and you lay each one down individually. It uses a spot color system, such as Pantone, which allows for precise control over each color and maintains consistency across a run. Digital printing uses the CMYK color system, which makes a spectrum of colors from just four basic ones: cyan, magenta, yellow, and black. If a certain color must be exact, such as for a logo or brand, then screen printing might be the better route.

This is especially true if your design only uses a few colors, and the art consists of just letters or simple shapes. Digital will excel when printing detailed designs and more complex objects, such as higher-resolution photographic images, intricate shapes, and three-dimensional-style art.

Screen printing does not handle detailed images or gradient tints very well. This is due to the lower line screen values that the process requires. Line screen equates to resolution, so the higher line screens in digital processes support more detail and smoother gradients.

Another aspect to consider is that, with screen printing, every color is an operation. Each one requires a separate screen and setup, and then you must pay careful attention to ensure that each color stays within the register. While some designs may be more forgiving, having just one color off-register can ruin the whole process.





When the application has opacity (light coming through), such as a dash panel, this requires thicker layers of ink to block the light where it shouldn't pass through. Screen printing generally wins here since it puts down a much thicker ink deposit than digital. It is still possible with digital, which may be necessary for certain situations because of the complexity of the artwork, but it takes multiple passes to build up the ink versus one hit with the screen.

## 5. Cost

Of course, budget is often a concern when choosing the best method. Generally speaking, digital is a much more economical process simply because the job prints in one pass. Conversely, as mentioned earlier, screen printing requires multiple steps to lay colors down. The amount of steps depends on the number of colors. It also requires time and materials to set up the artwork, burn the screen, set the screen, and keep a close eye on color registration. However, remember that there are other factors to consider. Budget alone cannot determine the ideal process.





# Screen vs. Digital Printing: Which Wins?

As you can see, there is no cut-and-dried answer as to which printing process is best for a specific application.

It depends on the key factors listed here, as well as others. For instance, screen printing is usually faster, while digital is less expensive due to lower setup costs. The decision will vary from job to job and requires careful consideration.

If you're unsure which process will give you the right results, it's best to consult the experts. Chances are, we've solved the riddle before, and if not, we're up to the challenge.





## About Us

Specialty Printing & Processing is a privately held Manufacturing and Service Operation with a full service production Screen Printer, delivering a full suite of digital and graphic solutions ranging from digital printing to sub-assembly services.

Founded in 1961, our award-winning staff members have over 100 years of combined experience providing creative, turnkey solutions for clients with all manner of needs. Whether your project is simple or complex, we will draw on our expansive capabilities to print your order exactly as you envision it, along with offering value-added services like design, assembly, testing, and more.

No matter how complex or unusual a particular challenge, Specialty Printing & Processing will find a solution to fit the exact needs of the application.

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