

*Paper Pulp*, by Bonnie Pierce Lhotka. Inkjet transfer to handmade paper, 30 x 24 in.

## SELECTING A PRINTING SURFACE

Artists and their print providers can choose from precoated as well as fine-art papers, and don't neglect the DIY option.

BY KARIN SCHMINKE, DOROTHY SIMPSON KRAUSE, AND BONNY LHOTKA

**Your artwork starts** with your surface, also known as the "substrate." In traditional digital printing, the substrate is merely meant to hold the printed image. But when digital printing combines with a traditional art medium, the surface becomes more important. In some cases, it can be as important to your artwork as the images you print on it.

You can choose surfaces specifically precoated for inkjet printing; you can experiment with standard fine-art papers; or you can precoat uncoated surfaces. Here, we'll discuss all three options.

The affinity between the surface on which the print is made and the ink determines the success of the print. [We're discussing primarily water-based inks here.] If the surface absorbs no ink (as in aluminum foil), the ink will puddle and run; if it absorbs too much ink (as in newsprint), the images will appear desaturated and flat. The ideal choice has low absorbency, causing most of the ink to sit near the surface. This ink "hold-out" is the key to sharp details and bright colors in a print.

To create ink hold-out, you must treat papers and other printable surfaces before use. Traditional art papers are "sized" so that they retain drawing ink without bleeding. Various substances are added to the paper stock in its pulp state to help the paper resist liquid penetration. You can also coat the paper's surface with these same kinds of substances to control its absorbency further.

Many products are now specifically precoated to receive prints from inkjet printers. In addition to all kinds of papers, there are canvas, vellum, and an assortment of specialty surfaces such as metallics. These products offer good color range and excellent ink hold-out, giving immediate success to the



At left, printing on untreated, nonabsorbent material like this plastic sheet causes the ink to run. Middle, untreated newsprint is too absorbent, producing a soft, dull print. At right, commercially treated fine-art paper gives this print its sharper, brighter image.

novice printer. Many artists find that commercially coated canvases work well for their art; they like the extra texture provided by the canvases, as well as their ease of use.

### Commercially precoated surfaces

Ready-made substrates have many advantages:

- They require no preparation;
- They produce predictable, consistent results over long periods of time (more so than with do-it-yourself precoats), a particular asset when printing editions; and
- They are designed to work with specific inksets for “perfect” prints every time.

Some traditional artists, however, find this last “advantage” problematic—the resultant images may seem too sterile, lacking a sense of the artist’s hand at work. In addition, ready-made surfaces are more costly than coating your own. You may also want a wider choice of products. Although the range of commercial precoated surfaces does continue to expand, items may be changed or discontinued, sometimes leaving you in a lurch.

Having said all that, ready-made products certainly are useful as a starting or “jumping off” point. They are also useful for obtaining a quick color proof to help you develop a composition, and for showing sketches to obtain commissions before developing your own mixed-media surfaces.

A good resource for ready-made surfaces is your printer manufacturer. Each firm has a line of materials matched to its own printer and inks, all but guaranteed to give you good results. These surfaces come in rolls or sheets sized for wide-format printers as well as in boxed sheets sized for desktop printers.

Keep in mind that they usually are coated on one side only; and while most of us know that the coated surface is the outside of the roll, when it comes to sheets it may be harder to identify (although most boxes indicate which side is printable). A small pencil mark on the back side of the paper as you take it from the box may prevent later confusion.

Note: If it’s water-resistant prints you’re after, and that characteristic isn’t listed on the box or elsewhere, be sure to check with the supplier before purchasing that precoated product.

### Fine-art papers

Interestingly, some off-the-shelf papers from your local art store can be printed on with satisfactory results. Of course, your success may depend on how you define “satisfactory,” but fine-art papers are worth exploring and often produce beautiful images.

Keep in mind, though, that when papers are not designed to be used as inkjet papers, the ink hold-out can be very low and absorbency very high—resulting in images with a softer focus and duller color than those printed on properly prepared surfaces. You can partially compensate for such dullness by increasing the saturation and brightness, or printing at higher resolution to increase the ink load. Some printer software allows for overprinting or increased ink densities; this feature is even more likely to be found in RIP software, which has more options

for printer control. But these compensation methods can be difficult to control, so it's best to select papers with the most ink hold-out.

Papers with lots of sizing and/or a hard surface have greater ink hold-out than more absorbent, soft, or fuzzy papers. If available, papers that have both surface sizing and internal sizing are preferable. The Daniel Smith catalog ([www.danielsmith.com](http://www.danielsmith.com)) gives sizing information for various papers that the company sells, for example. Select hot-pressed papers over cold-pressed for their greater smoothness.

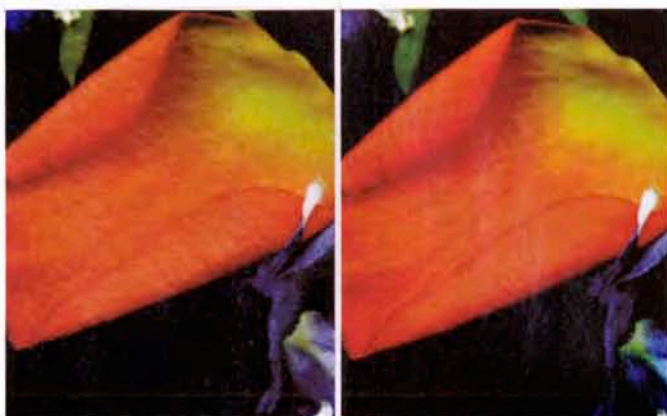
You can successfully print on the following art papers: silk tissue paper, Daphne, Lanaquarelle, and some Japanese papers. Lanaquarelle is a great choice because it is available in smooth, hot-pressed form with both internal and surface sizing. Be aware that some of the thinner papers may not have enough stiffness to feed through your printer. Artists with smaller desktop printers often iron thinner papers onto waxed or freezer paper prior to printing in order to stiffen them. Unsized or "waterleaf" papers (Arches 88, Twinrocker Feather) have no sizing and thus absorb water like a paper towel.

### Precoating your own surfaces

Although you may like the dependability of precoated paper or the soft look of printing on uncoated fine-art paper, eventually, you may want your images to be more unique or have brighter colors. At that point, consider coating your own papers.

Like priming a canvas with gesso, precoats ensure better color results. In addition, coating your own materials can be a big money saver, and you can transform many non-art materials into printable surfaces. You are only limited by your imagination and what will fit through your printer. Experiment with bark paper, leather, aluminum, Plexiglas, and wood veneer. When coated with an inkjet receiver, as long as those materials do not exceed the thickness recommended by the printer manufacturer, they are usable. Some printers, for example, can print on mat board thickness—so any materials thinner than a mat board (typically 1.5 mm) could be precoated and fed through the printer. Just be sure the materials aren't too heavy or uneven.

A flexible media printer like the Encad NovaJet 880 with extra head clearance opens up many interesting possibilities for printing on more dimensional media. And by building a reusable "tray" to hold your substrates as they go through the printer, you can take advantage of most of the printer's 1/2-in. head clearance and keep the printhead away from irregular surfaces. We hope that



The same picture printed on untreated watercolor paper (left) and on commercially precoated watercolor paper (right) has a richer, more detailed image on the treated surface.



The first of these two prints (left) was made on Tableau, a brand of uncoated, acid-free hemp paper; the second (right), was saturated in Photoshop to increase color intensity, and printed on identical paper.

more printers will increase head clearance in the future. Some flatbed printers are designed to print on surfaces up to 5.9 in. thick; for example, on a stretched canvas, glass, or bricks.

Warning: If you have a small desktop printer with paper guide "pizza wheels," you can still perform the processes in this chapter with any inkAID or rabbitskin glue, provided the precoat will apply to an absorbent surface such as paper. On a nonabsorbent plastic surface, use the white matte precoat because the ink dries as it is printed on and won't ruin your printer. Again, make sure your surfaces are thin enough to feed through your printer.

The ability to create your own printable surfaces opens up a whole new world of creative possibilities. During the precoat process, you can even introduce brushstrokes and other textures to the surface itself beneath your print, creating a unique and individualized base for your art.

## Precoating Your Own Surfaces

A slot ruler is an easy-to-make tool to help you build customized printing surfaces that avoid head strikes. Place coins equal to your printer's clearance at the ends of two square aluminum tubes, and secure them in place with duct tape. Slide your substrate through to check for high spots before printing. Printers that will accept mat board have 1.5 mm clearance, the thickness of a new penny.



A Fome-Cor (lightweight laminated board) tray holds these precoated ceramic tiles as they are printed in an Encad NovaJet 880 flexible media printer.

The result: *Innocence*, by Bonny Pierce Lhotka, an inkjet print on 2-in. ceramic tiles treated with white matte precoat, 24 x 24 in.



Precoats are not always interchangeable. Here, we have selected the most appropriate coating for each process, noting any suitable variations.

Just ahead, you will learn how to mix and apply a white matte precoat. Traditionalists are most comfortable with rabbitskin glue, the inexpensive and readily available adhesive that has been valued by artists for centuries. However, you must mix it every time you need it, otherwise it can spoil. Being affected by water and weather, it also varies in quality from batch to batch in ways that can affect your precoating. So if your surface is dampened, it can cause your image to blur. Rabbitskin precoat can also shrink or expand with changes in humidity, causing it to pop off of nonporous surfaces.

White matte and other clear precoats are marketed by inkAID ([www.inkaid.com](http://www.inkaid.com)), which offers consistent, ready-made products that are easy to use, although more expensive than rabbitskin glue.

The company's white matte precoat is a fine choice for a brilliant white, matte surface. It does a good job of covering colors completely, especially if you use two coats. It is also the choice for small-format printers, since it dries instantly when printed on. There are two clear inkAID products: semigloss and gloss. Both can be applied to absorbent and nonporous surfaces; however, to apply gloss on a nonporous surface, you must first apply a coat of inkAID adhesive.

### Preparing white matte precoated surfaces

Protect your worktable with newspaper, since you will be painting precoats over the edges of your sheets of substrate. Better yet, a large sheet of plastic makes a reusable surface that cleans up easily. Wear protective gloves when handling precoat material and when cleaning up afterward. For this exercise, we coated Strathmore Aquarius II synthetic watercolor paper, since it doesn't stretch or shrink when moistened.