Master Mountin



by Chris A. Paschke, CPF, GCF

Staying Up to Date

igitals are not the same today as they were a few years ago. The shift from analog film and darkroom developing to digital formatting and posting images on social media within seconds of shooting has changed everything for photos. Where dye sublimation and RA4 developing have replaced traditional darkrooms, wideformat pigment ink prints have made openedition offset lithography an antiquated process.

Digital imagery dominates all aspects of the printing world from signs and display to fine art. Although digital printing includes everything

from electrophotographic digital presses and electrostatic plotters to solvent ink flatbed printers, the important point is that framers today must understand contem-

porary printed imagery and media. Digital printing is obviously here to stay, but the technology surrounding it evolves so quickly that it is difficult to keep up with.



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a lot of other digital

prints out there

Giclée is a French word for "spray," and both giclée and inkjet prints are made by spraying ink onto the surface of a material. Simply put, all giclées are inkjets, but all inkjet prints are not giclées. Giclée is a term that printmaker Jack Duganne claims to have coined in the 1990s



Fujifilm Acuity 1600 Series rollfed and flatbed UV printers.

while at Nash Editions, back when continuous-tone Iris digital printers (since taken over by Scitex and now owned by HP) were the state-of-the art digital printing technology.

Technically, a giclée and an inkjet print are the same. They are images printed from a computer on wide-format printers from a high-resolution scan of original artwork or from digital photographic images. In the print world, a giclée has been synonymous with fine art reproductions printed on paper or canvas using a high-end inkjet printer and pigmented inks. Most photographers printing on photo-like paper refer to them as photographs or inkjet prints. Museums and fine art galleries label these prints as pigment ink prints—rather than giclées—because they have accepted and embraced digital technology. These prints are superior to traditional lithography, producing brighter colors, longer lasting inks, and such high resolution that they virtually qualify as continuous tone prints. Today's fine art pigment ink prints may be printed on any media, including watercolor paper, silk, canvas,

metal, bamboo, and acrylic.

Pigment ink prints are individually produced as high-resolution, high-fidelity, high-tech reproductions using CMYK+ and produced on special wide-format pigment ink printers using only high-gamut, moisture-resistant inks. These inks may be aqueous, solvent, UV-curing, or latex depending on the media they are printed on.



A decorative café wall installation was created on MDF by a solvent flatbed printer.

Archival Ink

The term "archival" was used for a number of years to indicate long-lasting ink prints. This has been replaced by "extended-term," as stated in ISO 18920 Storage Practices, in an attempt to better clarify the definition. Archival quality ink—the phrase used when

relating to giclée production—is pigment or solvent-based ink printed on media with extended-term life, including photo paper, watercolor paper, canvas, or vinyl.

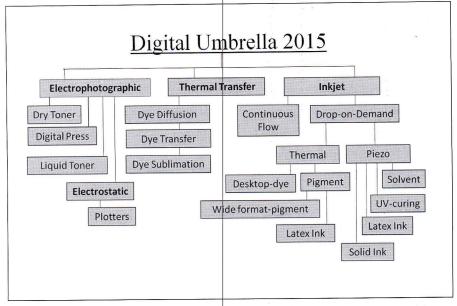
Pigmented, extended-term inks are common for piezo printers— Epson, HP-Z series, Canon—and excel in permanence and are embedded into the receiving layer. This makes the prints waterresistant and less susceptible to destructive environmental conditions. Many digital papers also have coatings that enhance color gamut, making them less susceptible to scuffing and scratching, which could diminish the archival properties of the print. The use of archival quality inks alone does not qualify a print as a giclée. It

is the combination of ink, printer technology, and media that establishes its standing as a giclée.

Inkjet Basics

As far as terminology goes, "inkjet" is becoming a little vague, much like the term "giclée." The bigger distinction is not the printer tech-





The Digital Umbrella 2015 illustrates the vast extent of technologies covered within contemporary printing. It has changed over the years, modifying electrophotographics and sublimation.

nology but rather the format (roll-fed vs. flatbed printing) and the type of ink. The more correct terms for inkjet identification today are aqueous, solvent, UV-curing, and latex, which better indicate the printing process itself.

Inkjet breaks into three basic printer technologies: continuous, thermal (dye-based), and piezo (pigment). They may also be grouped as

continuous flow and drop-ondemand (which includes thermal and piezo). Current media for inkjet printing includes photo paper, fine art paper, canvas, wrap mesh, and everything in between.

Aqueous inks remain the safest and most environmentally friendly version of all inkjet inks, regardless of whether they are dye or pigment, and often include glycol to improve



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performance. They require receptor coatings for inks to adhere properly and are not well suited for plastics or vinyl. They may also require a final laminate or liquid coating to help protect the image.

Dye-based inks for thermal printers are absorbed into the coated substrate more easily than pigments, which primarily sit on the surface of the paper. Ink manufac-

turers continue to improve ink chemistry, allowing dye-based inks to be much brighter and have a superior range of color matching than pigmented inks. In contrast, pigmented inks are more lightfast and colorfast, giving them a longer lifespan. Wide-format thermal printers that use pigmented inks can print on canvas, photo paper, film, polypropylene, Tyvek, and

textured and coated paper. Piezo technology uses pigmented inks for wide-format fine art and commercial printing.

Solvent Inks

Solvent inks are made of volatile organic compounds, which evaporate quickly, allowing for printing on a wider range of substrates and faster drying. They are pigmented and more durable, fade-resistant, inexpensive, waterproof, and UVresistant for exterior signage. On the other hand, solvent vapors are more toxic, and waste disposal is environmentally difficult. Eco-solvent inks are a milder version, which take longer to evaporate and may require heat to dry. They are less hazardous, though they are still not 100 percent environmentally safe.



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Wide-format solvent printers are used for commercial output such as wraps and both interior and exterior signage. They do not require special coatings because they are already waterproof, durable, and resistant to UV light but are heat sensitive to dry mounting at 150oF and over. Though solvent printers were developed primarily for commercial applications, that does not exclude them from routine use for art reproductions. Solvent printers are currently being used by fine art publishers for printon-demand (POD) open-edition images printed on canvas. Still, they may not meet the criteria to be called fine art giclées, so framing them using non-preservation methods, including dry mounting, is totally acceptable.

UV Inks

UV inkjet has become popular for conventional openedition printing and some wide-format images. They are compatible with a variety of substrates, both porous and non-porous. When the inks are exposed to UV light, they become fast-drying images with vibrant colors that offer increased health and safety with fewer environmental issues than solvent inks. They are durable and lightfast, so you can use them for exterior signage without needing to laminate the prints. Wide-format and superwide printers that use UV-curing inks are designed for commercial use and for smaller scale consumable products printed on glass, acrylic, corrugated board, honeycomb panels, foamboard, polycarbonate, and aluminum composite material (ACM).

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Latex Inks

Latex inks are aqueous, pigmented inks durable for interior and exterior use that do not need to be laminated once dry. These water-based inks are more environmentally friendly than solvent inks. Latex inkjet was developed and released by HP in 2008 using "an emulsion of polymer microparticles in an aqueous medium." Latex inks are flexible and stretchable, which makes them good for vehicle wraps and other applications over a base that is not absolutely flat or for free-hanging fabrics. They are also lightfast for indoor, window, and outdoor display and are resistant to scratches, smudges, and water.

Wide Format Then and Now

Wide-format printing began in the 1980s. In the early 1990s, electrophotographic laser and color copiers had become quite popular, and electrostatic plotters—which used the same basic process—had reached a width of 36". By the end of 1990s, electrostatic plotters had become relatively obsolete commer-

cially but found a specific use for architectural drawings, blueprints, and schematics, where they are still used today. By 1992, color inkjet printing was taking hold, predominantly at sign shops and graphics houses.

Throughout the 2000s, many commercial printers were using wide-format printing for image proofing, and today the vast majority of wide-format devices are inkjet, which has basically replaced traditional offset printing. The terms "wide format" and "large format" are interchangeable but generally constitute images 13"x19" or larger. Today, wide-format printers are 24" to 64" wide. Printers with outputs larger than 72" are called "grand format." Even fine art imagery has grown in size from 8"x10" to 40"x60".

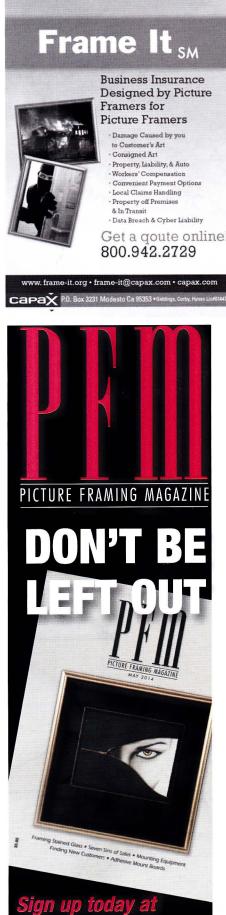
Product Identification

Since the world of reproductions has changed so drastically since 1980, I believe that the art and framing industry should consider replacing the term "giclée" with "pigment ink print," which is a far more accurate term. Pigment ink prints are now available with a color gamut and subtlety that far surpass early Iris prints and offers lightfastness and overall long-term stability.

A framer's need today has grown far beyond knowing if an image is a fine art giclée to the necessity of knowing the printer, ink, medium, and laminate or coating on a print if it is to be successfully mounted. In the November column, "Staying Up to Date," the importance of identification of all products and technologies was stressed to best determine compatibility prior to selecting a mounting technique. The adoption of wideformat digital printing has transformed many sign companies, allowing them to create signs in a whole new way, using different materials to better serve their customers' needs. This trend is crossing over into the framing market. Not only are framers now mounting solvent- and latex-printed canvases to





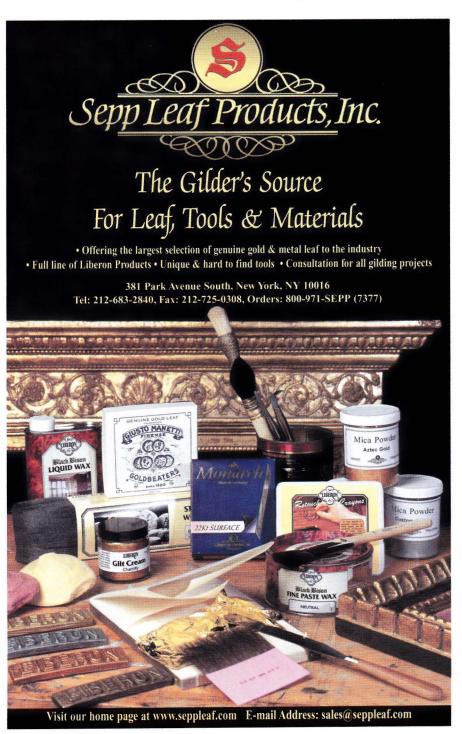


rigid substrates, but they are also being challenged to handle, mount, and sometimes frame soft-printed media. To mount or not to mount? *That* is the question. ■

For a more in-depth discussion on current digital developments, don't miss Chris' new class at The National Conference, M2018 Digital Prints -Trends and Handling.

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