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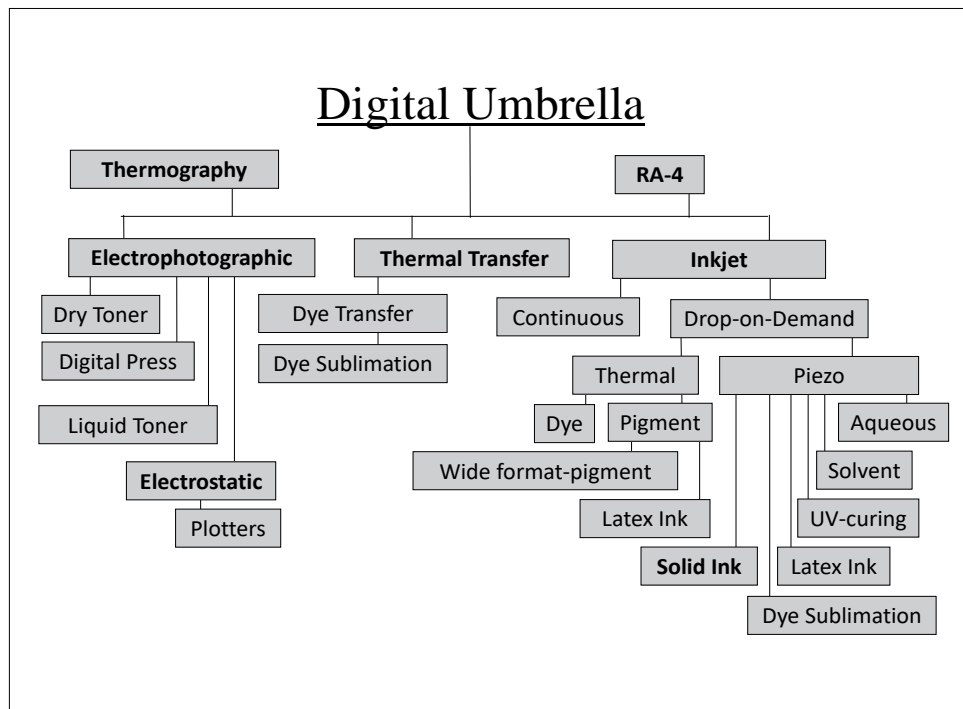
CLASS: **M2018** Lecture (2 hour)
Tuesday, February 6th, 12:30-2:30pm

TITLES: **Mastering Mounting: Understanding & Handling Digitals 2024**

OBJECTIVES: All giclée are inkjet, but all inkjet are not giclée. First you need to know what you have, only then can you select the correct technique for handling it. This session will explore and compare mounting alternatives, adhesives, and substrates to handle art and signage in the 21st century.

BIBLIOGRAPHY, REFERENCES, READING:

Johnson, Harald and C. David Tobie. *MASTERING DIGITAL PRINTING*, Second Edition
Digital Process and Print Series, Thomson Course Technology, Boston, MA, 2005.
Paschke, Chris A., CPF GCF, *THE MOUNTING AND LAMINATING HANDBOOK*, Third Edition, Designs Ink Pub, 2008.
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PFM, *Mastering Mounting*, monthly column.



Mastering Mounting: Handling Digitals 2024

I. Digital Umbrella 2024

Thermography and RA-4 are disappearing

Dye Sub is now Thermal and Inkjet

Printed canvases are now mostly Solvent (Eco-solvent), UV, and Latex

II. Typographic Method

Thermographic Printing

Direct Thermal = Paper coated to change color

Raised Print Process = Plastic resin powder heated to puff 3D

III. Digital Print Technologies

Electrophotographic = *Dry toner B&W and four-color copies from an existing document*

Wet liquid ink photocopying and dry xerographic toner copying. Xerography is Greek for "to write dry", and is an electrically charged drum that receives an illuminated image that is converted into a dot pattern.

Dry Toner = Canon laser printers, Xerox dry toner

Liquid Toner = HP Indigo, Mitsubishi, Ricoh Heidelberg Press (offset digital press)

Electrostatic Printing = *Pigmented toner on dielectric paper not used for fine art, laser printers*

Uses static electricity to transfer an image to a charged drum. A laser negatively charges a cylinder to the image pattern, positively charged toner is attracted to the negative areas of the drum, special dielectric paper is pressed against the drum to receive the toner and is set through heat rollers. This process uses a heat set ink, not thermal papers.

Plotters and Printers = Ricoh laser transfer system, IBM

Thermal Transfer = *Four-color dye and pigment on a ribbon of wax-like paper that transfers with heat*

A head comes in direct contact with the uncoated side of the wax ribbon pushing the inked ribbon to the surface of the paper. Ink is heated and transfers to the surface as a dot pattern.

Dye Transfer = Digital minilabs by Aqfa, Noritsu; Fuji Frontier and Pictography

Dye Sublimation = Canon, Kodak 8500, Sony, Mitsubishi CP-700

Inkjet Printing = *Liquid inks sprayed as dot patterns onto assorted substrates*

What is Inkjet?

Process = Thermal vs. Piezo

Format = Rollfed vs. Flatbed

Size = Desktop, Wide (Large) Format (<72"), Grand Format (>72")

Ink = Aqueous, Solvent, EcoSolvent, UV Curing, Latex, Sublimation

Inkjet vs. Giclée

Archival Inks

Is Solvent Giclée?

Four Basic Technologies

Continuous Flow/Tone = *Tight dot pattern that appears continuous*

Such a fine dot pattern is created when jetted, a 300 dpi appears to be that of 4000 dpi

IRIS, Epson; HP Z-Series = Fine art giclée and photo realism

Drop-on-Demand (DOD)

Thermal = *Heats ink in a reservoir, pressurized and jetted onto paper*

HP PhotoSmart, DesignJet; Canon image PROGRAF

Dye based aqueous inks; swellable coated media

Provide vivid color; most not waterproof; subject to most rapid fading

Pigment based aqueous inks; often marketed as "archival quality"

Better long-term durability and UV- resistance.

Piezo (Micropiezo, Piezoelectric) = *Ink squeezed through nozzle when voltage is applied*

Epson, Roland, Mutoh Falcon II, Mimaki JV4

Liquid or solid; water, solvent or oil on microporous coating

Aqueous Inkjet = *Pigmented, Water based, Embed into receiving layer*
Desktop, Large-format, Wide-format
Used in fine art and large format images.

Solvent Inkjet = *Pigmented, Waterproof, UV-resistant without special over-coatings*
Eco-Solvent Inkjet
Roland VersaCMM; Epson
Hard solvent ink requires specialized ventilation for fumes
Mild or Eco solvent ink for enclosed spaces
Dominantly uncoated vinyl, flexible surface signs, banners, exterior use

UV-Curing Inkjet = *Cured by exposure to strong UV-light, totally dry once cured*
UV Gel

Agfa, Durst, HP Scitex models, Mimaki, Mutoh
Wide and Super wide format, commercial use
UV radiation creates a chemical reaction of cross-linking into a solid
Uncoated substrates = wood, stainless, ceramic tiles, plastics, glass, aluminum

Latex Inkjet = *Aqueous pigment ink printed on low-cost, uncoated, solvent media*
Resin Latex Inkjet

Developed and released by HP in 2008;
Ink evaporates, latex particles bond into a durable film;
Dry and ready-to-use out of the printer on all media
Designed for vinyl and flexible signage (Tyvek)

Dye Sublimation Inkjet = *transfer or direct print for fabric, requires heat curing*
Epson SureColor, Mimaki DS, Mutoh ValueJet, Agfa Graphics, Printer Evolution
Replaces screen printing for polyester textiles
Heat set, is permanent and washable

Solid Ink (Phase Change) = *Solid to melted to solid, CMYK color stick or wax puck*
Tektronix / Xerox Phasers
Dye in wax applied to paper creates a slightly raised surface; mostly commercial

IV. Digitally Printed Canvases

Inkjet vs. Heidelberg Press (WAG) liquid toner offset
Shear Strength vs. Tear Strength
Mounting Digital Canvas and Photos
HA Board Comparisons
High Temperature = 180F
Bainbridge HAF, Single Step, Savage NuCor, Hartman
Medium Temperature = 150F-160F
Step 150 – discontinued
SpeedMount, Kool Tack, Gilman InSite
Low Temperature = 130F
Gilman MountCor, Mount Cor Canvas (permanent HA)
Reversible Boards = KoolTack Preserve, Bainbridge Restore = 150F-160F

V. When in Doubt ...Cold Mount

High Tack PSA with Rollers
New releases 2024
Available at Décor Moulding and International Moulding booths at WCAF Expo
Gilman Resilient® Mount - Soft Touch Board (available 50x87"@ 1/2", 3/4", 1")
HT PSA with immediate adhesion
Best with RL, especially for high gloss imagery
Gilman Resilient® ALIGN (available 50x87"@ 1/2" and 3/4")
Pressure-activated non-stick surface
Manual or RL activated, weighted to cure