

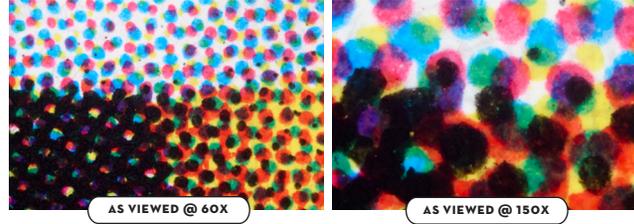
Process ID Chart: Digital Prints

ELECTROPHOTOGRAPHY, DRY TONER (1960–Present)



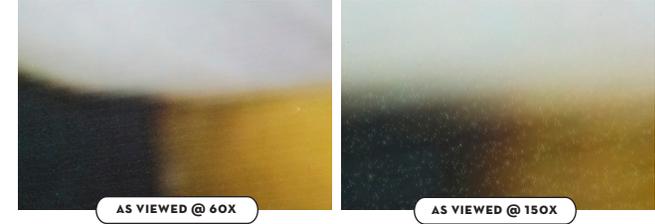
- Matte, semi-matte or glossy
- AM halftone pattern common
- Halftone dots made of dry toner particles
- Differential gloss

ELECTROPHOTOGRAPHY, LIQUID TONER (1993–Present)



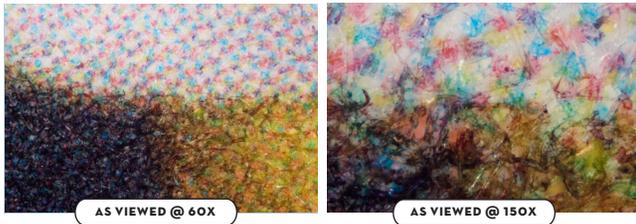
- Matte, semi-matte or glossy
- AM or FM halftone pattern
- Sharp-edge dots
- No squeeze-out
- Satellite droplets

DYE SUBLIMATION (1986–Present)



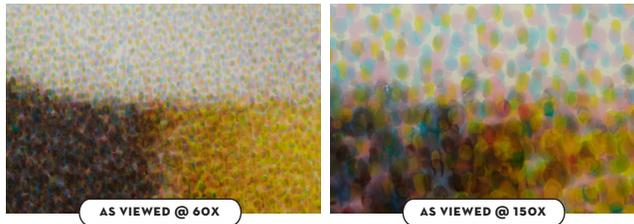
- Glossy
- Continuous-tone
- Parallel lines from heating element diodes
- Specks (anti-blocking agents)
- “Dropouts” caused by dust between media and ribbon may be visible
- Variation: dye sublimation transfer prints on aluminum

CONTINUOUS INKJET / IRIS / GICLÉE (1990–2000)



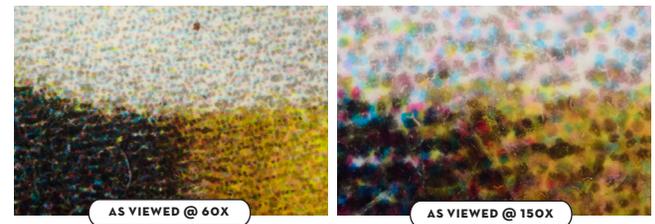
- Fine art paper or canvas supports
- Dye-based ink
- Water soluble dyes
- Very sensitive to ozone and humidity
- May be spray coated for protection

DROP-ON-DEMAND / MODERN INKJET, GLOSSY (2000–Present)



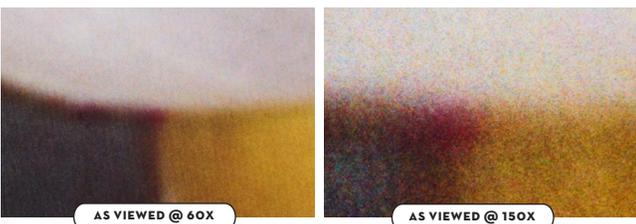
- Small, defined ink drops in an irregular “FM-like” pattern
- Differential gloss with pigment-based inks
- Colored bronzing from cyan dye in pigment-based inks
- Pigment-based prints prone to abrasion

DROP-ON-DEMAND / MODERN INKJET, MATTE (2000–Present)



- Ink drop pattern often loses definition on matte media
- Pigment-based prints prone to abrasion

DIGITALLY-EXPOSED DYE COUPLER (1990s–Present)



- Any dye coupler print surface
- Speckle pattern of dye clouds
- “Soft grid” of diffuse-edge lines from some exposure units
- Backprint may indicate “Digital” paper
- Difficult to distinguish from conventionally exposed prints

Pigment-Based Vs. Dye-Based Inkjet

Under specular light with the naked eye, **glossy inkjet** prints may display **differential gloss** and/or **colored bronzing**. The presence of either suggests a pigment-based ink. These visual effects result from the presence of pigments on the surface of the image layer, in contrast dye-based inks are absorbed **into** the image layer. Colored bronzing appears as a metallic reddish reflection, particularly in cyan image areas. The absence of differential gloss and colored bronzing cannot be used to rule out pigment-based ink in part because surface coatings can be applied to conceal these effects.

Colored Bronzing



Specular Light

Differential Gloss



Specular Light