



THE FINAL WORD IN BLACK & WHITE

THE BLACK AND WHITE PAPERS

PERMANENCE OF PHOTOGRAPHIC PRINT MATERIALS

INTRODUCTION

In a digital world understanding the permanence of photographic materials is of utmost importance to fine art photographers, conservators, and museum curators. Print production, handling, presentation methods and environmental factors all affect the lifespan of print materials. In order to assure the maximum permanence, photographers must aspire to the same archival standards as were once the norm when working from film-based capture and silver gelatin materials. Printing on the best materials and framing to archival standards or storage in the proper environment will ensure the best print longevity.

HISTORY OF FIBER BASE PRINTING

Peter Mawdsley invented fiber base printing materials in 1873 and by 1884, Eastman Kodak produced a coating machine, which brought the paper to a wider audience. With the advent of machine coating, a baryta clay base was used as an optical brightener for the highlight tones. This white pigment, also called barium sulfate, was coated underneath the sensitive silver emulsion to hide the fiber paper's texture and color and give a smoother, more continuous tone to the highlights in the photograph. Fiber paper was in greatest use until the 1960s when resin coated papers appeared on the market. However, those who prized print permanence continued to utilize fiber papers.



Fiber Base Paper Cross Section

Henry Wilhelm of Wilhelm Imaging Research states that "...the fiber-base black and white print, when reasonably well processed and washed—and especially if it's selenium toned—can be considered the high water mark of photography in terms of permanence."¹

With the inception of digital photography, fiber prints were thought to be an unlikelihood at best. Ilford Photo, recognizing the gap in the digital market, reformulated their traditional baryta paper base to accept tri-color laser exposure through digital printers. The traditional black and white silver gelatin paper base is exposed through digital means, and is then processed in traditional black and white chemistry. Since the paper is treated in traditional wet chemistries, it can be sepia or selenium toned to extend and ensure archival properties.

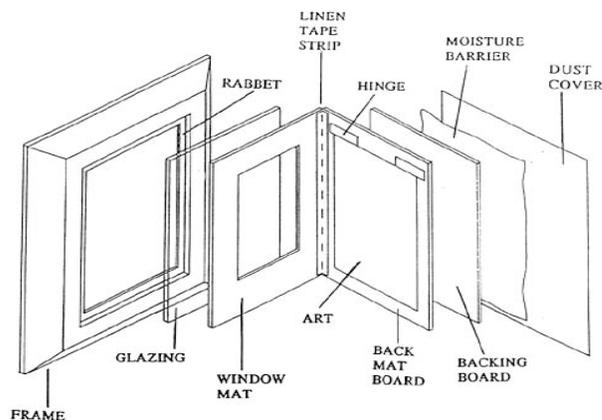
HISTORY OF GICLÉE PRINTING

¹ Paul Scranz, "An Interview with Henry Wilhelm of Wilhelm Imaging Research," *Photo Techniques*, January/February 2005

Giclée is a French term (meaning “fine spray”) coined by Jack Duganne in the early 1990s. It refers to the process of creating a fine art print by the action of spraying ink. Originally developed in 1989 and only available from the IRIS drum printer, Giclée prints are now accepted as high-end print reproductions that do not exhibit any digital signature such as patterns, dots, or banding caused by the ink spray. Noticing the fine quality Iris prints could provide, Graham Nash and Jon Cone developed museum quality, archival ink sets with wide color gamuts and intense tonal values. When printed with proper paper, inks, and computer software, an artist can create continuous tone prints with over 65,000 tonalities. The most archival Giclée prints use completely archival art papers and carbon or pigment inks that have been tested and rated through independent permanence testing facilities such as Wilhelm Imaging Research or the Image Permanence Institute.

PERMANENCE FACTORS FOR A FINISHED PRINT

Why is permanence such an important attribute and how can it be maintained? Photographic images are viewed not only as art but also as historical documents and organizations such as the National Register of Historic Places (NR-NHL) and the Library of Congress require prints meet archival standards. Permanence or archival standards are a must for fine artists, conservators and museum curators alike. Print permanence is established through proper printing techniques, neutral pH materials, and proper environmental display or storage. All materials coming into contact with the print must be neutral pH. The Library of Congress provides a diagram for Preservation Matting and Framing of Archival Materials.²



**MATting AND FRAMING
PACKAGE**

Under optimal storage or display conditions, fiber base prints and properly handled Giclée prints have a projected lifespan of 200 years without print fading or degradation. Resin coated (RC) prints have a lifespan of 70 years. To display these prints archivally, Hang out of direct sunlight and away from direct heat sources with museum quality framing. If stored archivally then a print should be kept in a cool, dark environment under 70°F and 70% humidity.

² “Guide to Preservation Matting and Framing,” Library of Congress < <http://www.loc.gov/preserv/care/mat.html>>