

“FILL YOUR PAPER WITH THE BREATHINGS OF YOUR HEART.” – WILLIAM WORDSWORTH

**HYATT'S**  
All Things Creative™

# PAPER SELECTOR

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## WHAT IS PAPER?

From the first papyrus used by Egyptians, paper has had a wide and varied history. The middle ages replaced papyrus with vellum and parchment and then paper made of linen fibres replaced it in the 13th century. The best papers are those made from linen and cotton rags. The rags are boiled, shredded and beaten into fibres to make a smooth, flowing pulp. It is run over a fine screen in a thin layer, dried, and then pressed. The best papers employ no chemicals whatsoever except for calcium carbonate which leaves a harmless residue in the paper. No fine art papers should contain bleach. Early papers were bleached by sun and air. The Chinese, Koreans, and later the Japanese, used mulberry bark to make paper to meet the meticulous requirements of their artists.

## PAPER SURFACES

Papers are made uniformly flat by passing it through a press. Artist's papers are sold in many finishes. Cold Pressed (CP) and Not-Pressed (NP) have an open or coarse texture and are used for watercolor painting. Some of the heavier grades are also available in Rough (R), which has a still coarser grain. Hot Pressed (HP) is not so well suited for watercolor but is perfect for technical drawings, pen and ink, pencil and opaque painting techniques due to its smooth surface. Bristol, actually a heavy multi-ply paper, was first made in the city of Bristol, England. It is available in a vellum or "high" surface as well as a "plate" or smooth finish. The better bristol is 100% cotton rag.

## 100% COTTON RAG

Cotton is naturally acid free and therefore will not break down like wood pulp papers. Wood pulp papers are cheaper to make as they are made from chemically treated wood that has been mashed, bleached and rolled out. Newsprint is an example of wood pulp paper. It will, over time, turn yellow or brown, become brittle and decay rather quickly. The reason for this quick decay is acid. Acidic papers and boards are bad for artwork because they can impart acid to the artwork turning it brown and accelerating its decay.

## PH NEUTRAL VS. ACID-FREE

These terms are used too freely in the world of art paper. Many people think they mean the same thing but

they do not. pH neutral means that a paper has been made less acidic or "neutralized" by the chemical addition of calcium or some other base to reduce its pH rating to neutral. Acid Free means exactly that - the paper never had acids to begin with so no chemicals are needed. Cotton paper is a prime example. Some paper companies call their papers acid free when the acids or lignins have been removed by chemical processes but these are more like a neutralized paper. Use cotton rag when archival quality is important. It is the best for conservation quality framing or important prints or drawings.

## WEIGHTS

Paper and board weights or thicknesses are described in an array of sometimes confusing and contradicting terms. Most papers of American or British manufacture are rated in pounds. Watercolor paper, for example, is available in 90, 140 and 300 lb. with 300lb. being the thickest. Sometimes a paper with the same pound rating can have a different thickness as pound ratings are derived from the total weight of so many sheets of a certain size - as is the European system of grams per square meter ( $g/m^2$ ) - and not the thickness of the paper. Point or ply is another rating used in the manufacturer of board or heavier multi-ply papers that are sandwiched into thicker boards. 60 pt. for instance is usually .060" thick. 2 ply is usually about 1/2 the thickness of 4 ply. Synthetic drawing surfaces, such as drafting film or Mylar™, are rated in "mils" which translates to thousands of an inch. 3 mil matte 2 side Mylar™ for example would be .003" thick and would be draftable on both the front and back. Mylar™, by the way, is the Dupont trade name for polyester film and is the same material as Duralar and Hyprint films.

## VELLUM & PARCHMENT

While today's drafting rag papers and cold press bristol boards use the term "vellum", real vellum is made from animal skins which are soaked and scraped until pliable and smooth. Parchment in the classic sense is a coarser version of real vellum.

## TYPES OF PAPERS

Between the art, commercial and printing industries there are literally millions of types of paper and boards for artists to choose from.

Watercolor papers are sized with a gelatin size to control the spread of color or ink. Printmaking papers are semi-absorbent to allow ink to penetrate but not wick away to keep printed images sharp. Bristol boards and illustration boards come in various finishes corresponding to their use. Cold Press for watercolor or multi-media and Hot Press for technical drawing. Hard surfaces such as bristol plate or drafting vellum and films, keep the ink floating on the surface which allows for easier correction. Decorative papers come in thousands of colors, sizes and finishes. They are made in many small villages in Asia, India, Japan, Italy and Africa. Hyatt's carries hundreds of these papers which are used for all types of art and craft projects from lamp shades to bookmaking and collage. Mat boards are used for mounting or matting artwork. They are available in three grades: Regular, RagMat and Museum quality. Regular is a deacidified wood pulp board while RagMat and Museum have a pure 100% cotton core which is naturally acid free. RagMat applies a colored paper surface for a wide array of color choices. Museum is a solid color all the way through with no paper surface. All artwork of value should be matted and framed using RagMat or Museum boards.

## GLOSSARY OF TERMS

**Acid free:** Paper that is free from any acid content or other substances likely to have a detrimental effect on the paper or its ability to last overtime (see pH).

**Alkaline:** Alkaline means "base." Anything that is alkaline has a pH over 7.0, and is considered to be free of acids.  
**Archival:** Paper that is not only acid free but also lignin and sulfur free. Most commonly used to repair and restore historic documents, the paper must be long lasting without causing deterioration to itself or other materials it may come in contact with.

**Batik:** A method of treating fabric or paper with wax before dyeing, so the treated area does not pick up color.  
**Bagasse:** The fiber left over after extracting sugar from sugarcane.

**Bamboo:** A grass yielding a fiber used for papermaking.

**Basis Weight:** The weight in pounds of a ream of paper. Its metric counterpart is grammage, where mass per unit area is expressed in units of grams per square meter ( $g/m^2$ ).

**Bleach:** A chlorine solution used to whiten pulp in papermaking.

**Bonding Strength:** The strength of paper or board to withstand layer to layer separation. It is the force with which a coating or film adheres to the surface of a sheet.

**Bristol:** A stiff, heavy paper whose caliper ranges upwards from 0.006”.

**Caliper (Thickness):** The average thickness of a single sheet as determined by measuring the thickness of different sheets and averaging the results.

**Cast Coated Paper:** A paper with high gloss in which the coating has been allowed to harden or set while in contact with a mirror like polished chrome surface.

**Chain Lines:** In a sheet of paper, the lines that run perpendicular to the laid lines. In a paper making mould laid wires are woven together by very thin wire or silk threads; these threads form watermark lines, called chain lines, in the newly formed sheet.

**Chemical Pulp:** Pulp obtained by cooking the fiber source such as wood with solutions of various chemicals.

**Chin Colle:** A paper collage process in which sheets of paper are laminated together by the pressure of the etching press and glue. This process allows for layers of colored areas to be achieved without having to use separate plates.

**Chin:** A Japanese term for mulberry bark, commonly used to refer to any paper with inclusions of mulberry bark.

**Coated Paper:** Any paper that has been coated with pigment and its binder with a coat weight of 7.5 g/m<sup>2</sup> or higher.

**Cockle (Crinkle):** The formation of ripples, bulges, or warped spots out of the plane of the sheet caused by uneven moisture, tension during drying.

**Corrugated Board:** A composite paper product made by adhering Linerboard to both sides of a web of corrugated medium on a Corrugator.

**Cotton:** One of the most commonly used plant fibers in the making of western papers. Also called “rag” or linters. Cotton is the purest form of cellulose produced in nature and it requires the least amount of processing before it can be used.

**Cover Paper:** A general term applied to a great variety of papers used for outside covers of catalogues, brochures, booklets, and similar pieces.

**Deckle:** The wooden frame that rests on top of a mould and defines the edge of a sheet during hand paper making.

**Deckle Edges:** The feathered edges of a sheet caused by the pulp thinning towards the edge of the deckle frame.

**Die Cut:** A cut made with a special punching blade instead of with a conventional rotary knife.

**Embossed Finish:** Paper with a raised or depressed surface resembling wood, cloth, leather, or other pattern.

**Esparto:** A tough, wiry grass without cultivation in the semi arid parts of Spain and North Africa. This fiber produces paper that is smooth and soft.

**Finish:** The finish of a sheet of paper denotes the condition of its surface. A high finish refers to a smooth, hard, surface. A low finish refers to a relatively rough, toothy surface.

**Free (Wood Free):** Description for pulp or paper that contains nil or minimal mechanical wood pulp.

**g/m<sup>2</sup>:** Paper weight can be measured in variety of ways. The most accurate, and most common for decorative papers, is in “grammage”, whereby the weight measured in g/m<sup>2</sup> refers to the weight in grams of exactly one square meter of paper. One gram is equal to .0022 pounds.

**Grammage:** The mass of a unit area of paper or board determined by the standard method of test: it is expressed in g/m<sup>2</sup>.

**Hemp:** An older name for abaca, manila hemp is related to the banana plant; its leaf fiber is often used in paper making. Not to be confused with true hemp cannabis sativa, or marijuana plant.

**Ink Jet Printing:** Printing process of an image or text by small ink particles projected onto the paper surface.

**Kozo:** A long, rough fiber from the mulberry tree that produces strong absorbent sheets of paper; the most common fiber used in Japanese papermaking.

**Kraft Paper:** Paper made substantially from any kind of sulphate (Kraft) pulp.

**Laid Paper:** Paper with a prominent pattern of ribbed lines in the finished sheet. It is customary for the laid lines to run across the width and the chain lines to run from head to foot. The mould used to make laid paper has numerous narrowly spaced laid wires that are woven together by very thin wires or threads called chain lines.

**Letterpress:** The process of printing from a plate that has a raised ink surface.

**Lightweight Paper:** Papers having a grammage (basis weight) normally less than 40g/m<sup>2</sup>.

**Lignin:** The primary noncarbohydrate constituent found in wood; a polymer that functions as a natural binder.

**Linters:** The short fibers that cling to cotton seed after the first ginning. These cotton fibers are too short for spinning or clothmaking, but are useful in making paper pulp.

**Machine made:** Paper that is produced on a rapidly moving machine which forms, dries, sizes, and presses the sheet. This process forms an extremely uniform sheet.

**Matte:** Dull finish of coated paper. The coating is a special formulation and there is little, if any, calendaring.

**Mechanical Pulp:** Pulp, which has been prepared from wood primarily by mechanical, rather than chemical, means of separating fibers or fiber agglomerates from each

other.

**Mould:** A flat screen with wire mesh onto which the deckle is placed during hand papermaking.

**Mould Made:** A sheet of paper that simulates the look of handmade paper but is actually made by a machine called a cylinder mould.

**Paper:** A name for a range of fibrous materials in the form of a coherent sheet or web used for writing, printing, wrapping, packaging, decorating, etc.

**pH (potential of H(hydrogen)):** In lay terms, the measure of availability of free hydrogen ions representing the balance between the acid and alkaline components of a material. 7 pH (pH neutral) represents a balance between acid and alkaline components; 0 pH is very acidic; 14 pH is very alkaline. (see acid free)

**Rag Content:** The percentage of cotton fiber in a paper, normally 25% or more.

**Rice Paper:** A common misnomer applied to Asian papers. Rice rarely plays a part in the manufacture of papers in Asia. Most ‘rice’ papers are made from mulberry fibre.

**Salago:** A wild shrub native to the Philippines which is harvested in a manner very similar to mulberry. Limbs are trimmed, the bark is stripped off and the inner fiber of the branch is boiled and beaten to make it less absorbent.

**Su:** A flexible bamboo or reed screen used in Japanese papermaking.

**Tissue Paper:** Thin, soft paper made from strong cellulose fibrous materials and of a substance usually between 12 and 25 gsm.

**Unryu:** Meaning “cloud dragon paper” in Japanese, unryu is characteristic of paper containing strands of fiber that are added to the sheet to create contrast and texture.

**Vellum Finish:** A toothy finish, which is relatively absorbent for fast ink penetration.

**Washi:** From the Japanese wa, meaning “Japan,” and shi, meaning “paper,” washi refers to any Japanese paper, traditionally made or otherwise.

**Watermark:** Localized modification of the formation and opacity of a sheet of paper while it is still quite wet, so that a pattern, design, or word group can be seen in the dried sheet when held up to the light.

**Wove Paper:** A type of paper with a smooth, even surface made using a mould with a fine wire mesh.

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