



Advice for Framing Art, Documents, Letters, Photographs and Other Paper Items.

The method used in framing a piece of paper, whether a letter, document, work of art or photograph, can have a significant effect on the preservation of that item. Several important choices must be made that will effect its longevity. These include the type and quality of materials used to mat and back the item, the technique used to mount it to the backboard and the frame and glazing. Let's take a look at each of these.

MATTING MATERIALS

The materials used to mat paper for framing have a definite influence on the condition of that paper in the future. Poor quality mat board contains harmful substances and should be avoided; these substances lead to the formation of acids that damage paper. If one looks at the bevel or cut edge of the opening or window in a mat and it is no longer white, but tan, beige or brown, this is a good indication that the board is acidic. Acidic board will damage the paper it touches, accelerating the item's deterioration by increasing weakening of the paper fibers, brittleness and making it yellow. A stain often referred to as a "mat burn" may form on the item at the edge of the window. This damage is caused by components in the board combining with humidity in air, creating acid that degrades paper.

The terms acid-free and archival are often used to indicate board that is safe for matting, but these terms can be misleading. For optimal preservation, the board used to make a window mat and mount backboard should be free of acid and lignin. This means that the board has been manufactured to have a pH of at least 7. Some boards are manufactured to have an alkaline reserve, or buffering agent, often 2-3% calcium, and have a pH of about 8.5. The purpose of this buffer is to neutralize acids that may develop over time.

There is a misconception that rag board (originally made from cotton rags but now often made of new cotton fibers) is always acid-free. This is usually, but **not necessarily**, the case. If rag board has been made with an alum rosin sizing, then the board will become acidic. Boards made from chemical wood pulp contain lignin, a naturally occurring substance in wood. This turns brown and acidic over time and must be removed during manufacture to meet preservation

standards. There are boards made from wood pulp from which lignin and other damaging substances have been removed. These are often called conservation or museum board. Only board made of cotton or wood pulp that has a pH of at least 7, with the lignin removed, and using a sizing that will not become acidic, will be acid-free.

MOUNTING

Whereas the materials used in mounting are important, the first decision to make when mounting paper to a support or mount is whether the attachment of the item will be an adhesive or non-adhesive method. The issues to consider are: use of water on the item; the reversibility of the adhesive; and whether or not the adhesive will damage the item over time.

A number of adhesive materials have been used for attaching an item to the mount backboard: masking tape, transparent tape, cotton and linen tape, heat-mount tissue, glue, mucilage, hide glue and rubber cement, to name a few. Many of these are damaging. Self-adhesive tapes, heat-mount tissue, and glues have shown over time to have harmful effects on framed items. The damage can take several forms, including stains, yellowing, embrittlement, translucency in the area of the tape or adhesive, creases, cockling, and even tears.

An alternative to this permanent mount is a non-adhesive method. This employs folded corners and/or strips made of polyester or paper. The corners are attached to the backboard and the item is slipped into the corners. This is the same technique that is popular for photo albums and scrapbooks. Corners of suitable quality and in a variety of sizes are available at many art supply stores, do-it-yourself frame shops and the History Center gift store. Also available are pre-made strips of polyester that attach to the mount backboard and place a narrow strip of stiff polyester film over the edge of the item. These strips are often useful for large or flimsy items for which four corners may not be sufficient.

If an item is to be permanently attached with adhesives to the mount backboard, the recommended method is to use Japanese tissue and starch paste or methyl cellulose. If an item is to be float mounted, that is with all edges of the item visible in the window mat, hinging is the only safe method. Directions for doing this are available through the Conservation Outreach Program at the Minnesota Historical Society.

FRAME AND GLAZING

Now consider the frame itself and the glazing. Most importantly, do not allow the item to touch the glass. If moisture penetrates the frame or if condensation occurs, the framed item may get damp and become adhered to the glass. In most cases when this happens damage will occur. This is a problem that is easily avoided. If there is a window mat, the mat will create a space between the item

and the glass. If there is not a mat, you can put a spacer in the rabbet of the frame to create a space so the paper or photo is not in contact with the glazing. This can either be strips of acid-free mat board or one of the commercially available, purpose-made frame spacers made of polypropylene or polyethylene.

There are several considerations in deciding whether to glaze your framed item with glass or acrylic. Firstly, you should never use acrylic to glaze charcoals, pastels or items with other types of powdery media. This is due to the fact that an acrylic sheet develops a static charge that can lift powdery media off the paper and onto the inner surface of the acrylic glazing. Glass and acrylic have both advantages and disadvantages that are summarized in the table below.

	Usable with charcoals, pastels, and other powdery media?	Scratch resistant?	Weight?	Breakable?	UV filtering?
Acrylic	No	Special kinds available	Light	No	Special kinds available
Glass	Yes	Yes	Large sizes are heavy	Yes	Special kinds available but very expensive

BACKING BOARD AND DUST COVER

A backing board is a rigid board that goes behind the matted item and holds it firmly into the frame. It should be at least 4-ply in thickness and acid-free. If the piece is small enough, an acid-free foam board can be used, although large pieces of thin foam board (up to ¼ inch) are not very stiff. Glass or framer's points or small brads hold the backing board in place in wood frames. Metal frames come equipped with special springs for this purpose. It is recommended that a paper dust cover be installed on the back of the frame. The dust cover provides a barrier to insects and dust and is one more layer of protection for your art or other treasured item.

PLACEMENT

The light exposure in the place where your framed item is hung will also influence how long the item lasts, even with the best of framing methods. Light deteriorates paper. The more light, the greater the damage, and this damage is cumulative over the life of the object. The symptoms include fading, darkening, yellowing and other changes in color, and embrittlement. Ultraviolet light is especially damaging, and is unnecessary for visibility, so it should be eliminated as

completely as possible. The point here is to use light judiciously; avoid direct sunlight and fluorescent light, and keep all light as low as practical.

In conclusion, if you use safe materials and good techniques, handle your items carefully, and do not use more light than is necessary, your item will last a long time. If you have questions, contact the Conservation Outreach Program at the Minnesota Historical Society for advice. Program staff can be reached by phone at 651/297-1867, 1-800-657-3773, FAX at 651/296-9961 or e-mail at conservationhelp@mnhs.org.

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Glossary

**Glossary terms provided
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Acid-free: A popular and loosely applied term referring to matting, framing, and storage materials having at the time of their manufacture a neutral pH; sometimes used inaccurately as a synonym for alkaline or buffered.

Alkaline: Characterized by having a pH of more than 7.0

Alkaline reserve: The amount of alkaline precipitates which forms in deacidified paper upon exposure to air. A reserve of two to three percent of precipitates is considered a reasonable level for permanence. 2. In accordance with ANSI Z39.48-1984, the compound, typically calcium carbonate, in mat board and other paper-based storage materials, deliberately introduced in order to impede acid degradation, by acting as a buffer to maintain a pH greater than 7.0. A 3% reserve is generally recommended.

Archival: (Archivally Sound) A non-technical qualitative term that describes a material or product that is permanent, durable, or chemically stable, and can therefore be safely used for preservation purposes; more accurately describes documents or records deemed significant and worthy of preservation.

Backboard: (Back Mat or Bottom Mat) The mat in direct contact with the verso (back) of the artwork and to which the artwork is typically attached.

Backing Board: The stiff foam board, corrugated paper or plastic board inserted into the frame to protect its contents from physical and atmospheric damage.

Buffering agent: (Buffer) In chemistry, a solution or material which contains both a weak acid and its conjugate weak base such that the addition of other acid or alkali causes only slight changes in the pH; also, the alkaline reserve contained in paper based materials in order to counteract acids that may form in the future.

Cockling: (Waving, Buckling, Warping, Curling, Undulation, Gondolage) Localized deformation or a repeating and regular pattern of deformation in paper, usually across the sheet or around the edges due to irregular drying or

fluctuating relative humidity. Cockling is sometimes considered to be more closely and regularly spaced than buckling.

Glazing: The glass or acrylic sheet used in a frame as a protective interface between the environment and the work of art.

Japanese tissue: (Japanese Paper) Hand- or machine-made bast fiber paper, typically made in Japan, used in conservation because of its strength, suppleness, and stability; in printmaking because of its softness, absorbency, and dimensional stability. It is often erroneously called "rice paper" or "mulberry paper."

Methyl cellulose: A chemically modified cellulose ether which has many uses in conservation as an adhesive, poultice, and sizing agent.

Polyethylene: A translucent thermoplastic material prepared by polymerizing ethylene at high pressure and temperature in the presence of oxygen. In sheet form it is used for lamination of documents in lieu of cellulose acetate or for encapsulation. It can also be used as a hot-melt adhesive or made into foams.

Polypropylene: A stiff, heat-resistant, chemically stable plastic. Common uses include storage enclosures.

Sizing: (Size) A substance that inhibits the penetration of water into the internal structure of paper and therefore decreases the swelling of the paper fibers in response to moisture. Sizing affects the stiffness, strength, smoothness, and weight of the paper, as well as its aging characteristics. Sizing agents include rosin, gelatin, animal and synthetic glues, starch, cellulose ethers, synthetic resins. 2. Chemicals added to paper and board that make it less absorbent so that inks applied will not bleed. Acidic sizing can be harmful and can cause paper to deteriorate.

Verso: (Reverse) The back or opposite side of a sheet on which appears an image or printed text, usually characterized by having no image or printed text or one deemed to be of lesser importance. Also called the reverse. The left hand side of an open Western codex.