

Backing

The backing may be the least visible part of a piece of matted or framed artwork, but that makes it no less important than any of the other elements. As with the mat, care should be taken to avoid acidic or otherwise potentially harmful materials—for instance, corrugated cardboard. Mat-board or comparably good-quality chipboard may be used, but perhaps the best material is Foamcore. It is lightweight, stiff, and available in a variety of thicknesses (and colors), making it easy to fit the assembly to a given frame's rabbet.

In some cases the art may be *mounted* on (attached to) the backing rather than hinged to the mat as described above. Mounting can remove or prevent sags and distortion, but may destroy future collector value unless the artist purposely mounted the art before releasing it. There is some debate over the legitimacy of mounting under various circumstances.

The artist may choose to mount the art in order to achieve a *float*, in which the opening of the mat is larger than the artwork, allowing some of the backing to show through. The width of the visible backing is called the float margin. With the right art, backing, and mat, floating can be a very effective form of presentation. However, mounting and floating can be tricky to execute successfully and are not recommended for the beginning framer.

Horrors and Travesties

So far, discussion has centered mostly on what materials and procedures should be used when matting and framing. Equally important, though, is what *shouldn't* be used. Below is a sampling of misguided decisions encountered in mats and frames over the years at convention art shows and in the fine art community.

None of these materials are archival, and many contain chemicals that eventually can damage the artwork. Even if they are relatively innocuous in themselves, improper use can create a mat that is impossible for a later owner to remove without damaging the art, or that makes it impossible for the artwork to “breathe”, expanding or contracting with changes in humidity or temperature.

Artwork has been wrapped in Saran Wrap. Mats have been glued to backings with all sorts of household glues, hot glue, epoxy resin, and even Superglue. Art has been mounted—sometimes to the backing rather than the mat, and sometimes on all four sides rather than just the top—using duct tape, gummed paper tape, clear paper tape, and staples. Backings have been made of corrugated cardboard, poster board, and mat board with the colored side toward the artwork. Hangers have been strung with fishing line and string.

Useful tools

Listed below are items that are handy or indispensable for matting and framing artwork, but have not been mentioned already.

For mats and metal or wood frames

- Tape measure (make sure it's accurate!)
- Flat-head screwdriver of appropriate size, for tightening mounting assemblies in metal frame or bending glazing points
- Mat cutter (Logan brand is best)
- Xacto knife and an adequate supply of #11 blades
- Utility knife and blades
- Cutting surface bigger than mats or backings being cut (self-healing is best; triple-thick chipboard or Davey board is next best)
- Straight-edge for marking and cutting straight lines (stainless steel is best, as it is less likely to be shaved by the blade)
- Pencil for marking where to cut

For wood frames only

- Philips-head screwdriver of appropriate size, to screw hangers to frame
- Heavy wood awl to create starting holes for hanger screws
- Butcher paper for dust jackets
- Glazing points and a glazing-point hand driver or gun, for holding assembly in frame rabbet

Optional

- T-square for marking and cutting straight lines and right angles (stainless steel is best, as it is less likely to be shaved by the blade)
- Notepad for calculations and sketches of unusual mat cuts
- Drafting brush for clearing away dust, chips, splinters, and other debris
- Small cotton swab on a long thin stick, for picking dust off inside of glazing after assembly
- Xacto dust jacket knife (yes, this is a specialized tool)

Matting and Framing 101

Written by Dave Bryant from notes compiled by Baron Engel and Christina “Smudge” Hanson.

How a piece of artwork is displayed is very important. Proper presentation will preserve that artwork for many years, maintaining or even enhancing its aesthetic and monetary value. Indifferent or poor presentation can damage or destroy the art over the long term, through fading, leaching, mold, or other environmental hazards.

Good presentation is as critical to the artist as to the collector. It speaks of pride in craftsmanship and attention to detail, and it may increase the art's value in the eyes of potential buyers. On the other hand, providing a mat or frame that damages the artwork will damage the artist's reputation as well. Remember, the artist's responsibility for a piece of art does not end with the sale.

This brief, and the panel to which it pertains, is intended to cover only the basics of matting and framing artwork. Even so, these terms and techniques will suffice for most situations.

The basic elements of a framing project

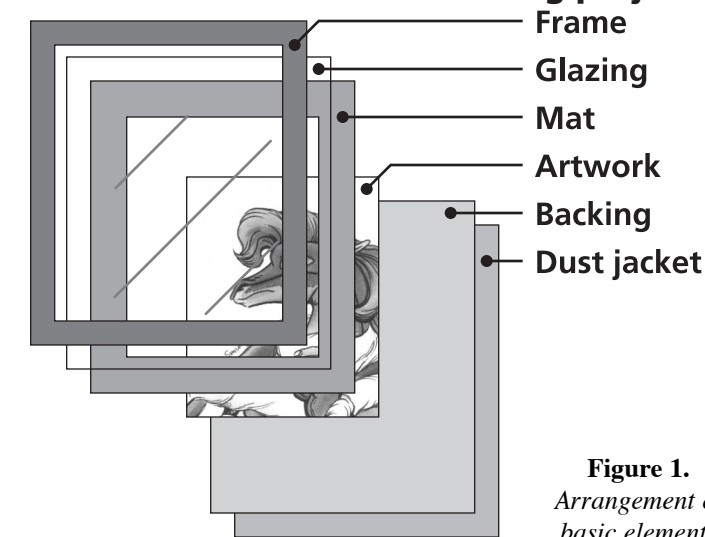


Figure 1.
Arrangement of basic elements

The *frame* is a structure, almost always of wood or metal, that contains, supports, and protects the artwork and the other elements listed below, and usually provides a decorative accent.

The *glazing* is a sheet of transparent material placed within the frame and in front of the artwork, to protect the latter from dust, bugs, and other sources of contamination.

The *mat* is colored pasteboard, sometimes covered with a fabric or other textured material, that is cut to surround a work of art, providing stiffening, protection, and a decorative accent. It also prevents the artwork from touching the glazing.

The *backing* is a sheet of mat-board or Foamcore placed behind the artwork and its associated mat to provide stiffening and protection.

The *dust jacket* (used only on a wood frame) is a sheet of butcher paper glued to the back of the frame to keep out dust, bugs, and other sources of contamination.

More detail on each of these elements can be found in the following sections.

Frame

Whether it is wood or metal, the frame should be large and robust enough for the weight of the glazing, mat, artwork, and backing, without being so large as to call attention away from the art. It should complement the artwork and its matting, adding a finishing touch without being obtrusive. This does not eliminate elaborate frames from consideration—but such a frame should be appropriate to the piece.

An important and easily overlooked consideration when choosing a frame is the *rabbet*. This is the width and depth inside the frame that fits over the glazing, mat, artwork, and backing. Since the rabbet is the actual surface that touches the rest of the assembly, it is very important that it be large enough for everything else to fit within it properly. The cross-section of the frame itself is called the *molding*.

If the frame is assembled improperly, its rabbet is not deep enough to contain all the elements placed in it, or (for a wood frame) has a molding too small for all that weight, it may eventually *blow out*. The bottom length of the frame sags greatly or even separates and falls off, causing the uncontrolled descent of glazing, mat, artwork, and backing to the floor, with predictable and disastrous results.

Hanging

The best method to prepare a piece of framed artwork for hanging is to attach a *single-screw strap hanger*—also called a “D ring”—or a *Clarke screw hanger* to each vertical side of the frame, above the middle but well down from the top, and string *picture wire* from one hanger to the other. (Nylon-coated wire is less likely to rip chunks out of one's fingers than uncoated wire.)

Use a wire cutter to cut the picture wire to the proper length. Don't forget to include enough length to string the wire through the hangers and wind it together to secure it. The “sawtooth” hangers included with most prefabricated frames are all but worthless and should be discarded, unless the piece and the budget are both small.

Bumpers, usually made of felt or rubber, are attached to the back of a large and heavy frame, at the bottom corners. They provide a cushion between the frame and the wall and help the frame to hang flat against the wall.

For the actual hanging, *picture hooks* are best. A small or light piece may need only one, but a larger or heavier piece will require two or more. Due care is needed to make sure the hooks are level and properly spaced. Hooks that are too close together or too far apart, or at different heights, will not distribute evenly the weight bearing on them from the picture wire.

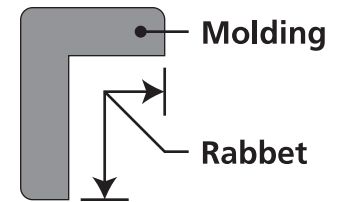


Figure 2.
Cross-section of frame

Cut out or copy the crib sheet below and keep it handy!

Standard U. S. mat and frame sizes (inches)	Fraction-to-decimal conversions
5 by 7	1/16 0.0625
8 by 10	1/18 0.125
8.5 by 11*	3/16 0.1875
9 by 12	1/4 0.25
11 by 14	5/16 0.3125
11 by 17	3/8 0.375
12 by 16	7/16 0.4375
14 by 18	1/2 0.5
16 by 20	9/16 0.5625
18 by 24	5/8 0.625
20 by 24	11/16 0.6875
22 by 28	3/4 0.75
20 by 30	13/16 0.8125
24 by 30	7/8 0.875
24 by 36	15/16 0.9375

* Often called “certificate” or “document” frames

Informative Web sites for the artist and framer

Daniel Smith:

<http://www.danielsmith.com/>

Light Impressions:

<http://www.lightimpressionsdirect.com/>

Crescent Paper Company:

<http://www.crescent-cardboard.com/>

Nielsen-Bainbridge:

<http://www.nielsen-bainbridge.com/>

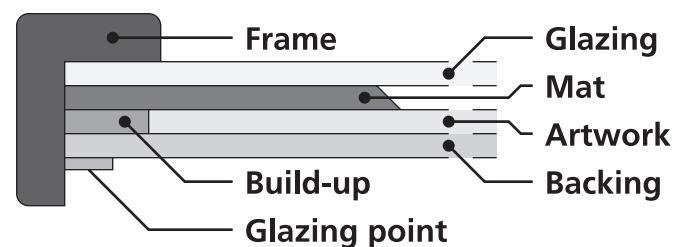


Figure 3. Cross-section of basic elements

Glazing

Two substances are used for long-term glazing: *glass* and transparent *acrylic*. Glass is cheap and scratch-resistant; however, it breaks easily and is quite heavy, and condensation can appear on the inner side when the humidity changes. Acrylic (usually sold under the trade name of Plexiglas) is lightweight, shatter-resistant, not prone to condensation, and provides modest protection from ultraviolet light, but is easily scratched and is more expensive than glass.

Glazing can be purchased in standard sizes; for custom sizes, have it cut by a professional. Do not try to cut it at home—it's too easy to cause injury and too difficult to get good results for the effort to be worthwhile.

Artwork may be shrink-wrapped by the seller to seal it temporarily from dust, bugs, and other contaminants. It is cheap and light, and can be applied to unframed art, but it is delicate and hard to apply to large items or pieces that are not stiff. It should be used for short-term storage only, as it definitely is not archival quality.

No matter what glazing is used—glass, acrylic, or shrink-wrap—it should not touch the artwork. The results of direct contact may include anything from simple smearing or transfer of image to chemical reactions that cause fading or discoloration.

When cleaning the glazing, use an anti-static cleaning and polishing solution such as Kleenmaster Brilliantize. An ordinary window cleaner will cause streaking, especially on acrylic, and may damage or remove special coatings of the sort discussed below.

Conservation glazing

Glass or acrylic treated in any of various ways to afford the artwork greater protection or visibility is called *conservation glazing*. The most common treatments are *non-glare*, *reflection control*, and *ultraviolet protection*.

Non-glare glazing is slightly frosted to reduce the reflection of light sources, which can create visual “hot spots” that obscure the view of part of the artwork. It is available alongside “regular” glazing from most retailers selling framing supplies.

Reflection-control glazing reduces the “mirror effect”—in which reflections of objects can create distracting or obscuring ghost images superimposed over the artwork—but does not itself obscure the artwork in any way. Needless to say, this can be expensive and usually must be ordered from specialty frame shops.

The intent of ultraviolet protection is to prevent the artwork from fading due to ultraviolet (UV) light exposure, usually by means of a thin coating on the surface of the glazing. This means it matters which side of the glazing is facing out. Incidentally, it is not only natural sunlight that includes UV light—fluorescent lamps also emit enough UV to damage artwork.

Matting

The most important function of a good mat is to keep the glazing separated from the surface of the artwork. Its other purpose is to set off the artwork, giving the whole assembly a crisp, finished look—but without calling attention to itself. An overly complex mat can overwhelm and detract from the artwork.

Still, though, there is room for variety in the selection and cutting of a mat. The most basic type is a single mat, which uses just one piece of matboard. This is best for art demanding a simple, dramatic presentation, or when budgets are tight. The most common type of mat, though, is the double mat, which uses two pieces of contrasting matboard, one on top of the other. (It is possible, of course, to use a triple mat, or even more, but this quickly gets expensive, complicated, and bulky.)

As with many other paper products, the thickness of a piece of mat-board is measured by the number of layers of material it incorporates, called the ply. The standard for mat-board is four-ply, but specialty rag mat-board may come in six-ply or eight-ply.

Cutting the mat opening

The opening is the hole through which the artwork is visible, and the width of the mat, from inner to outer edge, is the margin. Much of the time, the margin is the same on all four sides, but framing considerations or the composition of the artwork may require weighting, or making one side—almost always the bottom—wider than the others. In a double mat, the opening is cut larger for the upper layer (the outer mat) than for the lower layer (the inner mat) so that a small “border” of inner mat shows through. This is the inner mat margin, and is usually, but not always, a quarter of an inch.

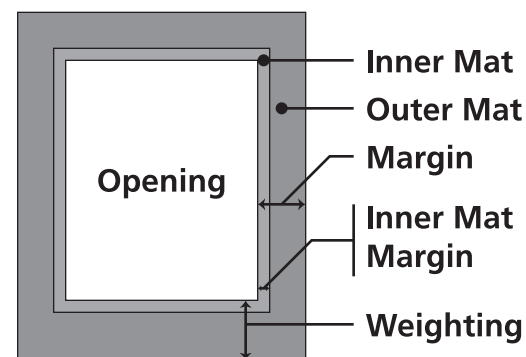


Figure 4. A typical double mat

The edges of the opening are nearly always cut with a forty-five-degree bevel, so that the core, or inner layers, of the mat-board shows through in a narrow strip. Most mat-board has a white core, but black core is also available, and some recently introduced specialty mat-boards have colored cores. Artwork done with pastels may be matted with a reverse bevel, so that particles of pastel that shake off the paper will fall down into the small groove created by this bevel rather than create unsightly streaks down the bottom of the matboard.

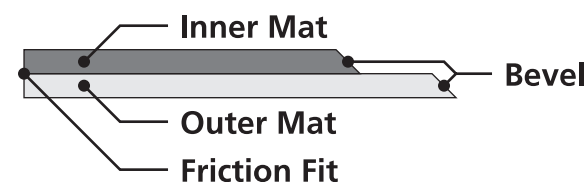


Figure 5. Cross-section of a friction-fit double mat

Be sure to use a sharp blade when cutting the mat (or the backing) and, if cutting a lot of mats, change the blade as necessary. A dull blade will rip the material, leaving the edge ragged and torn rather than crisp and well-defined. Also keep firmly in mind the old adage “measure twice, cut once.”

Mat integrity

For a double (or triple, or thicker) mat, another consideration is preventing the inner mat(s) from slipping. One method is to use a *friction fit*. In a friction fit, all the levels of mat-board have exactly the same outer dimensions, so that they stack perfectly, one on top of another. Unfortunately, we live in a less than perfect world, and friction fits are somewhat difficult and not always practical.

As long as the outer mat has the correct outer dimensions, it's possible to use double-sided adhesive to attach a slightly smaller inner mat to the back of the outer mat before cutting that mat's opening in turn. The *plug*—the piece of mat-board that is left over when the opening is cut—is retained in place to provide a cutting surface for the next mat-board.

Double-sided adhesives come in permanent and removable formulations. Specific products on the market include ATG by 3M, Studiotac by Nielsen-Bainbridge, Chartpak's Dry-Bond instant-tack adhesive used in the Dry-Bonder, and the Tombo Mono adhesive and dispenser. Ordinary double-sided adhesive tape is not archival and should be avoided, and even the products listed above should be used in moderation. A long strip down each vertical side of the mat usually is sufficient to provide an adequate bond.

Because the outside dimensions of the various pieces of mat-board may vary, a *build-up* may be necessary. This is essentially a set of shims that make the outside edge of the matting a consistent distance from the backing, preventing sagging, bowing, distortion, and shifting.

Attaching the artwork to the mat

Under most circumstances, the art should be attached to the back of the mat (not to the backing) with framer's tape, a single-sided acid-free or pH-neutral adhesive tape designed for the purpose. Because shifts in temperature or humidity can cause paper dimensions to change by as much as three percent, this attachment, or *hinge*, should be made only at the top of the artwork, allowing the art to swing freely before a backing is put in place.

There are two types of hinges, *standard* and *Japanese*. A standard hinge isn't much more than a couple of strips of framer's tape judiciously placed near the corners of the artwork. A Japanese hinge adds a narrow extra strip of tape at the top and bottom of each hinge, reinforcing the hold the tape has on the mat and on the artwork. It is required only for large and heavy artwork. Whatever hinge is used, be sure to smooth down the tape so that it follows the edge of the artwork, which improves the tape's hold on the material.

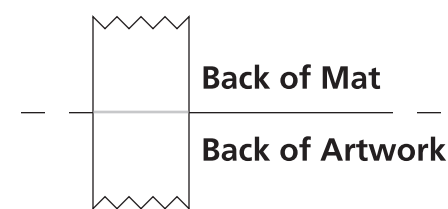


Figure 6. Standard hinge

Standard mat and frame sizes

It is best to cut (or buy) mats to match the standard sizes of frames sold by most retailers. (On the last page is a list of sizes standard in the U. S.) If that simply isn't possible and a custom mat size must be used, cut the mat to whole-inch dimensions. Don't, for instance, cut a mat to nine and a half inches by fourteen and three-quarters inches, or some equally outré measurements.

Why? Cutting mats to whole inches means the buyer at least can purchase the build-it-yourself frame sections (such as those manufactured by Nielsen) available in many art stores, which are sold in whole-inch lengths. Fractional-inch dimensions force the buyer either to discard the mat—no matter how exquisite it may be—and re-mat the piece, or to keep the odd-size mat and pony up big bucks for a custom framing job. Neither alternative will endear the artist to that buyer!

A pre-cut mat, such as one might buy in an art-supply store, generally has an opening of one standard size and outer dimensions of a larger standard size. For example, such a mat may have an opening of eight by ten inches and outer dimensions of eleven by fourteen inches. Be aware that the manufacturer may err on the conservative side and may cut the opening slightly smaller than the stated dimensions.

Buzz words

Certain terms have been worked to death by marketing departments eager to sell their companies' products to artists and framers. Most of the terms in question revolve around acidity, which is promoted as being the major culprit behind the deterioration of a paper product. While it is important, there are a host of other considerations as well, such as the paper's or art media's other inherent qualities, and exposure to environmental factors, including light, air pollution, bugs, and mold. Here are some brief explanations of some popular acidity-related buzz words.

An *acid-free* paper has a pH rating of at least six to seven and contains no free acid; a *pH-neutral* paper is made with any pulp that has a pH of six and a half to seven. A substance's pH number states its acidity or alkalinity and is defined by the hydrogen ion concentration of that substance in a water solution. The pH scale ranges from one through fourteen; values less than seven are acidic, and values greater than seven are alkaline.

An *archival* paper meets or exceeds the specifications established by an entity, usually a government or corporate authority, for the purposes of long-term storage.

A *lignin-free* paper is thought to be less susceptible to acid damage. Lignin, believed to contribute to the acidic breakdown of papers, is a complex polymeric substance that, along with cellulose, thickens and strengthens plant cell walls and forms the bulk of a plant's woody structure. Since it occurs naturally in plant material, it must be removed from paper pulp during the manufacturing process.

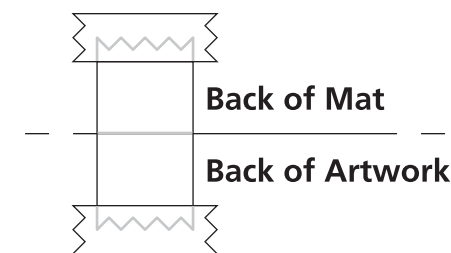


Figure 7. Japanese hinge