Matting & Displaying Your Artwork For An Art Show

By Glen Wooten

Why should you want to mat & mount your artwork? The 2 basic reasons are for protection, and to enhance it. It's really pretty simple...

In the dim, dark past of art shows, most people would hang their artwork in shows. **JUST** their artwork. Generally this was simply a bulldog clip grabbing the top of the paper the art was drawn on. This would allow the paper to curl, to slip out of the clip, to tear, to be generally man-handled...

And really, just how appealing is a (generally) white piece of paper against a (generally) medium-brown peg-board backing? Especially if it's curling...

Matting your artwork is really very easy to do. You can use pre-cut mats, or you can cut your own rather simply. If you use pre-cut mats, there's less work, but you're limited to the sizes you can find at your local store, as well as the colour selection they have. Cutting your own gives you the most flexibility, but requires an initial investment (which does not need to be that great. You can start out with basic equipment for $30, or go as high as a wall-mounted system for over $1000.) If you are going to cut a lot of mats, you want to spend a little more, and get quality equipment. If you use it a lot, the cost per mat will be much lower than buying them individually (and you'll get a higher quality product).

The first thing you have to consider when using **ANY** kind of mat is "is it archival?" That is, is it acid-free? Paper that's high in acid will start to turn colours over time, spoiling the image you've worked hard to make. In turn, if the matting material you use is high in acid, the acid will be transferred to your art, and the same thing will happen. Always look for acid-free materials, in the paper you use to draw on, the matting material you'll mount it on, the material you use to mount it to the mat, as well as the backing material you use. If one isn't acid-free, then it'll contaminate the others.

Any good art-supply store will carry acid-free matting material. You can also find either acid-free cardboard, or acid-free foamcore as a backing material (to make the completed product sturdy). For mounting it, you want to use acid-free mounting materials as well. These could be mounting corners that you put the artwork into, or acid-free tape.

NEVER use Scotch tape, masking tape, or package sealing tape. Scotch 811 (low tack - blue core) or drafting tape are not good, but are marginally acceptable - if it's **ONLY** temporary (but I'd never use them). And **NEVER EVER** use duct, gaffer's, or fabric tape (I've seen it happen - it will leave a sticky residue that you can never remove, which will be highly acidic. Where that tape was will be a stain within a few years - I guarantee it.) When in doubt, you can check the acid content of any material with an PH testing pen (available at an art store, or a printer's supply store).

You have all your materials - now what? Well, in the case of a pre-cut mat, just center the artwork as you like it in the opening, and either secure the mounting corners, or use a couple of small strips of framer's tape at the top. Do NOT tape it on all sides - you want the picture to be able to move just a bit. Otherwise, if it is placed in an area that has a different temperature or humidity than where you sealed it in, it will "buckle", and that won't look very good. As long as it's securely mounted so that it won't fall out, that's all you want.

What if it's not a pre-cut mat? Well, then you need to determine the outer size of the mat you want to use (and try to use a "standard" size, such as 9" x 12", or 11" x 14", or the like - making it 8.75" x 15.666" will drive whoever buys it crazy when they try to put it in a frame), and using a straight-cutter (or a sharp utility knife), just cut a piece of mat down to size (remember to cut an equivalent piece of backing material.) If you have gotten a large piece of mat to cut the section out of, keep an eye on how much is left - you can make one standard (32" x 40") piece of mat go a long way if you cut it "efficiently".

Then, determine the "window", or inner size of the mat. Just measure the picture area on your artwork, as well as any border area you want, and transfer that centered onto the back (NOT front) of your mat. Measure it again, and make sure that's what you've actually marked on the back (measure twice – cut once). Then, take your beveling tool (a mat cutter makes a 45 degree cut outward - that's why you cut the back), and working with a straight-edge (or however your equipment is configured) make an even cut from top to bottom on the line you've drawn, making sure to start & stop at the right points. Rotate 90 degrees, do it again - continue until you're done. Be sure to use a sharp blade, and a firm, steady pressure. Always cut just a little beyond the official start & stop points, so that the excess mat material will come away cleanly. Now, just mount it as above.

You've got the picture on the mat, and now you want to apply it to the backing material. One thing to examine here: if you are using pre-cut mats, check the backing. The mat itself is usually acid-free - the backing is generally chip-board - **NOT** acid free. If it's the sort of gray, uneven, speckled material most are sold with, toss it and get something acid-free. Will you be using foamcore? Expect to change blades often (foamcore dulls blades FAST – and a dull blade through foamcore rips, not cuts…)

If it's headed directly for a frame (and if it's in a frame, use Plexiglas – most art shows don't like standard glass in the show), or it will be tightly shrink-wrapped, you don't need to secure it to the matting. Otherwise, use a **SMALL** amount of double-stick tape at the corners to prevent the front from separating from the back. Frame shops generally use an adhesive tape gun (ATG), which is really nothing more than a fancy double-stick tape dispenser. Don't go overboard, use just enough to get the job done - you might have to open it back up again.

Now it's securely mounted. But what if something touches the artwork (a serious problem when using oil or pastels...) Encase it in something. You can either use a shrink-wrap machine (which many larger shops have), use tape-on shrink-wrapping material (which you tape tightly to the back, then tighten it with a hair dryer), or you can cover it with Mylar sheeting. This way, your picture is safe in transit, or at a show.

Mats come in so many colours - which one should I use? Well, if in doubt, you can always go with black. Basic black works with most everything (except of course extremely dark pictures - use white for that...) But if you have a choice, try to use a colour in your artwork to "set" the mood of the mat. Use a colour that a central point of your picture uses (such as the eyes, or something similar). You want to draw the viewer into the picture, and if the mat is the same colour as something you want them to see, their eyes will be drawn to that item. If you have a lot of one colour, you don't want that as a mat colour (it will wash out everything.) Use your judgment - what looks right? Or the reverse - what looks wrong - and you've now got fewer choices to make.

A few tips for hanging art: If you have many pieces that are matted in similar size, it's good to "stagger" the pictures, so that you don't have an unbroken row of artwork. If your eye will "slide" along the art, it could slide right off the panel to the next one - if you stagger every other piece (hang it an inch lower, etc...), then the eye has to stop and reset for each piece - and so you can be sure that the bidder is actually looking at the artwork.

If there are different colours of matting, don't group them by mat colour (a row of black, a row of blue, a row of white, etc...) - you want to make the eye stop on every piece, so make them contrast as much as possible.

A final trick if you are dealing with heads - if the face is looking left or right, try to position the pieces so that they look into your panel. If you have 6 pieces on the right side of your panel looking off to the right, and 6 on the left side looking off to the left, then all your pictures are more interested in what's going on on someone else's panels - make them look at your own stuff.

Once you've mastered doing your own mats, you can go on to trying fancy stuff, like circles, or ovals, or cutting designs in the mat itself. But you'll find that a good mat not only protects the artwork inside, it makes it look much better than it would just thumb tacked to the wall.

And if you'd like to go to the advanced class, please let me direct your attention to a VERY good article on taking care of your art:

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

Basic elements of a framing project

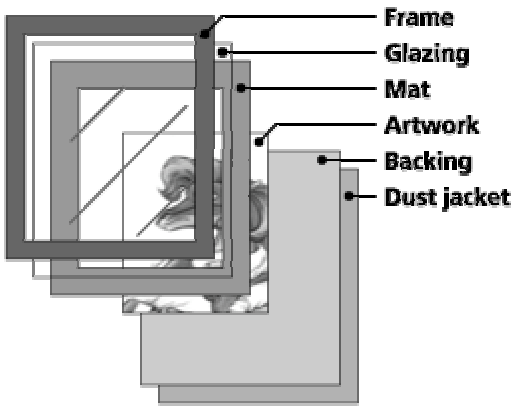


Figure 1. *Arrangement of basic elements*

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.

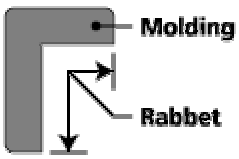


Figure 2. *Cross-section of frame*

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.

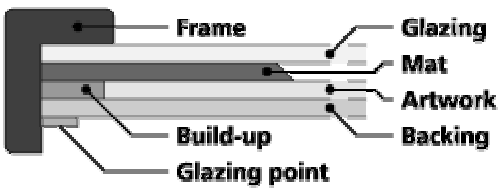


Figure 3. *Cross-section of basic elements*

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 Brillianize. 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.

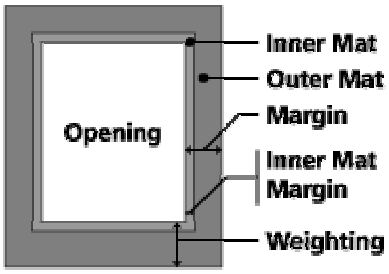


Figure 4. *A typical double mat*

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*

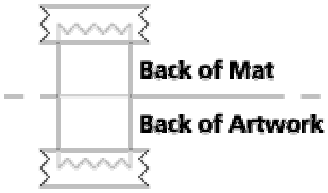


Figure 7. *Japanese hinge*

Standard mat and frame sizes

It is best to cut (or buy) mats to match the standard sizes of frames sold by most retailers. (Below 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.

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 adhesive 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)
- X-Acto 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
- X-Acto dust jacket knife (yes, this is a specialized tool)

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

Matting & Framing Animation Cels

A specialty adjunct to "Matting and Framing 101"

Written by Dave Bryant from notes compiled by
Baron Engel and Christina "Smudge" Hanson

Animation cels demand unusual precautions in matting and framing. Unlike most artwork, there are media on both sides of the substrate (ink on the front, paint on the back), and of all major media, cels are the most fugitive. An improperly stored or displayed cel may have a lifespan of less than ten years!

To prevent transfer of media, the cel must not touch either the glazing or the backing. A reverse-bevel *back mat* should be placed behind the cel to separate it from the backing. (The back mat and the "front" matting together are called a *recto-verso mat.*) The back mat may be a double (or greater) mat, if desired.

If a background sheet is provided with the cel, that sheet should be mounted to the back of the back mat with a conventional tape hinge, just as a normal piece of artwork would be mounted. Keep in mind that most matboard is acid-free on the side that is expected to touch artwork, but may not be acid-free on the other side. To protect the background sheet, choose a matboard for the back-mat that is acid-free on both the front and the back. The best available is four-ply museum board.

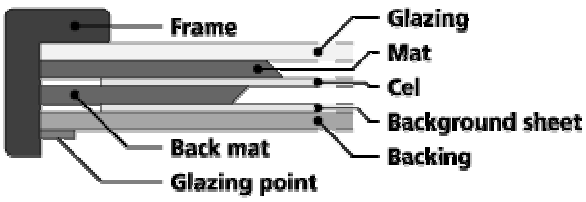


Figure 1. *Cross-section of basic elements*

Mounting the cel requires a more elaborate procedure than simple hinging. The best method is the *edge-strip system.* Fold in half, lengthwise, four long, half-inch wide strips of heavy paper and, with folds toward the outside, assemble them around the cel to form a stiffening framework. The cel should fit into this framework with a small amount of play—no more than an eighth of an inch.

Make each strip an inch or two longer than the cel's side, and cut slits in the vertical strips at the fold to allow the horizontal strips to be slipped through. Mount this framework to the front of the back mat using strips of tape placed across each strip about one-eighth to one-fourth of an inch outside each corner. The framework should be hidden behind the matting and should not be visible.

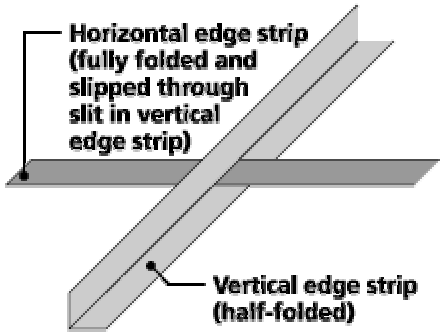


Figure 2. *Corner construction of edge-strip system*

Normal framer's tape isn't strong enough; linen tape or acid-free artist's tape are better. The former, however, requires moistening and can be tricky to use. The latter seems to

use different formulations of adhesive for different widths—one-inch-wide tape seems to work best.

If folding the strips proves difficult, use a burnisher or "bone" to achieve a smoother fold or use an X-Acto knife to score (lightly!) the outside of the fold line. The best material for these strips is an acid-free or pH-neutral paper of card-stock weight—100- to 140-pound—such as two-ply Bristol board, Lenox paper, or Conventry rag.

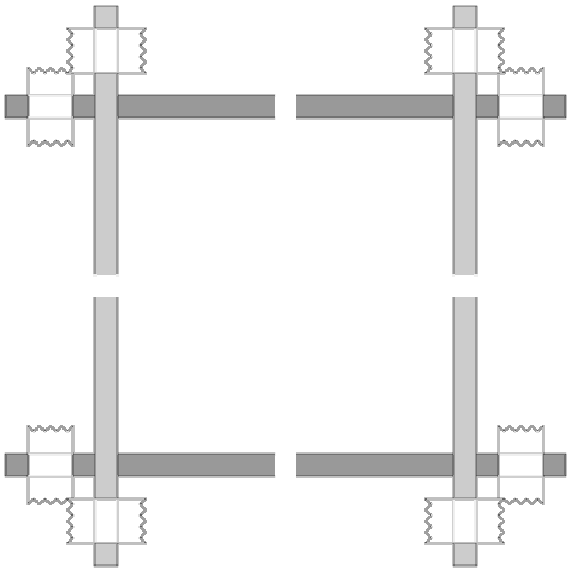


Figure 3. *Corners of edge-strip system, with mountings*

A popular alternative is to use "photograph corners" to mount the cel. While this is faster and requires less effort, it provides no stiffness; the cel may begin to sag, warp, or buckle in short order. Since the difference in price for the materials is trivial, there is no reason not to take the time and trouble to make edge strips. After all, an animation cel often represents a significant investment, one well worth the effort to preserve properly.

WHY GOOD ART GOES BAD

Artwork Preservation Secrets

by Terry Whittier

Preventing Damage To Original Artwork On Paper From Aging And Contamination

There are two main enemies of original art on paper during long-term storage or display: Chemicals that are CONTAINED IN the paper, and chemicals from OUTSIDE objects that come in contact with the paper.

THE ENEMY FROM WITHIN is the remaining acidity or alkalinity from the manufacture of the paper, or the build-up of acidity due to the aging of materials in the paper. Nasty chemicals are often used in the making of paper products from wood and a few other fibers. Some of these chemicals, as well as parts of the plant material, can remain in the paper, causing it to chemically change with age and turn yellow or brown, due to a buildup of acidity.

Ideally, you want paper as close to a pH neutral condition as possible. That means that it's not acidic or alkaline. A paper that is pH neutral or has some alkalinity will tend not to discolor with age. Some papers are buffered, meaning that they have alkaline chemicals added during production that tend to offset any acidity that might build up with age.

Some papers are known as 100% rag. They are made from fibers other than wood, such as cotton, wool, flax, synthetic fibers, and more. Not all 100 percent rag papers are completely archival, but most are. On the other hand, some common copier papers made from wood are fairly pH neutral when new, but assume paper made from wood will become more acidic with time.

If you want archivability in paper, be sure to find out about it before buying it. And double-check for balanced pH with a testing device, such as a pH testing pen.

EXTERNAL CONTAMINATION can come from self-adhesive tape, glue, acidic paper, humidity, skin oils, temperature, aerosols and ultraviolet or strong light.

Use only stable, acid-free or pH neutral materials that might come in contact with or be stored near paper.

The sticky coatings on adhesive tape contain volatile chemicals that can work their way into the paper and stain it. Plus, the adhesive will eventually dry with age and come loose, crack or crumble. Never allow masking tape, cellophane tape, duct tape, drafting tape or any self-stick tapes on or near the front or back of the art. Also avoid spray adhesives.

You can use pH neutral cloth or paper tape that has a dry, water-soluble adhesive. This kind of adhesive will not ooze

chemicals into the paper of the artwork and can be removed cleanly with a moist cloth. Use as little as possible, and use only on the far edges of the paper.

The best way to secure originals on a backing board is with archival corners. That way, no adhesive touches the art. Using corners made of pH neutral paper and secured with archival tape is the best possible mounting technique. (For added safety, place a sheet of pH neutral paper between the artwork and the mounting board and/or the matte overlay.) (In my experience, matte board is usually pH neutral on the white back surface, but it should be checked for acidity after a few years.) Archival paper tape can be easily folded for use as archival corners.

DISPLAY COVERINGS: to prevent UV light from aging the paper or fading colors, use UV light blocking glass (or other high-rated UV protective hard plastics), as long as any coatings are on the outside, away from the art. Be sure to clean the clear cover with mild soap and water before placing it against the art. Avoid direct sunlight and fluorescent lights. Avoid reflected sunlight, unless using a very good UV protective covering.

FOR INFREQUENT DISPLAY/ STORAGE, Mylar (polyester) is recommended because of its stability. Polypropylene, polyvinyl acetate, or acrylics (such as Perspex, Lucite and PlexiGlas) are almost as good as mylar, but should be replaced every few years and must be kept away from heat. Vinyl, PVC or other soft plastics must be avoided. The softer and more flexible the plastic, the easier it is for solvents to leak out. Chemicals evaporate out of the plastic or accumulate on the surface of the plastic and cause damage or discoloration to artwork as they soak into or chemically combine with the artwork. Avoid lamination or photo albums with "magnetic pages."

IDEAL ARCHIVAL STORAGE for art on paper would be in acid-free boxes, in Mylar sleeves, with buffered pH neutral paper sheets on both sides of the art, in a cool and moderately dry environment. Including some moth crystals and silica gel will help keep out pests and stabalize humidity. Most art materials and papers are made to be stable at room temperature and between 30% to 40% relative humidity, although a little cooler temperature range is better. Wide fluctuations in temperature and humidity are damaging. Eliminating oxygen by encapsulation and replacing the air with nitrogen gas will help. Many historic documents are stored this way. Any contaminants such as smoke or aerosol chemicals that could condense on or infiltrate the art must be avoided.

REFERENCES It is hard to find information about art conservation techniques, but the catalog of the archival storage supply company, Light Impressions, contains many tips about the topic. You can write and request a catalog from them at Post Office Box 787, Brea CA 92822-0787 http://www.lightimpressionsdirect.com

Making A Disposable Business Card Holder From Mat Scraps

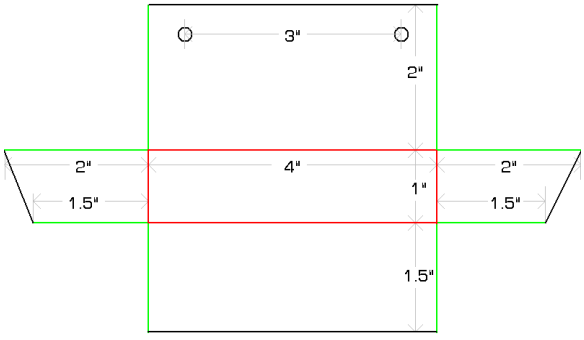
By Glen Wooten

You'd like to put a business card holder up on your art show panels – but where can you find something that fits securely on a pegboard – and is cheap enough to send to a mail-in art show?

Some artists use a banker's clip to hold their cards – but someone trying to get one card out can fling the cards all over the floor. Using a desktop business card holder can work, but attaching it to the board can be difficult. Setting a couple of hooks on the board and then "propping" your cards on them invites them to fall off the board.

Do you cut your own mats? Then you've certainly amassed odd scraps of mat material that are too small to be used for other mats. You've got what you need to make your own customized business card holder that you can afford to lose – and make a new one for the next show. All you need is some scrap mat material, a straight mat cutter, a beveled mat cutter, and some tape.

If you use a regular 3.5" x 2" business card (landscape format), then you can follow this simple diagram:



Using a piece of scrap mat at least 8" x 4½", first cut it square to 8" x 4½" (using the straight cutter), then trace the design onto the back of the mat. Cut the angle cuts (black lines) with the straight cutter, then cut the green lines with the bevel cutter. Score the red lines, fold the edges up (the beveled edges let you make a tight, square corner), and tape the corners.

Using a hand-held hole punch, punch out the holes for the peg hooks on 1" centers. Since the front of the holder is slightly shorter that your business cards (to make it easy to pick up a card), you might cut down one of your cards and paste it to the front.

If you use a portrait format for your cards (or use some other size), just adjust the sizes to fit your card. The back side is the same height as your card, the width is about ½" longer than the width of the card, and the depth is whatever you want (usually 1").

The holder is fairly sturdy, and should survive for several shows before you need to make a new one.