

BEST PRACTICES - WORKING WITH FABRIC-COVERED LINERS

By Scott Brummitt , CEO Raphael's Inc.

Although I like to think I'm still learning something new just about every day, the passing of time gives you a feel for the fundamentals, the key aspects of an activity which must be considered and planned for in order to be likely of reaching a successful conclusion. . The information that follows is simply a review of the fundamentals of cutting and joining fabric-covered liners as I have observed them on a daily basis for the past 27 years. My company, Raphael's, has made Liners the special focus of our attention from the day my father and I started doing business in 1977. While Raphael's is also known for its great selection of Fabrics, we manufacture and ship thousands of feet of Raw and Fabric-Covered Liners, in every conceivable shape and form, every day.

So you make a few Liners, big deal. . .

Well it's more than a few Liners really. In terms of different combinations of liner shapes and fabrics, the number is more than 13,000. Framing software companies tell us we have more products than any other vendor. If you're not into details and would rather talk about total footage, how many million feet do you need? For more than two decades Raphael's has been the Industry's leading supplier (in volume or variety) of Liners.

Like I said, big deal. You put some fabric on wood, what's so complicated about that?

Back when "Liners" was three or four small profiles covered with white or natural linen and sold by the bundle, there wasn't much to complicate things. Unfortunately this "one size fits all" approach hardly fit anybody. Creative Framers (including the ones who founded Raphael's) recognized there was enormous potential "in that space between the art and the frame." Today, when "Limited Editions" can exceed 10,000 virtually identical images, computer-assisted mat cutters knock out intricately detailed paper mats at the snap of a finger, and imitation rather than innovation seems to be driving the Moulding Manufacturers, Fabric-covered Mats and Liners offer that unique custom touch your clients desire. In a nearly infinite number of ways these have become the imaginative framer's most powerful design tools.

Well maybe it's a little more to it than I thought. . .

When we first began doing business nearly 30 years ago, the only custom-made liners were those which creative framers produced themselves. As I mentioned earlier, the selection of liners offered by the moulding companies was pretty boring. As Raphael's began to expand the concept of "liner" to include dozens of new shapes and scores of additional fabrics, we began to recognize that our business was not as simple as just putting fabrics and liners together. What glue to use, why basswood was better than pine, why linen was better than cotton, we had to answer all our own questions because there just weren't any companies doing much beyond the basics. We never limited ourselves by thinking that just because

something hadn't been done, it couldn't be done. Our willingness to experiment and ever growing selection of components brought Raphael's a steady stream of new customers eager to do more creative things in that space between the art and the frame. In 1990 we installed our first computer and among many other things began to use it to help us to keep track of our returns and re-do's. While it was comforting to see what a small percentage of orders fell into this category, and interesting to see that mis-communication between the order taker and the customer was behind nearly two-thirds of our "problems," this was also where we began to recognize what could, and couldn't, be done when working with fabric-covered liners. We've now had about 15 years of collecting information on liners which were returned to us or which were reported as "problems." Based on this information and our own experimentation we've reached a number of conclusions with regard to the product we produce.

Before we give you these details, let's see how much your experience has taught you about working with liners. How would you answer questions #1 and #2 below.

Question #1. We all know that wood can be a volatile material capable of expanding or contracting its shape or size with changes in its moisture content, but can you name three things that would be likely to facilitate a change in the moisture content of a fabric-covered liner? (Hint: One is fairly unique to fabric-covered liners but the other two can affect mouldings as well as liners.)

ANSWER The three most common ways the moisture content of a liner can be changed are:

- A) Cutting the liner. Cutting opens up the wood's end grain, the place where a piece of wood is most able to acquire or discharge moisture, increasing the possibility of alteration.
- B) Changing its environment. Moving from a dry climate to a more humid one or vice versa may result in subtle, yet noticeable, dimensional changes.
- C) The third thing likely to change the moisture content, especially of a fabric-covered liner, may be so obvious that it is frequently overlooked. How recently was the liner covered with its fabric? If the liner was made-to-order, then it will be likely to retain some of the moisture (and potential volatility) it absorbed when it was covered, for anywhere from two days up to ten days, depending on its environment.

Question #2 Besides the impact that changes in moisture content can have on a liner's dimension, what other activity can trigger changes which may affect the join-ability of a liner. (Hint: This problem is seen more on larger profiles and is also more likely to be seen in conjunction with non-finger-joined stock than finger-joined stock.)

ANSWER. Its kind of a trick question, but the answer is - cutting the liner. In addition to the potential changes in moisture content which cutting makes possible, cutting can release stresses present within the wood. If you think of wood grain as sinewy muscle, imagine what happens when the muscle is torn or cut. In wood this can be manifested in the form of a slight skewing or twisting in a bar. If bars are cut and joined in close order, this potential

problem can be avoided.

If it seems to you that we're saying there are a lot of potential problems associated with the use of Liners, you're kind of right. But what we really mean to say is, that if you don't take the time to recognize how Liners are different from mouldings, and even more important, how custom-made liners are very different from the pre-covered "stock" Liners offered by Raphael's or your local moulding distributor, you are missing an important piece of this puzzle, and needlessly exposing yourself to frustration and potential loss. On the other hand, if you follow the few simple guidelines listed below and throw in a little common sense, then you may have experienced your last Liner problem.

STAYING OUT OF TROUBLE - AVOIDING THE MOST COMMON PROBLEMS

If you're having difficulty joining a Liner, chances are, the source of your difficulties will be eliminated if you follow these six recommendations:

1. Distinguish between "Custom-Covered" Liners (Liners which are "made" only after you order them) and "Stock" or "Pre-made" Liners (those which were covered with fabric anywhere from a few weeks to a few years prior to when they will be cut to their final size.) in deciding how and when to cut your liner to its final size. If you are unsure whether a Liner is "Stock" or "Made-to-Order" you should assume it is the latter. If you know you are ordering a "Custom-Made" Liner, you can safely presume that both of the following will be true about your Liner: A) It will not be dimensionally stable until it is joined B) It will cut better on a chopper than a saw. Think about it. If you order a chop of a Liner which you think is not a "Stock" liner (and thus will be covered shortly before it is shipped) you know it will possess at least two of the attributes which you know are likely to be sources of instability in wood - the extra moisture from the adhesive recently applied to its surface and freshly cut bars capable of accentuating the discharge or uptake of moisture within the Liner. Cabinetmakers and wood flooring installers consider it essential that wood be delivered to the site at which it will be used at least a week prior to when any cutting will begin so that it can adjust to its environment and stabilize. Common sense should be telling you that there might be something about this practice that has some bearing on what you should expect from Liners. Recognize when the product you are ordering is more likely or less likely to be stable. When the latter is the case, take appropriate precautions, don't order your liner cut to its final size unless you can be sure it has had the time to become stable.

2. Distinguish between "Larger" Liners (those which are 2" wide and wider) and "Smaller" Liners. The wider corner seams and decreased flexibility associated with "Larger" profiles, make them simultaneously more demanding and less forgiving than on Smaller Profiles. Thus things which are likely to be a problem in ANY piece of wood will either have a greater probability of being a problem on a "Larger" Liner, or result in a more significant problem on a "Larger" Liner.

Just because you got away with doing something risky (like ordering your 50" by 70" chop cut with a 1/8" allowance) on a "Small" Liner profile, don't think you'll be so lucky doing the same thing on a "Large" Liner.

3. While you can say that "Stock" Liners are more likely to be "stable" and thus have fewer joining problems than "Custom" Liners, it is also true in ALL CASES that the sooner ANY Liner is joined after being cut to its final size, the less likely you will be to encounter difficulty in joining that Liner. In fact, the surest way to avoid most joining problems is to complete your joining within minutes (not hours or days) of when the liner was cut.

4. Very wide profiles should always be covered continuously. While we recommend that you consider the seamless or continuous-covered style of Liner whenever you are working with profiles wider than two inches, we do not even offer our profiles wider than 3-1/2" covered in any form except continuous. This is not our way of trying to drum up high dollar work, after all, we're pleased to tell you how you can order the raw liner and the fabric and create them yourself. Once again this is simply recognizing the reality of the situation. There is literally no chance that a super-wide profile can be covered and cut to its final size then shipped anywhere and joined sometime later and be expected to go together well. If you think this is possible, you do not understand the nature of wood. If you have never covered a seamless liner yourself, or would like some assistance doing this sort of work, we have tools and information which can make things easier. Please feel free to call us too free and we will walk you through the process.

5. "Stock" Liners are far more likely to tolerate cutting on a saw than "Custom-Covered" Liners. Although there are a few other factors which can influence how well a certain profile/fabric combination cuts on a saw, when a Liner is allowed to "cure" (dry for approximately 7-10 days) two good things happen:

A) The liner generally loses the additional moisture it takes on when fabric is adhered and returns to its natural equilibrium. (Remember moisture is the enemy of stability in wood) and
B) Although PVA type adhesives will always retain some elasticity (that's one of the reasons we like them when compared to more brittle drying alternatives) they do become noticeably harder after "curing." In the same way harder woods tend to cut cleaner, a somewhat harder adhesive nestled into the fibers of the fabric will also produce a cleaner cut with less fraying of the fabric.

6. There are occasions where lacking the right equipment, you simply "can't get there from where you are." Certain profiles, such as our Mat-Liners for example, require the use of a v-nailer to join properly. You simply cannot expect to join these very thin profiles without a good v-nailer. I feel a v-nailer is also an important part of joining "end-wrapped" liners and have seen only a handful of shops that manage to consistently join "end-wraps" cleanly in the absence of this piece of equipment. There are also instances where other equipment, such as a saw with a certain type of blade, or chopper with knives ground in a certain fashion, may be required

to have a reasonable chance of success in cutting a particular combination of profile and fabric. We'll talk about this more fully later in this article.

While from a marketing standpoint Raphael's would like to make it as easy as possible for you to order what may be totally unique, made-to-order custom liners, and receive them on virtually the same schedule as your every day basic products, we do not wish to mislead you into thinking that such product can defy the laws of nature. To paraphrase the line from "Animal Farm" in which George Orwell has one of the animals say "All animals are equal, some are just more equal than others," I would remind you that the properties of wood apply to all woods and wood liners, there are just some situations where they are more likely to be especially problematic. I have identified the "usual suspects" above and our order takers won't hesitate to give you reminders as well. Listen to our advice, plan realistically and you'll wonder why it took you so long to discover this fountain of creativity. There is no better investment you can make in your business than to provide your clients with original, memorable framing. Nothing says "custom" as clearly or as easily as a Fabric-covered mat or custom-wrapped Liner. Once you make framing personal and unique instead of generic, your customers won't settle for anything less.

The previous section focused on the nature of Liners and talked about some of the more significant potential problems, the next section will be speaking more about solutions, the options and methods available for those who wish to use Fabrics and Liners more effectively.

THE STYLES OF "CUT" LINER AND THEIR RECOMMENDED USAGE

Let's take a quick look at the styles of "cut" liner and what we feel are the pros and cons of each. The first three styles each represent a different approach for dealing with the characteristics of "Custom-covered" liners. Note how each of these styles takes a different path around the absence of "curing" time.

Chop +1" -The liner is created approx. one inch larger than its intended final size with the idea that the framer will have the equipment to trim the liner to its final size and then join it shortly thereafter. The ultimate answer to the need for speed. It is the form we recommend for any Liner Profile which is wider than 2" or longer than 60" which you cannot or do not wish to do as a Chop and Join or Continuous-Covered Liner. This form allows you to get the liner you need quickly without exposing yourself to the risks which would otherwise go with separating the cutting and joining of a custom-made liner. The potential downside of this approach is that your cutting equipment may not be suitable for use on certain profiles or fabrics (see also Cutting Recommendations)

End-Wrapped + 1/8 - The liner is cut to its final size and then the bars are wrapped so that the fabric extends over the mitered ends of each bar. Although when joined the corner seam is slightly more visible, because it is cleaner and cannot fray, the way a chopped or sawed liner might with certain fabrics, it may be preferable. End-wrapping is best suited to very fine, lighter weight, woven fabrics. It should be avoided in the case of suede or heavier weight linens or silks, where it makes the clean joining of the bars more difficult, if not impossible. When used in conjunction with the appropriate fabrics end-wrapping can also be said to provide a sort of “fudge factor” to the joining of bars. Minor gaps or openings are, in essence, “filled” by the fabric wrapped into the miters. We believe it is essential to use a v-nailer in the joining of end-wrapped liners in order to get the best closure of the corners. Vises and side nails are usually inadequate for this task.

Continuous-Covered - Though more expensive than a regular chop if you have us do the job, we can send you what you need to create continuous-covered liners yourself. We are strong advocates of going ‘Continuous’ any time you are working with a profile more than two inches wide. Joining the bars raw is easier because you don’t have to worry about getting glue on the fabric, and if necessary, you can clean up or fill any irregularities at the corners prior to covering the liner with fabric. You also completely eliminate the potential distraction of a very wide corner seam. This style really gives you a superior final product which your clients will appreciate. If done in your shop they really don’t cost much more than liners you purchase chopped and still have to join. Remember to keep the fabric’s width and orientation of any grain in mind when pricing this type of liner.

Regular Chop + 1/8" - When working with “Pre-Covered” or “Stock” Liners which are less than 2" wide or tall, this is the best combination of low-cost product, inexpensive shipping, and quality output. Even “Custom-Covered” Liners which involve smaller profiles can be ordered in this style. Don’t forget that ALL chops should still be joined as soon as possible after they are received.

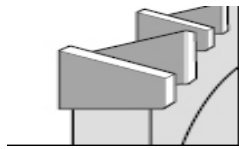
CUTTING FABRIC-COVERED LINERS

We make the following recommendations ignoring budgets, or other activities taking place in your shop, as if cutting Liners was your sole consideration. (What could you possibly have to worry about that’s more important than liners?)

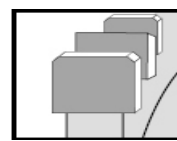
Sawing Liners - While the topic of saw blade configuration includes details beyond what I think we want to get into today, a few key points are worth mentioning. Generally speaking, the best blade for cutting Fabric-Covered Liners is a Wood Only, Carbide Tipped Blade with as

many teeth as possible. The blade “grind” most often found on Frame Shop saws, the “triple chip grind” is unfortunately not the ideal choice for cutting fabric-covered liners. While this set-up allows for the cutting of both wood and metal mouldings, the absence of “sharp tips” on the teeth means that you will tend to see more fraying, perhaps even shredding of the fabric when cutting with “triple chip” blades. For the cleanest cutting of a fabric-covered liner, the “ATB” (Alternating Top Bevel) grind is a better choice. (See images of the two “grinds” shown below) If you do not have the luxury of having a saw with this type of blade, or are unwilling to go through the hassle of changing your blades when cutting your liners, you may well be able to cut suedes or more tightly woven fabrics tolerably well, but other fabrics are likely to fray more than most people find acceptable. This is a good example of the “you can’t get there from here” situation mentioned previously.

Alternating Top Bevel (ATB) Tooth Grind



Triple Chip (TCG) Tooth Grind



We would like to acknowledge the very significant contribution of the people who make Tenryu Saw Blades for being willing to configure a dozen sets of blades and let us borrow them for testing purposes. It was only through this comparison that we were able to confirm our conclusions regarding the “ideal saw blade.” (Raphael’s does not ask for, nor do we receive, any kind of compensation from Tenryu, or any other vendor mentioned in this article, in return for mentioning their name. We work with these vendors because we like the quality of their products/services but pay for both on the same basis as any company using similar quantities.)

Among other factors which can have an impact on your ability to cleanly cut fabric-covered liners are the following:

- 1) Blade Speed - a faster turning blade (usually the result of a more powerful saw motor) will generally result in cleaner cuts.
- 2) The Blade’s Hook Angle - blades which have a more aggressive “hook” (usually expressed as a number higher than a positive 5 degrees) will tend to pull the material into the blade too fast. This commonly results in greater fraying than is necessary. We favor blades with about a 5 degree negative hook for use in cutting fabric-covered liners.
- 3) The Width of the Profile Being Cut - all other things being equal, the wider or larger the profile, the longer the saw blade will be against the edge of the fabric, and the greater the likelihood of seeing more fraying along the edge of the cut.. With the possible exception of fine-weave liners which have “cured” for an extended period of time, we don’t normally expect to be able to cut liners wider than 2” on our saws without seeing excessive fraying. This is one of many reasons we recommend that liners 2” wide and wider be done as “continuous-covered” (seamless) liners.
- 4) Blades which are not clean (which have too much accumulated residue on the teeth) will also result in more ragged cutting. Consider giving your blades the “Easy Off treatment” between sharpenings to keep them cutting their cleanest.

Chopping Liners - Hollow-Ground blades are the key to getting the best possible cut no matter what brand of Chopper you use. If you are not sure if your blades have been "hollow-ground" take one of the blades and place the face of the blade against a hard flat surface. You should be able to see light between the blade and the hard surface because of the concavity of the blade face. No light, no hollow ground. Not only do hollow-ground blades cut much better than non-hollow-ground ones, but because of the way they allow the wood being cut to clear away from the blade, they last two to three times longer between sharpening. One important caveat in our recommendation of "hollow ground" blades should be noted: If you must cut "hardwood" mouldings on your Chopper, in addition to the softer woods usually found in Liners, there is a higher risk of chipping a hollow-ground blade. We have used a sharpening service known as The Van Every Company for many years and gladly send our blades clear across the country to receive their expert attention. If you need their number we would be happy to provide it.

When to Saw and When to Chop - We all know that when it comes to cutting wood, a saw will generally produce a cleaner, straighter cut which will join better. So our goal should be to cut any liner, whose fabric will tolerate it, on the saw. The chopper is frequently chosen for cutting liners because chopping tends to do less damage to the fabric than sawing. With the set of blades referred to above we can do an excellent job of cutting all but the coarsest or loosest weave fabrics on any profile up to about 2" wide. As the width of the profile grows larger, the blade has to spend more time rubbing against the fabric, so usually only fine weave linen fabrics or suedes can be cut on a saw if the profile involved is wider than roughly 1-1/2". While some of the "harder" liner species such as basswood or poplar can cut pretty well with a chopper or saw, the softer pine species still used in cheaper liners can crumble or tear when cut on a chopper and really have to be sawed in most cases. Among the other factors beside wood species here are a few worth noting when deciding whether to saw or chop your fabric-covered liner:

- 1) As mentioned earlier, fabric-covered liners which have "cured" for at least 10 days to two weeks will usually tolerate a good quality saw blade, without fraying or fuzzing, better than more recently produced fabric-covered liners.
- 2) Linens will be much more likely, because of the nature of their fiber, to allow cutting with a saw, than fabrics such as cottons. While the two types of fabric may appear similar on a mat or liner, the working characteristics of linens make them a far better choice for use on liners.
- 3) Suede fabrics will normally cut better on a saw than a chopper.
- 4) Spray adhesives are not the right product to use on any liner which you will later be re-cutting. They do not create as strong of a bond as wet adhesives like our Miracle Muck™ and will tend to dry out and lose their bond far sooner in drier or hotter environments.

WORKING WITH ADHESIVES AND PRIMERS

Adhesives - Of course, we are very fond of Raphael's Miracle Muck when it comes to adhering Fabric to Liner, or joining corners. But the important considerations, when deciding which adhesive to use, are the following: 1) Does the glue interact with any of the components involved in a negative way? For example, when Spray 77 is sprayed on raw wood, it tends to draw resins from within the wood to the surface. This can lead to a spotting of the fabric you have adhered

to the wood. Also, if not allowed to “air out” sufficiently, spray adhesives can also cause a fogging of the interior of the glass covering them. On the other hand, when working with most water-based adhesives (including Muck) one needs to keep in mind the potential impact of raising the moisture content of the Liner. 2.) Does the adhesive last as long as you want it to? Many spray adhesives tend to ‘dry out’ over time or in dryer climates, literally turning to dust. 3.) What is required to be able to use the adhesive? Do you need a special work area or equipment to be able to use it properly and safely. 4.) What sort of cleanup does the adhesive require? 5.) Can it be heat reactivated? It is very handy to be able to apply heat to an adhesive which may have already dried and get it to stick again.

Priming Liners - Two of the more important considerations in choosing a priming material are: 1.) How well does your primer interact with the wood and with the adhesive you will be using on top of it? Traditional Gesso and most Spray Paints are oil based and less likely to cause moisture related problems in your Liner stock. A good quality Flat White Enamel Spray Paint (Painters Choice at most Home Depots) works well for light touch up priming. If you plan on using a Spray Adhesive it is very important to be sure to seal the wood first so the resin cannot be leached to the surface by the spray adhesive. 2.) What sort of surface is left after using the primer? Heavier materials like gesso may not ‘level’ well, latex paints and some cheaper spray paints may not provide the coverage you desire, or may require multiple coats.

Wrapping Things Up

Most of the people we do business with don’t own every tool or piece of equipment we recommend, yet manage to turn out job after job without a hitch. That’s because they choose the appropriate style for their situation. Success comes most often from having a realistic understanding of what can and can’t be done. Hopefully the information included here will make you better able to choose the right approach for your shop. One thing is certain, the creative use of fabric-covered liners and custom wrapped mats will help you to distinguish your framing from the “run-of-the-mill” because of the way it will personalize the product you provide. We all value things which are more unique, and framing is no exception. When looking for the best way to insure the future success of your business, think about the customers with whom you are currently doing the most business. Chances are, these are the customers for whom you’ve created the most original or unique work in the past. These are the people who are pleased to show off your work and share your name with their friends. When you opened their eyes to the difference between framing and custom framing, you dramatically expanded their budget and the likelihood they will be coming back with more things in need of your special treatment. In today’s competitive environment, with price pressure from the “big box” stores on one side and the availability of “framed product” expanding rapidly via the internet, our products help you provide distinctive, personalized framing, the sort of work which people can’t get from these competitors. Now that you have a better understanding of how fabric-covered mats and liners work, all you need is a few good examples on your wall. Raphael’s has never advertised, only occasionally does trade shows, has no full-time sales people and yet continues to sell more product year after year. Why? Because the product sells itself. With custom covered mats and liners it’s a simple proposition. “Show them, and you will sell them.”