

Profitable Profiles

By Jim Parrie

Innovative, great framing designs can generate huge sales. Unfortunately, they don't always generate huge profits to match. Sometimes this happens because the designs are inefficient to manufacture. Fortunately there are several methods you can use to create innovative designs that make use of moulding materials, sizes, and profiles that will reduce manufacturing time and expense.

Materials are important because the composition of the moulding can greatly affect production and shipping costs. For example, softer timber species will cut easily but can cause problems in other areas:

- If the moulding is too soft the moulding may crush in the saw and or the joiner.
- Softer mouldings may cause the gesso, the white or pink material between the finish and the timber that fills any imperfections, to crush or crumble when it is being cut or chopped.
- Softer mouldings may require the air pressure to be reduced on the pneumatic joiner. This can cause an interruption in process flow and/or mistakes.

Harder timber species are more difficult to cut but have a more lasting finish. The downside to the harder species are:

- They may reduce the life of the saw blades.
- They may increase the number of blade sharpenings.
- They may require pneumatic adjustments to joiner or saws, thereby increasing setup time.

Choosing moulding that encompasses production needs as well as aesthetics results in framing designs that are more profitable.

- Some species are so hard that V-nails will bend from time to time, increasing the equipment downtime.

Medium hardness species help minimize these problems, which will increase the satisfaction levels of the production department but may not provide for the design

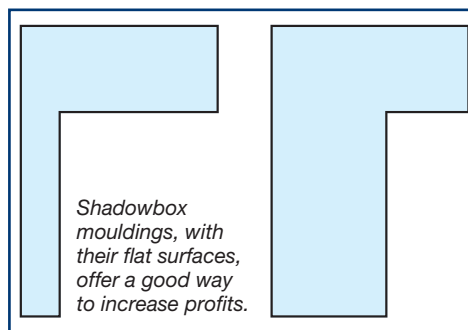
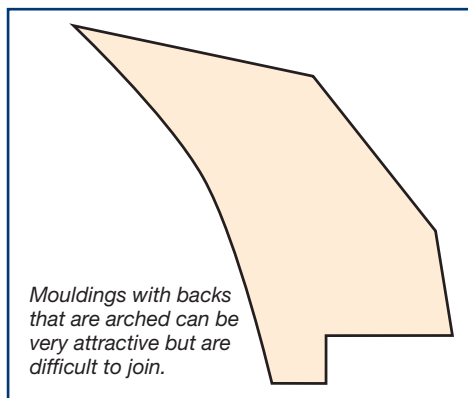
opportunities that designers need and may cost more.

Therefore, when seeking a new moulding, remain conscious of these hardness issues and production concerns because these issues affect profitability. If you decided that a moulding is critically important to a line, then have the production department calculate the true cost of manufacturing. Make sure to include:

- Setup time
- Additional waste
- Touchup time
- Additional blade sharpening and wear
- Increased handling costs

Once these additional costs are calculated, the costs should be added into the price of the frame package and the selling price adjusted accordingly. If the item can sell at a fair market price after the new price is established, then you have yourself a new product. If the item cannot sell at the new price, then the item is not worth adding to the line.

When I go through this process of calculating direct and indirect manufacturing costs for a frame package, I often recommend that an item either be priced at a higher price point to ensure profitability or removed from the line. Often, there



are items that cannot be sold at a higher price, therefore they must be removed from the line. Invariably, when I make a recommendation to eliminate an item, the result is a cacophony from the sales department about “But that is one of our best sellers.” My usual response is, “You are losing money every time you sell one of these frames.” And the sales department says again, “Yes, but that is one of our best sellers.” This is where the old framing adage applies: “Even though you are losing money on every frame, maybe you can make up for it in volume.”

Moulding Size

The size of the moulding is critical to a profitable design. As American homes get larger and ceilings get higher, consumers are seeking larger and larger frames. Mouldings are getting wider each year. However, these wider mouldings have brought new challenges.

Basically, equipment manufacturers cannot increase the size of processing equipment (saws and joiners) as quickly as the moulding manufacturers can design and manufacture larger size mouldings. When larger mouldings are being considered for addition to a line, it is essential to make sure that these mouldings will fit the equipment. Some facilities modify the drop of their saws to accommodate larger mouldings. This type of equipment modification can endanger employees and affect the performance of equipment. It can also be an OSHA violation. It makes more sense to sell or design with a moulding before a production team receives it so they won't be forced to make adjustments on the fly the day the order is received.

Obviously, larger mouldings require larger equipment. If you are committed to the safety of your production team, then modifying equipment is not an option. That means that if you are considering larger mouldings, then you must determine if you want to invest in larger equipment. Keep in mind that larger equipment will handle the capacity but that larger saws are more expensive and require more expensive blades and sharpening.

Moulding Profiles

The profile or shape of a moulding should also be considered. Certain profiles provide for higher profits than others. Profiles that are square and have fewer protruding edges will make production easier because there will be less chipping and puttying. Protruding edges can especially cause chipping as blades become duller.

Mouldings with backs that are arched can be very attractive but are difficult to join. This same moulding without a sufficient flat surface for the joiner fence can be purchased with a 1/2" flat rear surface that can be supported by the fence.

When considering thin profiles, there are mouldings that have a bottom surface area that is less than 1/2" yet

can be several inches high. These mouldings cause a series of problems. First, they are difficult for the saw operator to support while being cut. This lack of physical support can cause for gaps in the corners because the moulding will move while being cut and joined. A similar moulding can be purchased with a wider surface area that will provide more support. Once again, cost differences must be considered: What does the additional putty time cost? Is it cheaper to use a moulding with a wider base because it will require no puttying?

Another way to increase profits by buying moulding effectively involves shadowbox mouldings. Typically, the inside of a shadowbox moulding must be lined with matboard and foam board. This takes time and materials. Some moulding manufacturers make moulding that is lined in black, gold, or whatever color you desire and/or has a double rabbet. These mouldings may seem more expensive, but when you compare the amount of materials used per unit and the additional time needed to insert those materials in the frame, these specialized mouldings can be more economical. Here is an example:

Traditional Moulding

16"x20" glass size

Materials:

Foam board: \$2.09

Mat board: \$4.18

Labor to process and insert materials: \$2.50

Moulding cost: \$9.67

Total: \$18.44

Lined Shadowbox Moulding

16"x20" glass size

Materials:

Foam board: \$0

Mat board: \$0

Rubber tubing and staples: \$0.82

Labor to process and insert materials: \$0.33

Moulding Cost: \$13.41

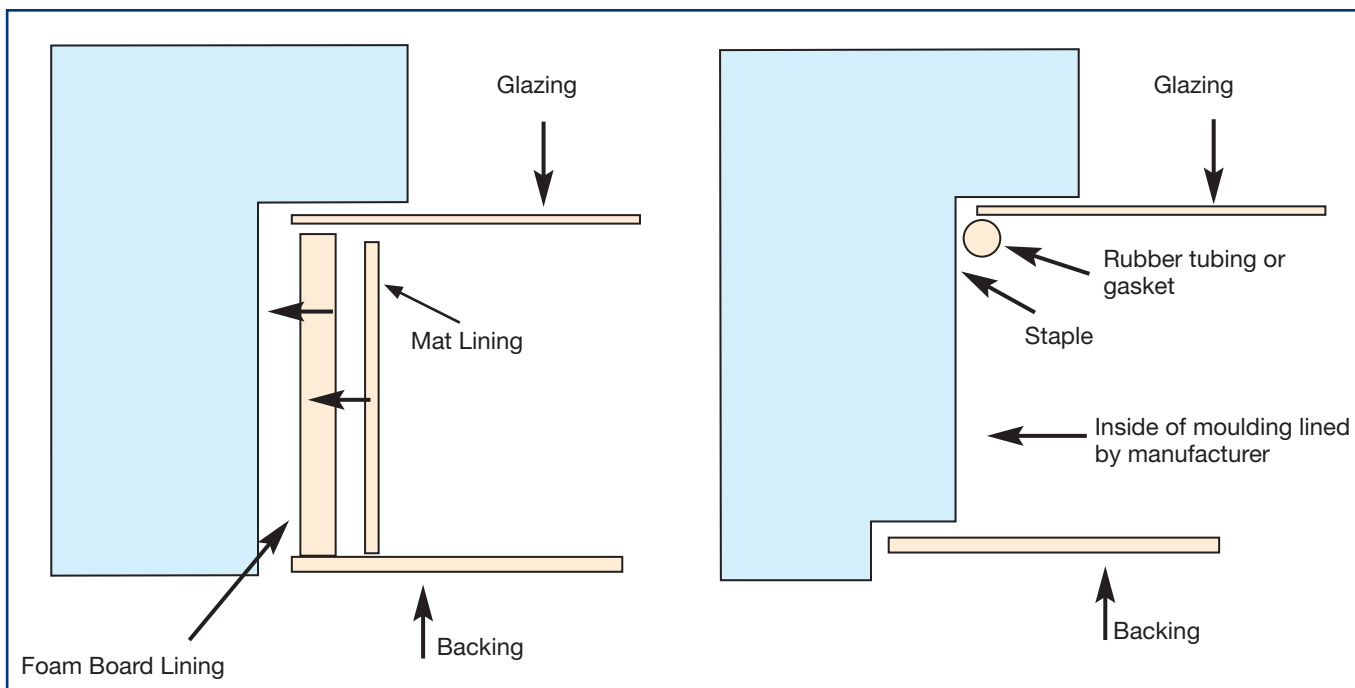
Total: \$14.56

As this example shows, the more expensive lined moulding reduces processing costs and thereby increases profits by \$3.88 per unit.

Design/Production Synergy

Developing a synergy within the design and production departments can create profitable and innovative designs more rapidly. This can begin with designers being thoroughly trained not just in picture frame design but also in picture frame manufacturing. A designer should spend at least two to three days a quarter in the production department working with the production staff. This has multiple benefits:

- It provides a designer with a better understanding of



Left: Framing with traditional shadowbox moulding requires lining with mat board and foam board. Right: Framing using pre-lined shadowbox moulding starts with a more expensive moulding but ends up saving money when you total all your material and labor costs.

the limits and capabilities of the production system. This will help expand the creativity of the designer, allow the designer to have a deeper knowledge of turnaround times, timing constraints, and systems capacity.

- By personally handling the materials, designers can learn the limitations and potential for the different materials.
- Working together will build a greater sense of teamwork between departments.

When adding new mouldings to a product line, it's always advisable to form a moulding selection committee from various departments, including production, design, shipping, and purchasing. They all have valid reasons for accepting or rejecting certain mouldings and looks at the addition of a new moulding differently. Some of these concerns are:

Production. The production department wants moldings that are:

- Easy to unwrap and handle
- Consistent in length and quality
- Cut easily
- Require little touch-up
- Join quickly

Design. The designers are typically seeking:

- New and innovative looks
- Moulding designs that will expand their ability to create
- Moulding designs that are consistent with current trends

Shipping. The shipping department

is looking for:

- Methods to reduce freights costs
- Possibility for higher incidents of shipping damage
- Chances that it will increase packaging costs

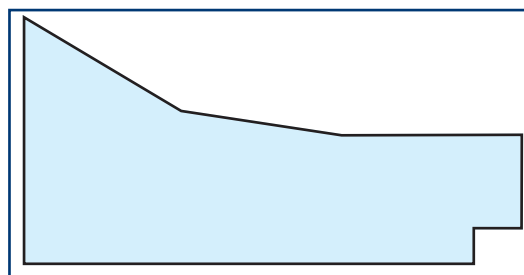
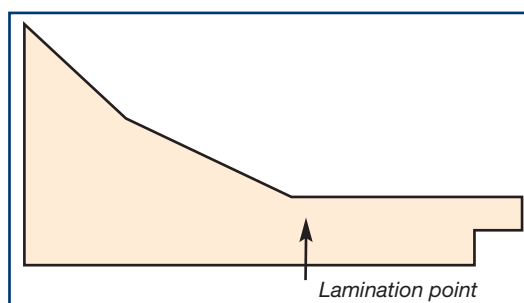
Purchasing. The purchasing department will be concerned with:

- Is it necessary to increase the number of moulding SKUs thereby increasing our inventory?
- Is it possible to use a similar moulding so that we do not have to purchase an additional SKU?
- What is the risk/reward of bringing in an additional moulding

- What will this do to the size of the inventory?
- What will be the potential number of turns on this inventory item?

These concerns are a sampling of those commonly voiced by various departments when new mouldings are introduced into a line. There will be much more "buy-in" within each department if there is an opportunity to voice opinions on which mouldings are added. This will save the company money in the long run by discovering potential problems before it is too late.

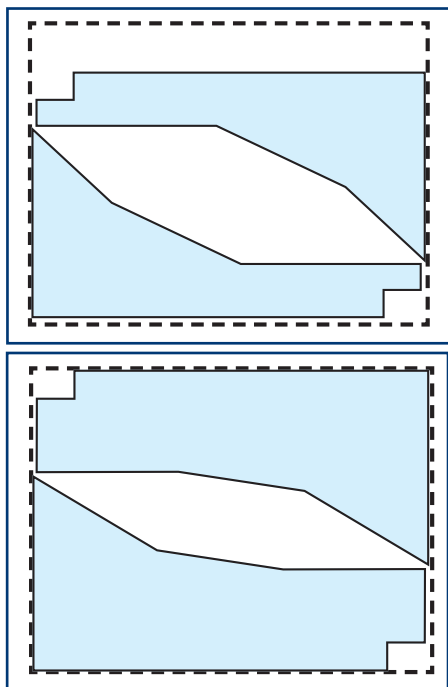
Another way to spot problems is to have the moulding manufacturer send 50' to 100'



The top profile was created by conventional moulding design methods, requiring laminating a second piece to complete the design. The lower profile was created using "reverse designing," so only one piece of stock is needed, saving money.

so that a prototype can be built and shipped to the designers. This will give each department an opportunity to preview any potential problems.

One method for achieving more efficient profiles for production is to have the profiles milled. Today, because of declining margins and favorable deals in South America, distributors will partner with their customers on custom profiles. If you choose this option, consider "reverse designing" the profile. Conventional designing of picture frame moulding has a designer producing sketches of designs or patterns that have a certain look, feel, or appearance. Then the



The gap between the inverted profiles shows that the bottom profile provides a more substantial frame from one piece of stock and has less waste. The dashed lines represent the size of the stock. The open areas (in white) are waste.

raw moulding stock is selected to the scale of the design. For instance, the designer may feel that a certain floral pattern looks better on a 3.5" moulding, therefore that is the size of the moulding. In reverse design, the size of the raw moulding stock is taken into consideration first. The designer is presented with choices of the stock and then is told to get the most out of the stock as possible.




For instance, the top profile in the drawing at the bottom of page 22 was designed using the conventional method of moulding design. Due to the width of the moulding and the structural limits of the raw stock, it will be necessary to laminate two pieces of raw stock. The lower profile needs only one piece of stock.

The drawing in the left column of this page also illustrates the differences in waste between the two approaches. The gap between the inverted profiles


shows that the bottom profile provides a more substantial frame from one piece of stock, and it has less waste. The dashed lines in the drawing represent the size of the stock. The areas in white are waste. Why waste money on the traditional design method?

When designers consider the raw stock, they can save you 10 to 20 percent on the price of moulding. They're still allowed to be creative, but it doesn't come at the cost of profits.


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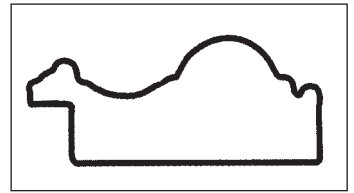
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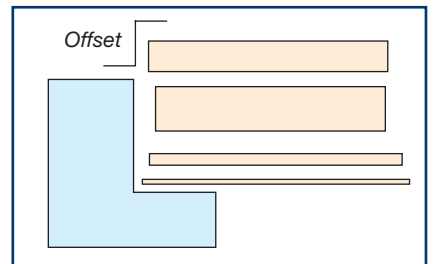
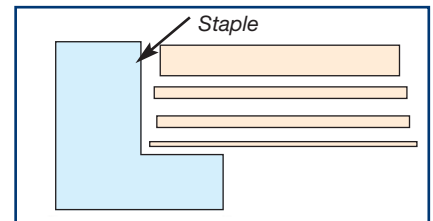
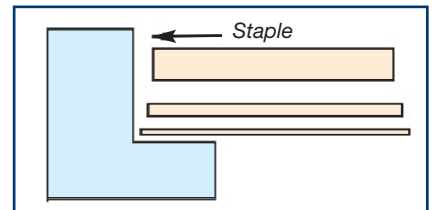
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When considering the use of a profile that has a thinner area between two higher rails, give serious thought to the height of the V-Nails necessary for joining. If one size V-Nail, such as a 10mm, can be used throughout the entire width of the moulding, that is a definite plus for considering that moulding. However, if the moulding requires different sized V-shaped nail because of the varying thickness of the moulding, that presents a series of issue. If you change nail, that will require downtime on the underpinner and increase the cycle time. Stacking V-shaped nails also increases cycle time and increases material costs.



With profiles that have significant variations in thickness, different V-Nail sizes may be needed. That can require changing nails, resulting in underpinner downtime.

There are joiners on the market that stock five to six sizes of V-shaped nails. These machines are faster than changing nails on conventional underpinners, but their cycle time is still slower than using a single size nail. Joining time can dramatically impact the manufacturing cost of a frame package and needs to be calculated for each profile. If not, you may destroy all the profits in the frame job in this one stage of the framing process.



The top profile allows all components to fit easily inside the rabbet for easy stapling. The middle arrangement requires the staple to be inserted at an angle. This takes more time and probably more staples to make everything fit. The lower arrangement shows what happens when all the components do not fit within the rabbet. Using an offset increases cycle time and material costs. In this case a moulding with a deeper rabbet is called for to reduce overall expense even though the moulding would cost more.

Profile efficiency is one key to increased profitability in any frame package. The manufacturing, handling, and shipping costs for the entire frame package must be considered at every step of the process, including the moulding profile. So, when designing a frame package, examine the profile at every step to see where the potential savings lie. ■