

# DAMAGE CONTROL

**D**amage to framed items can take place throughout the distribution channel, from the manufacturer to the consumer. Damaged goods received by a client do more harm to your company than just infuriating customers. Items that are received damaged by consumers destroy trust, injure your reputation, frustrate the staff, and cost money to remanufacture and reship.

Damage to products doesn't just happen in transit but also in-house prior to shipping. It is not as costly per unit, but it does happen more often than shipping damage.

To understand the financial impact of damaged goods on your balance sheet, it is important to study the hard costs that damage creates. Consider each of the following factors and assign a value to each one:

- ▶ Return freight cost
- ▶ Reship freight (sometimes by air)
- ▶ Materials to rebuild items
- ▶ Labor to rebuild items
- ▶ Added staff to handle damage claims
- ▶ Percentage of claim customers lost due to damaged goods
- ▶ Value of additional sales lost per claim over the next three to five years
- ▶ Cost to replace (or regain) a lost customer
- ▶ Refunds issued
- ▶ Management time to handle issues
- ▶ Other factors based on your business model.

Once each of these factors has a value assigned to it, you have a value associated with each damage claim. Multiply this figure by the number of claims per year. Once you have a final figure, share it with your staff so they can understand the impact that damage has on your company's bottom line.

Just as shipping damage costs can be analyzed, so can the costs of in-house damage. Consider these factors:

- ▶ Materials to rebuild items
- ▶ Larger inventories needed to cover damage
- ▶ Labor to rebuild items
- ▶ Additional staff needed for re-do's
- ▶ Increase in average number of days past due.

Once the cost of each of these factors has been determined, multiply them by the number of damaged items per year.

**Controlling damage in manufacturing and shipping can improve your efficiency and keep your customers happier.**



*Proper moulding storage (above) helps minimize damage while improper storage (below) can lead to increased damage.*



*Improperly built carts (left) can lead to more damage than professionally built ones (right), which are a more effective way to transport moulding in a production facility.*

Components that are damaged within the production system should be identified so the root cause of the damage can be minimized or eliminated. Here are some categories to consider in reducing shipping and in-house damage

- ▶ Proper frame construction
- ▶ Quality control
- ▶ Handling procedures
- ▶ Package design
- ▶ Good carrier.

## Proper Frame Construction

One reason manufacturers incur shipping damage is that frames are not built to withstand the rigors of shipping. Common sense would dictate that trying to ship a 30"x40" mirror in a 1" MDF frame will generate more damage claims than the same 30"x40" mirror framed in a 3" oak moulding. Therefore, prior to selling a framed SKU to a retailer, you must consider the durability of the product.

When considering the shipping integrity of the moulding, study its overall strength and mass. Frames made from hardwoods like oak are more durable than softwood frames. Damage will generally occur in the corners when a wood is too soft. Corners can also be broken when there



*Professionally made bins (left) keep your supplies and products more organized. Organization is the real key to minimizing damage. Properly wrapping artwork after fitting (right) minimizes storage and handling damage.*



are too few V-shaped nails used or if no glue is applied. Frequently, OEMs won't use glue to increase the throughput at a joiner station. However, shipping returns may offset the labor savings. To determine the cost-benefit of gluing corners (for those who do not glue), make and ship 200 to 300 frames with glued corners. Determine the number of units produced for the same number of labor hours needed when corners are not glued. Compare the number of damage claims for glued and non-glued frames. Compare the cost of the additional labor needed

for gluing corners versus any savings from reduced damage.

To reduce in-house damage to joined corners, also look at these issues:

- ▶ Is the drying time for glued corners long enough?
- ▶ Are frames being hand carried or hung on a cart when transported?
- ▶ How many V-shaped nails are used per corner? Adding an additional nail per corner is cheaper than rebuilding an entire frame.

## Glazing

Acrylic or styrene makes sense for shipping purposes on a variety of fronts. Both are lighter and reduce overall weight. On a 13"x32" framed product, one manufacturer was able to save 1.5 pounds per unit in shipping weight. The result was a huge savings because he was basing his projections on shipping 3,000 units per day to all 50 states, Canada, and Puerto Rico. There is also far less chance of breakage with these glazing methods as opposed to glass. Many carriers will, in fact, not insure framed products that contain glass.

Prior to oil price increases and Hurricane Katrina, there was a shift taking place toward styrene glazing. Hurricane Katrina (and then Rita) severely damaged several refineries,

including a one that made polypropylene pellets. The resulting decrease in the supply of available raw materials has caused significant increases in the price of petroleum-derived glazing.

As a result, petroleum-derived glazing has become more expensive (and yes, it does scratch). Plus, consumers perceive traditional glass as having more value. This has made glass more appealing again. If you feel you must use glass, look at the span and use thicker glass when larger sizes are required. This will result in less breakage with only a minimal increase in weight.

Another way to reduce damage is to attach a sheet of Masonite across the entire back of the frame. This can make a smaller moulding sturdier and reduce any flexing that may occur when you are using larger pieces of glass.

It always makes sense to build a prototype SKU and ship it to a friend via the same common carrier that will be transporting your product. Have photographs taken of the condition of the packaging and of the product after it arrives as a record. Experiment with different frame construction methods, packaging, and carriers until you find the method that reduces your damages the most.

## Quality Control

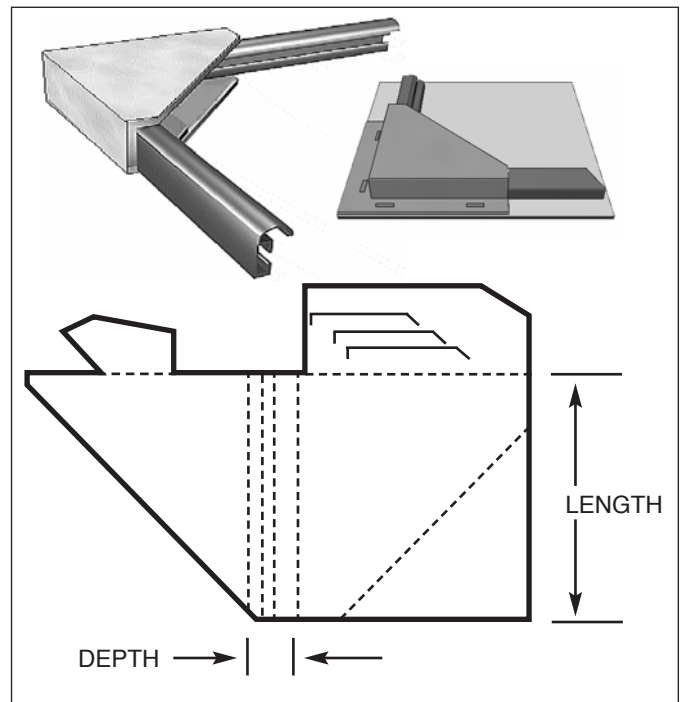
Stringent quality control (QC) procedures can reduce in-house damage by helping identify where it is happening and catching damaged components and finished products before they reach the next stage. All members of production and shipping teams should be active participants in the quality control process.

For instance, when moulding is pulled it should be checked before it is given to the saw operator. He should then check the cut rails prior to passing them to the joiner. A joined frame should then be checked prior to passing it to the next person and so on. This process is the same for moulding, mats, glass, etc. Whenever a defective component is received, the recipient should log that component. This data should be tracked so that trends can be analyzed and problems diagnosed and remedied. Every person in the system should consider himself or herself a customer who is paying for a product that must meet certain quality control tolerances. They will be held accountable by the person next in line. Any incentive programs should take re-do's into account.

## Handling Procedures

Internal handling of items both before and after packaging dramatically affects the amount of damage. Here are some pointers to help minimize damage prior to packaging:

- ▶ Implement a QC program for the receiving department. Check all boxes, crates and packages for damage as they arrive. Document all damage (also use digital photographs).
- ▶ Implement a QC program for all raw material handlers. All personnel in a manufacturing facility should consider the next person in the manufacturing chain as their



Cardboard corners are an effective way to reduce handling and shipping damage. These can be folded by hand. There are also machines designed to install corners on fitted artwork.

“customers.” They should never pass a defect on to a customer.

- ▶ Institute a QC policy for all staff members.
- ▶ Have components travel on carts or conveyors instead of by hand. When frames are carried by hand, they bang together and get dinged. It saves more money in labor and damage costs to have components and raw materials travel in bulk via conveyors or carts as opposed to having staff members hand carry items.

Another method to reduce in-house damage is to follow each component from the receiving dock to the consumer and count the number of times an item is touched or handled. These “touches” are expensive because each one means a human has handled an item. Every time a human handles an item, there is an associated cost and an opportunity for damage. By reducing the number of times each component is touched, you can reduce the cost and chance that an item will be damaged. Carts are the easiest method for reducing touches.

## Package Design

A quick and effective method for developing good packing design is to contact a local box manufacturer. They have far more experience than most frame manufacturers and can build prototype boxes fairly quickly. As mentioned, ship a finished product and study the damage. Then experiment with a variety of shipping methods and carriers until you find one that is cost effective. Remember, cheaper boxes and cheaper freight lines are not necessarily the most cost effective.

Cardboard corners are an excellent method to keep joined corners from becoming dinged and scratched when

stacking frames. However, cardboard corners are not a substitute for heavier gauge cardboard shipping containers. Bubble corners guard against damage from scratching but add virtually no strength to joined corners when shipping.

Using plastic bags in conjunction with cardboard corners will reduce scratching and dinging of items prior to being placed in a shipping container. For a more effective use of staff, have the person wrapping items be your final QC inspector, verifying that an order is correct and that an item meets QC tolerances.

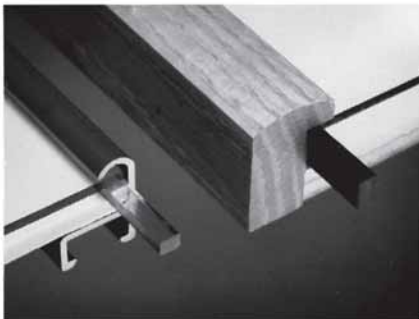
## Good Carriers

Quite often manufacturers base their relationship with freight lines primarily upon transportation costs. However, not all carriers function in the same manner. Some carriers, such as Yellow Freight and Fed Ex Freight, handle packing and routing of loads in different manners. Both have different damage rates and delivery times. Carriers like Fed Ex may have a lower damage rate than a discount freight line. Conduct a cost-benefit analysis of the savings you get when using a discount freight line versus a premium line to see where the value is for your firm. You can also contact a carrier and have it send out a packaging specialist. Most box manufacturers also provide this as a free service.

These are only a few main points concerning damage control. You should also meet with packaging, shipping, and material handling experts and have them review your factory procedures. Quite often they will use information and technology from other industries that can not only dramatically reduce damage but also improve factory efficiency. ■

Jim Parrie, Ph.D., CPF, a 30-year veteran of the framing industry, has owned and operated small frame shops, galleries, and wholesale operations to high volume OEM facilities. Currently, he owns Millennial Technologies & Consulting International, a consulting firm to high volume framers, retail chains, and manufacturers throughout the world.

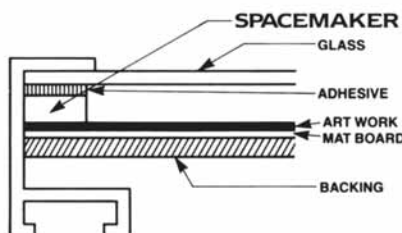
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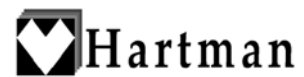


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