



Special Report

How Specialized Crating Services Can Assure Your Goods Will Be Safely Delivered

Many companies shipping large-size goods from hospital equipment to antique furniture find it advantageous to outsource their crating operations to companies that specialize crate design.

This practice results in minimal losses, reduced insurance rates and fewer warranty claims on various types of large-size equipment.

Also included are special considerations for overseas shipments of crated goods to foreign countries.

**The peace of mind knowing that your customer
will receive your product in the same condition that
it left your final quality control checkpoint.**



The last step in the manufacturing process of just about any product is packaging the item for shipment. With the exception of automobiles, aircraft, and boats, just about everything made or sold is packaged in a cardboard box or wooden crate.



The packaging of goods must be done with precision and care. Most small consumer goods are packaged using specially manufactured foam plastic end caps or package inserts. Boxes are generally stacked on pallets to be moved by a forklift or pallet jack which further minimizes damage from the mishandling of individual boxes. Large items need more attention in preparation for transport.

The larger the object, the more specialized the packaging.

One of the major concerns amongst companies engaged in manufacturing, selling, warehousing and distribution of large, often delicate goods is the safe transport and storage of these products. Such items include but are not limited to:



- medical equipment – respirators, dialysis machines, imaging devices, etc.
- data processing – server racks, pre-assembled network systems
- scientific instruments containing delicate components
- studio recording equipment
- machine tools and specialized industrial equipment
- antique furniture and glazed cabinetry
- sculptures, art objects, and museum pieces

It is important to take the necessary steps to assure that what you ship arrives at its destination in the same condition as it was when it left your premises. Outsourcing your packaging to skilled specialists who are experienced and knowledgeable in the practice of secure packaging will greatly minimize the probability of losses due to damaged goods. Additionally, one must consider the detriment that losses cause to good customer relations.



Typical Causes of Damage to Crated Items

Handling at Staging Points

The number of times each piece is handled before, during and after transit needs to be considered in how an item is packed. An item hitting four terminals between pickup and delivery will be handled a minimum of 15 times. This frequency of handling greatly increases the likelihood of damage to the product.



Many factors are to be considered when engineering a packaging style but the most important to consider are the fragility, weight, load bearing issues, and value of the item in addition to the mode of transportation (air, ground, rail, or ocean) and the conditions the shipment will be under during transport.

Shipments are subjected to rolling, pitching, heaving, surging, swaying, and yawing, shock & vibration caused by acceleration and deceleration forces, turbulence, impact against loading docks, and forklift handling. Other considerations are the weight of superimposed packages, pilfering, corrosion, and temperature extremes. Finally, marks and symbols used in labeling the container are effective against loss and damage.



Obviously the most likely cause of damage to a product is when its box is dropped. Shipping and warehousing operations attempt to keep that risk to a minimum by the use of specialized cargo handling equipment, but it happens.

Generally to be safe, it is best to consider possible damage from a force two or three times average when a pallet is set down by a forklift on a concrete surface or when a shipping container is set down on a truck bed or a stack of containers are loaded on a ship.

The fragility of the item itself must be taken into consideration. A piece of antique furniture or a sculpture will more likely be damaged than a milling machine.

Cushioning Devices

Designed for specific items of cargo minimize damage due to vibration, warehouse handling and bumps on the road.

Examples of foam rubber strips and inner pallets.

Movements in Transit.

Then there are ‘side to side’ and ‘forward and backward’ movements caused by a truck moving forward and braking and making turns – or by a ship moving side to side in rough seas. When a crate is handled by a forklift, it is usually tilted slightly when it is picked up or set down.

There are various techniques used to restrain the object inside the crate from shifting or tilting within the crate such as strapping, banding, blocking and bracing that are employed to eliminate many transit perils.

Vibrations

During transport by road or rail, there will also be vibrations transmitted to crated goods. Trucks rolling on less than perfectly smooth roads and the typical vibration of rail travel as the train moves over joints between rail sections. Depending on the sensitivity of the cargo, there are cushioning devices that can minimize the effects of external vibrations. These range from bubble wrap and poly foams of varying grades to floating pallet bases and inflatable rubber donut mounts for heavy items.

Damage to the Crate

Damage to the shipment can also be caused by damage to the crate itself from impact to the sides of the crate, stacking crates on a transport vehicle, or from the cables used in rigging the freight onto a container. The crate



Waterproof Wrapping
For situations where cargo might be staged outdoors.



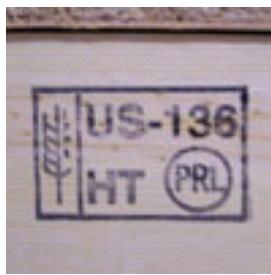
Crate for transporting large oil paintings.

Designed to keep them upright and away from other cargo items from bumping into the crate containing the paintings



Typical Wooden Crate

Lumber must be fumigated and pressure treated to prevent introducing insects and fungi into foreign countries.



Lumber Certification Seal, also known as a "Bug Stamp" required on all lumber used in crates for international transport of goods.

should be made to withstand any impact by another crate bumping into it when a forklift operator tries to set another crate besides yours.

And in some situations, crates are stacked atop one another. Therefore a crate should be able to bear the weight of another unless it is large enough where stacking is not done. An example would be a crate tall enough to fill the height of a shipping container or the inside of a truck. The amount of weight that can be stacked atop your crate should be labeled and the material handlers should be aware of how much weight can be stacked atop a typical crate.

Other Considerations in Crating

Water damage: it is important to know if your crate will be staged out of doors and thereby exposed to rain. Waterproofing might be necessary or desiccants introduced.

Ease of unpacking. It is important to design a crate that will allow for easy opening and removal of the contents. Instructions on easy opening should be included with the paperwork attached to the crate. Crates are usually designed to be taken apart around the object, often so that a lifting sling can be used to remove the object from the pallet underneath.

International Shipping Certification of Crating Materials as being Pest Free

Special care must be taken in selecting materials for building crates when exporting your products to other countries. Wood can be a means to introduce invasive insects and fungi to other countries. This can sometimes result in a disastrous infestation.

Since wood is still used in making crates and cargo pallets there is a concern in many countries of insect pests and fungal organisms being introduced from within the wood used in making crates and pallets.

A specialized crating service is familiar with international trade regulations governing packaging of goods. Special care is taken in selecting a reliable source of lumber suitable for building crates.

Lumber must be fumigated and pressure treated to eliminate any living organisms, eggs and spores of insects and fungi. Pressure treating also makes wood more water resistant.

Wood used in crates and pallets is specially labeled according to ISPM 15 norms. This provides customs and inspectors with an internationally recognized symbol of compliance with environmental safety standards.

Any qualified international crating company will have not just one stamp, but up to three different distinct stamps for various circumstances in shipping internationally.



Stamp signifying the lumber used in constructing a crate has been properly treated to prevent introduction of potential foreign insect and fungal pests.

One stamp that is required encompasses the wooden crate and any lumber that is attached to the crate. A dunnage stamp is used for lumber used in blocking and bracing inside a container, and a third stamp must be employed for loose pieces of lumber such as saddles and cradles between multiple items inside the crate.

The recourse used in foreign countries when it's not clear whether the lumber has been properly treated can be rather costly. It ranges from shipping the product back to its origin, having it fumigated at your expense before it clears customs, or completely destroying the product and the crate.

It is always best to be up to date about any changing regulations. Various countries have their own specific restrictions. There are also new implementations of current guidelines that are in the works. It is prudent to use a service that specializes in crating items for export. Such a provider would be up to date on such regulations.

Advantages or Outsourcing Your Crating Operations

Many companies have their in-house 'wood shop' for building custom pallets and crates. These are usually companies that have a limited product line with minimal risk of damage and cater to the domestic market.

However companies dealing in a wide variety of products, or products that require special care in packing and transport, especially if products are to be shipped long distances or overseas might consider outsourcing the cushioning and crating of their products.

Crating is a skill in itself.

Companies that provide crating and shipping (or maybe transport) services employ tradesmen familiar with crate design and how best to protect sensitive cargo in transit. They are aware of what types of items to be transported need more protection from all of the various perils.

Computer Aided Design

When a machine or instrument or medical device requires internal cradles or other forms of restraint within the container, computer design capabilities offer a key advantage. If your company manufactures specialized equipment, there are CAD drawing files (AutoCAD) or computer models (e.g. Solid Works or Inventor) that can be used to design the crate and internal support structures. Having a cyberspace model also provides insight on how a crate will be assembled around an object and how best to unpack the crate's contents at its destination.

Using drawings or models from your company's design department, the crating firm can make precise drawings for the wood shop for any cradles of supports to use inside the crate. It also allows for precise placement of vibration dampeners and cushioning devices.



Cargo Cradles
Examples of the use of CAD drawings in designing crates for specific items to be transported.



Special care in transporting fine antiques.



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Computer aided design eliminates the need to take measurements of the actual object and translating them to a specific crate design. It saves time and provides for better protection of what is being shipped.

Custom Design and One of a Kind Shipments.

Some companies providing large pieces of equipment, such as hospital equipment, would need a specially designed transport enclosure that could be produced on demand, with design specs and CAD files in a database ready to produce identical containers on an as needed basis.

There are other instances where one of a kind transport packaging solutions is required. These include antique furniture and museum pieces, sculptures and other large works of art. In this case, a crate must be individually designed for each object.

A crating service will custom design each crate to provide adequate support and protection from external forces. Forward, backward, side to side, up and down are all directions a piece can move inside a truck, along with the constant vibration from long distance transport. These are all considered by a specialty packaging and crating provider in planning the best way to contain a product.

Also any carrier or trucker must secure the crate itself so it will not move or shift or collide with other crates or walls of the truck cargo space or shipping container.

In the case of museum pieces, special attention is given to unpacking and final placement of the object where it will be displayed.

Introducing Craters and Freighters

A company dedicated to safely packing and transporting large size products, especially costly and delicate items requiring special care in packaging and shipment. Here's a partial list of services and advantages provided by Craters and Freighters:

- Over 25 years of experience engineering custom packaging and containers
- 65 offices and locations in the continental US
- Affiliated with trucking companies that offer reliable handling of your goods
- computer-aided design for faster, more precise development of custom crates
- familiarity with international shipping laws
- experience with overseas shipping (scheduling, types of containers, etc.)
- expert advice on proper insurance of your shipment
- instant tracking of your shipment available online
- supervision at every step of the way to your shipment's destination, including transfer from truck to shipping container for overseas transport.
- and we can probably do it cheaper than you can (we can say that nicer) *Continued next page*



To find a Craters and Freighters location near you,
visit <http://www.cratersandfreighters.com/cf/contact.do>

**Please include digital photos and CAD drawings
To obtain the most accurate estimate.**

To obtain an estimate, send email to Easterne@CratersandFreighters.com.
Please include digital photographs and CAD files, preferably AutoCAD
drawing (.dwg) files or pdf files of AutoCAD or other CAD system draw-
ings.



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