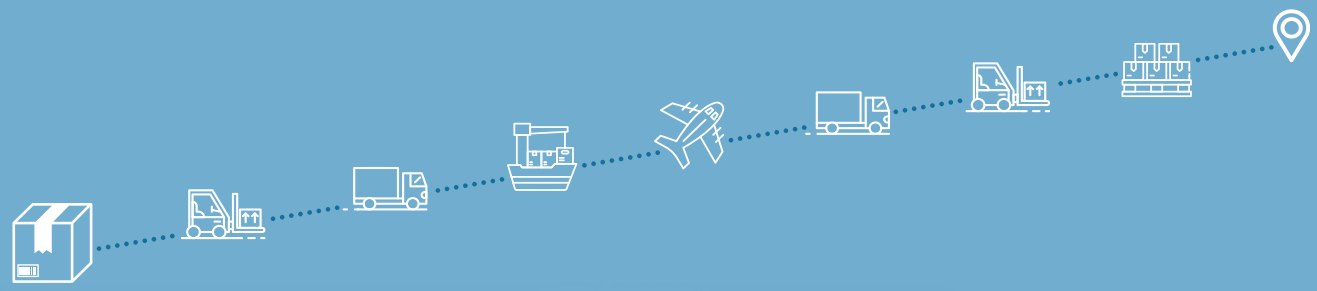
LARSON PACKAGING COMPANY

The Complete Packaging Comparison Buyer's Guide

Corrugated boxes & foam, hybrid packaging, wooden crate, ATA cases and molded cases. Which is the right choice for shipping your valuable equipment?

When shipping or storing valuable and sensitive high-tech equipment how do you know whether you need a corrugated box, hybrid packaging, crate, ATA case, or molded shipping case?

You're buying ***more than just packaging*** for your product or equipment — you're buying a solution to a very specific shipping challenge. We've developed this guide help you understand the crucial differences between each type of packaging so you can get the answer right for your specific situation.



Companies rely on our expertise in protective packaging to get their products safely yet cost-effectively to the point of use — and work

9 key considerations when choosing and developing protective packaging

The answers to these questions will influence what kind of packaging will be most useful for your application.

Protection/Safety
How sensitive or delicate is your equipment?

Fragility
How sensitive is it to shock and vibration?

Size/Weight/Uniqueness
How big is your item? How much does it weigh? How will it be handled? Is it odd shaped or does it have arms, hoses, protrusions, or fragile components?

Material Handling
Does it need to be carried or moved by a person, or are pallet jack or forklifts required? Is a loading dock available at the origin and destination? What equipment is available there? Will the packaging be kept or disposed of? How? What size doors are in the area?

Shipping Method
Will it be transported by air (carry on, checked or cargo) , ocean, or truck, or in the back of a car? What is the environment like that can impact handling, size/weight restrictions, and shock and vibration?

Ease of Use
How will the item be loaded and unloaded? How will it be handled? How important is it to have tools or avoid tools? How much does loading/unloading time cost you? Do you need it standard or customized?

Aesthetics/Branding
Is premium look important to you? Branding? Warnings? Does the packaging need to make a strong impression, perhaps at a trade show or other type of public presentation? Or does it just need to get there and work?

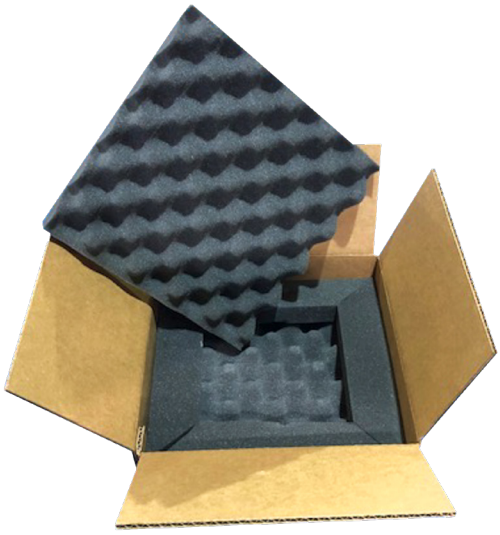
Reusability
How many trips does this item need to make? Do you plan to reuse your packaging? How many times and how often will your item need to be shipped?

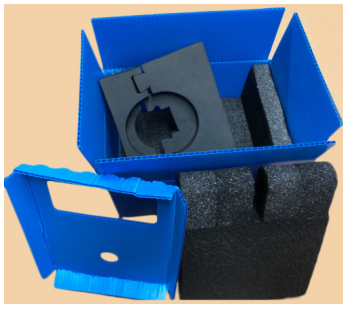
Cost-Per-Package or Cost-Per-Trip
Are you open or looking for closed loop logistics and multiple trips or for a disposable one-way option? Are you comparing apples to apples even among types of product? (Not all packaging products are designed or built the same)

The Options
Overview

	 Box & Foam	 Hybrid Pack	 Wooden Crate	 ATA Case	 Molded Case
Up Front Cost	Low $ per unit	Moderate $$ per unit	Moderate $$-$$$ per unit	Higher $$$$ per unit	Higher $$$$ per unit
STRENGTH & CAPACITY					
Durability/ Protection	○	○○	○○○	○○○○	○○○○
Weight Capacity	Up to 160lbs	5lbs - 400lbs	125lbs - Unlimited	50lbs - 400+lbs	10lbs - 250lbs
No. of Trips	1	1	~10	100+	100+
Cost per Trip	Flat	Flat	Low with multiple use	Very low with multiple use	Very low with multiple use
MATERIAL HANDLING					
Ease of Use	Easy	Easy	Moderate to difficult	Easy	Easy
Ease of Transport	Very Easy	Moderate	Somewhat Difficult	Moderate	Easy

Option 1.
Box and Foam





What it is

Corrugated boxes are the most popular type of single-use packaging, and they are made from corrugated fiberboard or plastic.

Corrugated boxes may also include engineered foam interiors to house and protect products inside them. The foam cushioning provides blocking and bracing against shock and vibration. Different types of foam can be used based on your application, the fragility, weight, and dimensions of your equipment and other considerations.

Up Front Cost

Low
$
per unit

Strength & Capacity

DURABILITY PROTECTION
●○○○

WEIGHT CAPACITY
UP TO 160LBS

NO. OF TRIPS
ONE

COST PER TRIP
FLAT

Material Handling

EASE OF USE
EASY

EASE OF TRANSPORT
VERY EASY

Why it is used

As the most popular type of packaging, a corrugated box is a hassle-free solution. No special tools are required to open it and using it is relatively straight-forward. Boxes are also easy to dispose of and can be recycled. It's easy to obtain bulk corrugated packaging while keeping inventory low since repeated orders can be rapidly fulfilled on-demand.

Corrugated is lightweight and versatile—it can be combined with other substrates to optimize for cost, weight, and performance. Because it is less expensive, it also offers the best protection-to-cost ratio of any outer packaging. However, it is limited in the amount of protection it provides.

How it's used

Corrugated boxes are typically used for one-off shipments and for products that need only a minimal amount of in-transit protection. For added support, a corrugated box or other corrugated design can rest on a pallet base, which reinforces stability while keeping costs low. Boxes can be custom designed for almost any application, and waterproof plastic corrugated is a great solution for more durable medium-term storage in challenging environments (such as clean rooms, near water, etc.) or where multiple use is desired. Plastic corrugated is more durable for multiple use and/or in clean room environment.

Drawbacks

The most significant negative aspect of corrugated packaging is that it offers only a very limited amount of protection against the elements and is easily ruined by water or rough handling. It also typically offers lower weight handling capacities than other types of packaging. Corrugated boxes are not designed to be reused. But since they are less expensive, they are also a more disposable solution in general.

Option 2.
The Hybrid Pack

What it is

Hybrid Packaging is a combination of wood and corrugated elements often used as a substitute for wooden crates when the product is smaller than a large beverage refrigerator.

A properly designed hybrid crate can offer the same protection as wood but at a lower manufacturing cost and shipping weight. Much of the packaging can be recycled making it better for the environment.

Why it is used

Sometimes, full wooden shipping crates may be overkill or heavy and bulky for the application. Or it may be costly and difficult to recycle for a one-way trip. Yet, on the other hand, a corrugated box may not offer sufficient protection or — if only a handful are needed — could be unnecessarily expensive.

An intelligently designed hybrid corrugated pack can provide the same in-transit protection as one made solely from wood but will weigh substantially less (up to 75% lighter) and cost less to manufacture (up to 30% cheaper). This can enable it to transport heavier items while meeting common carrier weight limits and lead to substantial cost savings.

How it's used

Hybrid packaging is often the perfect packaging solution for medical units, electronic parts, and other high-value items requiring one-off shipments, often direct to end users. Hybrid packaging is also often gentler on the environment: a greater proportion of the packaging can be recycled through established waste streams. This makes it easier to dispose of the packaging waste once delivered.

Hybrid packaging offers versatile design options for cost and performance. For example, corrugated layers can be tailored to fit the product's particular shape for maximum protection, and the outer layer can be printed on. Strength and rigidity can be added by lining plywood, lumber or v-board inside a corrugated DST or HSC. Or a wood cap can be substituted with a corrugated cap to save weight.

Drawbacks

Hybrid Packaging is not suitable for exceptionally large or heavy items. The working rule of thumb is hybrid packaging should not be used for anything over the size and weight of a common beverage refrigerator. Additionally, hybrid packaging is designed for one-way use although the base may be reusable. A standard wood crate may make sense if the crate can be used multiple times.

Up Front Cost

Moderate
$$
per unit

Strength & Capacity

DURABILITY PROTECTION
●●○○

WEIGHT CAPACITY
5-400LBS

NO. OF TRIPS
ONE

COST PER TRIP
FLAT

Material Handling

EASE OF USE
EASY

EASE OF TRANSPORT
MODERATE

Option 3.
The Wooden Crate

What it is

Wooden crates are wooden containers scientifically engineered to precisely enclose and protect equipment from external forces and shock. Far more than just a plywood box, wooden crates can be carefully engineered and tested to provide specific amounts of mitigation for shock and vibration.

Why it is used

Wooden crates are highly customizable and sturdier than corrugated boxes. Once an item weights more than 125lbs, a crate may be warranted. Most designs meet Mil-Spec and ASTM standards for quality and protection. Wooden crates can also be reused and refurbished to extend their lifetime, which can help make them more cost-effective. Since wooden crates are less expensive than ATA and polymer plastic cases like Pelican and SKB, they are attractive for situations where the number of trips needed to be used is relatively low and the amount of protection needed is high or because site or weight dictates.

Wooden crates can always be constructed to handle more weight which is why there is virtually no weight or size limit. Thanks to high engineering and testing standards, wooden crates can be built to withstand rough conditions and provide a high degree of protection to contents inside.

How it's used

Wooden crates are typically used for moving heavy and delicate products and sensitive items that require special handling in transit. Examples include server racks, medical equipment and robotic arms, and other types of awkward, heavy equipment. Large items that need engineered shock protection and support will usually require a wooden crate with the addition of a shock or "floater" base. Corrugated packaging can also be combined with wooden crates into a hybrid solution for cost-efficiencies where less than full-scale protection is needed. Wooden crates should be designed to last multiple trips with basic refurbishment.

Drawbacks

Of all the different packaging types, wood packaging is the heaviest. This also makes it more difficult to handle and load and unload. Most crates require material handling equipment (such as forklifts) to move or special tools to open. Additionally, as a consideration for international shipping, some destinations have phyto-sanitary requirements, such as heat-treated wood for overseas transport.

Up Front Cost
Moderate
$$-$$$
per unit

Strength & Capacity

DURABILITY PROTECTION
●●●○

WEIGHT CAPACITY
125LBS+

NO. OF TRIPS
TEN

COST PER TRIP
LOW WITH MULTIPLE USE

Material Handling

EASE OF USE
MODERATE

EASE OF TRANSPORT
SOMEWHAT DIFFICULT

Option 4.
The ATA Case

What it is

ATA cases, also known as road cases, flight cases or transit cases, are customizable sturdy containers with modifiable features for easy and repeated transport.

Originally developed for use in the airline industry to easily send parts and avionics, the ATA 300 specification details construction and use of at least 100 round trips. ATA cases can be assembled using four types of materials: Hexagrip Phenolic Coated Plywood, High-Impact ABS Plywood, or Engineered Plastic Panels.

Up Front Cost

Higher
$$$$
per unit

Strength & Capacity

DURABILITY PROTECTION
●●●●

WEIGHT CAPACITY
50-400+LBS

NO. OF TRIPS
100+

COST PER TRIP
VERY LOW WITH MULTIPLE USE

Material Handling

EASE OF USE
EASY

EASE OF TRANSPORT
MODERATE

Why it is used

ATA cases are easy to use and move around, generally toolless, usually including handles and casters for moving around on four wheels. Additionally, they can be opened and closed with custom latches and include hinged lids for easy access to contents inside. ATA cases are studier than other types of packaging and are designed to be used over and over again. They are also very customizable and can be adapted easily for different functions and situations, including acting as a permanent outer "shell" for technology that never leaves the case (monitors, rack units, etc.). ATA cases are a good way to isolate and protect sub-assemblies and improve organization and usability through the use of custom drawers and foam interiors. In addition they are great for long-term storage, and with minor modifications, they can reduce or eliminate the need for material handling equipment. They can be sized to cube out a truck. ATA cases are fabricated and very flexible in design.

How it's used

Products that can be compactly stored and need durable protection often have need for an ATA case, particularly if transported frequently. Production and event companies typically use ATA cases to carry lights, electronics, and musical equipment that will be used on the road. When ease of use and transportation is a high priority for electronics and other types of gear that needs rigid protection, an ATA case will usually get the job done. Also, for events and trade shows where a premium packaging look and aesthetic appeal are important for presentation, custom ATA cases can be ideal. Or to organize and store products effectively.

Drawbacks

Because ATA cases are designed using such durable materials, they are also typically more expensive than other types of packaging. If your equipment needs highly durable packaging, but it will not be transported regularly, you may simply need a wood crate that can be used only a few times. Internal components of ATA cases can also be more difficult to repair, though they are less likely to wear out as quickly overtime. ATA cases are difficult to dispose of and recycle—if the need ever arises! Although they can be repurposed.

Option 5.
The Molded Shipping Case

What it is

Durable packaging made from high-strength polymer resin, adapted to many use cases. Some of the most recognized brands are Pelican, Pelican-Hardigg and SKB. These cases have multiple sizes and styles that can be injection-molded or roto-molded and include many different customization options.

Why it is used

A molded shipping case, like Pelican or SKB, is designed to be highly protective and easy to use. It is ideal for items that are not as heavy, but require strong protection and ease of handling and storage. Pelican and SKB cases are resistant to many elements and have a lifetime guarantee. Since they are gasket-sealed, they are designed to be watertight and dust proof. Built to meet or exceed military specifications, these are some of the toughest cases on earth.

How it's used

Polymer plastic molded cases are designed for use in the field in a number of different industries, such as scientific and medical instruments, aerospace parts and avionics, military weaponry and tools, deployment kits, platoon kits, and field diagnostic and test kits. Custom foam interiors can be designed for internal protection against shock damage, making these cases ideal for equipment like thermal imaging, cameras and communications gear. Custom toolkits, medical supplies and first aid, law enforcement equipment and the like are often housed in Pelican or SKB cases that are lighter weight and provide crush-resistant protection. Systems and instruments can also be integrated into molded cases so they become part of the product themselves, such as rack mount cases, which turn into mobile units that are easy to transport and deploy. Cases can be injection molded, roto-molded or blow molded.

Drawbacks

Pelican and SKB cases come in standard sizes and are not as easily modified for custom solutions (modification voids the warranty), although they can be outfitted with customized foam interiors to fit, organize, and protect different types of products. These polymer plastic cases are also not biodegradable or easily recycled, but they are generally used longer than other types of recyclable packaging like wood crates or corrugated boxes.

Up Front Cost

Higher
$$$$
per unit

Strength & Capacity

DURABILITY PROTECTION
●●●●

WEIGHT CAPACITY
10-250LBS

NO. OF TRIPS
100+

COST PER TRIP
VERY LOW WITH MULTIPLE USE

Material Handling

EASE OF USE
EASY

EASE OF TRANSPORT
EASY

We're business-to-business protective packaging experts

No matter how complex your needs, how delicate the product, or how tight your deadline, we take the entire burden and hassle of protective packaging off your hands — **saving you time, money and hassle.**

We'll couple our production line to your usage so that custom packaging arrives exactly when you need it for perfectly synchronized just-in-time packaging.

We take even highly complex projects from design and prototype to finished precision packaging that's in the warehouse in as little as three days.

And we engineer our protective packaging to ensure your cargo will safely endure the toughest trans-shipment with zero damage.

We guarantee it.

How we're different from other packaging companies

Manufacture in-house

We are a complete, full service in-house manufacturer of custom packaging — not a distributor or a consultant.

Frictionless vendor experience

We can work with you to unite all your custom anti-shock and anti-vibration protective packaging under one roof for faster turnaround times, simplified admin coordination, and a frictionless vendor experience.

Large standing inventory

We carry a large raw materials inventory and our twin high-capacity production plants have state-of-the-art capabilities. Plus, we back it with a talented design team and empowered customer service team for immediate action and rapid solution development.

Industry-leading leadtimes

We can take your project from design and prototype to finished precision packaging that's in your warehouse ready to use in industry-leading leadtimes of as little as three days.

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