



Shippers Say Goodbye to Wood Pallets Forever... ...And Hello to a Stronger Bottom Line

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Change. It's the one constant in our Information Society. A sea of flat panel monitors has replaced the behemoth CRT screens of years past. Instant messaging, e-mail, and cheap video conferencing technology have made telephones, fax machines, and business travel less important. But one thing never changes: your freight will crisscross the country and the globe sitting on trusty old wood pallets.

And why not? Wood pallets are reliable and perform their limited job description well. The modern pallet dates back to 1925. Its design has stagnated for decades, and both users and manufacturers have come to accept glaring weaknesses. But in recent years, these weaknesses have damaged your bottom line.

Between extra fuel costs, environmental concerns, and workplace injuries, wood pallets are becoming a major headache. But there's a reason why no alternative has taken hold. Metal pallets are strong, but very heavy and expensive. Plastic pallets have a long life, but are far more costly than wood and not much lighter. Corrugated pallets are significantly lighter than wood, but cannot rack and don't stand up to the rigors of shipping or warehouse handling. Despite all their deficiencies, wood pallets continue to dominate the industry. You accept them, because you really don't have much choice.

"A unique wood-corrugated composite...promises to revolutionize the way you think about shipping."

What do you really need from a pallet?

- It must be resilient enough to carry all your loads.
- It must rack.
- It must be affordable.
- It must be environmentally friendly.
- It must offer modern tracking technology.
- It should be lightweight, to cut your fuel costs.
- It should reduce workplace safety hazards.
- It should move seamlessly from transport to display.
- It should be compact enough for easy storage.

Of course, you know that a pallet with all of these characteristics doesn't exist. That is, until now. A unique wood-corrugated composite and clever engineering have made such a device a reality. Soon we will introduce you to a new pallet technology that promises to revolutionize the way you think about shipping.

The Trouble with Wood

As much as we all rely on them, there are many problems intrinsic to wood pallets. Here are some of the more critical ones:

Weight

US standard GMA 48"X40" pallets weigh 45-50 pounds or more. In an era of \$10 or \$15 per barrel oil, that was not a big deal. But those days are long gone. If someone cut enough fat out of your pallets, the dynamics of freight shipping would change. In the world of LTL (Less-Than-Truckload) and air cargo, where extra pounds mean higher costs, heavy wood pallets are weighing down your bottom line.

Another weight-related concern is that wood pallets are difficult for workers to carry. Often they must use forklifts merely to move empty pallets around a warehouse floor. Or employees might decide against using pallets for peripheral functions because it's just not worth the effort.

Durability

After their initial use, many wood pallets require repair, are relegated to carrying much lighter loads, or are junked. Others suffer all-too-common run-ins with forklifts, leaving them damaged. Given you can't depend on their durability, many customers buy used pallets and discard them after a single trip.

Environmental Concerns

Because they are cheap and not always sturdy, we often treat wood pallets as throwaway items. Consequently, **wood pallets occupy an estimated 2-3% of landfill space in the US** (according to the USDA Forest Service). Pallets are also popular fuel for bonfires. San Diego and Huntington Beach, CA recently outlawed or placed restrictions on this practice. No doubt other cities will follow, sending even more pallets to the landfill.

According to pallet manufacturer Goeman's Wood Products, the pallet industry only recovers an estimated 17 million wood pallets for repair and recycling each year. This is less than 2% of sales, a performance that is no longer acceptable.

Unnecessary energy usage is a major environmental concern. Due to their weight, wood pallets are responsible for a significant waste of fuel.

While you may not believe these environmental issues affect you directly, you would certainly change your tune if a government agency or an environmental group began focusing on your wasteful ways. In a time when companies are falling all over themselves trying to prove who is the most "green," the last thing you want is to earn the nickname "Landfill Louie." It's a public relations nightmare if consumers view you as callous towards the environment.

Unsanitary

Wood pallets are vulnerable to invasive insects and plant diseases. Consequently, they are a poor choice for the shipment and storage of food

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products. To fight disease, the International Plant Protection Convention prohibits untreated wood pallets from crossing national borders. To prepare for overseas use, pallet companies must treat their products with heat or chemical fumigation, or make them from something other than wood. Costly, heavy metal and plastic are the usual alternatives. Corrugated and lightweight plastic handle more modest loads. An affordable, lightweight pallet that could go from truck to warehouse and cross the oceans untreated would be a big improvement.

“The new pallet’s customization and tracking components allow it to move seamlessly from truck to warehouse to display.”

Workplace Injuries

Not only are wood pallets heavy, leading to back injuries, but they are vulnerable to splinters. In addition, wood pallets use nails and staples, which present their own hazards to both employees and freight. All of these factors contribute to workplace injuries.

Bulky

Because of their size and inflexible nature, wood pallets present a storage problem. Customers who might reuse pallets in the future instead pay to discard them. This is preferable to having pallets waste valuable storage space.

The Solution: Introducing the pi pallet

Pallets International, Inc. recognized the pressing need for a pallet to do the job of wood, but without its many limitations. The resulting breakthrough is the pi pallet, a hybrid of durable corrugated material and heat-treated wood bonded together with industrial strength adhesive. The pi pallet has tested as strong as comparable wood pallets in spite of being 65-70% lighter (13 and 16 pounds for the two models vs. 45-50 or much more for wood).

The pi pallet functions as a single unit, enhancing its strength and ability to cushion its cargo. It is much lighter than wood or most alternatives, and is ISPM-15 certified resistant to infestation. The new pallet’s customization and tracking components allow it to move seamlessly from truck to warehouse to display. Simply put, the pi pallet is a category killer.

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Key Benefits

Immediate savings

This is no time to be investing in non-revenue producing tools. The pi pallet’s dramatically lower weight results in substantial savings for LTL shippers. The per pallet savings due to weight reduction greatly exceed the net cost of the pallet for nearly every shipping class. **So for LTL shippers, the pi pallet generates immediate savings via lower freight fees and fuel surcharges from the first use.** Per pallet savings for air cargo are extraordinary.

Green technology: the pi pallet will slash fossil fuel use and save billions of pounds of wood each year. Because it is recyclable, adopting the pi pallet will free up US landfills from the approximately one billion wood pallets they absorb yearly.

Load more air freight onto each plane

While trucks can usually be loaded full, this is not always the case with planes. Airlines and freight haulers often limit the freight on a flight based on conditions to preserve a margin of safety. By replacing heavy wood pallets, the lighter pi pallet frees up more weight for cargo on each flight. Whether carriers ultimately save on fuel or reach weight capacities with more cargo (and less pallet weight), the savings goes straight to their bottom line.



Rackable

A primary reason wood maintains its dominant market share is the fact that lighter alternatives like corrugated and plastic cannot rack with significant weight, if at all. Warehouse and lab testing demonstrate the pi pallet can stand in a rack with at least 2500 pounds, just like wood pallets.

Sturdy for all your loads

The pi pallet's advanced engineering makes it as sturdy as wood in spite of its greatly reduced weight. The pi pallet functions as a single unit, enhancing its durability and allowing it to absorb more shocks than a wood pallet.

It will make your business "green"

The pi pallet's environmental credentials are compelling:

- Its lighter weight will result in **less use of fossil fuels**.
- It is **reusable and recyclable**, so adopting the pi pallet will **eliminate most of the approximately one billion pallets added to landfills each year**. Wood pallets currently take up 2-3% of all landfill space.
- Many retailers, including Wal-Mart, have begun to rate suppliers based on their environmental performance. **If the government doesn't force you to consider environmental issues, your customers will**. It's wise to be proactive and tout your company's conservation efforts publicly.
- Given how many users view wood pallets as throwaway items, in practice the pi pallet should have a much longer life cycle than wood.

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Safety

As discussed earlier, wood pallets are a workplace hazard. Any warehouse employee can carry the lightweight pi pallet without risk of injury. And since the pi pallet has no exposed wood surface, staples, or nails, the risk of splinters or other handling injuries is minimal.

Designed for you

The pi pallet can handle oddly shaped items, and customers can retain it for displays. The company can customize its pallets with printing (bar codes, logos, names, etc.), laminating, assembly instructions, advertisements, etc. This makes the pi pallet aesthetically pleasing for use outside of warehouses. Its modularity enables many shapes and sizes for product integration. The pi pallet's construction allows for simultaneous die cutting and printing.

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Tracking capability

More and more businesses insist they be able to implement state-of-the-art technology for tracking and inventory control. In early 2011, the U.S. FDA received authority to implement a mandate for electronic **"farm-to-fork" traceability** of all fruits and vegetables. Pallets International can embed the pi pallet with a RFID chip and bar coding for these tasks and many more.

Handles ALL of your pallet needs

Since the wood is heat treated before assembly, the pi pallet is not vulnerable to infestation or plant diseases. It's ISPM-15 certified and **ready for international use right off the assembly line**. And it's safe for the transport, storage, and display of foodstuffs. The pi pallet is also resistant to dust.

Comparison Chart for U.S. Standard 48”X40” Pallets

	pi pallet™	Wood	Plastic	Corrugated	Steel
Weight	13-16 lbs.	40-70 lbs.	7-60 lbs.	10-20 lbs	60- 500 lbs.
Target User	LTL & air shippers; RFID; racking; int'l	OEMs; re-handlers	Food dist., automotive; paper prods.	One-way; light duty	Heavyweight
Load Capacity	2500 lb.	1000 lb. light; 2500 lb+. heavy	Very low up to 3000+ lbs. for heavyweight	Generally lightweight at 1000 lbs.	>3000 lbs.
Retail Cost Per Unit	\$9-\$12 in mass production	\$8-\$12; \$5 used	\$10-\$60 and more	\$10-\$15; more for heavy duty	\$hundreds
Environmental Scorecard	Fuel saver; reuse; recycle; long life; renewable	Fills up landfills; reuse; recycle; renewable	Requires fossil fuels; reuse; long life; sometimes recycle	Fuel saver; recycle; renewable	Reuse; long life; sometimes recycle
Advantages	Lightweight; sturdy; rackable; long life; sanitary; RFID; “green”; customizable	Reusable; sturdy; rackable	Sturdy and long life (only heavyweight); sanitary; RFID	Lightweight; RFID	Sturdy; long life; sanitary; rackable
Disadvantages	Currently no FTL savings due to industry pricing model; won't stand up to flooding	Heavy; unsafe; environmental issues; not sanitary	Heavy; costly; most do not rack; lighter ones have limited use	Fragile (cannot ram); does not rack safely; moisture damages badly	Heavy; costly

Sample Shipping Quotes

Note: All of these calculations feature a typical 50% discount off the rates in effect July 18, 2009 using the freight calculator of R&L Carriers at http://www.rlcarriers.com/kp_rate_quote.asp. The only variable plugged into the calculator is 30 pounds per pallet less for the pi pallet on the right vs. the wood pallet on the left. Weight and net charges are highlighted. Savings will vary based on origin/destination, freight class, and weight. These quotes are typical.

Shipping charge including one wood pallet

Rate Quote			
Quote #: 7055983		Service Days: 5	
Origin		Destination	
Terminal:	EUREKA, CA (ATC) EUREKA, CA 95501	Terminal:	HAGERSTOWN, MD (HAG) 10120 Governor Lane Blvd Williamsport, MD 21795-4026
Zip:	95501	Zip:	21795
Phone:	1-888-575-2632	Phone:	1-877-731-7346
Class	Weight	Rate	Charge
175	1,410	\$515.55	\$7,269.26
Gross Charge	1,000		\$7,269.26
R+L Discount Saves This Much		50%	-\$3,634.63
Discounted Freight Charge			\$3,634.63
Fuel Surcharge		16.30%	\$592.44
Net Charge			\$4,227.07

Shipping charge including one pi pallet

Rate Quote			
Quote #: 7055998		Service Days: 5	
Origin		Destination	
Terminal:	EUREKA, CA (ATC) EUREKA, CA 95501	Terminal:	HAGERSTOWN, MD (HAG) 10120 Governor Lane Blvd Williamsport, MD 21795-4026
Zip:	95501	Zip:	21795
Phone:	1-888-575-2632	Phone:	1-877-731-7346
Class	Weight	Rate	Charge
175	1,380	\$515.55	\$7,114.59
Gross Charge	1,000		\$7,114.59
R+L Discount Saves This Much		50%	-\$3,557.30
Discounted Freight Charge			\$3,557.30
Fuel Surcharge		16.30%	\$579.84
Net Charge			\$4,137.14

The lighter weight of the pi pallet results in savings of nearly \$90 sending one pallet with merchandise in this example. That far exceeds the \$7 net cost of the pi pallet (\$12 less \$5 for a used wood pallet it replaces). For shippers using large numbers of pallets, annual savings can run into the \$millions. Savings are far greater for users of new wood pallets.

Shipping charge including 3 wood pallets

Rate Quote			
Quote #: 7056049		Service Days: 4	
Origin		Destination	
Terminal:	LOUISVILLE, KY (LVE) 6900 Distribution Drive LOUISVILLE, KY 40258	Terminal:	EUREKA, CA (ATC) EUREKA, CA 95501
Zip:	47567	Zip:	95432
Phone:	1-800-669-1423	Phone:	1-888-575-2632
Class	Weight	Rate	Charge
70	1,970	\$141.04	\$2,778.49
150	1,070	\$293.71	\$3,142.70
250	1,170	\$581.98	\$6,809.17
Gross Charge	2,000		\$12,730.36
R+L Discount Saves This Much		50%	-\$6,365.18
Discounted Freight Charge			\$6,365.18
Fuel Surcharge		16.30%	\$1037.52
Net Charge			\$7,402.70

Shipping charge including 3 pi pallets

Rate Quote			
Quote #: 7056059		Service Days: 4	
Origin		Destination	
Terminal:	LOUISVILLE, KY (LVE) 6900 Distribution Drive LOUISVILLE, KY 40258	Terminal:	EUREKA, CA (ATC) EUREKA, CA 95501
Zip:	47567	Zip:	95432
Phone:	1-800-669-1423	Phone:	1-888-575-2632
Class	Weight	Rate	Charge
70	1,940	\$141.04	\$2,736.18
150	1,040	\$293.71	\$3,054.58
250	1,140	\$581.98	\$6,634.57
Gross Charge	2,000		\$12,425.33
R+L Discount Saves This Much		50%	-\$6,212.67
Discounted Freight Charge			\$6,212.67
Fuel Surcharge		16.30%	\$1012.66
Net Charge			\$7,225.33

This example shows fuel savings of \$177 for three pallets containing different classes of products. Again, the savings far exceed the pi pallet's cost. As shipping quantity rises, the savings mount.

“(Wood pallets) remain fixtures in the shipping industry because there was nothing better to take their place. Now that has changed.”

Conclusion

Wood pallets have served us well. Like other outdated technologies, they have earned a dignified retirement. But they remain fixtures in the shipping industry because there was nothing better to take their place. Now that has changed.

The new hybrid pi pallet meets or exceeds the wood pallet in nearly every respect, plus offers significant benefits wood and other alternatives cannot match.

To learn more about how the pi pallet can tackle your shipping requirements, please contact Pallets International at (415) 651-1675. Visit the web site www.PiPallet.com , or email us at info@PiPallet.com.
