Reusable Shipping Containers

Several well-managed companies have demonstrated financial savings and waste reduction from replacing single use shipping containers with reusable/returnable crates, mobile carts, trays, totes, racks, or tubs.

Many types of reusable shipping containers are in use today, including those made of metal, plastic, paperboard, wire, or fiberboard. Once the contents are emptied, reusable containers can be collected and stacked for return to the supplier. Containers can be collapsible or nestable for ease in backhauling. An efficient system design is dependent on specific requirements and restrictions within a shipping process.

Benefits

Although reusable shipping containers may be initially more expensive than corrugated containers, over time there may be a cost savings. Savings are realized through reduced purchasing costs and disposal costs, although additional costs, such as return transportation and labor, may be incurred.

COMPARISON OF SHIPPING CONTAINERS BY MATERIAL

(Based on typical two-cubic foot size)

ATTRIBUTE OF CONTAINER	CORRUGATED ONE-WAY	CORRUGATED REUSABLE	FIBERBOARD REUSABLE	PLASTIC REUSABLE
Weight	1.5 lbs	2.2 lbs	5 lbs	5.5 lbs
Durability	Poor	Fair	Fair to Good	Excellent
Estimated Initial Procurement Cost	$0.53	$1.06	$6.05	$11.03
Estimated Life	1 trip	5 trips	50 trips	250 trips
Procurement Cost/trip (avg.)	$0.53	$0.21	$0.12	$0.044
Other costs	Setup Disposal	Setup Breakdown Return Re-setup	Return	Return

Source: Buckhorn, Inc. "How to Select Shipping Containers", Milford, OH.

Other benefits of reusable shipping containers can include improved ergonomics (improved handles and access), improved safety (elimination of box cutting, staples, and broken pallets), and less product damage due to transport packaging failure.

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Updated: 04/02/09
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09-LQ-008

Limitations of Reusable Shipping Containers
Reusable shipping containers aren't cost-effective in every situation. Generally speaking, reusable containers work better when there are closed distribution loops, a constant flow of consistent products in large volume, limited cleaning or other processing requirements, and short transportation distances.

Case Studies
The Vancouver (Washington) facility of Panasonic Shikoku Electronics Corporation of America receives television components from an overseas supplier in durable plastic trays. The trays also eliminate the need for wooden pallets. Empty trays are nested and shipped back to the supplier in intermodal containers. Annual savings exceed $65,000.

Custom floor mats used to be shipped to Toyota Logistics Services (Portland) in recyclable corrugated boxes, on pallets. Working with its supplier, Toyota switched to a pallet-free, durable plastic tote. Empty totes are collapsed, stacked, and backhauled to the supplier in California. Savings are estimated at $24,500/year.

For More Information
The following two sites provide additional information intended to help businesses switch to reusable transport packaging:

- Reusable Transport Packaging Directory: http://www.moea.state.mn.us/transport/index.cfm
- Reusable Transport Packaging: There's a Better Way: www.better-way.info

Credits: Alameda County (CA) Waste Management Authority & Alameda County Source Reduction and Recycling Board; Minnesota Office of Environmental Assistance; Twin Cities Solid Waste Management Coordinating Board.

Alternative formats (such as large type, Braille) of this document can be made available. Contact DEQ's Office of Communications & Outreach, Portland, at (503) 229-5317