

Pallet Stabilization: Evaluating the Options

According to a report published by the Joint Industry Unsaleables Steering Committee, industry expense for unsaleable items exceeds \$2 billion annually. Among companies experiencing a decreasing unsaleables rate, top forces driving change included improving shipping practices and reducing damage to packaging. The question is: what can you do to protect your products as they move through the supply chain?

Pallet stabilization, securing packages together for stronger, more uniform loads, is one method to minimize product damage while maximizing supply chain flow. The following guideline will help determine the best pallet stabilization system to meet your needs.

Protect the Package

In adhesive-based pallet stabilization, users apply a small amount of adhesive to each package and as the packages are stacked, the glue secures the packages together to form a unit. Creating uniform stacks minimizes over- and under-hang to protect corners from damage due to banging or bumping. Adhesive can also be applied directly on a pallet or slip-sheet to prevent the unit load from sliding during transport.



Pallet stabilization protect packages from damage before, during and after shipping.

Hot or and cold adhesive can be applied in a variety of patterns—bead, swirl or dot—to minimize residue and accommodate most board stock without fiber tear. In addition, adhesive will not damage, deface or obscure packaging, graphics or bar codes. Adhesive also withstands ambient heat and humidity to maintain load integrity in challenging environments.

Stretch wrappers stabilize pallets by applying multiple layers of film around the packages on a pallet. Stretch wrap stabilization offers the advantage of protecting exterior packaging from exposure to dust and contaminants, but there are potential drawbacks to consider when covering pallets with film. For example, in the agricultural industry, produce can ripen too early if stretch wrap traps moisture against the packaging. Moisture can also cause the



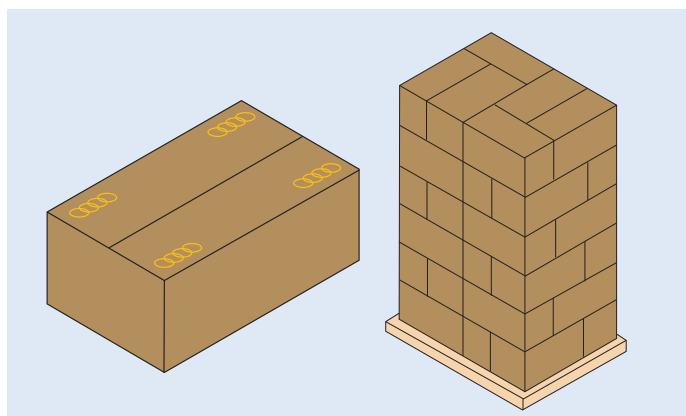
packaging to disintegrate, jeopardizing product integrity and load stability. In addition, layers of stretch film can obscure bar codes, slowing supply chain progress.

Reduce Costs

When evaluating pallet stabilization costs, estimates should include capital equipment prices and expenses associated with recycling waste. As energy and raw material prices continue to rise, it is also important for packagers to choose a pallet stabilization method that will minimize total material costs.

Stretch wrap systems, including the wrapper and the baler, are five times more expensive than adhesive systems. When companies choose to recycle stretch wrap, additional expenses, such as the collection containers for used wrap, transportation costs to processing centers and the cost of labor to prepare materials for recycling, must also be considered.

In addition to lower equipment costs, adhesive systems use less material to unitize a pallet. At only pennies per pallet, adhesive can be used alone or in combination with stretch wrap to reduce overall material costs. Adhesive also allows packages to be easily separated and restacked without the use of additional adhesive.



Small amounts of adhesive secure packages together to form a uniform pallet load.



Pallets unitized with adhesive remain stable for overhead storage.

Stretch wrap, by comparison, requires multiple layers and multiple applications. Although stretch wrap pricing fluctuates with the petroleum market, it is generally costs more than \$1.00 per pallet. Cost per pallet increases further if the original stretch wrap must be replaced due to damage during storage or transportation.

Improve Safety and Operation

Two additional factors, safety and ease of use, should also be considered when choosing a pallet stabilization method.

Adhesive systems are compact, automatic and easily integrated into packaging lines. Adhesive dispensing machines can also provide safety features such as false trigger guarding and automatic shut-down to further protect operators. Automatic adhesive fill systems can also be used to minimize operator interaction with the equipment.

Manual stretch wrap applications, which require users to apply, remove and re-apply layers of stretch wrap, are labor intensive and risk repetitive stress injuries to operators. Safety hazards are not unique to manual systems; automatic stretch machines pose their own dangers when operated at high speeds. In order to recycle used stretch wrap, additional hands-on processing is required to remove any string, tape or labels.

After stretch wrap is removed from pallets, loads are no longer secure and can fall and injure employees or passing customers. In contrast, adhesive stabilization allows columns to be broken apart for overhead storage without compromising the stability of the pallet.

Consider Environmental Impact

Green legislation and retailer directives, such as scorecards that rate vendors on everything from raw material use to recycled content, continue to directly affect packaging requirements. Manufacturers must proactively examine their packaging processes in order to meet both internal and external environmental goals. Systems that use fewer materials will likely provide the greatest environmental and economic benefits.

When unitizing with adhesive, less material is used initially and after a pallet is broken apart, it will remain secure without the use of additional materials. In addition, adhesive becomes a part of the original packaging so there is no additional waste to dispose of and recycling is easier.



The manufacture and disposal of stretch film is a common concern throughout the packaging industry. Debate continues on how severe the production and incineration of stretch film impacts the environment. Stretch wrap is recyclable; but the costs and manual labor mentioned above often deter companies from participating in recycling programs.

Which method is best for you?

In conclusion, multiple factors should be considered before selecting a pallet stabilization method. Take a closer look at which option can provide low-cost, automatic unitizing that protects your packaging, improves operator safety and meets environmental goals.

For more information on adhesive pallet stabilization, please contact a Nordson representative at 800-683-2314 or visit www.nordson.com/hotmelt.



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PKL-13-4064
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