

Lockin' loads

Water-based adhesive holds it all together

Plastic wrap has long been the standard means of containing palletized shipments. But for companies with specialized loads, heavy unloading damage and environmental concerns, there is an alternative. **Deborah Aarts** explains.

There's a certain security about plastic wrap. For decades, it's been the standard way to package loads of goods on the go. It's tried-and-true, relatively cheap, and, for the most part, does a fine job of securely containing high volumes.

But it can also be cumbersome, labour intensive, wasteful and inefficient. For certain applications, wrap simply doesn't work as well as it should. And when this interferes with productivity, manufacturers and distributors tend to seek out alternatives.

Enter Lock n' Pop, a plant-derived, water-based, non-toxic, non-hazardous adhesive made by the Key Tech Corp in Lynnwood, Washington. It is applied by an automated machine to the tops of cartons (or bags) as each is loaded onto a pallet. After a short time (one to four minutes, depending on the formula), the adhesive starts to bond. As more units stack up, it strengthens, securing the individual items together from within.

"Our product has to have some intimate contact," explains Rosanna Cavanaugh, president and CEO of Key Tech. "The weight forces our product together, to become intermingled, to a degree. The heavier the package, the better off we are."

The idea to create the product came nearly three decades ago, when manufacturers across North America started unitizing shipments. Key Tech—at the time a specialty chemicals company dealing mainly in paper and packaging—began toying with the idea of a shipping adhesive. They weren't alone. Many companies at the time experimented with different compounds, glues and hot melts, many of which had an annoying tendency of tearing up the product upon removal.

"The concept was to have a product that wouldn't do that," Cavanaugh laughs.

The company did just that, concocting a non-marking adhesive meant specifically for shipping. Things have developed since then: there are now a number of different Lock n' Pop formulas, each configured for different products, weights and temperatures. But all operate on the same basic principle: the compound will hold a pallet load together until it reaches its final destination. At that point, because of the product's low tensile strength, the secured item will detach easily when lifted from the load.

For certain items—namely dense, bagged products like cement or flour—the product works much better than plastic wrap. Since Lock n' Pop holds the units together from within, it eliminates the problem of items spilling from the pallet during unloading.

For others, however, it's not such a great fit. Lighter materials—like light bulbs, for example—may not have the weight or stability to allow the adhesive to fasten properly.



Automated machines apply the water-based adhesive while the pallet is being built.

Because of this variability, the company insists on consultations with each potential client before installing the system.

"It's very application-driven," explains Craig Howe, national sales manager for Lock n' Pop in Canada (his company, Mississauga-based Palletizing Systems Ltd, is the exclusive Canadian distributor). "We always recommend a trial of some sort."

When the product and the operation are a good match, Howe will recommend the proper formula. When the product doesn't suit the nature of the client's business, however, he has no problem saying so.

In fact, neither he nor Cavanaugh want the adhesive to replace plastic entirely. Both feel that wrap has a place in pallet packaging—especially when used to complement to their product. According to one study, loads secured with a combination of Lock n' Pop and a single layer of plastic show a 200 to 300 percent increase in stability.

The system's automated application equipment runs from \$5,000 to \$8,000 for one production line. The Lock n' Pop solution itself costs an average of three-quarters of a cent to a cent and a half. This adds up to between 25 and 60 cents per pallet, less than the roughly \$1.00 *MM&D's* industry sources say it costs to wrap an average pallet in stretch wrap (including labour).

According to Howe, clients tend to achieve quick return on investment, especially when they take reduced wrap consumption, improved employee productivity and fewer damage claims into consideration.

"If stretch wrap were a steak, people would pay attention to it. But because it's not a centre-of-the-plate item, no one cares how much it costs, because relative to the cost of the product, it's insignificant," explains Morris Binder, who handles Lock n' Pop's marketing.

Users tend to care more, he says, about Lock n' Pop's safety features, the damage it prevents and, increasingly, its green properties. It is made of organic, water-based, biodegradable materials, posing minimal risk to the environment. According to Binder, for every cubic foot of landfill waste that Lock n' Pop produces, the equivalent volume of plastic wrap yields two to three hundred cubic feet of discarded materials.

So far, the response from users to all these factors has been favourable. Several US industry giants have signed on, including Costco and Lafarge. In Canada, approximately 50 clients (mainly in the food and beverage and bagged dry powder sectors) use the product—and the number is climbing.

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