

# Keep It in the Box

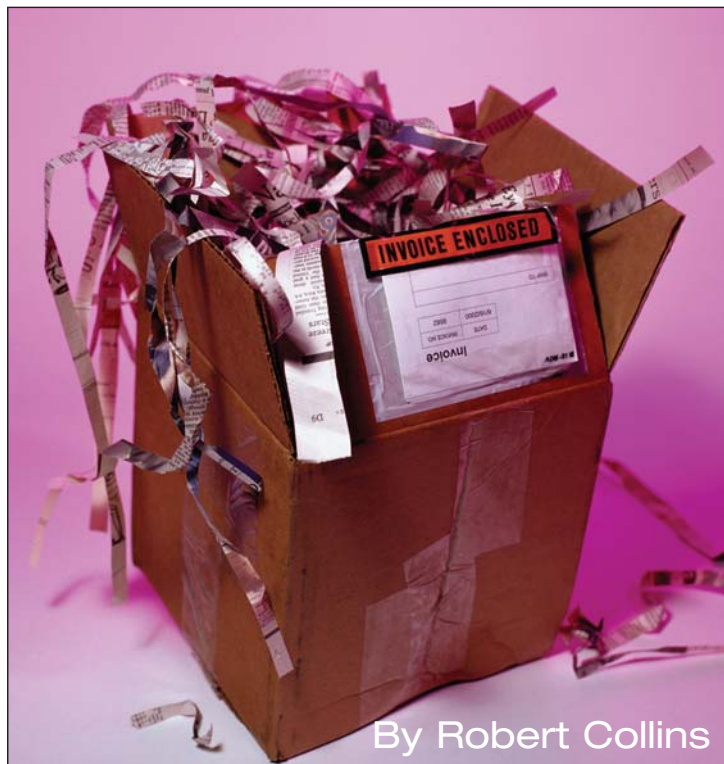
## Security in package sealing

Over the past several years, specifically since the devastating terrorist attacks on September 11, there has since been an emphasis on the need for security in every aspect of our lives. One of those aspects is the need for enhanced security within the packaging industry. We have been inundated with new ways to ship our packages more securely and tamper-evident. The

RFID method is one that has taken on a life of its own. Ever since Wal-Mart's decree that their vendors must begin using RFID technology, we, as an industry, have been attempting to discover the best way to implement this technology.

Though an RFID method is critical and will one day be implemented throughout the industry, there is one part of packaging security that seems to have been overlooked. That is in the method of closing and sealing a carton. Although it may sound simple, without a secure seal, a package will not uphold the integrity it requires when shipped from one point to another. As consumers or even B2B customers, how many times have we received a package that was shipped with an inadequate seal? How many times have we noticed that the Postal Service or a small carton freight carrier has had to re-seal a carton because it had come undone in transit?

There are several issues that immediately come to mind when a package is shipped with an inadequate seal. Is the company I am purchasing from so concerned with cost reduction that they



By Robert Collins

do not care how I, the consumer, perceive them? Was the package opened in transit and was something taken from it? Or even more alarming, has someone put something in the carton that I should be concerned with when I open it?

Currently, there are three major methods used to seal a carton;

each of them has pros and cons. There is the hot melt glue method which is primarily used in the food industry. Pressure sensitive tape (PST or plastic) water-activated tape (WAT) or gummed tape are the methods used in most other industries.

The PST or plastic tape method of sealing a carton is the most common practice used today. It can be applied to a carton manually using a hand gun, or it can be applied using an automated case sealer, which is more efficient, especially for high-volume packaging environments. PST is typically available in different widths and thicknesses and will generally hold a carton closed during transit. However, there are instances when the properties of the carton's contents or environmental factors outside the carton will adversely affect the PST and the carton seal. When a carton closed with PST is exposed to extreme hot and cold temperatures, PST can lose its adhesive integrity. In addition, a dusty environment can have an adverse effect on the adhesion of PST as it interferes with the sticking process. There are some plastic tapes better adapted to address these issues, but they will also be more costly.

Plastic tapes are also available in pre-printed versions that have specific identifiable patterns that will reveal tampering if cut down the center of the tape prior to being received at its destination. In some cases this is adequate, but it can be beat if the tape is totally removed and resealed, giving an unopened appearance. There are also content weight limitations when using PST. With too much weight inside the carton, the tape can be stretched or pulled from the carton.

Increasing in popularity is the method of sealing with water-activated tape (WAT). Water-activated tape is typically two-ply paper reinforced with a fiberglass material with a starch-based adhesive that is activated using a tape dispenser. The water-activated dispensers required to dispense this tape are available in manual or electronic units. The electronic method is more efficient as more packages can be sealed per hour. The benefits of using WAT are realized when the tape is applied to the carton. The activated adhesive is absorbed by the carton surface, and the moistened tape is securely bonded with the carton and virtually becomes one with the carton. WAT is also unaffected by temperatures and can be used in extreme hot and cold environments with no effect on the tape's adhesive properties. Reinforced WAT has the ability to withstand contents of extreme weights such as paper or metal products. In addition, WAT is tamper-evident as it cannot be removed from a carton without leaving obvious signs. The bonding of the tape to the carton insures a secure seal as well as a professional look when received by a customer. WAT can also be pre-printed with security messages as well as be printed on-demand at the time of dispensing, depending on the equipment used. Though

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WAT will provide a safe and secure seal on a piece-by-piece basis, it can be a bit more expensive than PST. However, when using WAT, it is likely that less tape would be used versus a hand gun dispensing plastic tape because less tape is needed to achieve a strong, tamper-evident seal.

With these two methods being the most common, each has its place in sealing a carton, and each has benefits depending upon the requirements of the shipper. Pressure-sensitive and water-activated tapes will continue to dominate the market as the industry attempts to improve carton security.

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