

Sustainability in Wrapping

There are two important definitions for sustainability in the wrapping process.

- The first is sustaining your own business by making smart, well-executed business decisions. That part you already know.
- The second one refers to the impact your packaging process has on the environment. It involves thinking about your products and processes with a consideration for the environmental impacts those products and processes have on our planet and its inhabitants. This is called Life Cycle Analysis.

To calculate the impact of your packaging process on sustainability, you could look at three process measures:

- Total Cost of Ownership
- Life Cycle Analysis
- Total Cost Assessment

Total Cost of Ownership

Total cost of ownership is a strictly internal calculation that includes the capital cost of equipment and estimates the operating cost including materials cost, energy, labor and maintenance expense of alternative processes. This allows you to create a total cost in order to make a valid comparison between one process or piece of equipment and another.

Life cycle Analysis

Life Cycle Analysis is a process for measuring your products impact from raw material through processing to consumption and disposal of remains. There are a couple of approaches to life

cycle analysis.

- Cradle to Grave
- Gate to Gate

Cradle to Grave looks at raw materials from when they come out of the earth, are transported and processed through your use of them through the consumer disposal of what is left.

Gate to Gate looks at only the part that you control within your facility.

There are variations that look at other portions of the process that the manufacturer can influence such as consumer disposal, transportation, etc.

One of the ways to measure sustainability by product or process is to use some commonly accepted measurement tools. Here are some resources for doing that.

[The Carbon Trust](#) is a UK based organization measuring the carbon footprint of products. Measuring the carbon footprint is based on looking at the carbon used in creating and disposing of a product. Even if the process is the same in every manufacturing plant, the process can vary depending on the energy used for power the process, the distance traveled for the materials and the distance to the consumer. Most recently it did a measurement for Pepsi's Tropicana Pure Premium Orange Juice 64 ounce container. Pepsi plans to use this to measure and track process improvement.

[GreenBlue](#) is a US based non-profit dedicated to helping businesses improve their sustainability by think about how to transform the making of things. One of their primary tools is life cycle analysis which encourages businesses to redo processes

to improve their efficiency and environmental impact.

For a sample of a company embarked upon this process, look at [Mark & Spencer's Plan A](#). This UK retailer has a five eco plan because, as they say, " there is no Plan B."

Total Cost Assessment

Leveraging Life Cycle Analysis leads to Total Cost Assessment, which is the calculation of the dollar cost of all that goes into making a product. Some of these costs are internal and some are societal. Internal costs are those that the company bears to make the product. Sometimes society tries to push the costs back to the manufacturer, for example, paying for environmental clean up. Some are still born by society such as municipal trash pick up or water purification. Total Cost Assessment tries to calculate all these costs since the payor may change from society to manufacturer.

Comparison of Wrapping Processes

Energy consumption and efficiency of your wrapping process

Overwrapping is a very efficient energy user. Unlike shrink wrap which requires a heat tunnel to shrink the loose film to the product, overwrapping uses heat only to weld seams. This means that the heat created and used is minimal.

The material you use in your process

Material used is a little tricky to think about because the product has to be attractive and protected.

Factors to weigh

- product protection and enhancement
- environmental impact of creating the wrapping material
- amount of material used in the process
- environmental impact of disposal of the packaging post-

consumer or at some intermediate point.

Overwrapping is again a more efficient way to wrap for several reasons.

- the kind of film it uses
- the amount of film it uses

The kind of film overwrapping uses

Polyethylene film is the most commonly used film in shrink-wrapping. Polypropylene film is the most commonly used film in overwrapping and flow wrapping. Pound for pound, polyethylene is a more expensive film than polypropylene. Worse yet, more polyethylene film is used because it is first trimmed to get rid of the excess and then shrunk 20-25% to conform to the package it wraps.

Polypropylene film does not shrink. It is designed to wrap around a package with overlaps between $\frac{1}{4}$ and $\frac{3}{4}$ inch. This overlap is enough to ensure a seal while minimizing film and energy consumption. It provides a nice gift-wrapped look to the package while being efficient in film use and energy consumption.

The amount of film overwrapping uses

Overwrap uses less film than both flow-wrap and shrink wrap both for its tight conformity to the product with minimal overlap and for its lack of shrink.

Overwrap has implications for bundling as well.

- Bundling with film reduces cardboard consumption by replacing cardboard boxes with lighter weight film. This, in turn, reduces the amount of waste consumed and placed in landfills.
- Bundling also reduces energy consumption because containers weigh less when filled with film wrapped products than with intermediate cardboard containers. Bundled packages take up less

space and save on shipping weight and cost.

- Overwrappers can wrap using non-petroleum based materials such as biodegradable films, paper or waxed paper. That overwrapping provides a safe and attractive wrap is our customer's bonus.

For further information, please check our web site:

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