

Introduction: High Barrier Foil Alternatives

American Packaging anticipating the continued demand for aluminum foil and escalate costs began to develop in conjunction with our customers non-foil structures with foil like properties (high barrier) at a lower cost. Through our sustainable efforts we have reduced our aluminum foil demands by 11.5 million pounds over the last five years. This reduction in usage has saved our customers millions of dollars while at the same time providing a superior product.

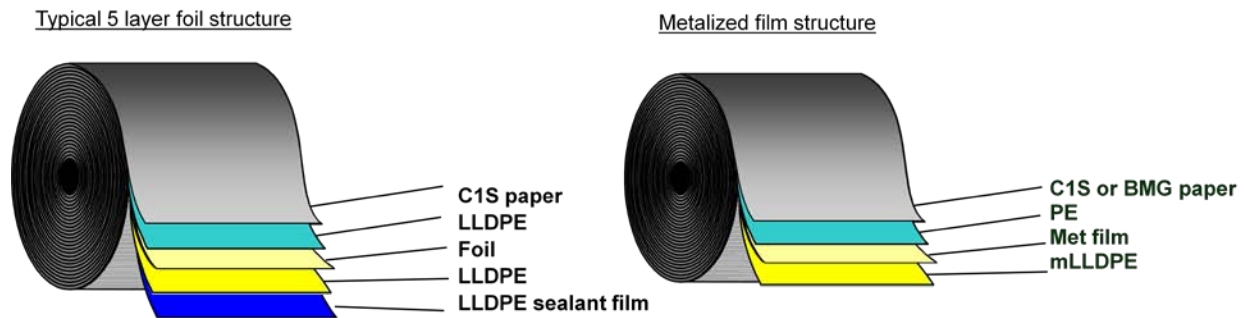
The problem:

Foil has been the industries chosen structure for decades as it has excellent high (MVTR) barrier and extended shelf life. However, given the global economy, the demand for aluminum foil coupled with rising energy costs create a very uneconomical picture with no foreseeable relief in the future. The result is predictable, prices escalating at inflationary rates, may be as high as double digits. It's a known fact that foil is a high energy intensive manufacturing process therefore its higher cost.

APC Solution:

Through extensive testing, APC has developed a non-foil alternative that offers sustainability improvements and other technical enhancements. By replacing foil with metallized laminations APC has been able to reduce costs and improve the package performance and functionality. APC's unique innovative high barrier metallized PET has allowed applications requiring high moisture and oxygen protection to achieve the similar reduce costs and improve the package performance and functionality. Utilizing the proprietary metalizing/extrusion lamination process APC has been able to achieve moisture barrier levels in the 0.005 gms/100 in²/24 hrs at 90% RH, 100°F and OTR levels below 0.02 cc/100in²/24 hrs at 50% RH, 73°F

Shelf life studies reveal superb results with metalized films versus foils.



Sustainability Improvements, Performance Advancements, Other Attributes:

- Reduced cost
- Increased puncture resistance
- Comparable barrier properties (MVTR <0.01)
- Eliminated flex cracking for improved long-term product protection
- Improved puncture resistance
- Improved organoleptics
- Lower SIT (Seal Initiation Temperature)
- Reduced material weight
- Improved shelf aesthetics by eliminating foil's shop worn appearance

With APC's metalized lamination, customers have been able to downsize the overall package, improving their package-to-product ratio without compromising packaging machine performance. In several instances machinability was improved. Accordingly, reducing package size results in smaller cartons and shipping containers; therefore reducing transportation and handling costs.

Conclusion:

APC's high barrier metalized laminations creates a win-win situation. The improvements in the non-foil structures provide sustainable solutions while offering enhanced product performance characteristics at a reduced cost. Sustainability is realized through reduced greenhouse gases and energy consumption, in addition to increased package to product ratio. Improvements in critical characteristics of product-

package integrity, machinability and aesthetics are just a few of the attributes of using APC's high barrier metalized laminations.

ABOUT AMERICAN PACKAGING CORPORATION

American Packaging Corporation is an ISO 9001:2000 company specializing in the manufacture of flexible packaging laminations for a variety of specialty markets. The company has three process focused facilities: Rotogravure Printing and Laminating, Flexographic Printing and Laminating, Extrusion Laminating and Coating.

The company is privately-held and has been serving the packaging industry for over 100 years.

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