



WINDMÖLLER & HÖLSCHER

PRESSE-INFORMATION | PRESS INFORMATION

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EXPO in Lengerich **28./29.10. + 01./02.11.2010**

Coextrusion of PET Barrier films

FILMEX Cast Film Line Offers a Wealth of Possibilities in Flexible Packaging

The FILMEX cast film line from Windmüller & Hölscher will be featured for a trailblazing technological innovation in the field of barrier films at the company's in-house EXPO, which takes place parallel to the K 2010. W&H introduces new PET-based thermoforming barrier films with outstanding product and mechanical properties. The FILMEX line, equipped with 8 extruders, a 17-layer feed block and 2,700 mm die with edge encapsulation, will produce high clarity lidding films during daily live demonstrations.

Coextruded barrier films continue to develop in the flexible packaging market. As thermoformed-, lidding stock- or bag films, barrier films guarantee the shelf life of packaged food. Cast film extrusion is an ideal production method for barrier film as the result of superior performance and economic efficiency. Currently, the largest and most efficient 11-layer FILMEX cast film plant in the world reaches outputs of up to 3,000 kg/hour.



An additional advantage of cast film extrusion is its inherent flexibility with regard to layer configuration. The FILMEX takes this advantage a step further with the universal Smooth Barrier (SMB) extruder screws, which can process all standard raw materials with perfect melt quality. Put together, this gave rise to the idea of extending the FILMEX's capabilities to accommodate coextrusion of polyethylene terephthalate (PET).

PET is a very versatile resin, which, due to its range of properties and attractive price, is widely used for packaging purposes. It is either used with very thin, biaxially stretched films (BO-PET) or with thicker films between 150 and 1000 µm. In packaging applications, PET films are typically laminated with PE in order to achieve the required sealing characteristics.

When compared to PA, PET exhibits superior optics and printability as well as outstanding thermal moldability. PET has become substantially less expensive than PA and its suitability for the coextrusion process has opened a wealth of opportunities in package design and cost savings for manufacturers, who were previously limited to a smaller range of thicknesses offered in BO-PET and PET.

However, PET is a much more challenging resin, compared to more conventional materials when it comes to its conversion. The step-growth polymer requires intense drying prior to conversion, extrusion needs higher melt temperatures and fine tuning of melt viscosity as well as selecting proper tier-resins.



W&H has acquired the extensive experience, necessary for processing PET, from basic PET/PE applications to more sophisticated PET/PA/EVOH barrier films. As an example, W&H will present a thermoformed shell from highly transparent and rigid 250 µm PET/PE.

Further developments to be presented at the EXPO include a 17-layer, 70 µm PA/PE nano-layer barrier film, which will be produced live on the FILMEX-line during the daily demonstrations. The film, which is used for the lidding of the thermoformed shell mentioned above, excels with outstanding clarity and sealing characteristics.

Nano-layer technology offers huge potential for improving film characteristics, i.e. stiffness, barrier properties or thermal moldability. The best way to identify and tap the unlimited potential of nano-layer technology lies in close cooperation between processing plants, polymer supplier and machine manufacturers. Windmüller & Hölscher has completed extensive testing with nano-layer technologies and can cite numerous successful developments with customers and resin manufacturers on its ultramodern FILMEX cast film line.

Windmüller & Hölscher is an international leader in the design, manufacturing and distribution of machinery for the flexible packaging industry and is based in Lengerich, Germany. The product range includes flexographic and gravure printing presses, blown and cast film extrusion systems, multiwall equipment, plastic sack and bag making machines, as well as form-fill-seal machinery.



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At W&H house EXPO, a cast film line consisting of 8 extruders, 17-layer feedblock, and 2,700 mm sheet die was on show, producing high clarity PA/PE nano-layer film intended as lid material for thermoformed packages.



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Thermoformed tray made from coextruded PET/PE for food packaging, with high-clarity lid film – both produced with W&H FILMEX.