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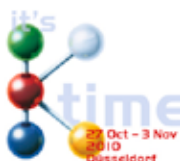
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October 2010 - Code-No. 13'10



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

### **Focus on the Product**

#### **W&H Presents Innovations in Film Applications**

*The flexible packaging market is dynamic and possesses tremendous growth potential. According to a study from the US-based Freedonia Group, global demand for flexible packaging will increase by 3.5% from 16 million tons in 2008 to nearly 19.5 million tons in 2013. Innovations in film production, printing and manufacturing will need to meet the increasing market demands. Solutions from Windmüller & Hölscher can be seen at the company's in-house EXPO in Lengerich, Germany. In addition to two VAREX blown film lines and a FILMEX cast film line, visitors will also see the recently introduced OPTIMEX and AQUAREX blown film lines as well as the MDO (Machine Direction Orientation) line in production. The EXPO will focus on demanding, innovative products, which may have the potential to revolutionize the flexible*



*packaging market. Printing presses, valve bottomers for PP woven sacks and other equipment from W&H subsidiary, BSW (Bag Solutions Worldwide) on display add to the scope of the EXPO.*

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### **VAREX blown film line for production of PP labeling**

PE has traditionally been the preferred material for bottle labeling. For recycling purposes, it makes sense for bottles made of PP to have labels also from PP, although it's handling can be more difficult. W&H will exhibit an ultra-smooth, stiff 65 µm three-layer film made at outputs of 500 kg/hr. Because film smoothness is crucial to label stock and a prerequisite for easy downstream processing, the 3-layer VAREX is equipped with an annealing unit. The line also features the NOSTIC AIR CAGE to achieve an immaculate optical appeal of the film and the new FILMATIC T winder for perfectly wound rolls.

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### **VAREX Blown Film line for stretch-wrapping of hay**

Hay bundles are frequently stored outdoors wrapped in 3-layer PE-based stretch films. Farmers complain however that these films lack of an oxygen barrier, which can cause the hay to mold. W&H is the first machinery manufacturer to show the production of a 25 µm 7-layer stretch barrier film that effectively prevents fungus growth. An example of this film will be produced on a VAREX blown film line at an output of 360 kg/hr. A newly developed, stretchable EVOH serves as barrier. To produce these films, a wider line is required (2,200 mm) as well as a smaller die for a blow up ratio of 1:3.8. For this reason, the VAREX is equipped with 350 mm MAXICONE 160/400 die. Also being shown for the first time is the Module K-NDC rotary non-contact thickness gauge for barrier films.



### **OPTIMEX Blown film line for production of laminating films**

The OPTIMEX, W&H's newest blown film line, produces superior, high-clarity 3-layer laminating film with a high metallocene content. After lamination with aluminium foil, the composite can be used for many types of packaging, including those for coffee, tea and cosmetics. The OPTIMEX was introduced at W&H's in-house EXPO in 2009 and is capable of producing outstanding films for multiple applications at an attractive price. Outputs of 350 – 400 kg/hr prove that the OPTIMEX is not hiding in the VAREX's shadow.

### **AQUAREX blown film line for the production of 3-layer PP infusion bags**

Infusion bags must be extremely transparent. To date, PVC has been the primary material used to produce them. The new AQUAREX „up-side-down-wet“ blown film line produces films with high gloss and superior clarity and will show that PP can replace PVC for the production of infusion bags. The AQUAREX blows the bubble downward and quenches it with water, thereby achieving higher outputs than conventional blown film lines and delivering better mechanical and optical film characteristics. The reason for this is the high cooling speed of the melt. During the AQUAREX presentations, a 200 µm 3-layer film will be produced at outputs of 250 – 300 kg/hr.

### **MDO (Machine Direction Orientation) for shrink sleeves for bottles**

A look at the beverage aisle in the supermarket shows that more and more bottles are being labeled with shrink sleeves. In order to reach the desired shrink characteristics for the sleeves, the film is processed on an MDO line which orients it in machine direction. Visitors to the EXPO will see this process live. A 3-layer COC film (cyclo-olefinic co-polymer), which



was produced using TOPAS Advanced Polymers, will be oriented to a ratio of 1:3 (from 140 µm to 47 µm). COC is used for its particularly good stiffness and shrinkability.

Unidirectional stretching permits a very specific tailoring of film properties to the desired needs. The COC film processed during the demonstrations features a high shrink in machine direction and no shrink at all in cross direction. Such film characteristics cannot be attained by standard blown film stock without being stretched by an MDO unit. In general, films can achieve higher tensile strength and rigidity as well as more gloss and transparency by the stretching process. The downgauging reduces raw material usage and costs, especially with expensive barrier materials.

#### **Cast film line FILMEX for co-extrusion of PET-barrier films**

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. Laminated composites of polyamide (PA) and polyethylene (PE) films, which were used in the past for these applications have been superseded by co-extrusion of PA/PE films. At the W&H in-house EXPO, a thermoformed shell from high clarity, high rigidity 250µm PET/PE will be produced on the FILMEX. Because the process bypasses lamination and permits production of thermoforming films in a gauge segment, which was never before thought possible, it offers substantial economic benefits.

The FILMEX presentation will include a 17-layer, high-clarity nano-layer barrier film as a cover film for the thermoformed shell.



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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**PR 1290**

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.



**PR 1291**

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



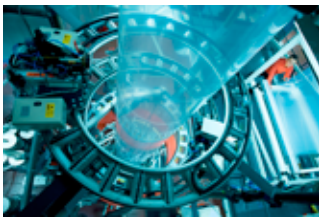
**PR 1292**

If both, bottle and label, are the same material (PE), later recycling is facilitated („monomaterial“). Highlighting its response to this challenge, W&H was extruding at EXPO sophisticated 3-layer PP label film characterized by excellent stiffness as well as flatness.



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**PR 1293**

W&H VAREX blown film line excels with outstanding flexibility and universal use for a broad spectrum of both resin types and applications.



**PR 1294**

Outdoor stored hay bales packed in conventional PE based 3-layer stretch film are liable to mold infestation as a result of a missing oxygen barrier effect of the film. W&H is the first engineering company to demonstrate – at its house EXPO – the production of 25-micron stretchable 7-layer barrier film as an effective protection against mold.



**PR 1295**

The new OPTIMEX blown film line on show was demonstrated producing sophisticated metallocene based high-clarity laminating film for composite aluminum foil as used for tea or coffee packaging applications.



**PR 1269**

OPTIMEX is W&H's newly designed blown film line providing a highly attractive cost-performance ratio, for a broad spectrum of 3-layer applications.



**PR 1296**

Perfectly transparent („clear as glass“) – is a vital requirement when it comes to film for medical infusion bags. At EXPO, the W&H **AQUAREX** was demonstrated producing high-clarity, high-gloss PP film, which is an ideal substitute for PVC used so far.



**PR 1284**

The **AQUAREX** blown film line turns extrusion „upside down“. It blows the film downwards and uses water instead of air to quench the bubble.



**PR 1299**

**AQUAREX** opens up new packaging applications to classic polyolefin resins. Just one example: **AQUAREX** film ideally lends itself to subsequent upgrading with a MDO stretching unit.



**PR 1297**

W&H house EXPO included the demonstration of 3-layer COC film orientation with a ratio of 1:3, for use as shrink sleeves for bottle packaging. A look at the supermarket shelves shows that printed sleeves are increasingly competing for the customers' attention and choice.



**PR 1298**

Monoaxial machine direction orientation of polymer film with the W&H MDO (Machine Direction Orientation) unit allows for optimization of film properties to the specific final use of the film.