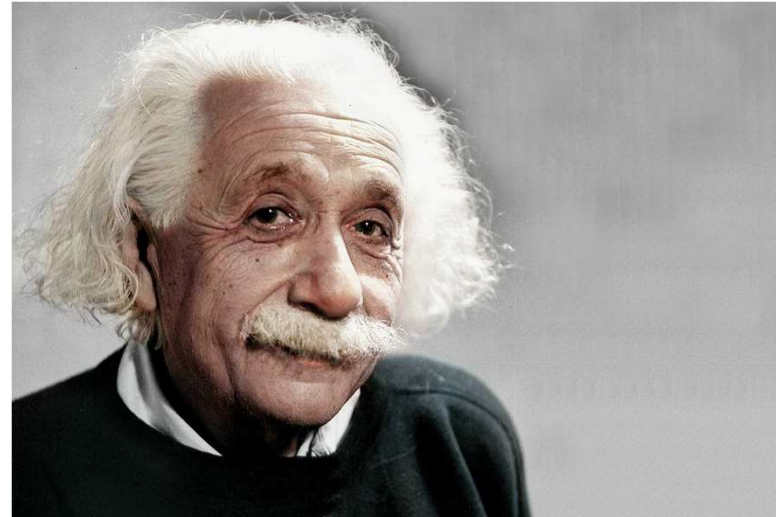




Speaker: Rinos Muchenagumbo
Chief Sales Officer - Lucobit Aktiengesellschaft

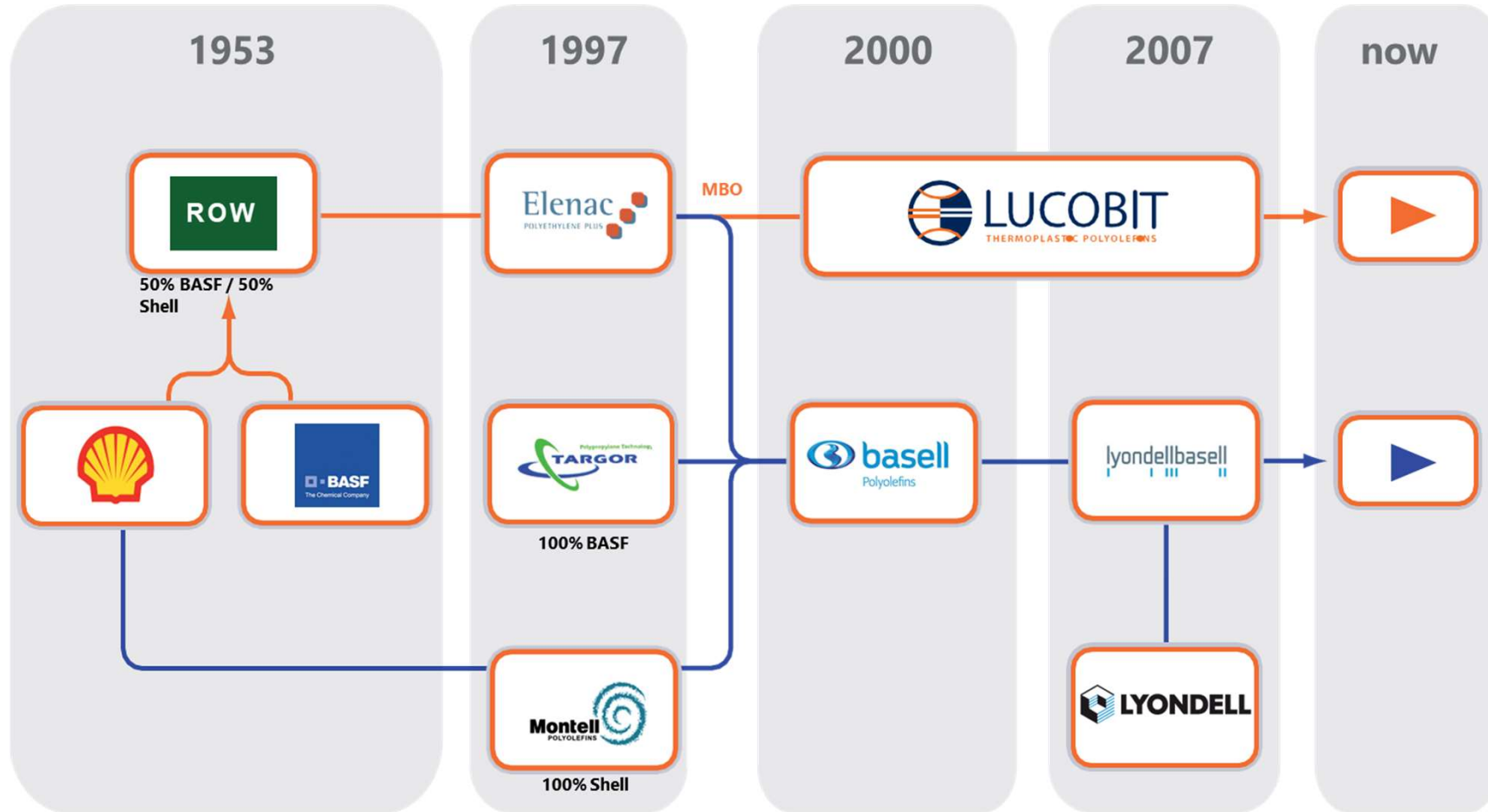
„The definition of insanity is doing the same thing over and over and expecting different results.“ –
Albert Einstein



Lucobit Stretch Hood Solutions



LUCOBIT AG the Ethylene Butyl Acrylate Company



LUCOBIT AG comes from the best in class in the chemical industry

Lucofin® based Stretch Hoods

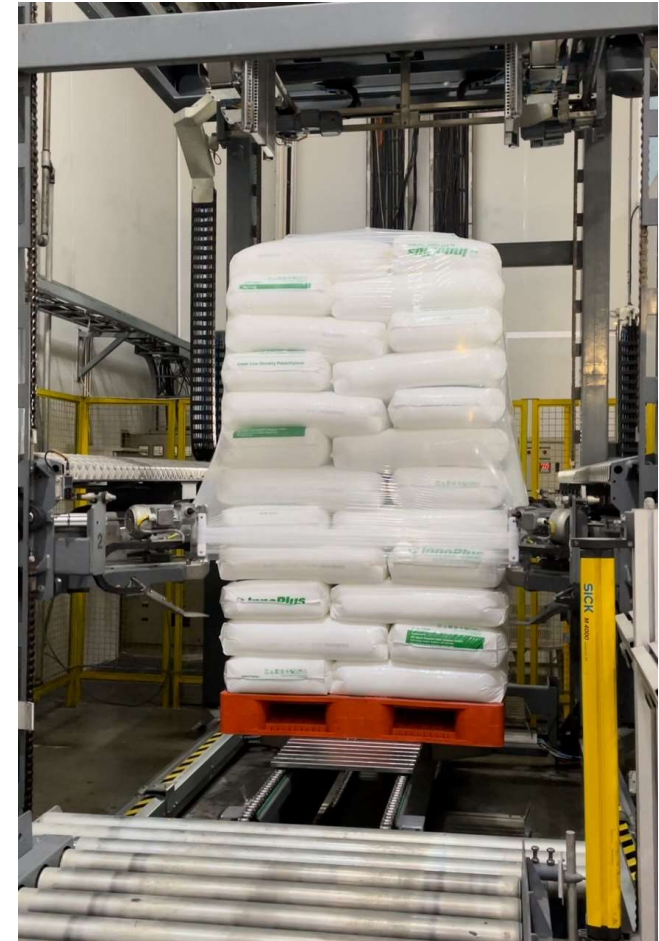
- **Lucofin® is an Ethylene Butyl Acrylate Copolymer - EBA**
- **It has a good compatibility to a wide Range of polymers including PE, PP, PA, PBT, TPU and bonds to metals like Aluminium and Steel**
- **It is recyclable without restrictions and enhances performance of recycled materials like PCR**
- **Lucofin® exhibits good elongation and tensile properties esp. in combination with other polymers**
- **The material enables downgauging with good processability even at low wallthickness**

Manufacturing Stretch Film
Stretch Hood
at a faster pace with
increased retention force
and reduced cost!

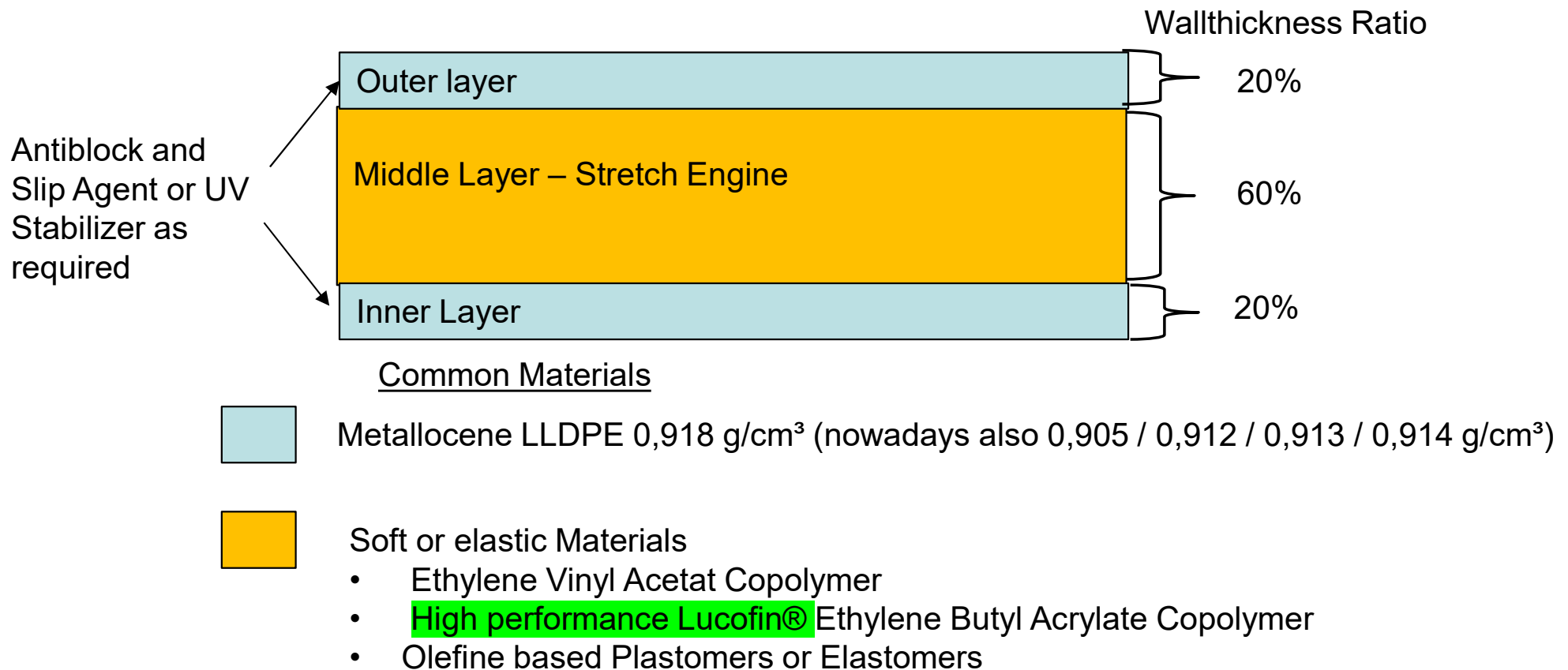
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Introduction: Stretch Hood

- Stretch hood – has special requirements since it has to be stretched over a pallet
- To ensure stability, protection, and efficiency in packaging
- has a lower material usage compared to stretch film
- conforms to various load shapes and sizes, offering versatility in packaging applications.
- offers better protection against moisture, dust, and UV exposure



Established 3-Layer Structure of Blown Stretch Hood Films on the Market



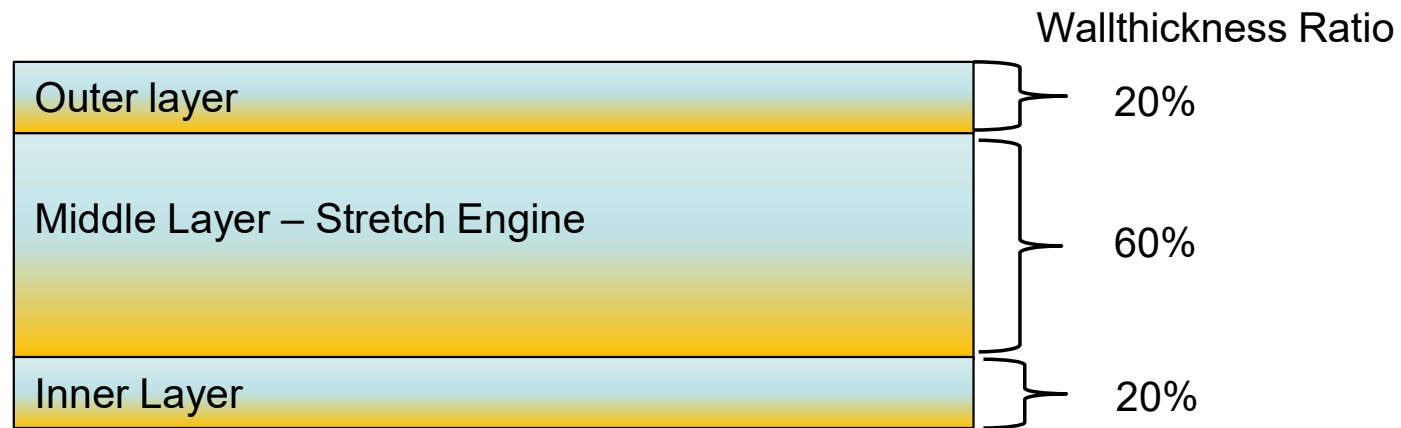


Lucofin® Meets Highest Demands for Stretch Hood Films

- Efficient blown film extrusion process – high output and bubble stability
- Speedy changeover
- Consistent wallthickness distribution below 3 Sigma
- Elongation of film well beyond 500%
- High holding force of film
- Cost efficiency
- Downgauging – reduction of wallthickness



Lucofin® based 3-Layer Structure of Blown Stretch Hood Films



Lucofin® Solution



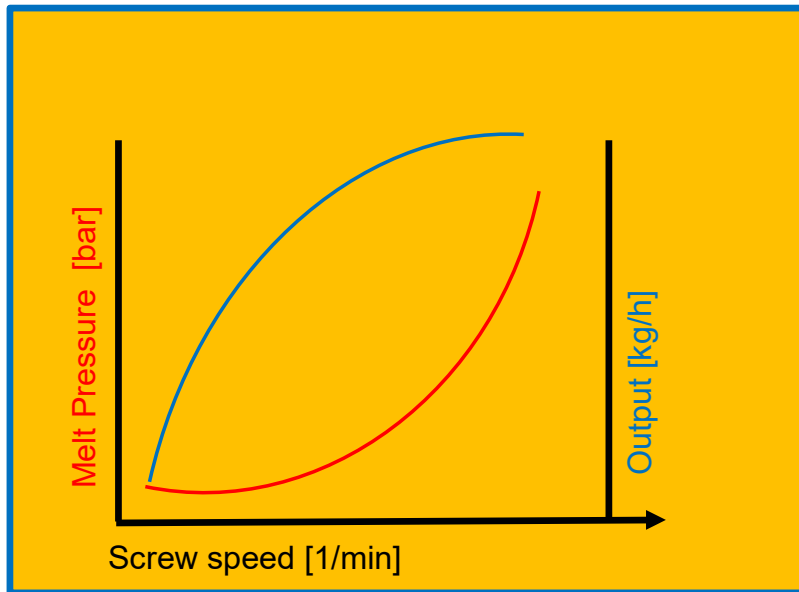
Instead of 60% EVA / POE / POP, the Lucobit Solution has

26% Lucofin®

in the total Film

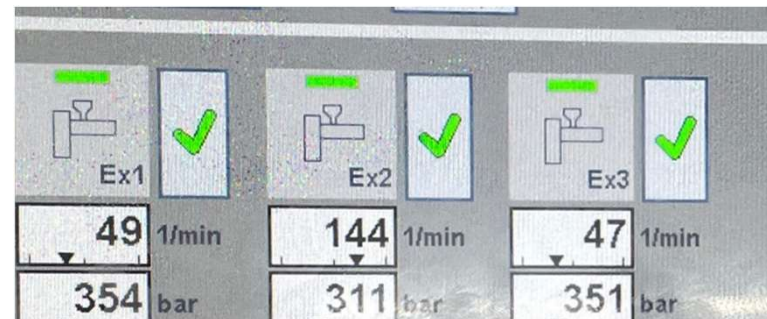
→ One of the significant savings in costs for materials





Lucofin® Improves Extrusion Process

- Lucofin® reduces the Melt Pressure by 10-20%
- → as a result, output [kg/h] can be increased by 10-15%



Melt pressure is a limiting factor on output rate and Lucofin® is the game changer



- Melt pressure goes down from 400 to 300 bar
- Bubble stability good and changeover is efficient
- Wallthickness variation is small (1 - 3%)

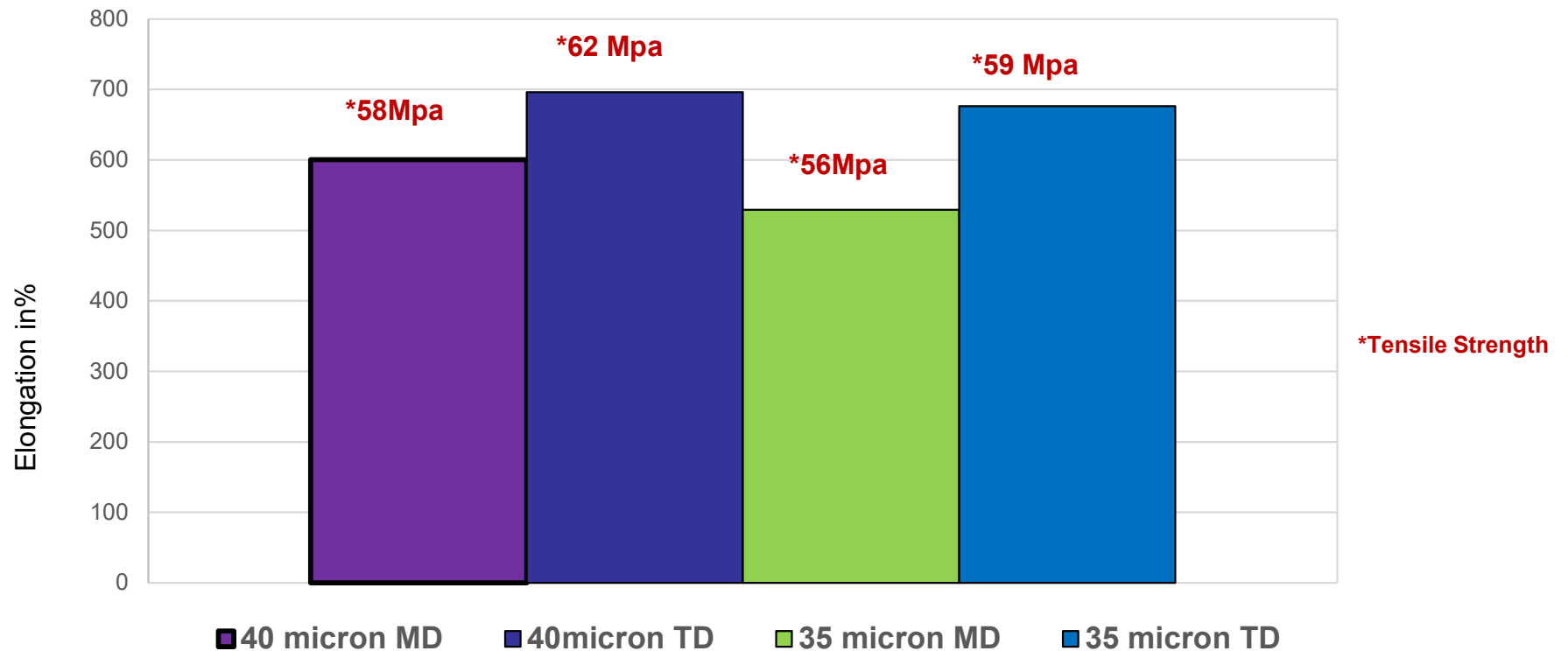
Lucobit Stretch Hood Solutions



Parameter		Lucofin 1400HN	Lucofin 1083DN	Competition 1	Competition 2
Average thickness	µm	102	102	103	103
Tensile strenght MD	MPa	40,6	42,5	32,8	33,8
Tensile strenght TD	MPa	40,9	43,5	34,6	35,6
Elongation at break TD	%	793,1	782,3	752,8	742,8
Elongation at break MD	%	840,7	848,3	791,9	770,1
Coefficient of internal friction		0,33	0,31	0,44	0,41
External friction coefficient		0,24	0,28	0,51	0,55
ODT MD tear strength	N/mm	70,8	75,1	36,6	32,5
ODT tear strength TD	N/mm	87,2	89,5	39,6	33,5

Lucofin® based Stretch Hoods have a significantly higher tensile strength and Holding force
 → Wallthickness can and should be reduced - downgauging

Downgauging Lucofin® Based Stretch Hood Film



Despite a slight increase in orientation, the film performed well with 13% less wallthickness

Testimonial:

From a Major US Customer, reporting his test results of Lucofin® based Stretch Hoods on a shaker table to replicate transit conditions.

“Lucofin® performed very well, lasting the entirety of the typical testing time without any major shifting. On a further positive note, we actually had a couple of our competitor films on the table at the same time, with the same loads, and they failed almost immediately.”

Summary:

- **Lucofin® is an Ethylene Butyl Acrylate Copolymer - EBA**
- **A versatile material which is compatible with a wide range of polymers and substrates.**

Lucofin® based Stretch Hoods :

- **have a higher retention force with consistently high elongation properties**
- **can be produced thinner while retaining their properties (downgauging)**
- **can be extruded faster, increasing output (cost efficiency)**
- **use a much lower proportion of Lucofin® than other structures that use copolymers such as EVA or POE, making the materials less expensive overall (cost efficiency)**

**Thank you for your
attention!**

**Please feel free to
contact us!**

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