



## SML inaugurates new headquarters

With the construction of its new headquarters now completed on a green field near Redlham, Upper Austria, SML has set up one of the world's most advanced centres for extrusion technology. The site is home to state-of-the-art facilities for the production of plastics processing machinery, as well as campus-like R&D and training facilities with architecture to inspire the extrusion solutions of the future. For SML, the new HQ serves as both a milestone for its long-lasting success as a company and a solid foundation for further growth and development.

SML's new headquarters opened – exactly on time – in April 2019 following eighteen short months of intensive construction work. The relocation of all business units to the new site ran smoothly and without delays in production. "For us at SML, the inauguration of our new HQ is a clear symbol of our determination to further expand our leading position in the field of extrusion technology in the decades to come," says Karl Stöger, managing director of SML.

### PERFECT WORKING ENVIRONMENT

The new site has a total built-up floor area of 42,000m<sup>2</sup>, a substantial part of which hosts one of the leading state-of-the-art production facilities for plastics processing machinery in Europe. The highlight of SML's headquarters is the new Technology Centre with R&D facilities and ready-for-sale demonstration systems for customers. One of the new HQ's architectural highlights is the atrium in the spacious office area, which will serve as venue for company events and informal meetings. All the facilities at SML's new



HQ were designed to offer perfect working conditions, promoting innovation and open communication among employees.

### OPTIMISING PROCESSES IN MANUFACTURING AND LOGISTICS

SML's new production site fosters the highest levels of flexibility in manufacturing. Along with optimised logistical sequences, machine production at the new plant is becoming more and more efficient. After years of continuous growth, it was necessary for SML to avoid bottlenecks in production and ensure the reliability of delivery times. Due to an overall improvement in operating processes, throughput times have been reduced and productivity increased in every business unit.

### ADVANCED BUILDING TECHNOLOGY

The new HQ's building infrastructure reflects SML's drive to pursue technical innovation and efficient resource use. The whole site can be both heated and cooled with an

### Facts and figures

Construction period:	18 months
Plot of land:	90,000m <sup>2</sup>
Total built-up floor area:	42,000m <sup>2</sup>
Technology centre:	3,100m <sup>2</sup>
Office building:	6,000m <sup>2</sup>
Education and training:	900m <sup>2</sup>
Production and storage:	32,000m <sup>2</sup>

eco-friendly reversible heat pump system using groundwater. Groundwater is also used to provide cooling capacity for test runs on demonstration lines. A centralised power monitoring system makes energy consumption for the whole site as efficient and eco-friendly as possible.

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### Editorial

**Karl Stöger**  
Managing Director



Dear Reader,

What an eventful year this has been. In April, we moved the entire company to new buildings in Redlham, which is some 14 kilometres away from the old Lenzing site. Our new, ultra-modern plant offers twice the space and provides a perfect home base for further growth and development. It includes a Technology Centre that will be equipped with a full range of extrusion lines and pilot systems in the coming months.

Once every 12 years, the ITMA and K exhibitions fall in the same year. We will be exhibiting our product range encompassing textile spinning as well as plastics extrusion in Barcelona and in Düsseldorf this year. Preparations for these key events are in full swing.

A three-station triplex lamination line for aseptic packaging was tested, presented and shipped to a customer in the last two months. This application is the latest addition to our product range and has been the source of great attention and interest in the market. Visitors have been especially surprised by consistent performance during the various test runs performed before shipment and the line has surpassed all our expectations.

SML stretch film winders enjoy an excellent reputation for their outstanding technical features and specifications, so it is astonishing that yet another high-performance winder model has been introduced. The new triple turret version of our popular W4000-4S winder enables fully automatic hand roll and machine roll production on both 2-inch and 3-inch cores behind 4.5-metre-wide 9-up PowerCast lines. When it comes to these dimensions and performance levels, it has no equal.

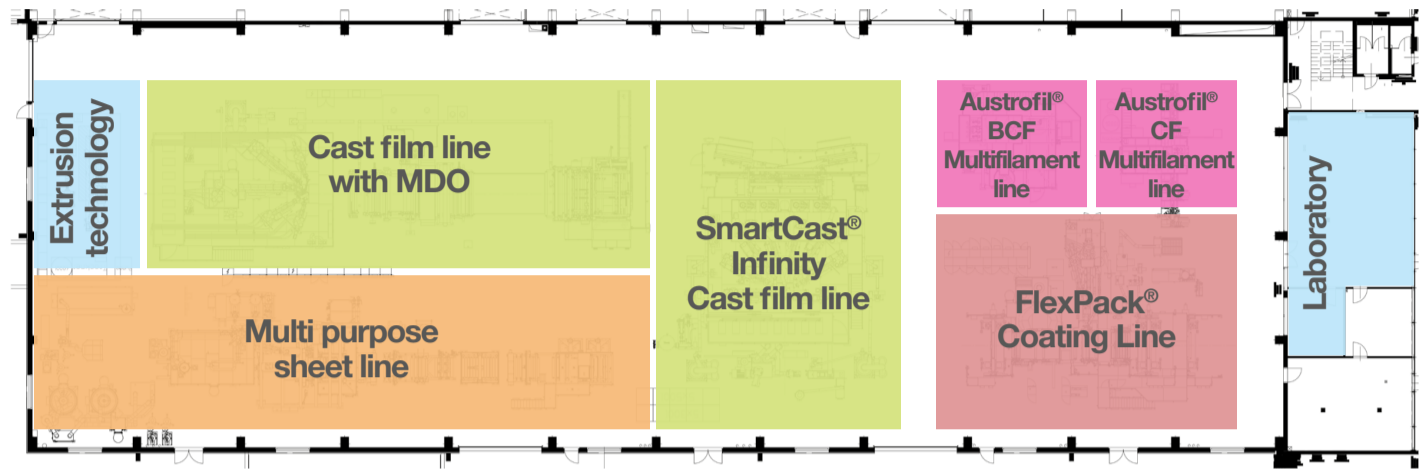
Inside this edition of TechReport, you will find articles elaborating further on the topics mentioned above and additional news on recent developments. Please enjoy reading it and feel free to get in touch with us for more information.

Yours faithfully,

*Karl Stöger*

# The invaluable innovation cluster at SML's new headquarters: SML Technology Centre

One of the true highlights of SML's headquarters is its brand-new Technology Centre, which hosts the company's R&D activities. Spanning more than 3,000m<sup>2</sup>, it is home to a centre of excellence for extrusion technology, several production-scale demonstration lines, laboratories with state-of-the-art testing equipment, and campus-like spaces for meetings and training sessions.



## CREATING SOLUTIONS TOGETHER

SML's Technology Centre is running ready-for-sale demonstration lines, both for internal trials and joint R&D projects with customers. Together with its partners, SML is using these lines to test new raw materials, to improve the properties of end products, to improve manufacturing processes and to work on new products.

The Technology Centre at SML's newly inaugurated headquarters offers a wide variety of testing facilities for all aspects of SML's products. SML is steadily adding new lines to its Technology Centre.

## FLEXIBLE TEST STAND FOR SCREW VERIFICATION

A key feature of SML's centre of excellence for extrusion technology is the flexible test stand, allowing screw verification tests for any SML extruder type. Since the test stand contains all the electrical and control equipment for extruders,

## Demonstration lines for all aspects of SML's products:

Product group	Line	From week
Cast film line	SmartCast® Infinity	48/2019
	Cast film line with MDO	Q1 /2020
Sheet line	Multi-purpose sheet line	31/2019
Coating line	FlexPack®	30/2019
Multifilament line	Austrofil® BCF	18/2019
	Austrofil® CF	30/2019
Extrusion technology	Flexible extruder test stand	20/2019
	Permanent 75mm extruder	40/2019
Laboratory	Extensive testing equipment	Already available
bit.Wise	Data analytics and visualisation	Already available

SML's technicians can connect and test extruders before they are integrated into complete lines. This allows SML to optimise the operating conditions and screws at an early project stage in a time-efficient way.

## TESTING POLYMERS WITH NO LIMITS

In connection with this flexible test stand, SML's Technology Centre features a permanent extruder with a screw diameter of 75mm, offering trials with two types of barrel designs: a smooth

bore 33 L/D design (which can be extended to 37 L/D) and a 37 L/D HO-LT design. HO-LT is a proprietary SML design that builds on the Helibar® principle and facilitates high output at low melt temperatures. An extensive range of sensor equipment and an advanced data acquisition system are generally included. In the 75mm extruder, SML has chosen a mid-range product from its extrusion portfolio, ensuring safe scale-up to larger production-size machines. Combined with a selection of high-performance extrusion screws, there are hardly any limits as far as testing different polymer types and grades. A melt pump or a flat sheet die can also be connected to the extruder, allowing for trials under real production conditions.

## Machinery for the circular economy

# SML presents new PP monolayer sheet line



The creation of an efficient and effective circular economy is, at least for the moment, the most realistic answer in the ongoing discussion about plastic waste. In releasing its new PP monolayer thermoforming sheet line, SML is demonstrating a clear commitment to easy-to-recycle packaging materials. The new line contains SML's latest high-speed extrusion technology, setting new standards for productivity and low unit cost.

"In view of the current discussions about plastic waste, SML is expecting a clear shift in demand towards easy-to-recycle PP sheets, either monolayer or co-extruded. It is for this reason that SML has developed a new PP monolayer thermoforming sheet line for an output range of up to 1,000 kg/h – ideal for medium-sized production batches, ambitious newcomers and all manufacturers looking to produce recyclable materials," says Berthold Droege, technical director at SML.

## HSE TECHNOLOGY FOR MAXIMUM EFFICIENCY

The stand-out characteristic of SML's new line is its high productivity at very low unit cost, making the production of PP monolayer sheet for recyclable cups and trays truly competitive. The basic version of SML's new line manufactures PP thermoforming monolayer sheet in a thickness range between 500 - 2,000µm and at widths of up to 920mm. Meanwhile, the winder produces rolls with a diameter

of up to 2,000mm on 6-inch shafts. The centrepiece of the new PP monolayer thermoforming sheet line is an efficient high-speed extruder (HSE), allowing for net production output of up to 800 kg/h with total energy consumption of less than 300 Wh/kg attributable to the line. In addition to its high energy efficiency, the advantages of SML's HSE include very short polymer residence times, fast material changes and a small footprint.

## LONGEVITY WITH OUTSTANDING VALUE FOR MONEY

SML's new PP monolayer thermoforming sheet line comes with a variety of different options and upgrades. Output can be boosted by more than 15 percent with the longer 42D extruder unit, while the processing window for virgin and recycled material can be widened. The optional integration of a co-extruder allows for higher flexibility in production. In addition to its very low operating costs, the investment costs for SML's new PP monolayer sheet line are also moderate – in output terms, the basic version comes in at below 1,000 EUR/kg. As with all machinery manufactured by SML, every component meets the highest standards of quality and longevity, making SML's new monolayer sheet line a safe investment for the future, from both a financial and an environmental perspective.

Extrusion lines –  
engineered to perform

## SML branches into aseptic board packaging market

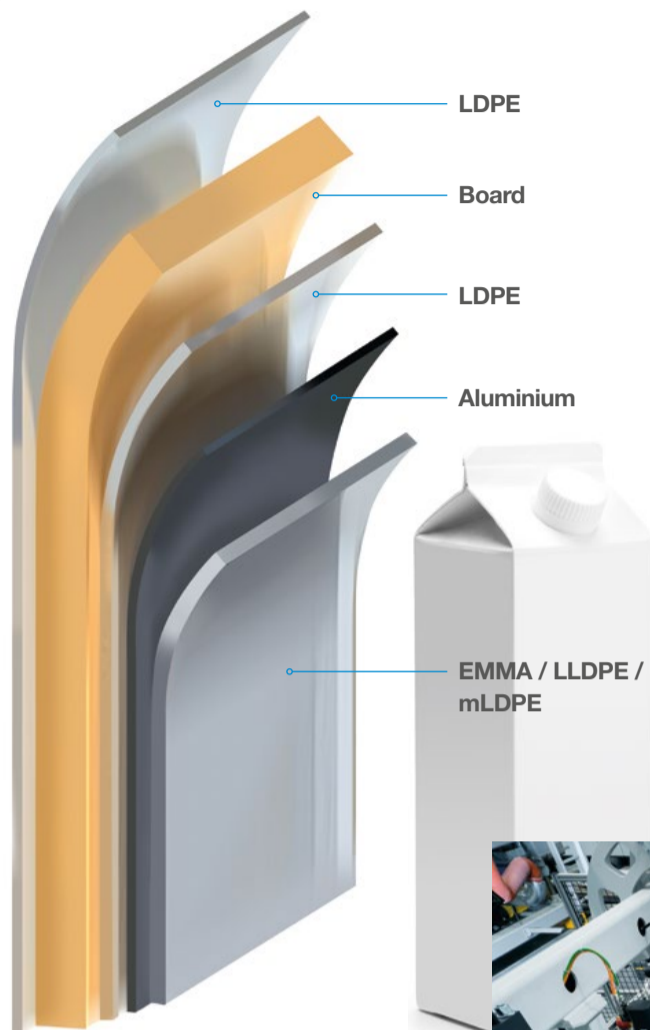
# Ultra-precise

SML has successfully entered the market for lamination machinery for aseptic board packaging with the introduction of its new triplex extrusion lamination line. In sharp contrast to most other devices in this field, SML's new line processes thin paper for flexible pouches as well as paperboard for beverage cartons at equally high quality.

"Our new triplex extrusion lamination line offers a very wide application area – from aseptic materials for classical beverage cartons to flexible pouches. Its stand-out technical attribute is the ultra-precise interaction between the different units," says Mario Hoellnsteiner, the product manager at SML responsible for the line. Undoubtedly, the most demanding challenge in designing the new line was to create a system that perfectly manages both thin paper and paperboard.

### SENSITIVE ROBUSTNESS

"We had to strike the right balance between very sensitive and fast-responding tension control in low tension areas for processing thin paper on the one hand – and a robust, long-lasting design for rigid cardboard on the other," explains Mario Hoellnsteiner. SML accomplished this mission thanks to an elaborate tension control system, which communicates between the different PLCs, drives and measuring cells within microseconds. All the machine parts such as unwinds, laminators, pre-treatment units and winders are closely interconnected and perfectly matched to one another. Even different web paths and product-specific pre-treatment units are used to get the best product out of the machine.



### SMILE AUTOMATION: IN-HOUSE PLC, DRIVE AND INTERFACE PROGRAMMING

The tension control system for SML's new lamination was developed entirely on-site, as SML is one of the few suppliers on the market with full resources to allow for PLC, drive and interface programming in-house. SML considers this a strong competitive advantage, especially when it comes to completing complicated tasks in a short and straightforward way –

and providing the fastest possible service support afterwards.

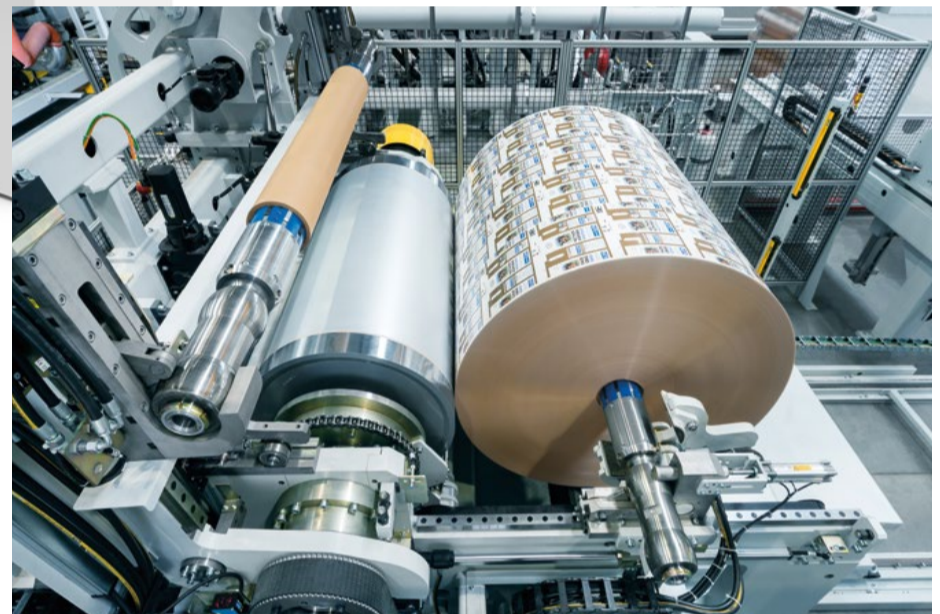
### DURABLE MACHINE DESIGN – READY FOR HEAVY LOADS

SML's triplex extrusion lamination line has an elaborate setup that combines a durable machine design, proven components and the latest state-of-the-art technology with the highest levels of user-friendliness and production efficiency. Due to the specific construction of the triplex

line, changes in materials and access to all sections of the line are extremely easy and convenient. One of the main requests received was to make material change-overs as speedy and waste-free as possible. A key technical highlight is the fully automatic drum winder W1800, which features an automatic reel and shaft handling system suitable for heavy product rolls of up to 4 metric tonnes.

### Technical specifications:

Max. mechanical machine speed:	400 m/min
Roller width:	1,500mm
Product width:	700 - 1,350mm
Total product weight:	150 - 400 g/m <sup>2</sup>
Line design:	LID (laminate/inside/decor)



Drum winder W1800 for big diameter reels

## Brand-new triple turret winder for 2- and 3-inch stretch film

SML's brand-new W4000-4S-3T triple turret winder strings together several superlatives, combining flexible 2- and 3-inch operation, speeds of up to 850 m/min, the highest levels of efficiency with 4.5m net film width, record-breaking cycle times, and fully automatic core and roll handling.

"Our latest innovation in winding technology is a perfect solution for large-scale 2- and 3-inch stretch film production," says Christoph Iglseder, a design engineer for winding technology at SML. The design of SML's new W4000-4S-3T triple turret winder allows for stable production of hand, machine and jumbo rolls on a large variety of cores (and even on coreless winding shafts). Due to its final film width of 4.5m, the new winder is highly energy-efficient in operation when

combined with SML's high-volume PowerCast XL stretch film lines.

### DESIGNED FOR TOP PERFORMANCE

The three turn-over units of the new W4000-4S-3T triple turret winder are arranged on top of one another and supported by a massive main frame. A small footprint is a signature part of this design, saving our customers valuable space on the shop floor. The film inlet section unit has been raised to ensure equal film lengths and tensions for each turn-over unit. Walkable platforms around and inside the winder ensure a fast start-up process and ease of maintenance. When changing between 2- and 3-inches, the winding shafts can be stored in magazines and remain in the winder. Additional automated equipment reduces the effort required for conversion reducing downtime to a bare minimum.



Brand-new W4000-4S-3T triple turret winder

► Designed for top-quality

### TAILOR-MADE SOLUTIONS FOR FURTHER PROCESSING

The short cycle times of SML's new triple turret winder result in a high number of finished rolls, and automated palletising devices should be considered as an option. However, recognising that each customer has different demands, SML offers tailor-made solutions ranging from simple manual removal to fully automated one-table systems.

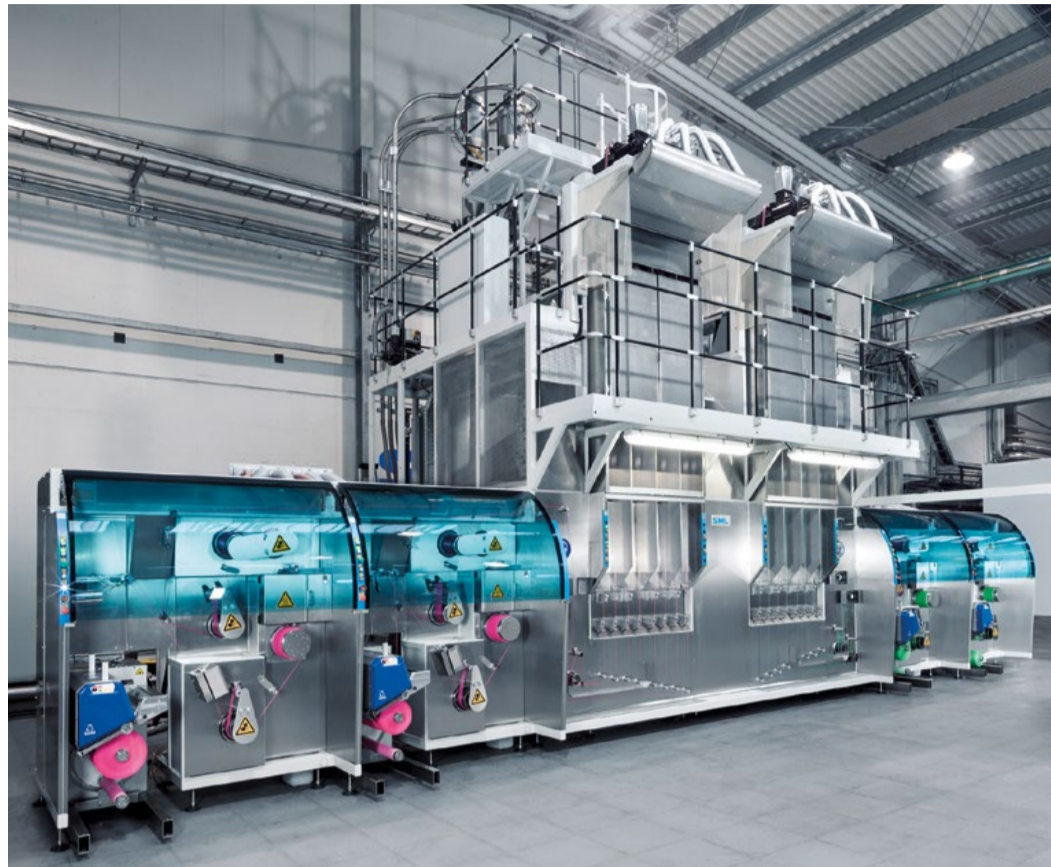
SML has once again strengthened its leading role in the winding technology market with the roll-out of the new W4000-4S-3T triple turret winder. But despite all the technological innovation, the fundamental properties of SML's winders remain top product quality due to technical precision, reliability and operability.

# SML expands its Spinning Range

Maximum of efficiency and flexibility in carpet production

SML is taking its spinning range to the next level. A new BCF Tricolor model with increased output capacity and brand new features will be launched by mid-2019 along with an enhanced entry-level line for Monocolor. And within the CF spinning line selection, SML has made its MT and HT series ready for PA6 and HDPE.

In the BCF segment, SML has finished the development of a new 11.5 t/day Tricolor concept, offering maximum of efficiency and flexibility in carpet production, including the usual range of color combinations for BCF yarns. In comparison with SML's existing Tricolor model, which has become an established fixture worldwide, the new line has 50 percent higher production capability at a better price-performance ratio. As well as its tricolor operation, the new design offers the useful option of operating the



Austrofil® BCF multifilament line

line either as a single large system or as three completely independent monocolor lines for smaller yarn batches. The use of the new spinpack generation shortens setup time by more than 60 percent while allowing higher filament counts.

#### HORIZONTAL SET-UP WITH MINIMISED FOOTPRINT

A key advantage of SML's BCF lines is their unique horizontal line design, which guarantees direct access to all key segments, making operation and maintenance easy and convenient while requiring only low ceiling heights. Equipped with the newest generation of

low-width spinpacks and more compact stretching units, the new Tricolor line has a compact footprint comparable to lines with a vertical design.

#### NEW BCF LINE FOR SMALL YARN BATCHES

The next BCF spinning line from SML to be brought to market by June 2019 is a Monocolor BCF line with a capacity of 5 t/day. This new line combines SML's high standards in product quality and precision with a moderate price level. SML's new Monocolor BCF line is specially designed for first-time investors entering the carpet

industry and established manufacturers working with small production batches.

All the new BCF spinning lines are equipped with SML's patented texturing system, which has a long track record of success. In interaction with optimal cooling conditions on the cooling drum, this system guarantees top levels of yarn crimp, which substantially reduces raw material costs in carpet fabrication.

#### IMPROVED CF LINES FOR PA6 MDY AND FDY

In its CF segment, SML has refined its well-established spinning lines, most notably by increasing raw material flexibility. Based on the popular standard MT/HT4x2 lines for PP yarn production, the newly modified lines are now also available for PA6 MDY and FDY usage.

These technical modifications broaden the variety of applications significantly, giving manufacturers the opportunity to branch out into new markets in a single step and at minimal additional cost.

#### CONTINUOUS FILAMENT FROM HDPE

On request, having implemented a minor upgrade, it is now possible to process HDPE multifilament yarn on certain SML lines. HDPE multifilament yarns provide impressive results with remarkable haptic and unique mechanical properties. They can be knitted to fabrics or braided to special types of rope – one application area growing in importance is the fishing net market.

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## Coming soon: new FlexPack® demonstration line to prove performance

As its new Technical Centre opens its doors, SML is presenting a production-scale demonstration line for extrusion laminating based on its well-established FlexPack® design. Equipped with two turret unwinds, the new demo line processes substrates between 800mm and 1,650mm in width at speeds of up to 450 m/min. Other features include co-extrusion, along

with ozone shower, corona pre-treatment and a primer station. The new FlexPack® demonstration line's laminator can be either equipped with a standard pressing unit or with SML's patented DoubleCoat module. Changes between the two units can be made with fast turnaround.

Due to the variety of different technical features, SML's new line can be used

for a vast array of applications, from specific technical tasks to flexible packaging and medical products. SML's FlexPack® demonstration line will be open for customer trials in the second half of 2019. For detailed information or to plan a trial visit, please contact Johannes Danter (daj@sml.at) or Mario Höllnsteiner (hom@sml.at).

## Events 2019

Event	Location	Booth No.	Date
INTERPLAST	BANGKOK		JUNE, 19 - 22
ITMA	BARCELONA	H7-C122	JUNE, 20 - 26
PROPAK	MYANMAR	N11	SEPT, 12 - 14
T-PLAS	BANGKOK		SEPT, 18 - 21
K'2019	DÜSSELDORF	17/ C 39-42	OCT, 16 - 23