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MiniCast - high performance stretch film

SML to demonstrate its leadership in stretch film lines at the Plast in Milan

▶ Easy & fast switch from core to coreless production

As an established market and technology leader in stretch wrap film lines, SML offers production lines for all types of stretch film application – and with a wide range of equipment options and features. One of SML's most successful lines, the MiniCast, will be shown in operation at the Plast 2026 trade show. Despite the line's low space requirements, the 1.5 m wide MiniCast is certain to impress trade show visitors with its performance.

CORELESS PRODUCTION

In collaboration with DOW, SML will run the MiniCast twice daily, producing ultra high quality films from 100 % polyethylene – fully recyclable, of course. In addition to this, the production of coreless film rolls will be part of the demonstration. The production of coreless machine rolls for high speed wrappers, weighing 16 kg, will be demonstrated at the trade show stand. "We want to show how easy and fast it is to switch

from core to coreless production," explains Thomas Rauscher, Product Manager at SML. To address this, SML has developed innovative methods to control and regulate the tension of the film during the winding.

TECHNICAL SET-UP

The MiniCast machine on show will be equipped with 4 extruders and a 5-layer feedblock in combination with a Reflex die from Cloeren. It also comes with the time-proven 1,600 m diameter single chill roll, a new thickness measuring device, and the widely-sold W4000 turret winder. The 3-up winder version showcased will produce rolls at 3 x 500 mm net film.

An ESTL Film Performance Tester will also be available on site, allowing visitors to check the quality of the films straight away.



▶ Live demonstration runs daily
PAV 13P / Stand E07 G02



9-12
JUNE
2026
MILANO

Technology Centre Available demonstration lines

Following demonstration lines are currently available for customer trials:

- ▶ **MiniCast** stretch film line (4 extruders / 5-layers incl. winder W4000 4S-1T)
- ▶ **EcoCompact II** stretch film line (4 extruders / 5-layers incl. winder W4000 4S)
- ▶ **FlexPack** extrusion coating and laminating line
- ▶ **Austrofil VERTEX** multifilament spinning line
- ▶ **Cast film line** with modified MDO-unit and winder W2000 (optional twin-screw extruder)
- ▶ **FlexiPET** sheet line incl. SML's twin-screw extruder TSE80 and winder W650

For additional information and any inquiries concerning trial runs, please contact the designated product manager.



Extrusion lines –
engineered to perform



Dear Reader,

Innovation has always been the driving force behind SML's success — and this latest issue of *SML TechReport* once again demonstrates how our commitment to performance, precision, and sustainability continues to redefine what's possible in extrusion technology.

As we move into this year's busy exhibition season, SML enters an exciting new phase of technological evolution. At *Plast Milan 2026*, we will showcase the MiniCast high-performance stretch film line, running live demonstrations of *coreless film production* and *100% recyclable polyethylene films*. This milestone highlights our dedication not only to operational excellence but also to the circular economy and resource-saving production methods.

In parallel, SML's Nano101 technology pushes nanolayer stretch film production to unprecedented levels with 101 layers—setting a new benchmark in material performance and flexibility.

Across our product range, we continue to translate innovation into tangible value for customers, from the FlexiPET demonstration line with its powerful twin-screw extruder and high-precision calendering, to the proven Austrofil HT with a HO-LT extruder that delivers up to 25% higher output while reducing energy consumption.

Each of these developments reflects our philosophy: *engineering extrusion lines that perform — and endure*. What unites them all is not only technical advancement, but an understanding of our customers' needs for efficiency, adaptability, and sustainability.

We invite you to explore these stories, discover our latest process technologies, and experience firsthand how SML continues to lead through innovation, partnership, and precision. Together, we're shaping the next generation of plastic film, sheet, and fibre production — responsibly, intelligently, and with Austrian engineering excellence at its core.

Yours sincerely

Karl Stöger
Karl Stöger
Managing Director

High-volume PET sheet production

SML equips Fuhai Shandong Packing Material with cutting edge roll stack technology

SML was proud to partner with the Chinese company Fuhai Shandong Packing Material Co., Ltd. on its newly built production plant for thermoformable A PET sheets. With its large scale production facility, Fuhai, a fully integrated PET raw material manufacturer, is extending its value chain offering. With an exceptionally high melting capacity of more than 35 tonnes per hour spread

across 8 SML sheet lines, the facility is one of the largest for PET sheet in the world.

OUTSTANDING ROLL STACK DESIGN
To cope with the considerable throughput rates, SML provided its outstanding roll stack technology in two different configurations: inclined roll stacks with a roller width of 2,200 mm for thick PET sheet production, and the recently launched XL roll stacks with a roller width of 2,700 mm for thinner sheets.

MAINTAINING TIGHT THICKNESS TOLERANCES
The perfect thickness distribution across the entire

width of the XL roll stack is ensured by a hydraulically adjustable pressure roller, which provides a uniform uniform gap between the rollers. Combined with ax-crossing, high-quality sheet production in wide widths is taken to a new level.

INLINE SLITTING WITH FULLY AUTOMATIC WINDER
The time-proven fully automatic W2000 winder, which also offers the option of inline slitting of up to 4 webs, is equipped with a powerful guillotine cutting unit used for perfect rolls. Together with Fuhai's skilled engineering team and SML's field-service experts, the lines went into the commissioning phase in a remarkably short time. "The decision to go with the SML technology was absolutely the right one," confirms Xu Lei, Technical Project Manager Fuhai.



XL roller width of 2,700 mm

Latest advances in stretch film production

Nano101 – more layers, more performance

Building on the success of previous generations of SmartCast stretch film lines, SML has now installed the fourth generation of the SmartCast Infinity in its Technology Centre, equipped with the latest advancements: a newly developed nanolayer feedback for 101 layers.

- ▶ 101 layers – the highest number count ever achieved in stretch film
- ▶ Highest percentage of nano-structured film in the total film
- ▶ Highest number of extruders – the nanolayer feedback is fed by eight extruders

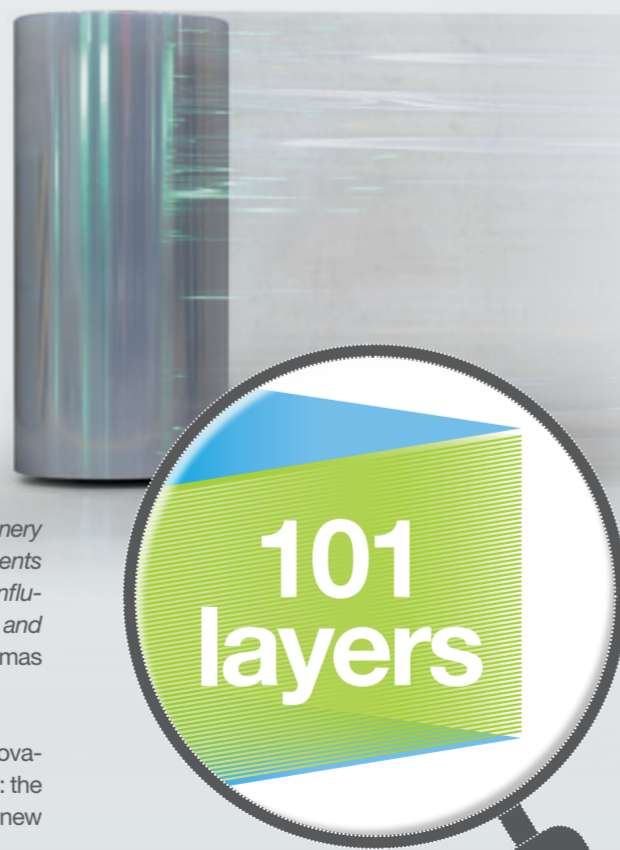
Nanolayer technology is an advanced technology in stretch film production to improve film quality and wrapping application. Nano-layered film gives stretch film incredible performance despite its thickness. While Nano67 is already an established technology for high-end applications on the market, SML now pushes this technology further.

WHAT MAKES NANO101 UNIQUE?

In close collaboration with Cloeren and drawing on the vast experience and learnings of Nano67, we developed a truly unique piece of equipment. The new nanolayer feedback was custom-engineered to meet highest requirements. This design differs from every previous solution in three key ways:

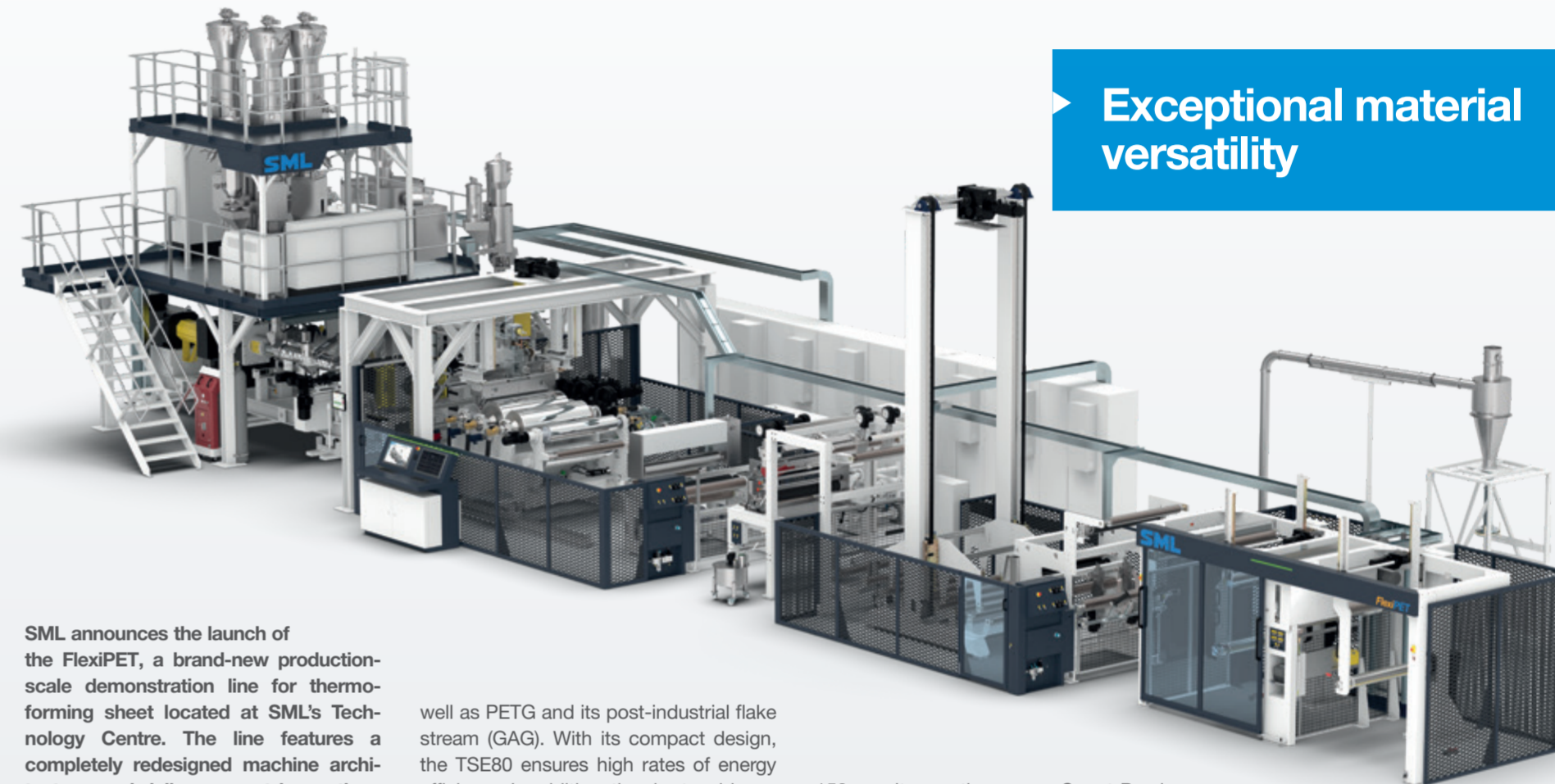
Overall, these features offer higher flexibility to influence film properties. "Nano101 lets us combine a wider range of functional materials, in different sequences and at lower percentages. While the stretch films produced on our machinery already exceed the market requirements for elongation, Nano101 focuses on influencing tear propagation, holding force and puncture resistance," explains Thomas Rauscher, Product Manager at SML.

With Nano101, SML now offers two innovative nanolayer technologies as standard: the time-proven Nano67 and the brand-new Nano101 – the choice is yours!



Twin-screw extrusion

FlexiPET – redesigned demo line for PET thermoforming sheet



Exceptional material versatility

SML announces the launch of the FlexiPET, a brand-new production-scale demonstration line for thermoforming sheet located at SML's Technology Centre. The line features a completely redesigned machine architecture, and delivers smart innovations at every level: most notably SML's new twin-screw extruder TSE80 for polyester, a modernised roll stack, and the new W650 winder.

The FlexiPET is a co-extrusion sheet line configured for a classic 3-layer structure (A/B/A), but which also has the versatility to operate as a 2-layer line (A/B) as required.

EXTRUSION EXCELLENCE: TSE80 COMBINED WITH HIGH-PERFORMANCE VACUUM UNIT

"At the heart of the line lies the new TSE80 – a state-of-the-art parallel co-rotating twin-screw extruder designed in-house by SML and specifically optimised for PET," explains Martin Kastner, R&D Engineer at SML. Equipped with a low-maintenance, water-cooled main drive delivering 348 kW, the TSE 80 achieves an output capacity of up to 1000 kg/h for PET.

The TSE80 demonstrates exceptional material versatility. It is optimised for processing large volumes of materials with low bulk densities – such as flakes or regrind. The concept is also an excellent choice for processing PET/PE flakes, as

well as PETG and its post-industrial flake stream (GAG). With its compact design, the TSE80 ensures high rates of energy efficiency. In addition, the short residence time in the extruder retains the natural, clear colour of PET, preventing the yellowing of the film.

To ensure the highest melt quality for processing PET without pre-drying, the TSE80 is combined with SML's high-performance vacuum unit. This frequency-controlled two-stage vacuum system employs a roots vacuum pump for high volume flow rates with a dry-running rotary screw pump for low pressure levels. This configuration achieves absolute pressure levels as low as 1 mbar. Due to the dry-running vacuum pumps, the unit ensures high levels of energy efficiency and environmental compatibility.

A gravimetric batch blender with three stations for main components (virgin, flakes, regrind) and two additive dosing stations offers exceptional flexibility for complex formulations.

The co-extruder in the FlexiPET line is an SML single-screw extruder (ES 60/28D) powered by a 64 kW main drive motor. It is designed for processing pre-dried material with an output of up to 200 kg/h for PET.

KEY FACTS	
Maximum output	Up to 1,200 kg/h of PET
Layer structures	A/B/A or A/B
Thickness range	150 – 1,400 µm
Final net film width	Up to 1,000 mm
Winding diameter	Up to 1,500 mm
Number of webs	Up to 2

PRECISION CALENDERING
Downstream, the horizontal roll stack ensures a high specific output, even for thin gauges as low as

150 µm. It uses the proven Smart Parallel Gap (SPG) polishing roller technology for superior thickness tolerances. "A major innovation is the roll stack movement, equipped with servo positioning drives and linear guides, which enables precise, 100 % reproducible positioning in both the horizontal and vertical directions," Martin Kastner continues. This feature includes automatic start-up processes, collision protection between the roll stack and flat die, and the ability to store production positions in



winder (diameters of up to 1,500 mm and 2,000 kg roll weight). A movable winding shaft support ensures the production of perfectly straight-edged reels.

The W650 basic version also includes semi-automatic cantilever operation with automatic cross-cutting via flying knife. Energy-efficient asynchronous servo motors with resolver feedback, combined with SML's in-house winding controller, enable

the SMILE control system. The design complies with Calander standard DIN EN 12301-2021-12, ensuring safety without affecting the visibility of the smoothing roller gap.

W650: NEW WINDER FOR THERMOFORMING FILM

The FlexiPET concludes with the new W650 winder, a development that combines the best of two worlds. It offers the user-friendly roll handling of a cantilever winder – where the shaft remains in place during changes – combined with the large winding capacities of an A-frame

EXPERIENCE FLEXIPET – PUT THE MACHINE THROUGH ITS PACES
We invite customers to conduct trials, product development, and sample production. Bring your materials and experience the full potential of FlexiPET!

Austrofil HT spinning lines

Now up to 25% more output

SML's Austrofil HT spinning lines are renowned for their high-quality PP yarn production, especially in the field of high tenacity (HT) products. To increase output even further, SML has developed a new 45 mm extruder dedicated to multifilament yarn production. The new Austrofil HO-LT extruder allows HT lines to achieve up to 25% more output while maintaining the premium mechanical properties of PP yarns.

HO-LT EXTRUDER TO IMPROVE SPINNING PROCESSES

The new extruder is based on SML's proprietary HO-LT technology (high output – low temperature) – a concept that has been successfully used in cast film and sheet extrusion for over 10 years. The HO-LT technology offers several advantages that are directly beneficial for fibre spinning: its characteristic gentle polymer melting and short residence times improve the spinning process. The melt temperature stays within a moderate, narrow band across a wide output range. This ensures consistent and excellent yarn properties from low to high titre. Short residence times enable quick product and material changes, while the HO-LT extruder still provides exceptional melt-mixing – a perfect match for dope-dyed yarn production.



TESTED ACROSS THE FULL TITRE RANGE

The HO-LT extruder has been extensively tested both in the SML Technology Centre and on-site at customer facilities, covering the full titre range of the Austrofil HT lines (150–4,000 den / 165–4,400 dtex). The increased extrusion output allows the production capacity of an Austrofil HT line for titre > 1,300 dtex to be increased to up to 200 kg/h. The quenching unit and stretching unit with the unique hot-air oven have also been harnessed to achieve outstanding high tenacities of over 7 g/den for PP multifilament yarn.

LOWER ENERGY CONSUMPTION

Apart from its performance, the HO-LT extruder also stands out with its exceptional energy efficiency. Compared with conventional extruders, it consumes significantly less power – a genuine advantage at a time of rising energy costs.

“Overall, the development of the Austrofil HO-LT extruder is a perfect addition to SML's spinning line portfolio and facilitates a cost-effective production with high output,” says Stefan Dambauer, Product Manager at SML. The new extruder can also be deployed on SML Austrofil VERTEX spinning lines for manufacturing low-titre PP yarns for textile applications.



▶ Based on HO-LT technology

FlexPack - thermal lamination film

The protective layer for a wide range of applications

Thermal lamination films provide lasting protection for printed surfaces in a wide variety of paper-based products, such as important documents or product labels. Damage from moisture and other environmental influences is prevented, while end products' durability and appearance are enhanced.

APPLIED IN MANY INDUSTRIES

Over the last few decades, thermal lamination films have evolved into true all-rounders. They are now indispensable in all industries - from medicine and education to the food service sector and much more. SML serves all these industries with its customised extrusion coating and lamination lines, meeting the high-quality requirements of the end products. Yet how is a thermal lamination film actually structured and what is important in terms of its manufacturing?

THE THERMAL LAMINATION PROCESS

In general terms, thermal lamination is a process which uses heat and pressure to fuse a layer of protective film onto a paper or plastic substrate. The protective, thermal lamination film is basically a two-layer structure, which ensures the necessary durability and transparency. In this context, the outer layer is typically made of (BO)PET film, which provides scratch resistance and UV protection. At the same time, the extrusion coated and heat-activated adhesive inner layer securely bonds paper and common substrates/materials. When heated to 100–150°C the active adhesive layer changes into a viscous phase and thus permits mechanical bonding to the paper under compression.

MELT HOMOGENEITY MATTERS

The manufacturing of the thermal lamination film plays a key role in the quality

▶ Enhances durability and appearance



of the end product, as any contamination and surface defects in the adhesive layer coated on the carrier film inevitably become visible after the final lamination process. *“An excellent melt homogeneity of the typically EVA-based adhesive layer, combined with very fine melt filtration and an optimal surface structure on the cooling roller, is essential,”* Johannes Danter,

Product Manager at SML explains.

“With our extensive experience in extrusion coating and laminating of a wide range of substrates and gauges, we are able to configure the optimal machine to meet even the most specific demands in thermal lamination,” Johannes Danter concludes.

Extrusion lines – engineered to perform