

CAST FILM LINES

BREATHABLE FILM / LAMINATES ▶



SML lines – for the baby's comfort

The growing demand for breathable films/laminates in the hygiene, construction and sports industries for products as varied as diapers, sanitary towels and roof underlay has prompted SML to further develop its cast film lines with integrated MDO (machine direction orientator) units. In fact, SML is the technology leader in the field of breathable film and laminate production machinery and its competence is mirrored by a market share second to none.

Breathable films contain up to 50% CaCO₃. SML has outstanding experience with regards to extruders for the processing of highly filled raw materials. Equally important for the film quality is the automatic die control with integrated cascade algorithm. Two beta gauging sensors, located before and after the MDO, are combined to ensure correct die bolt mapping. Web stability is enhanced by means of the SML vacuum box, electrostatic edge pinning and an air knife. The design of the casting section and the MDO unit minimises vibrations and in the case of breathable film, allows mechanical speeds of up to 350 m/min.

SML accumulated 40 years of experience in the stretching field and this has created excellent MDO solutions. The MDO process creates micro porosity in the film. This ensures that the breathable film gets the desired water vapour transmission rate (WVTR),

strength and elasticity. After stretching, the film is annealed, cooled and furnished with a textile touch by an integrated embossing station.

SML's series W2000 „aerofilm“ winders are located at the end of the line and wind small or large-diameter rolls with the possibility for inline slitting. Fully automatic shaft, roll and core handling are available for efficient breathable film manufacture.

Breathable laminates are produced on the same line as breathable film and merely require the addition of an unwind for the nonwoven and a „porous coating“ die in the lamination unit.

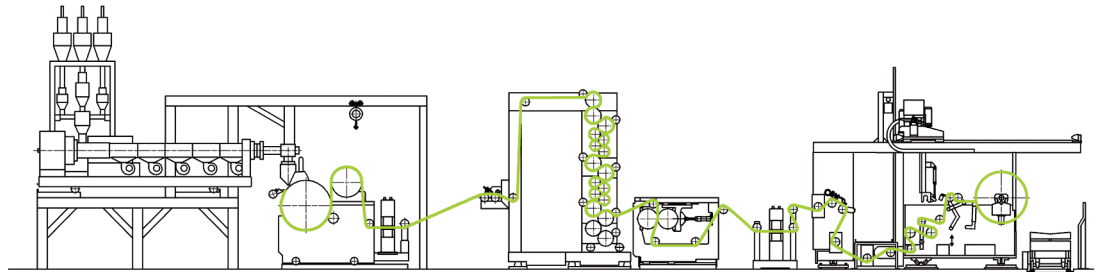
In-house wet testing of the line under production conditions prior to delivery ensures immediate and smooth start-up and commissioning at the customer's site. SML has the total capability to realise complex hygiene film lines in the shortest available time – from inquiry until start of production.

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product

Applications:	film for hygiene products and the building industry
Raw materials:	LDPE, LLDPE, mLLDPE with up to 70% CaCO ₃ film, PP-Homo, PP-Copo with up to 70% CaCO ₃
Film weight range:	15 - 50 g/m ²
Laminate weight range:	22 - 50 g/m ²
Final film width:	up to 2500mm



line configuration

RAW MATERIAL HANDLING

Drying system:	dryair system for virgin and recycling material
Feeding system:	individual pneumatic hopper loaders
Gravimetric dosing:	up to 6 components per extruder
Extruder output control:	integrated in SMILE control system

EXTRUSION

Extruder diameters:	75 / 90 / 105 / 120 / 135 / 150 / 180mm
L/D ratio:	33
Melt filtration:	hydraulic screen changers
Coextrusion structures:	up to 3 layers
Extrusion die:	automatic die with cross profile control

CASTING UNIT

First cooling roll:	800mm, matt surface, driven and tempered
Second cooling roll:	400mm, chrome surface, driven and tempered
Mechanical line speed:	350 / 450 m/min

DOWN STREAM EQUIPMENT

Thickness measuring before and after MDO:	beta ray gauging system, cascade control for die adjustment
Corona treatment:	one-side, double-side or reversible treatment

STRETCHING UNIT

Preheating unit:	up to 4 rollers, individual driven and tempered
First stretching unit:	4 stretching rollers, individual driven and tempered
Stabilising unit:	2 rollers, individual driven and tempered
Second stretching unit:	4 stretching rollers, individual driven and tempered
Stabilising unit:	up to 3 rollers, individual driven and tempered
Stabilising unit:	one driven and water cooled roller

POST EMBOSSING UNIT

Embossing roll:	embossed steel roller, driven and tempered
Pressure roll:	rubberised roller

EDGE TRIMMING AND REFEEDING

Primary and secondary edge trimming:	inline edge trimming with blades or circular knives
Edge trim processing:	repellitising of edge trims with an inline recycling unit

WINDING

Basic concept:	series W2000 aerofilm horizontal sliding winder especially designed for the winding of hygiene films and laminates
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AUTOMATION

SMILE control system