

- 1 1.2 m wide slot-die, heatable up to 50°C
- 2 atmoFlex 1250, topview
- 3 atmoFlex 1250, rewinding section with lamination capabilities

atmoFlex 1250

ROLL-TO-ROLL PILOT WET COATING LINE

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The wet coating of polymer films and other flexible substrates and their modification allows these materials to be used in a wide range of products. Roll-to-roll plants allow coatings to be efficiently applied at favorable cost.

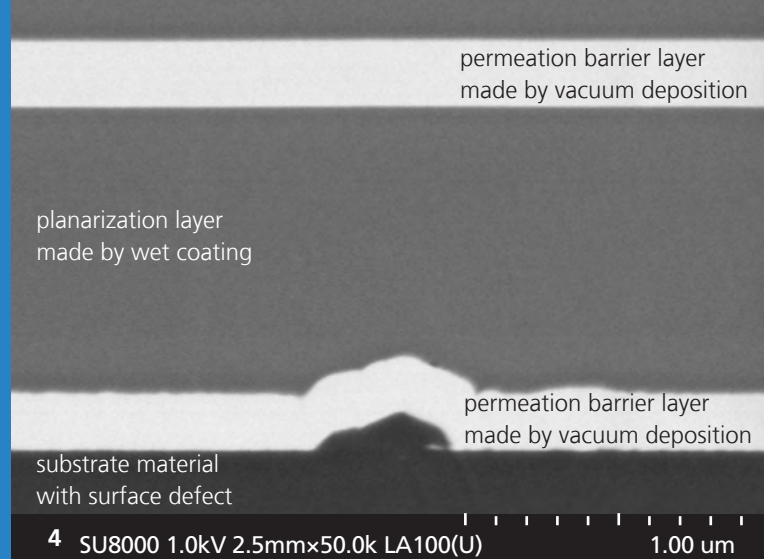
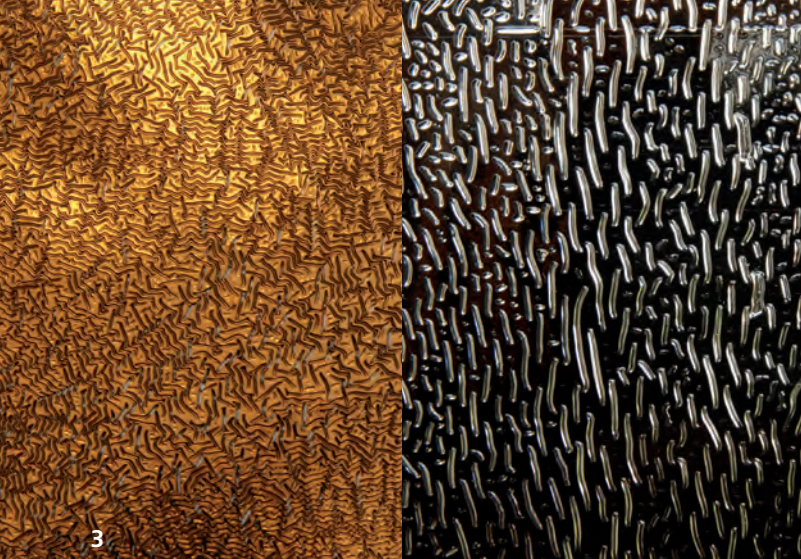
With the new coating line *atmoFlex 1250* (manufactured by 3D-Micromac GmbH, Germany) optical and decorative functional layers, abrasion resistant layers and structured layers manufactured by embossing processes can be applied. The maximum web speed of 150 m/min ensures highly productive coating processes. Wet and dry lamination processes are also possible with the *atmoFlex 1250*.

The wet coating takes place through a 1.2 m wide slot-die, ensure highly uniform

layers in web and cross-web direction. The crosslinking of lacquers will be done by means of an electron beam system. This system may be used also for post-curing of polymers or sterilization of polymer webs or textiles.

All rollers within the *atmoFlex 1250* are optimized regarding diameter and surface to handle pre-coated materials properly. Therefore vacuum coated materials maybe processed without altering the thin and delicate vacuum layers.

The *atmoFlex 1250* enables Fraunhofer FEP to provide a complete in-house process chain for research and development of multilayer systems, made by wet and vacuum coating processes at industrial scale.



3

4 SU8000 1.0kV 2.5mmx50.0k LA100(U)

1.00 µm

Technical specifications

coating width	1200 mm
substrate width	1250 mm
substrate thickness	10 ... 300 µm
outer diameter substrate roll	500 mm
winding speed	1 ... 150 m/min
electron beam energy	90 ... 150 keV
process modules	<ul style="list-style-type: none"> ▪ unwinder (supports masking films) ▪ corona pre-treatment ▪ contact cleaning ▪ slot-die coating ▪ wet and dry lamination ▪ electron beam curing and treatment ▪ rewinder (supports masking films)

Technology

- slot die
- lamination
- electron beam curing
- electron beam treatment
- in-line pre-treatment/contact cleaning
- optimized handling of pre vacuum-coated substrates

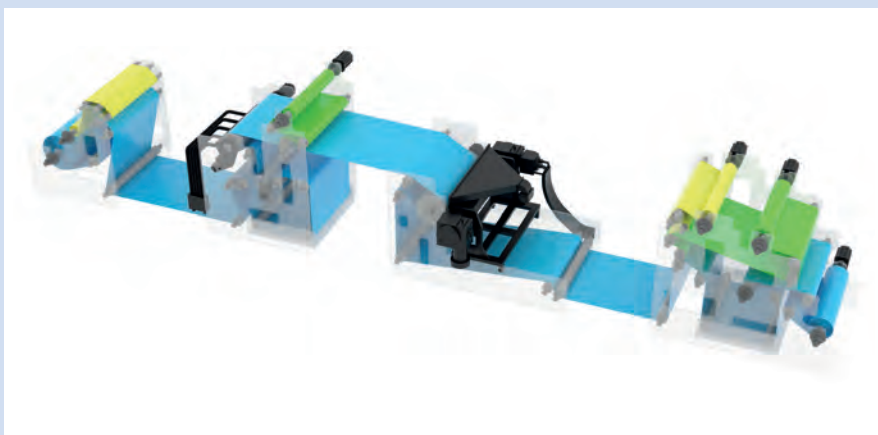
Our offer

- development of technologies for coating polymer films and other flexible materials
- coating tests of lacquers, cured by radiation for different applications (optical and decorative functional layers, abrasion resistant layers, permeation barrier layers)
- development and testing of key components
- sample provision for testing and marketing purposes, and pilot production
- studies on the efficiency of coating processes

3 Examples of textured surfaces, made by wet coating and cured by means of electron beam

4 SEM cross-section picture of a permeation barrier layer system, consisting of two vacuum deposited barrier layers and a planarization layer, deposited by wet coating – a surface defect of the substrate is effectively covered

5 Schema der atmoFlex 1250



3D MICROMAC

Equipment partner



Europa fördert Sachsen.
EFRE
Europäischer Fonds für regionale Entwicklung

Funded by the European Union
and the Free State of Saxony.
Funding reference: 3000651169



We focus on quality
and the ISO 9001.