The ebeam power house - portfolio & concepts

EUCARD2, Warsaw, Poland

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ebeam

a business of the COMET Group

Contents

ebeam

COMET Group
At a glance

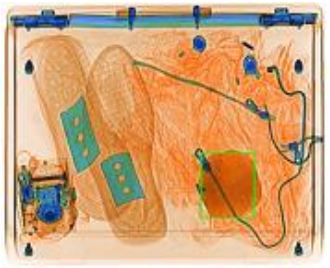
- Founded in 1948
- Headquarters in Flamatt, CH
- 14 locations worldwide
- >1100 employees worldwide
- Net sales in mCHF in 2015: 282.3

ebeam

COMET Group
At a glance

Leading worldwide with x-ray, RF and ebeam Technologies

Industrial X-Ray



OEM

ebeam Technologies

OEM

End-user

Plasma Control Technologies

OEM

X-Ray Systems

End-user

since May 2015

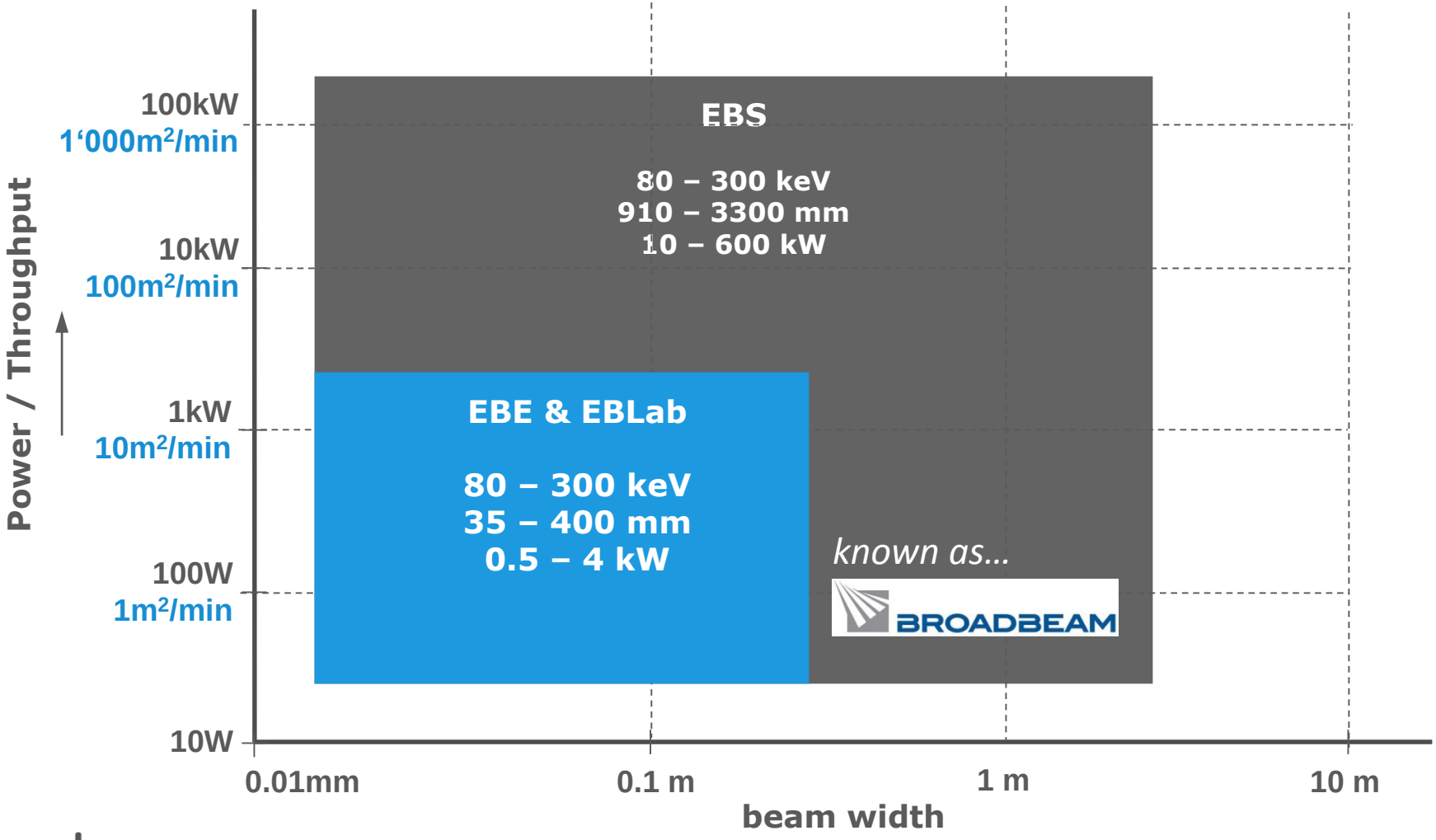
the first and biggest EB Power house in LE-EB

we are
one now

ebeam

ebeam product portfolio

"Beamscape"



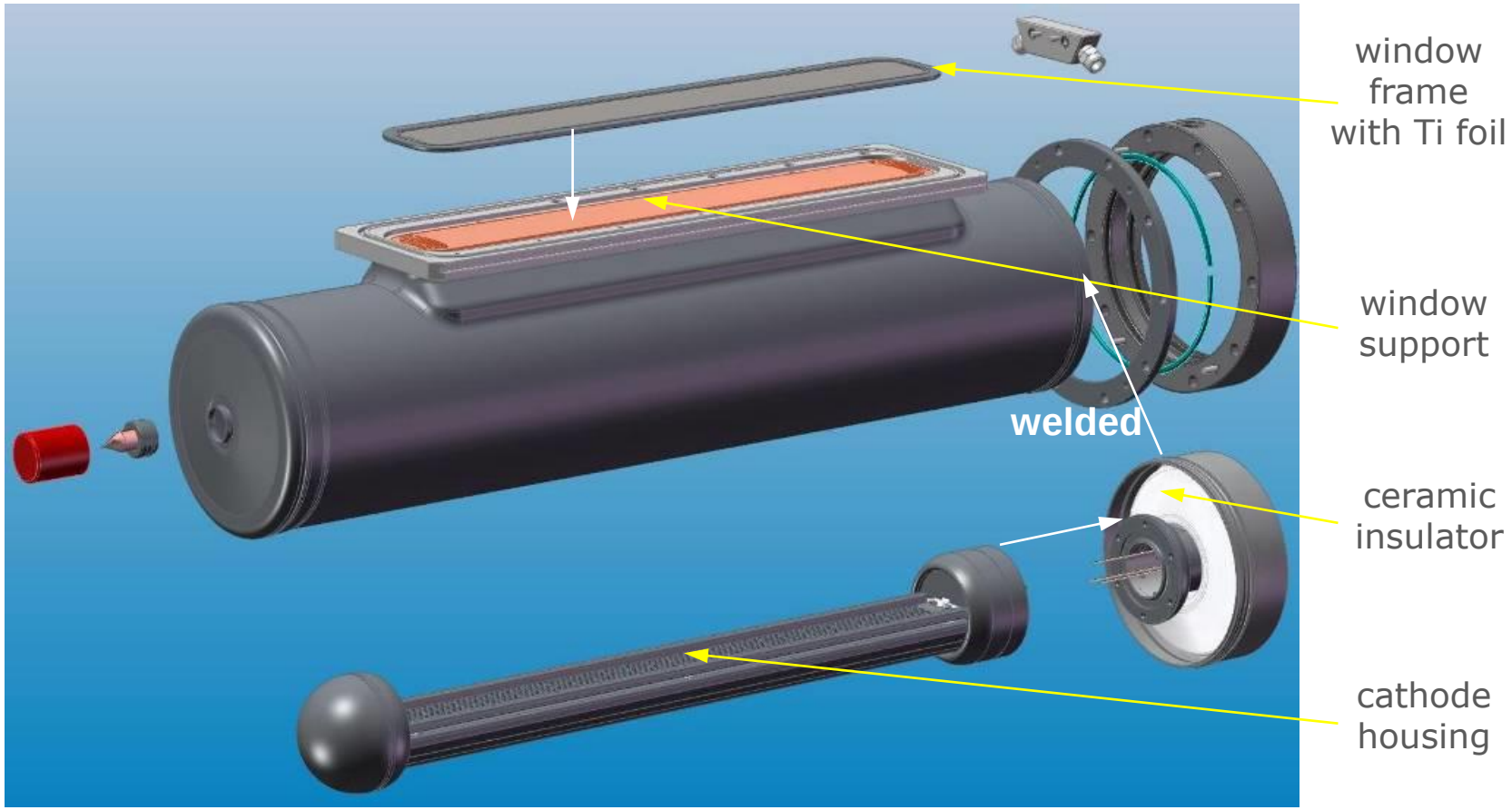
Why we exist

Inline Sterilisation of Packaging Material

https://www.youtube.com/watch?v=WSeItaEavpo
https://www.youtube.com/watch?v=d36tV08ejKA

Sealed Electron Beam

ebeam «lamp»



- Hermetically sealed by brazing and welding
- Single, replaceable part

ebeam

ebeam portfolio – seald Lamp

EBLab, “Lamp” and “Brush”-Type

ebeam Technologies portfolio

sealed ebeam lamps

EBLab (lamp)

EID (lamp)

ebeam engine (lamp)

Energy	80-200 keV	80 keV	80-300 keV
Width*	A4(216 × 297 mm)	0.25 m / 0.38 m	0.25 m / 0.38 m
Speed	3 – 30 m/min	100 m/min (30 kGy)	

*standard widths

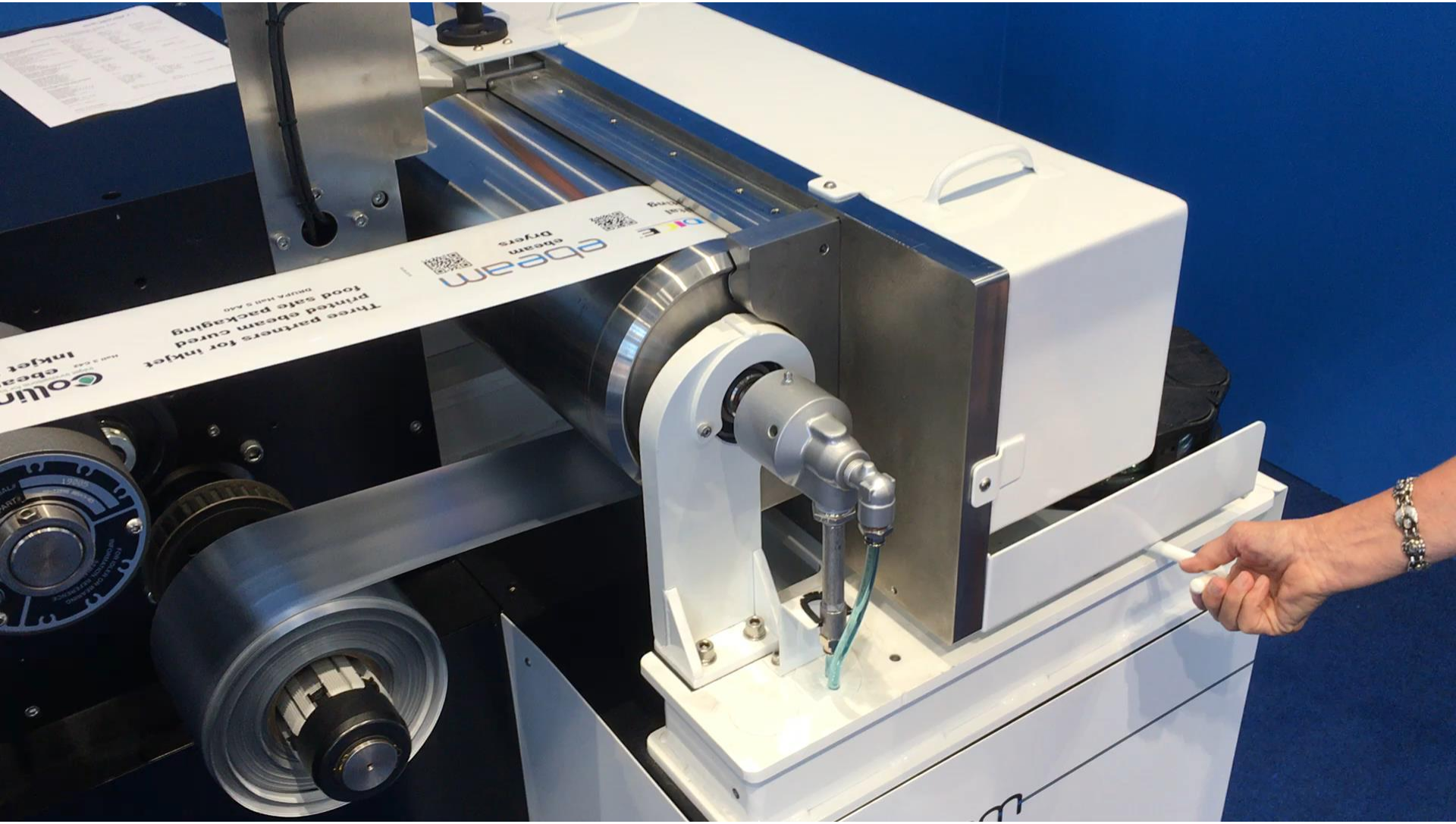
ebeam in Digital Printing

Inkjet: ebeam inkjet dryer (EID) for narrow web

world most compact ebeam

Access ebeam

Example: Electron Beam Inkjet Dryer



Sealed Lamp Systems

80 kV to 200 kV

ebeam Technologies portfolio

product specifications (sealed) - I

Type	EBE-80/270 EBE-80/400	EBE-200/270 EBE-200/400	EBE-300/270 EBE-300/400
Electrical data			
Electron energy range	70 to 80 keV	80 to 200 keV	100 to 300 keV
Max. power at max. high voltage	1.8 kW (…/270 version) 2.7 kW (…/400 version)	4.0 kW	4.5 kW
Performance data (17 mm distance to product)			
Surface dose uniformity	< ±10 % over beam width at 80 keV	< ±10 % over beam width at 90 keV	< ±10 % over beam width at 100 keV
Beam width (1)	230 mm (…/270 version) 340 mm (…/400 version)	230 mm (…/270 version) 340 mm (…/400 version)	230 mm (…/270 version) 340 mm (…/400 version)
Surface dose rate (2) at max. voltage and max. power [dose × web speed]	2232 kGy × m/min (…/270 version) 2295 kGy × m/min (…/400 version)	1932 kGy × m/min (…/270 version) 1308 kGy × m/min (…/400 version)	1157 kGy × m/min (…/270 version) 779 kGy × m/min (…/400 version)

Annotations

(1) The maximum usable beam width depends on the chosen distance to the window and the requirements on dose uniformity of the application.

(2) Dose distribution is a complex function of electron energy, distance to window, surrounding media, characteristics of irradiated material, and others. Furthermore, the desired distribution of dose (surface vs. depth dose) will vary in each application. Hence, the tabulated values are given only as a first impression, based on a model system (dose deposited in the first µm of water in 17 mm distance from the window).

ebeam Technologies portfolio

product specifications (sealed) - II

Type	EBE-80/270 EBE-80/400	EBE-200/270 EBE-200/400	EBE-300/270 EBE-300/400
Dimensions and mass			
ebeam Lamp	Weight: 12.3 kg (…/270 version) Weight: 13.2 kg (… /400 version)	Weight: 12.3 kg (…/270 version) Weight: 13.2 kg (… /400 version)	Weight: 15.3 kg (…/270 version) Weight: 17.8 kg (… /400 version)
High voltage power supply (L × W × H)	607 × 430 × 421 mm³ Weight: 70 kg	695 × 578 × 657 mm³ Weight: 198 kg	950 × 570 × 579 mm³ Weight: 244 kg
High voltage cable	Length: 5.5 m and 10 m Weight: 6.3 kg and 7.6 kg	Length: 5.5 m and 10 m Weight: 18.9 kg and 26.5 kg	Length: 5.5 m ! Weight: 24.7 kg
Cooler	optional	optional	optional
Environmental data			
Operating temperature	4 to 80 °C (ebeam Lamp), 0 to 40 °C (Power Supply)		
Storage temperature	−20 to 60 °C		
Water cooling			
Flow rate	min. 3 l/min (at 4 to 6 bars)		
Water inlet temperature range (3)	20 °C to 40 °C		
Miscellaneous			
Expected Lifetime (4)	> 8,000 hours operation		

Annotations

(3) Water temperature must be chosen to avoid condensation.

(4) Depends on the environmental and operational conditions.

ebeam Technologies portfolio

Production Lines (sealed/pumped)

EBS CE-Series (ebeam)

LE-Series (Broadbeam)

EP-Series (Broadbeam)

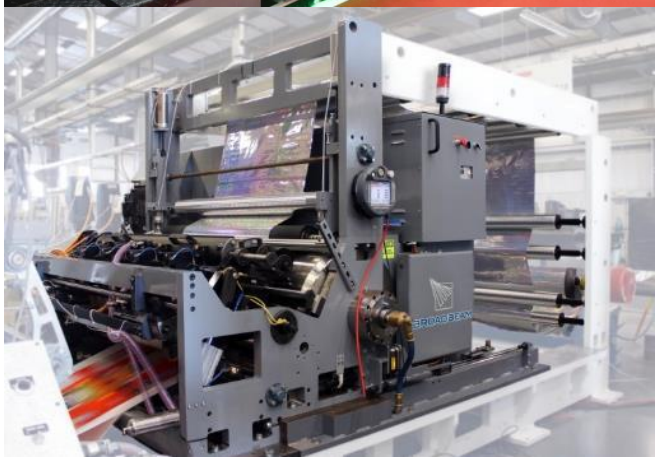
Energy	80-200 keV	80-150 keV	80-300 keV
Width*	0.25m/0.38m	0.9m/1.37m/1.8m/2.75m	up to 3.3 m
Speed	100 m/min(30 kGy)	400 m/min (30 kGy)	400 m/min (30 kGy)

*standard widths

Wide Area Systems

LE- and EP-Series

80kV to 150kV (LE-Series)



150kV to 300kV (EP-Series)

EB on Web Materials
Different Functionalities

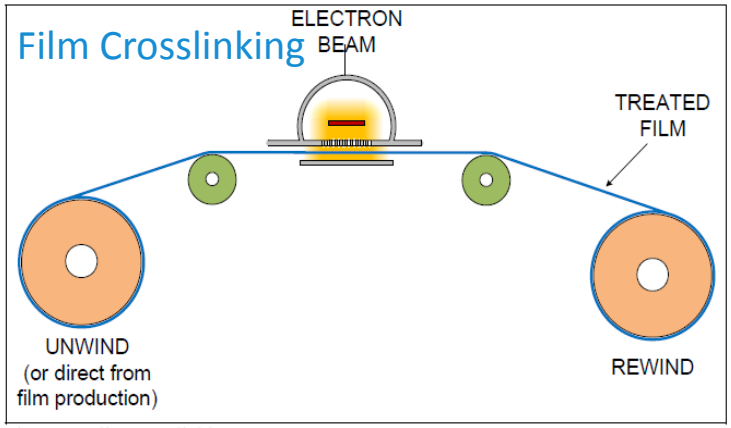


Figure 2. Film Crosslinking

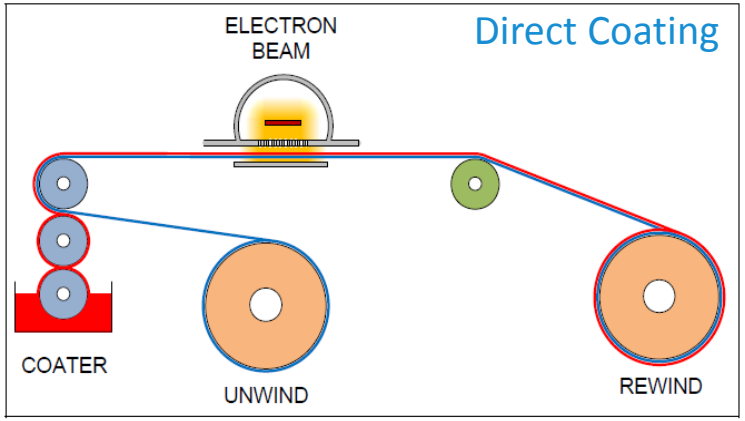


Figure 4. Direct Coating

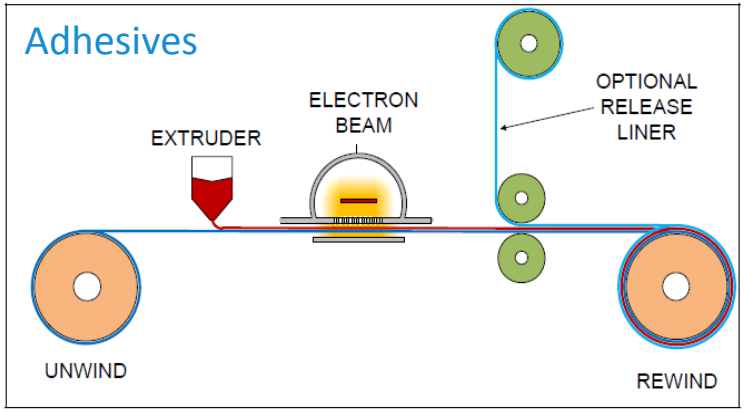


Figure 3. Pressure Sensitive Adhesive Crosslinking

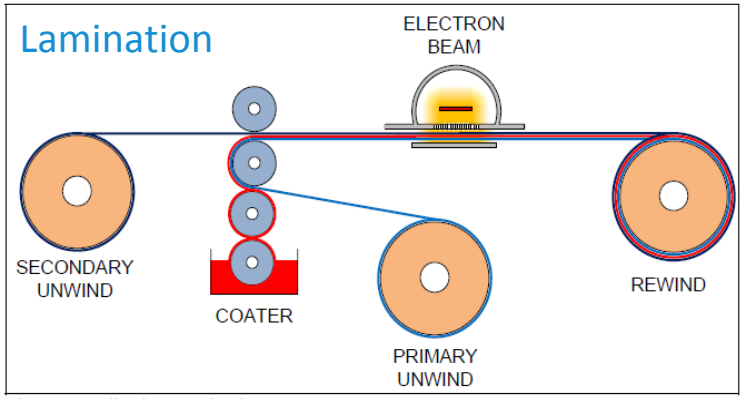


Figure 5. Adhesive Laminating

EB on Web Materials

Different Functionalities

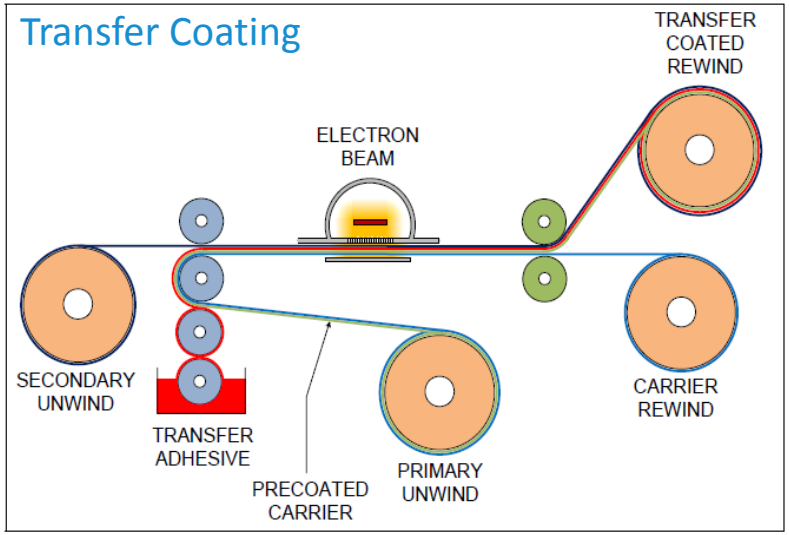


Figure 6. Transfer Coating

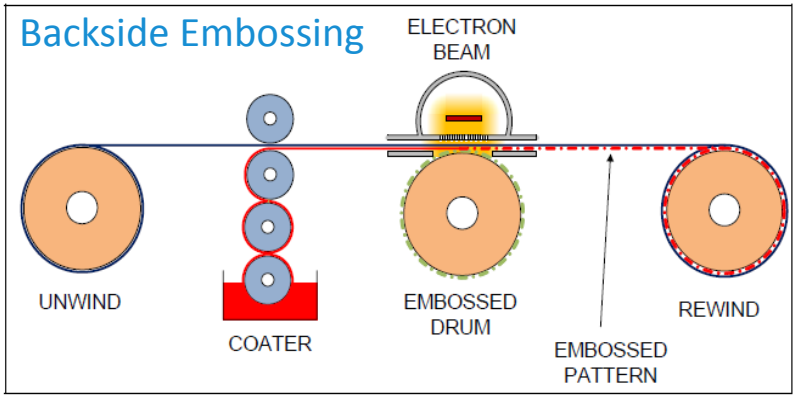


Figure 7. Backside Embossing

ebeam

from food safety to microbiome design

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