



# ROLL-TO-ROLL COATING TECHNOLOGY

FOR SECURITY AND OPTICAL APPLICATIONS

WEB Coating Products

# SECURITY APPLICATION

Applied Materials is a leading supplier of advanced roll-to-roll vacuum coating systems used to deposit thin films for flexible electronics, packaging and advanced technology applications.

Our WEB Coating product portfolio includes advanced tools with electron beam evaporation and offers a broad range of equipment solutions for depositing flexible substrates for the converting industry. These solutions are ideal for various applications in the security application market, where special layers and precise coatings are needed for protecting brands and products, as well as authenticity of currency and certificates.

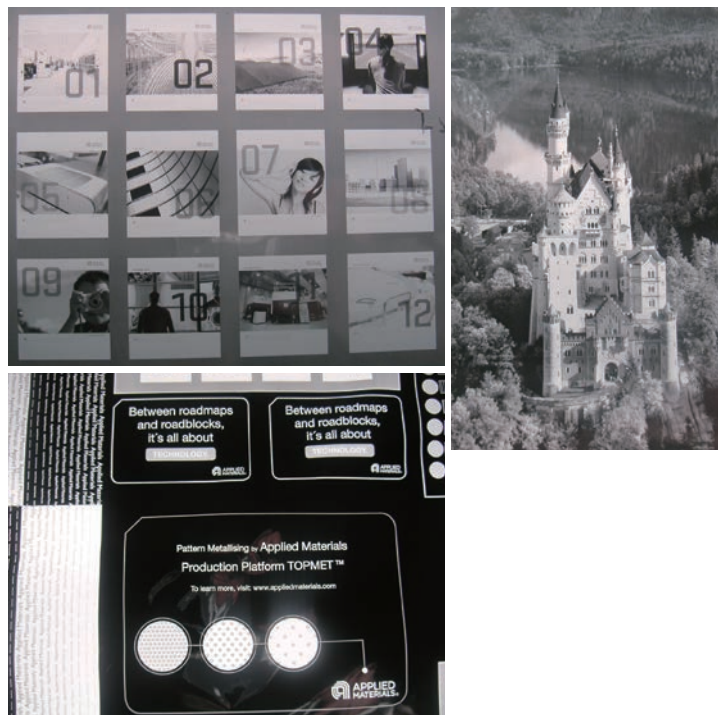
Our electron beam-based roll-to-roll tools deposit precise layers of specialty coatings such as optical quality dielectric materials to support holographic security and anti-counterfeit applications. Among this growing market are applications to protect currencies and labeling for product brands.

Beside e-beam, inline patterning and induction heated evaporation enlarge the production system portfolio for security and optical coating applications.

## Product Picture Examples:



## Pattern Pictures:



# DELIVERING TECHNOLOGY LEADERSHIP WITH MORE THAN 700 TOOLS SHIPPED GLOBALLY

## APPLIED TOPMET™ PLATFORM DEVELOPMENTS

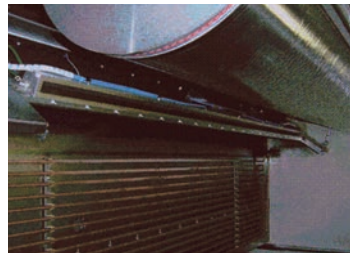
1992	2000	2008	2010	2013	2015
<p><b>Introduction TopMet™</b></p> <ul style="list-style-type: none"> <li>• TM Family 1250-2450</li> </ul>	<p><b>TopMet™ (2nd Generation)</b></p> <ul style="list-style-type: none"> <li>• TM Family 1250-2450</li> <li>• Higher Pump Capacity</li> <li>• Bigger Coating Drum 500 mm</li> </ul>	<p><b>TopMet™ IP</b></p> <ul style="list-style-type: none"> <li>• TM 1250 &amp; 1650</li> <li>• Pattern (segmented) metallisation</li> </ul>	<p><b>TopMet™ HiRes</b></p> <ul style="list-style-type: none"> <li>• TM 2450 &amp; 2850</li> <li>• Increase coating rate by 25 %</li> </ul>	<p><b>TopMet™ (3rd Generation)</b></p> <ul style="list-style-type: none"> <li>• TM Family 2450-3250</li> <li>• Coating Drum 600 mm</li> <li>• AIOx ECON capable</li> </ul>	<ul style="list-style-type: none"> <li>• TM Family Scale up to 3650-4450</li> </ul>



TopMet™ High Rate Evaporator



TopMet™ Clear



TopMet™ with E-Charge for improved Productivity

## APPLIED TOPBEAM™ PLATFORM DEVELOPMENTS

1980	1990	1995	2000	2005	2010	2015
<p>A 620 EB for Magnetic Tape</p>	<p>TopBeam™ 1900</p>	<p>TopBeam™ 1100S</p>	<p>A 2100 EB, also for SiOx</p>	<p>TopBeam™ 2100S</p>	<p>TopBeam™ 2850S</p>	<p>TopBeam™ 2850S</p>

## APPLIED TOPCOIL™ PLATFORM

Introduced in 2016



### TopMet™ IP Inline Printing



Vacuum metallizer features inline printing of both grey-scale and patterned structures on polymeric substrates and paper, eliminating a process step while at the same time enabling differentiated packaging

### TopBeam™



A wide variety of different metals and oxides can be evaporated with Applied's high-power Electron Beam evaporation. This process evaporation offers the highest coating speed of all vacuum coating processes. For high coating thickness uniformity a closed-loop inline control system both in transverse and machine direction is mandatory. This requirement is fulfilled with ESCOSYS™ in combination with the appropriate inline measurement system.

### TopCoil™



Evaporation system based on induction heated crucibles

The TOPCOIL™ platform complements Applied Materials' evaporation portfolio with induction heated crucible technology. This is a solution for applications demanding aggressive, low defect performance and also enables depositing a wide range of materials.

<http://www.appliedmaterials.com/roll-to-roll-web-coating> | email: [web\\_sales@amat.com](mailto:web_sales@amat.com)

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