Impact of Screening Technologies in Flexo

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CORE MARKET:

DuPont offers flexographic printing solutions for consumer packaging and digital printing inks for commercial, textile and home & office applications that deliver consistent, high-quality print performance and productivity.

KEY PRODUCTS:

Cyrel® Flexographic Printing Plates
Artistri® Digital Inks
DUPONT™ CYREL® SYSTEMS.
HIGHER QUALITY AT HIGH SPEED.

DUPONT™ CYREL® FAST THERMAL PROCESSING SYSTEM
Unparalleled productivity and sustainability.

DUPONT™ CYREL® EASY PLATE TECHNOLOGY WITH BUILT-IN FLAT TOP DOTS
Color complexity and workflow simplicity.

www.cyrel.eu
Impact of screening technologies in Flexo

... in other words...

How to get better results using your existing press
Why do we need screening?

- A Flexo press (and a flexo plate) can only print solid ink – or no ink at all
- But of course we want to reproduce detailed, vibrant graphics
- So image details are screened in order to resemble to a greyscale impression
- Over time, different technologies and methods have been developed...
Development of screening in Flexo

AM Screening
- Circular
- Elliptical

Improved Ink laydown
- MicroCell

Improved Highlights
- "HD Flexo"

Special Purpose
- EASY Brite

Improved image quality and details
- Crystal Screening
- Bellissima Screens
Let’s see the impact of different screening methods on this example design
AM screening

- Traditional Flexo screen: Circular dots
- For more details: more dots per cm
- For high resolutions (> 60 L/cm), also imaging resolution needs to be increased

- Strengths
  - Proven, robust, reliable

- Weaknesses
  - Highlights and Solids not optimal
  - High risk of moiree when using more than 4 colors
Improving Highlights

- New screening technologies enabled a different modulation of highlights, enabling to print lighter.
- Further increase of image resolution.

- Strengths
  - Increased image quality through lighter highlights.

- Weaknesses
  - Solids not optimal.
Improving Ink laydown and Solid Density

- Micropatterns on the plate surface enable higher ink transfer
  - Smoother ink laydown
  - Higher densities
  - More vibrant images

- Strengths
  - Increased image quality through higher contrast

- Weaknesses
  - Image detail still not photorealistic
Improved image quality and details

• Further enhanced screening technologies make the screen practically invisible and combine all of the previously mentioned improvements

• Strengths
  o Photo-like quality
  o Image enhancement in highlights, midtones and solids
With careful selection of the right photopolymer plates, all of these screening technologies can be applied TODAY…

…so what’s new?
Cyrel® EASY BRITE Screens for WHITE

• Special Micropatterns to improve white ink laydown and save ink, enabled by EASY Plate technology
  o Specially engineered MicroCells for white background printing

• Strengths
  o Maximum opacity and smooth ink laydown
  o Ink saving potential
A closer look... EASY BRITE screens

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Ink Savings (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Double Bump 8 cm³/m² (EASY BRITE P+1)</td>
<td>8 cm³/m²</td>
<td>45%</td>
</tr>
<tr>
<td>Double Bump 8 cm³/m² (EASY BRITE P+2)</td>
<td>12 cm³/m²</td>
<td>24%</td>
</tr>
<tr>
<td>14 cm³/m²</td>
<td>12 cm³/m²</td>
<td>24%</td>
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</tbody>
</table>
EASY BRITE - value

Eases cost pressures at Printers

- Allows printers to use smaller volume anilox – Ink Savings
- Smaller volume aniloxes will allow customers to go to higher press speeds
- Plate works on press – with minimum press adjustments to get optimal results – Smart Plate technology
- Eliminates need for a specific “white” plate

Higher Print Quality

- Uniform ink layer
- Eliminates Trail Edge Void
- Improved appearance of final print – Improved Opacity, reduced Graininess and reduced Mottle
- Allows printers to go to higher quality levels using their existing setup

Better overall consistency

- In conjunction with Cyrel® EASY plates, the EASY BRITE screens offer more a consistent print of large solid areas
This is what we can do with Flexo!
Thank You