drupa websession
Eco-friendly Premium Packaging

April 2021
PrintCity-Alliance – Who are we?

PrintCity is a strategic alliance recognised as the “connection of competence” across the entire printing and packaging value chain, promoting the value of print and packaging.

- We deliver **value to customers** by gathering and sharing leading global know-how within a network.
- We deliver **knowledge** via seminars, trade fairs, project studies, tutorials, publications and electronic platforms.
- We maximise **synergies** to develop our industry effectively and cost-efficiently.

And we have been doing since **drupa 2000**
Your hosts today

connection of competence
Other members involved

- ZELLER+GMELIN
- MERCK
- KAMA

- UV & LED-UV Inks & coatings
- Special effect pigments
- Broncing
- Virtual Embossing
- Hot - Foiling Embossing
- Scoring / Perforating / cutting
- Gluing

_connection of competence_
Premium & Environment

- environmental goals
- highly finished premium packaging

This package is:
- fully recyclable
- fully deinkable
- contains no plastic
- not laminated
High finishing

- Visual & haptic effects
- Matt – gloss
- Hotstamping
- Coldtransfer
- Embossing
- Effect Varnish
- Effect Pigments
Environment

- Monomaterial construction
- Renewable materials
  - Freshfibre
- Efficient Production
  - CO2 neutral
  - LED-UV
- Fully recyclable
  - Hotstamping & Coldtransfer
  - UV
Eco-friendly Premium Packaging

Production:
Efficient & CO2 neutral

Recycling:
Folding Box & auxiliaries

New samples:
LED UV

Cooler:
Barriers, board & varnish
Questions and discussions

- Questions directly after the presentation
- Q&A at the end

OR

- Direct contact later
  - Drupa Matchmaking
  - Our Virtual Stand
  - Telephone / e-mail
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Sustainable and safe paperboards for betterhuman®
Part of Metsä Group – with a unique value chain from pure Northern European wood fibre to high-quality end products

Metsäliitto Cooperative | The Group's parent company | Owned by appr. 100,000 Finnish forest owners

METSÄ FOREST
Wood supply and forest services

METSÄ WOOD
Wood products

METSÄ FIBRE
Pulp and sawn timber

METSÄ BOARD*
Paperboard

METSÄ TISSUE
Tissue and greaseproof papers

METSÄ SPRING | Innovation company

*) Shares listed on the Nasdaq Helsinki
Quality consistency enables high converting and packaging line efficiency

- Our own tailor-made Nordic pulps
- Consistent fibre quality
- State-of-the-art mill technology and standardized processes
- Comprehensive testing

Consistent paperboard quality, with tight tolerances in all specified properties

- Good runnability on converting and packaging lines
- Excellent printability
- Fewer adjustments
- Fewer stoppages
- Less waste

connection of competence
The premium FBB grade MetsäBoard Prime FBB Bright allows a colourful printing result and is suitable for high-end finishing applications.

The structural design made by Cadpack utilizes the good strength properties of the board that is also used for the inner tray, allowing a plastic free packaging solution.

The sustainable and lightweight paperboard from Metsä Board is made of fresh fibres. When combined with a creative design it enables a functional, ecological and safe packaging that protects the product inside and allows an outstanding promotion for the brand.
Industry-leading material and packaging expertise in Metsä Board Excellence Centre

**R&D laboratory**
- Packaging performance
- Product safety analysis
- Barrier materials and coating
- Material and chemical characterisation
- Board and paper technology
- Sustainability performance

**Packaging design studio**
- State-of-the-art design, prototyping and analysis
- Consumer behaviour research in a virtual store

**Simulation**
- Simulation for packaging design and packaging performance
  - Computer-aided engineering (CAE) tool to define the most optimal designs and materials for packaging applications

**Customer feedback centre**
- Instant analysis of customer feedback

**Global network of Metsä Board’s experts**
- Expertise in sustainability, product safety, converting and printing, supply chain and global business intelligence

*connection of competence*
Reducing carbon footprint
Advancing circular economy
Providing alternatives to fossil-based materials

Mitigating climate change requires shifting away from fossil energy and fossil-based materials.
We help our customers improve their environmental performance through sustainable packaging materials and solutions.
Our paperboards are recyclable

Fresh wood fibres are pure and strong, making them an excellent material for the circular economy because they can be recycled multiple times.

Our raw material is renewable

To have something to recycle, somebody has to produce fresh fibre solutions in the first place. Our fresh fibre is renewable, and we support and utilise the natural cycle by managing forests sustainably.

Our operations are based on replanting

To ensure the sustainable supply of fresh fibre, we make sure forests grow more than they are being used by, together with forest owners, planting over 30 million seedlings per year.
Eco-barrier board – a sustainable alternative to plastic

- MetsäBoard Prime FBB EB – a recyclable eco-barrier board developed as an alternative to plastic in premium food and food service packaging
- Special barrier treatment for grease and moisture resistance
- Recyclable with paper or paperboard recycling schemes
- Certified for industrial and home composting
- Eco-barrier paperboard – less plastic without compromising the protection for the product
We are looking forward to your questions

Dennis Grotian
Technical Service Manager
Our sustainability priorities
Environment and sustainability
Key component – NEW production line
Photovoltaic plant

- Build up in 2011 – Investment of 325,000 Euro
- 2,500 m² - 150 kW – 95,000 kWh/year
- Share of electricity consumption 20 %

“Green” energy contract

- Since 2009 with local partner
- 100 % renewable energy sources
Biomass plant

- Build up in 2013 – Investment of 365,000 Euro
- 400 kW wood power plant

Cogeneration unit (electricity and heat)

- 25 kW heat + 11 kW electricity
  76,000 kWh/year
- Share of electricity consumption 15 %
Key component – NEW production line
Key component – NEW production line
Companies are climate neutral when their carbon emissions are calculated and offset with the support of internationally recognized carbon offset projects.

We support two projects: Hydropower, Virunga, D.R. Kongo und Forest Protection, April Salumei, Papua-Neuguinea.

Environmentally friendly coatings

Example

- Water barriers as a substitute for plastics
- Oil and fat barriers for food
- Aroma barriers
Environmentally friendly coatings
Example

- Composting and Recycling
- Film thickness coatings 2 - 6 microns
- Through composting resources will be eliminated from the circular economy
- Printed products should be kept within the circular economy and not treated as compost.
Better Human

• PrintCity value added packaging - Sustainable electronics
Better Human

+GRAPHICS

- Hybrid texture/gloss effects with a very fine wave lineart
- Haptic and visuell effects
Save-The-Date

WEILBURGER

+GRAPHICS

• WEILBURGER Online-Event

• June 15\textsuperscript{th} and June 17\textsuperscript{th}
We are looking forward to your questions

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Sales Director

Bastian Pinsenschaum  
Head of Technical Service
UV Technology

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New Perspective
1 Interdeck: 7 positions for UV or LED, fully interchangeable

2 End of press: 2 positions for UV, 1 position for LED
Hot Swap Flexibility

Hot Swap - Easy switch over
LED Energy Saving

- Switching Off
- Reactivity of ink
Format switching

Clocking
Offset: Glue
- Cold transfer unit: Metallic Silver
- Offset: Process Colours (Black, Cyan, Magenta, Yellow)
- Offset: Pantone
- Offset: Hybrid varnish
- Flexo: Gloss coating, clear
- Drying unit
- Flexo: Perlescent Coating

PRINTING requires 8 colour machine with double coating
Available: 7 colour machine + coater + extended delivery

In total 3 passes needed:

• Glue + Cold Transfer Silver
• Process Colours + Pantone + Hybrid + Clear Coating
• Perlescent Coating
Challenges

- **Ink to board/silver**
  - Register (2\(^{nd}\) pass)
  - Uniformity of print
  - Adhesion

- **Hybrid varnish/coating to ink**
  - Register (2\(^{nd}\) pass, Flexo to Offset)
  - Dampening of Hybrid
  - Smooth surface, Anilox roller (140 L/cm)

- **Perlescent Coating to coating**
  - Register (3\(^{rd}\) pass, Flexo to Flexo)
  - Pigment size, Anilox roller (110 L/cm)
  - Surface quality (gloss, resistance)
Thank you
We are looking forward to your questions

Stefan Feil
Head of Applications Development
Finishing from KURZ

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Effect with sustainability!

Example Box Better Human II:

Effect: LIGHT LINE® Infinity
Cold transfer full-surface and overprintable
Effect with sustainability!

Why this effect?

- LIGHT LINE® Infinity: Endless design with impressive depth effect
- The iridescent lens optic turns surfaces into eye-catchers at the respective touch point...
- ...and differentiates them from other products at first glance

BUT: (HOW) DOES FINISHING WORK?
Can the effect of embellishment be demonstrably measured?

YES!
What are the most important findings?

✓ **Finishing** significantly *increases* consumer *attention*

✓ Print finishing *increases* the *viewing time* for print products, high-quality paper grades can further enhance the effect

✓ **Finishing** even applied discreetly - significantly *increases* attention and *purchase motivation*. [...] With the use of individually combined finishing techniques one can not only create an *appearance that stands out from the crowd*, but also strongly supports *the subconscious effect of a brand*

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From the study "**EF[FACT]IVE PRINT. Neuroscientific study on the effectiveness of print finishing and fine paper**". Neuroscientific study of the research institute "The Neuromarketing Labs" under the direction of Prof. Dr. Kai-Markus Müller, commissioned by the association Druck und Medien Bayern and the Seismografics GmbH.

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**connection of competence**
Finishing from KURZ

Hot stamping / cold transfer / digital finishing:

connection of competence
The effect of finishing vs. sustainability - a contradiction?

**NO**, not with the solutions from KURZ!

- **NO** foil on the packaging
- Fully conceivable and recyclable packaging
- Extremely thin transferred aluminum layers
- The carrier film does not get into the environment
- Global standards that go beyond the legal requirements
Products decorated with KURZ transfer finishes are **recyclable**, because ...

**WHICH STATEMENTS ARE RIGHT?**

- there is no plastic on the packaging
- The transfer finish is deinkable
- The sorting machines can detect the substrate with transfer finish
- the aluminum layers can be used again
Finishing from KURZ

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WHICH STATEMENTS ARE RIGHT?

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Finishing from KURZ
THE MILESTONE - ON TOP!

➔ PET RECYCLING 
made by KURZ!
We collect used PET backing material.

The PET backing material is fed into the KURZ recycling process.

The recyclate properties are entirely re-engineered.

Recycled PET is transformed into a high-quality, injection-mouldable material...

...for high-quality products with a wide range of properties.

c on n ec t i o n o f c o m p e t e n c e
Finishing from KURZ

You can find detailed information under:

https://www.kurz-graphics.com/sustainability

Also among others in:
We are looking forward to your questions

Markus von Beyer
Environmental & Safety Management
Recycling & Sustainability
Further questions?

- Materials
- Environment
- LED-UV
- Recycling

- Dennis Grotian
- Arno Dürr
- Bastian Pinsenschaum
- Stefan Feil
- Markus von Beyer

- Monomaterial
- Embellishment

connection of competence
Tutorial & Flyer

**Tutorial:**
*Technical* information from design to production
- Materials
- Configuration
- ....

**Flyer:**
*Environmental* information
- Production
- Recycling
- ....


c on n e c t i o n o f c o m p e t e n c e
Please visit the Virtual Stand of the PrintCity Alliance

Samples?
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