



IRAN SUMMIT 2015

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13. - 14.10.2015
TEHERAN





Jurgen Betz

Education

Study of Chemistry University Erlangen-Nürnberg
2001 Ph.D. in organic chemistry

Professional experience

2001 to 2003

Technical field service at VAW Tscheulin Rothal (now part of Amcor)

Product development and technical support for flexible packaging material, Main Market: lacquered and printed lids (PET and Aluminum based) and various laminates (ALU, PET, Paper, Films) for food and pharmaceutical packaging

2003-2007

Application engineer / key account manager at Amcor Helio Folien GmbH

Product development of flexible packaging material (foods, snacks and confectionary), Main Market: printed OPP and PET laminates for snacks and confectionary

2007- 2012

Product development Manager at Mondi Coating Zeltweg

Development of flexible packaging materials based on extrusion coating technology, Main Market: dehydrated food

Since 2012

Product development Manager of the Extrusion coating segment at Mondi Coatings

Coordination of Product Development for all served industries (Automotive, consumer, building, Imaging ...), Patent Manager, Product stewardship

Mondi

Mondi is an international packaging and paper Group, employing around 25,000 people across more than 30 countries. Our key operations are in central Europe, Russia, North America and South Africa. We offer over 100 packaging and paper products, customized into more than 100,000 different solutions for customers and end consumers. In 2014 Mondi had revenues of €6.4 billion and a return on capital employed of 17.2%.

The Mondi Group is fully integrated across the packaging and paper value chain –from managing forests and producing pulp, paper and compound plastics to developing effective and innovative industrial and consumer packaging solutions.

Our innovative technologies and products can be found in a variety of applications including hygiene components, stand-up pouches, super-strong cement bags, clever retail boxes and office paper. Our key customers are in industries such as automotive; building and construction; chemicals; food and beverage; home and personal care; medical and pharmaceutical; packaging and paper converting; pet care; and office and professional printing.

Mondi has a dual-listed company structure, with a primary listing on the JSE Limited for Mondi Limited under the ticker code MND and a premium listing on the London Stock Exchange for Mondi plc under the ticker code MNDI.



Mondi Extrusion Coatings

We protect against wind, water, fire and earth

Dr. Jürgen Betz

Teheran, October 2015

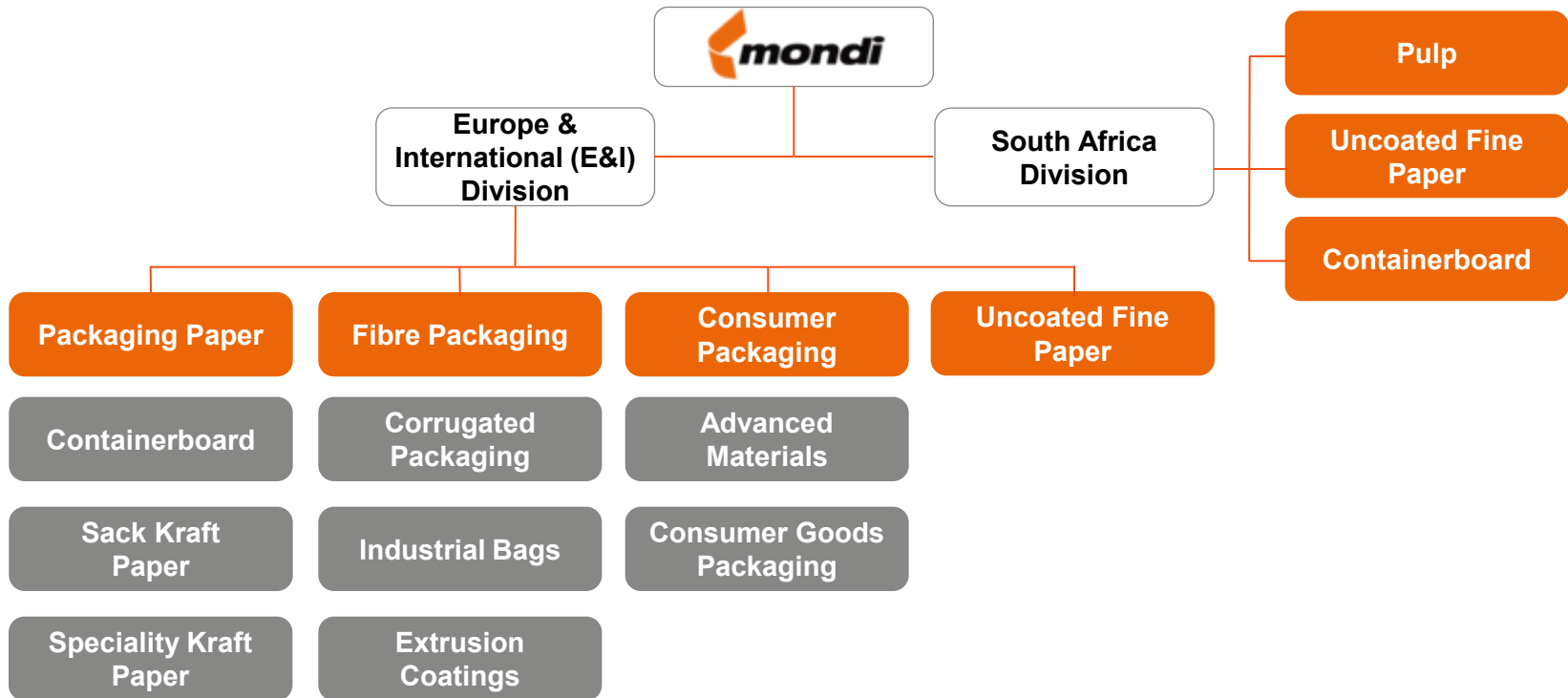


Mondi Group



We are an international packaging and paper Group, employing 26,000 people in production facilities across 31 countries.

Our key operations are located in central Europe, Russia, the Americas and South Africa.



Mondi Group – Key figures



In 2014 Mondri had revenues of €6.4 billion and a ROCE of 17.2%. The Group is listed on both the London Stock Exchange (LSE) and Johannesburg Stock Exchange (JSE).

Mondi Group	2014	2013	Change
Revenue	€6,402m	€6,476m	(1%)
Underlying EBITDA ¹	€1,126m	€1,068m	5%
Underlying operating profit ¹	€767m	€699m	10%
ROCE ²	17.2%	15.3%	-

1 The Group presents underlying EBITDA and operating profit as measures which exclude special items in order to provide a more effective comparison of the underlying financial performance of the Group between financial reporting periods.

2 ROCE is underlying profit expressed as a percentage of the average capital employed for the year, adjusted for impairments and spend on strategic projects which are not yet in operation.

The Mondi Way



To create solutions for our customers' success, delivering exceptional value in a sustainable way.

Purpose

- Leading market positions
- High-quality, low-cost asset base
- Customer focused development
- Focus on performance

Strategy



- Operational excellence
- People development
- Sustainable development
- Cutting edge products
- Customer focus

Mondi Diamond



- Dynamic
- Respectful
- Responsible
- Entrepreneurial
- Empowered
- Transparent

Culture



- Passion for Performance
- Caring
- Acting with integrity

Values



Extrusion coatings



We protect against wind, water, fire and earth



- High-quality, cost- and energy-efficient technical solutions for various industries, including automotive, building, food, industrial paper and packaging, medical and pharmaceutical as well as graphical sectors
- Extrusion coating and laminating for functional enhancement of various substrates, such as paper, board, films, nonwovens and scrims

● 5 plants in Europe



Consumer barrier solutions



Foam facers



Transport packaging

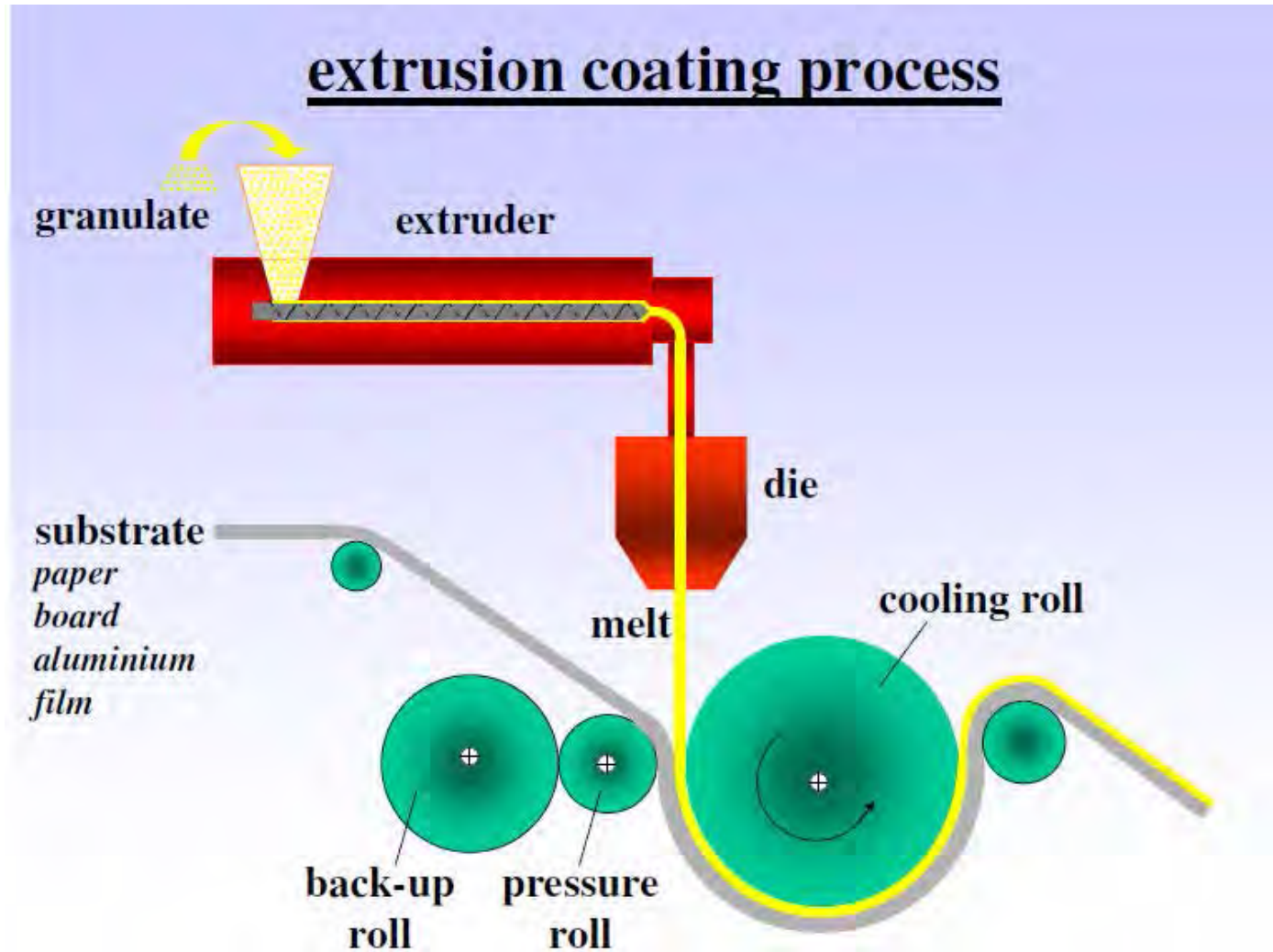


Foam papers

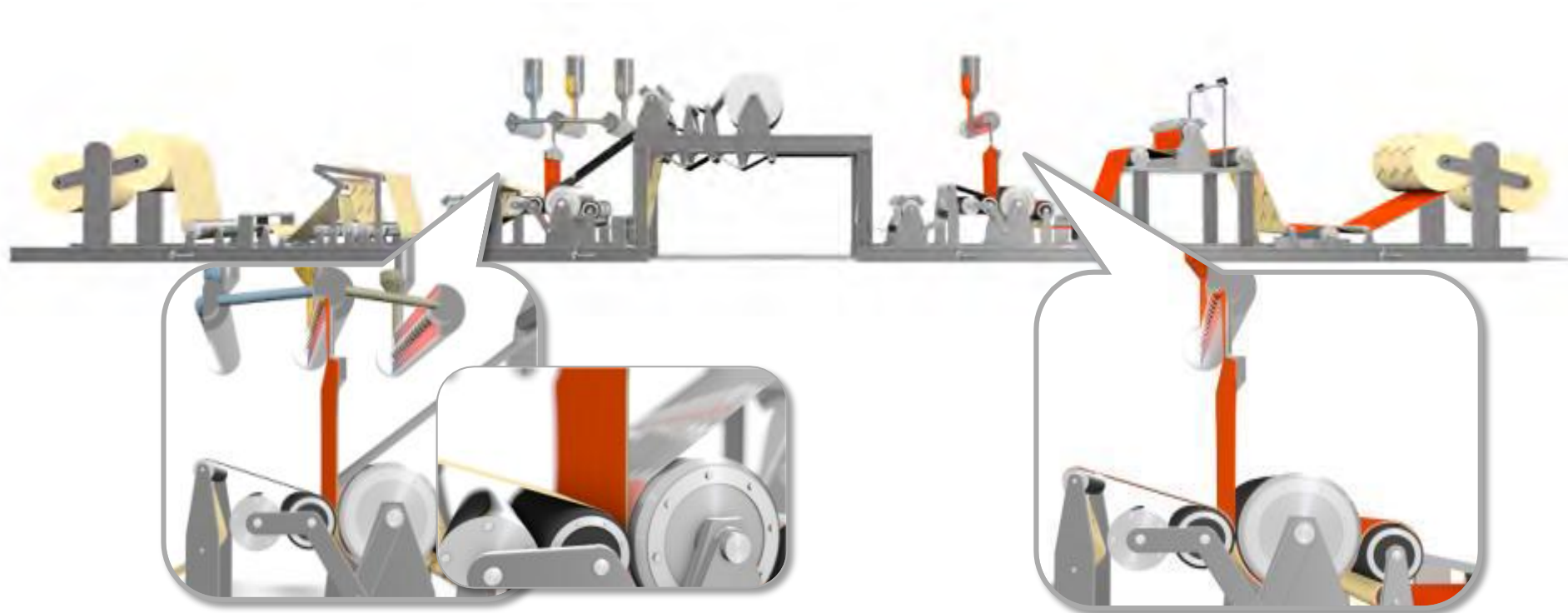


Specialties

Extrusion Technology



Long-standing technical expertise

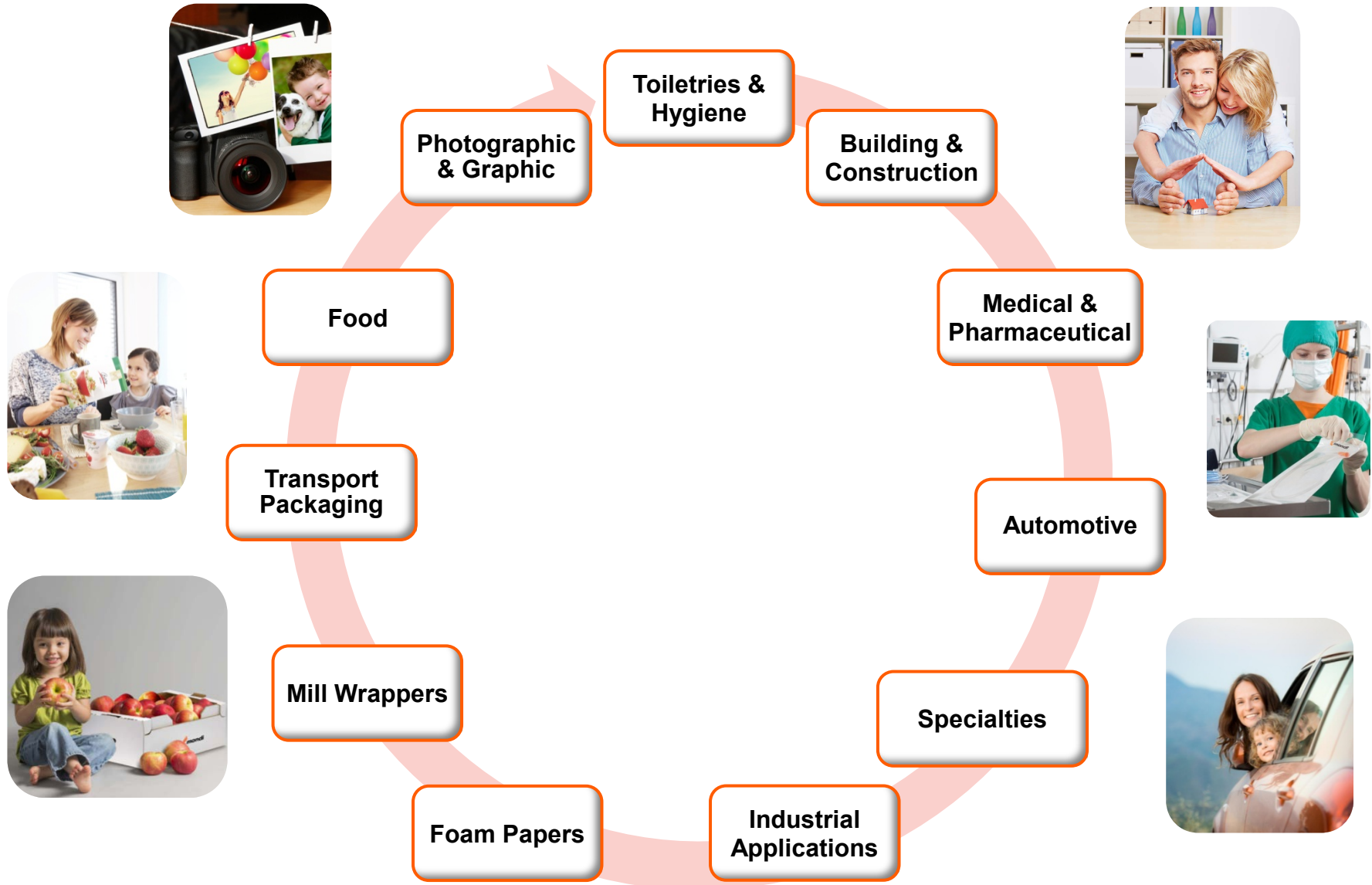


Co-Extrusion

Mono-Extrusion

Based on our international plant network with **state-of-the art production lines**, we rely on the technical experience of our dedicated **Application Engineers**. Focused investments ensure that our machine park provides **cutting-edge technologies** for the production of current products and future innovations.

Comprehensive range of served industries



Trends in extrusion coating



● Automotive

- Light weight
- Cost improved

● Building

- Fire retardant solutions
- National legislations on Insulation

● Consumer (mainly EU/US)

- Convenience (more old people)
- Single house holds (small units/single serve)
- Food on the go (from coffee and drinks to meals)
- Product safety (barrier materials)

● Transport packaging

- E commerce





As a specialist for **innovative and intelligent food packaging**, we supply the ideal packaging solution to satisfy your individual needs. Our products meet the **highest hygiene standards** for food contact.

Consumer barrier solutions



Miprotex ®

Miprotex is an ideal paper based solution that **prevents the migration of mineral oil**. Miprotex is also a good barrier solution against aromatics and grease and it complies with all direct food contact regulations.



Aroprotex ®

Aroprotex as a **tailor-made aroma barrier** to protect foodstuff from the outside and keep the aroma inside. Aroprotex is a highly effective paper-based barrier solution with numerous advantages.



CupCoat

State-of-the-art cupstock coatings solutions guaranteed through a variety of coatings to offer an outstanding paper cup, at the same time optimising the production process.



BarrierFilm

This **innovative barrier liner** consists of a material mix of FSC paper and a special barrier that not only leads to an excellent protection and a long shelf life, but also helps reduce the carbon footprint of the packaging.



Consumer barrier solutions



Dehydrated, Dry Food & Beverages

Multilayer barrier materials guaranteeing hermetic sealing and product protection against moisture, grease, oxygen and light.



Portion Packs

Paper, film and foil-based laminates assuring high packaging hygiene standards and excellent printing results on glossy substrates.



Composite Cans

Protective inner liner barriers to maximise shelf life and prevent puncturing.



Bags

Sandwich laminates provide water vapour barriers for optimised mechanical strength and surfaces suitable for flexo-printing.



Consumer barrier solutions



Sustainex®

Versatile biodegradable and sustainable packaging materials featuring excellent sealability, barriers to gas and grease and thermal resistance.



Sanocoat®

Antimicrobial coating for maximised product shelf life - used for food, baby nutrition and snack food.



SoftpeelCoat®

Easy opening solutions - tailored to the specific needs of customers - guarantee maximum consumer convenience and product safety.



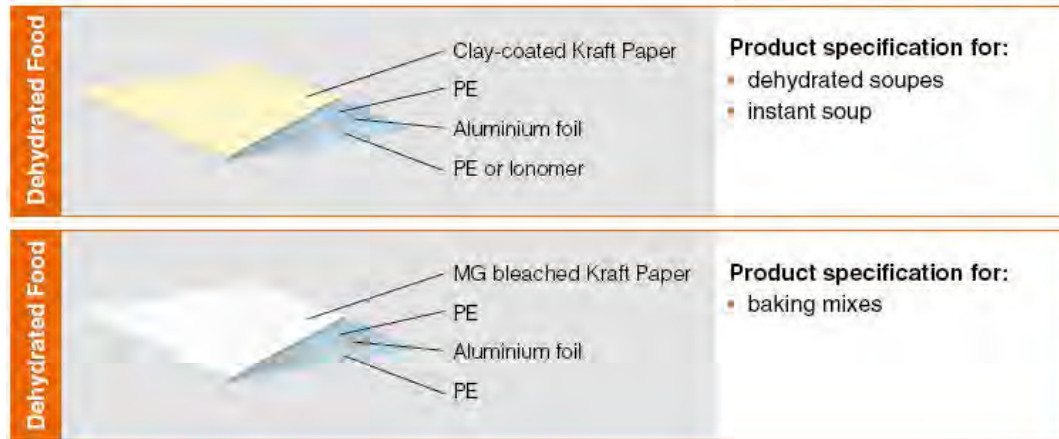
Consumer barrier solutions



• Dehydrated & Dried Food

- Product examples
 - Dehydrated soups, baking mixes, ...
- Product needs
 - Protection against moisture, oxygen, external odours, etc.
 - Seal integrity on fast FFS packing lines
 - Long shelf-life

○ Typical product specifications



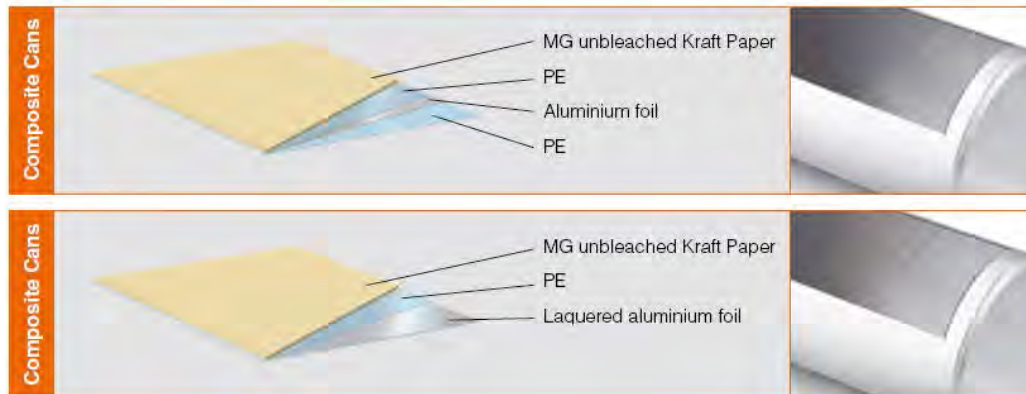
- Material requirement:
 - Good printing surface, good opacity

Consumer barrier solutions



• Composite Cans

- Product examples
 - Snacks, dough Ready-to-bake
- Product needs
 - Extrusion-laminated materials ensure right levels of moisture and oxygen inside the packaging
 - Prevention of migration
 - Protective inner liner barriers to maximise shelf-life
- Typical product specifications

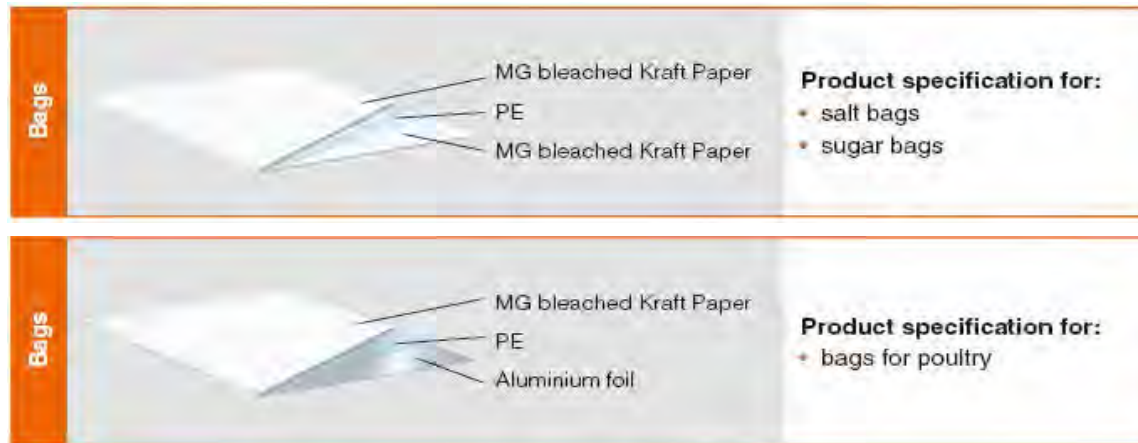


- Material requirement
 - Optimum barrier materials withstand friction and prevent migration

Consumer barrier solutions

● Bags

- Product examples
 - Sugar bags, airsickness bags, bags for poultry, ...
- Product needs:
 - Tailor-made barrier properties for individual requirements
 - High printability performance and attractive design.
 - High mechanical properties in order to achieve high speeds on packing line.
- Typical product specifications:



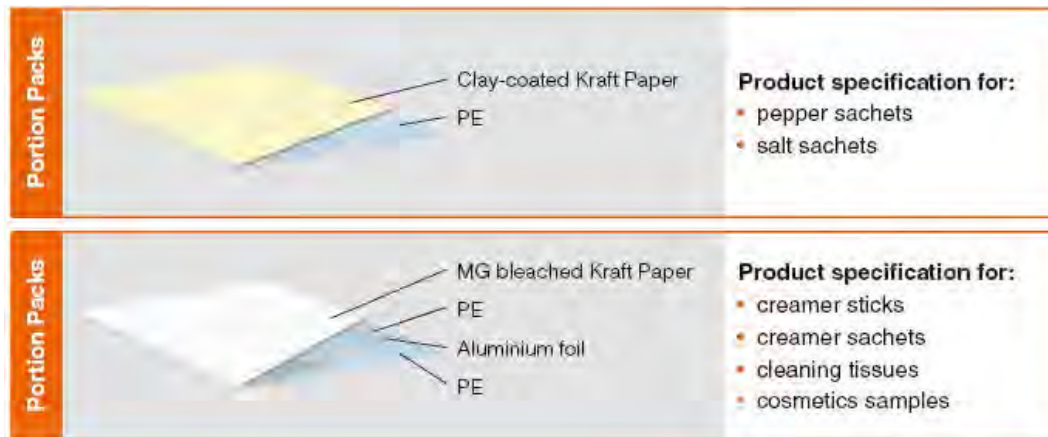
- Material requirement
 - Good printing surface, mechanical strength

Consumer barrier solutions



● Portion Packs

- Product examples
 - Sugar sticks and sachets, pepper & salt sachets, creamer sticks, cosmetics samples, ...
- Product needs
 - Optimised image/branding-gloss surface, perfect seal integrity, good printability
 - Smooth feel and mechanical strength
 - High levels of packaging hygiene
- Typical product specifications

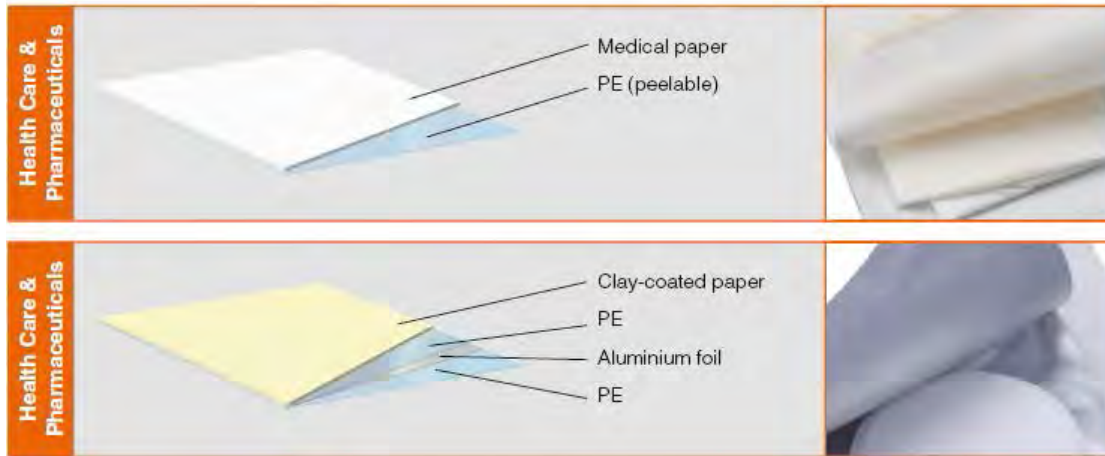


- Material requirement
 - Good printing surface, mechanical strength and stability

Consumer barrier solutions



- Health care / Medical Packaging
 - Product needs
 - LD PE coating as seal layer with perfect adhesion and as carrier for peel lacquer
 - Good flexo and rotogravure printability performance
 - Optimised mechanical strength.
 - Typical product specifications



- Material requirement
 - Good printing surface, mechanical strength, suitability for gamma sterilisation, no fibre dust and no outstanding fibres (create pin holes), no impurities

Development Highlights in the pipeline



Tobacco

- Tobacco ECO-pouches for self made cigarettes
- Tobacco ECO-stand up bag
- Structure: MG 40gsm + PE 12gsm + Alu 6,3μm + PE
- Technical requirements:
 - Sufficient barrier for tobacco
 - Runnability on tobacco pouch line
 - Good slip properties
 - Good flatness
 - Environmental appearance and haptic
 - Peel opening
- Cooperation with external printer



Mondi's Biopolymer brand

The Sustainex® products range includes:

- Extrusion coating
- Extrusion lamination



The common basis of Sustainex® is not the technology nor the polymer grade or producer, but the fact that all Sustainex® polymers are based on or contain biopolymers from renewable sources.

Sustainex® Cardboard



Specification

- Cardboard weight from 200 to 350 g/sqm
- One side or two side coated
- With or without corona treatment (printability)
- Coating weight between 20 and 50 g/sqm
- Excellent sealability also against PLA, Cellophane

Applications

- Cardboard boxes for frozen food
- Cardboard for cheese packaging (Water vapour barrier beneficial)
- Sandwich boxes (heat sealable even the window)!
- Cups
 - Ice cream
 - Drinking cups (for hot and cold products)
 - Yoghurt cups



Sustainex® + MG or Clay Coated Paper



Different paper grades available

- Weight between 40 and 100 g/sqm
- Coating weight between 15 and 30 g/sqm
- One or two side coated
- Corona treatment possible
- Good seal-ability



Applications

- Wrapping material for fresh food (Cheese, Meat)
- Wrapping for fast Food (grease barrier)
- Lidding material (lids for special cups)
- Packaging material for hard bread
- Sachets
- Paper cones for water
- Air sickness bags



Sustainex® + Kraft Paper



Kraft paper

- Different paper grades available (60-80 g/sqm)
- Bleached or unbleached
- Coating weight 15 to 30 g/sqm
- Excellent seal-ability

Applications

- Bread bags
- Waste bags (not water sensible)
- Bags
 - Pet food (replacement of coated paper)
 - Agriculture (soil)

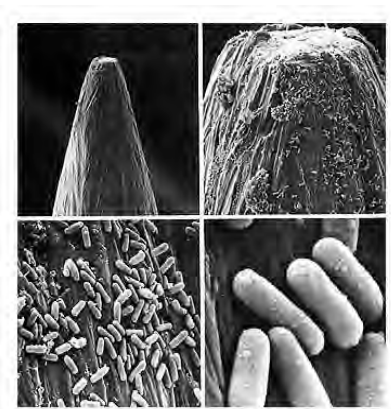


Sanocoat®



For antimicrobial product protection

Certain bacteria are harmful to human beings and can provoke infections and diseases. Bacteria tend to multiply explosively and have a negative effect on hygiene for example through accelerated product degradation or food contamination.



http://www.gmuender.org/bt/viren_bakterien/sld012.htm

Product features & applications

● **Material highlights** of Sanocoat® are:

- **Prevention** of germ-growth
- Inhibition of mold (*Candida albicans*)
- **Hygiene-maintenance** and significant bacteria reduction (*E. Coli*, *S. Aureus*)
- **Odour control**
- Increase of **shelf life** and product **freshness**

● Possible **applications** of Sanocoat® are:

- Fresh-, baby- and snack food
- Health care and pharmaceutical packaging
- Technical applications



SoftpeelCoat®

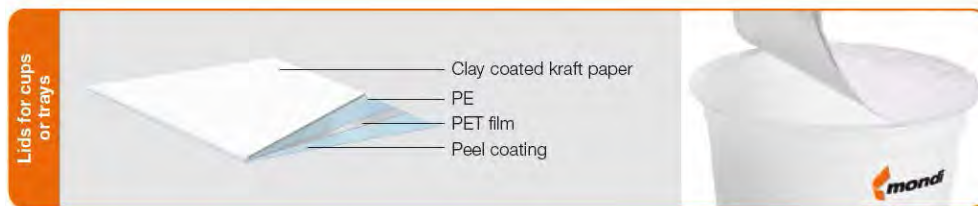
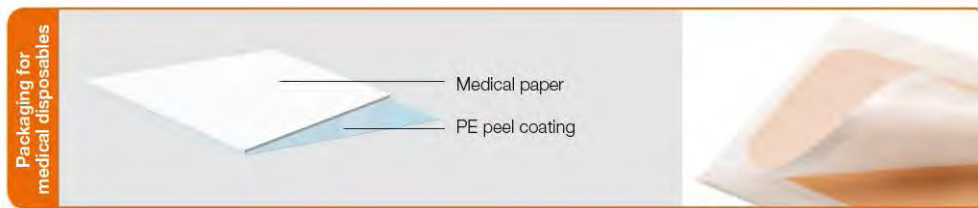


Mondi's peel coating range offers **advantages** for endusers and converters:

- Easy opening for convenient and easy handling of packaging
- Proper peel opening
- High product safety through excellent seal integrity
- Suitable for a broad range of applications, particularly in the food and pharmaceutical industry
- Good runability on high-speed packaging lines as known from standard LDPE



- „Peel coating against peel coating“ applications
 - Paper based bags using a peel film to ensure proper opening and to avoid product contamination
 - Peel coating packaging for single-use disposables for highest hygiene standards
- „Peel coating against tray/cup“ applications
 - Snacks packaging with special peel coatings guarantee maximum consumer convenience and high product safety
 - Lid films for e.g. dairy products like jogurt allow easy opening
- Typical product specification





Our wide product portfolio of **case linings** will safeguard your box, as well as your box content. We provide **protection** against a broad range of **internal and external influences** making the box suitable for its purpose.

Transport Packaging



Paratén®

Paratén® is a barrier liner produced on the basis of either virgin or recycled fibres. The pure fibre MG kraft paper on top allows direct wet and fatty food contact



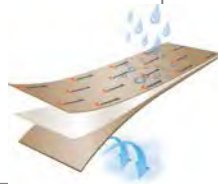
Seafood/Fish



Vegetables



Flowers



Paratherm®

Paratherm® is a special barrier liner product with a heat-resistant surface, allowing high temperatures in board production and conversion, as well as in packaging applications



FROZEN MEAT



FISH



AUTOMOTIVE PARTS



Special liners

Parasoft®, **Parastat®** and **Paraprint®** electro static discharge are special barrier liners designed to bring extra functions like scratch resistance, electro static discharge and improved printability



Miprotex® for corrugated

Miprotex® is a mineral oil barrier solution that has been adapted to be used also on corrugators. Perfect for food protection it is also used for industrial purposes





We produce laminates and substrates for **sensitised photo materials** and **protective films** for **printed media**.

Graphic and Photographic

- **Ima-Base[®]** - Substrates converted into high end printable media
- **Ima-Shape[®]** - Finishing films that protect and add rigidity to printed media
- **Ima-Pack[®]** - Packaging laminates for sensitised photo materials





Based on the versatile technology of extrusion coating, we are able to supply a broad range of **specialties**, **tailoring our products to our customers' specific requirements.**

Hair-removal Strips

- Thin nonwoven substrates with extruded barrier films, **providing superior wax barriers** in combination with **a smooth surface** ensuring a non-plastic feeling..



Personal Protective Apparel

- Our **multilayer laminates** guarantee state-of-the-art chemical barriers in a light-weight but strong multilayer sandwich, ensuring **superior barriers against chemicals** (resistant to liquid splashes up to 5 bar)



Multilayer structure of tailored functionality

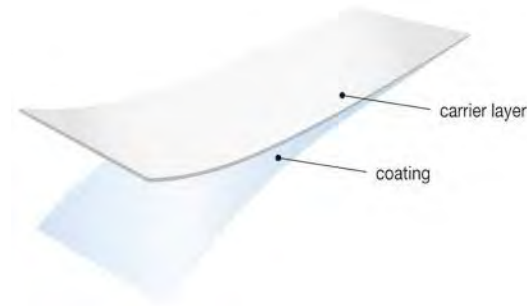


Based on extrusion and co-extrusion technology, we produce

● Available base materials:

○ Carrier layer:

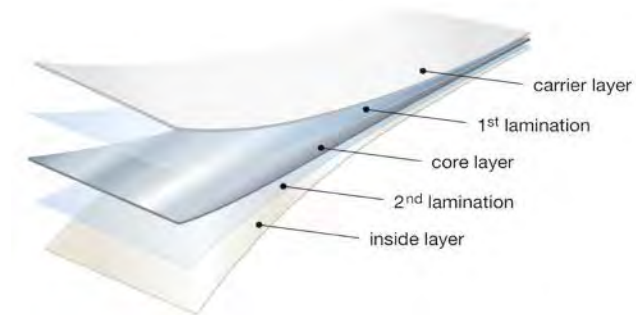
- Paper
- Board
- Nonwoven
- Glass Nonwoven
- Woven
- Films (OPA, PP, PET)
- Aluminium



2-layer structure

○ Polymers

- PE
- PP
- Co-Polymers
- Additives
- Tie layers



5-layer structure

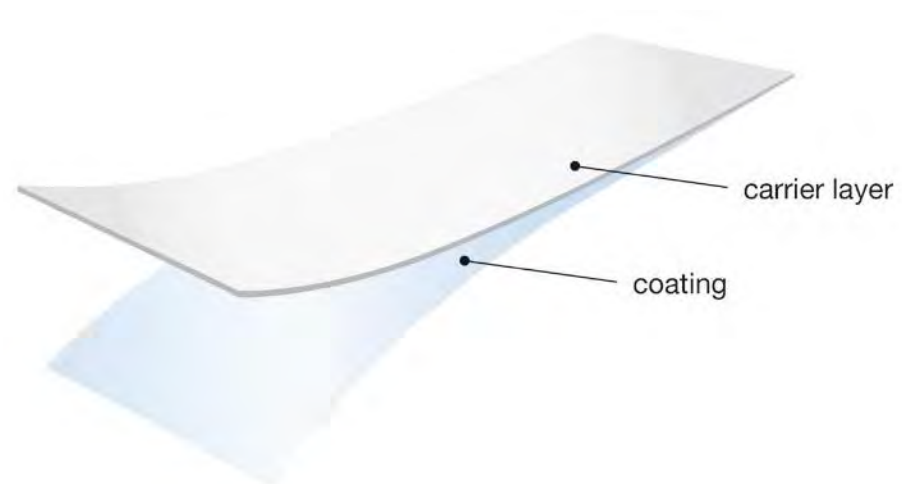
2 Layer Structure (Coating)

- Carrier layer

- Paper
 - Clay coated paper
 - MG paper
 - MF paper
 - Unbleached paper
- Board
 - SBS
 - Greyboard
 - Liquid Board
- Nonwoven
- Films
 - PET
 - OPA
 - OPP
- Aluminium

- Coating

- PE
- PP
- Specialities



3 Layer Structure (Lamination)

- Carrier layer

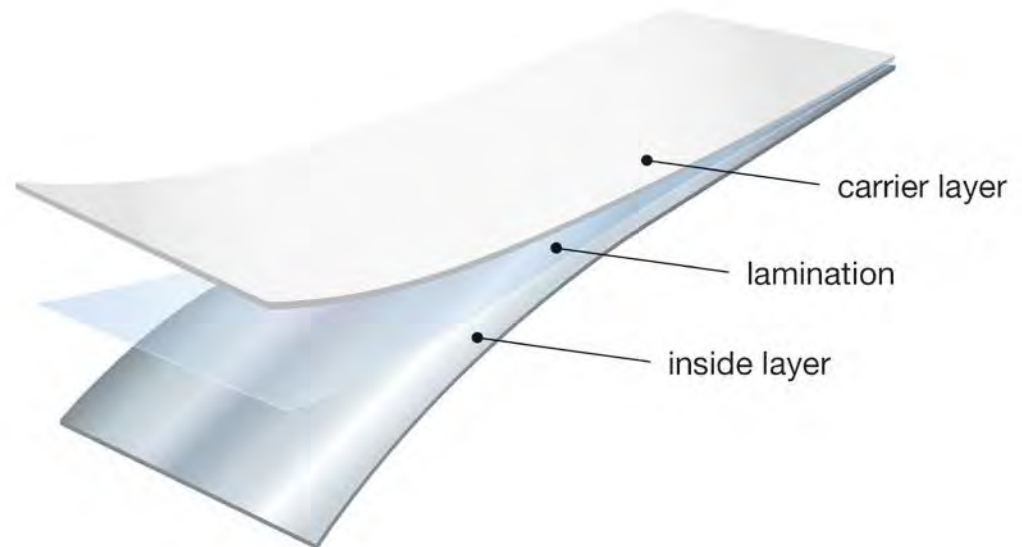
- Paper (various types)
- Board
- Films
- Aluminium

- Lamination

- PE (LD or MD)
- PP
- Tie layer

- Inside layer

- Paper
- Aluminium foil
- Films
 - PE EVOH
 - met PET
 - met OPP



4 Layer Structure (Lamination + Coating)



- Carrier layer

- Paper (various types)
- Films
- Aluminium

- Lamination

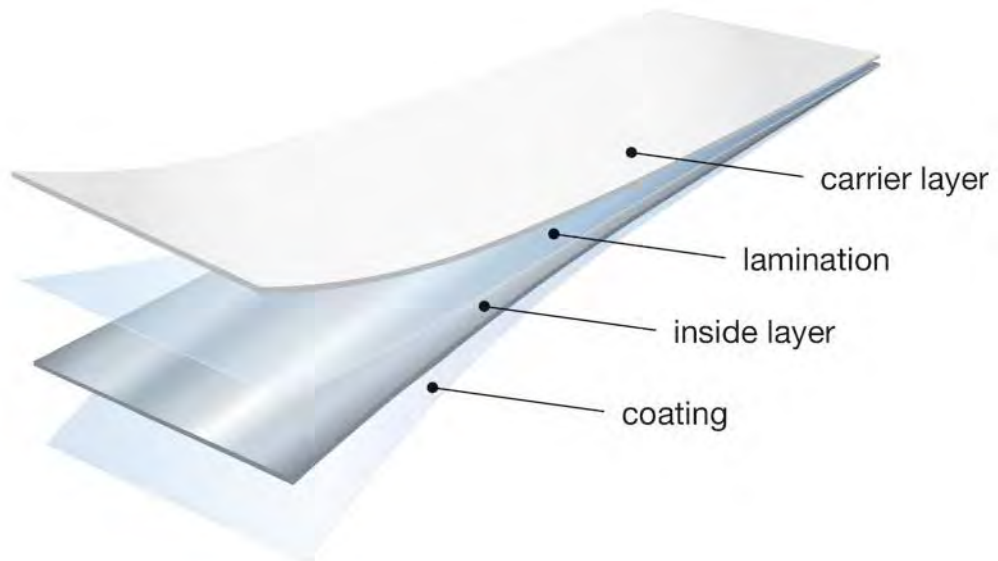
- PE (LD or MD)
- PP
- Tie layers

- Inside layer

- Paper
- Aluminium foil
- Films
 - met PET
 - met OPP

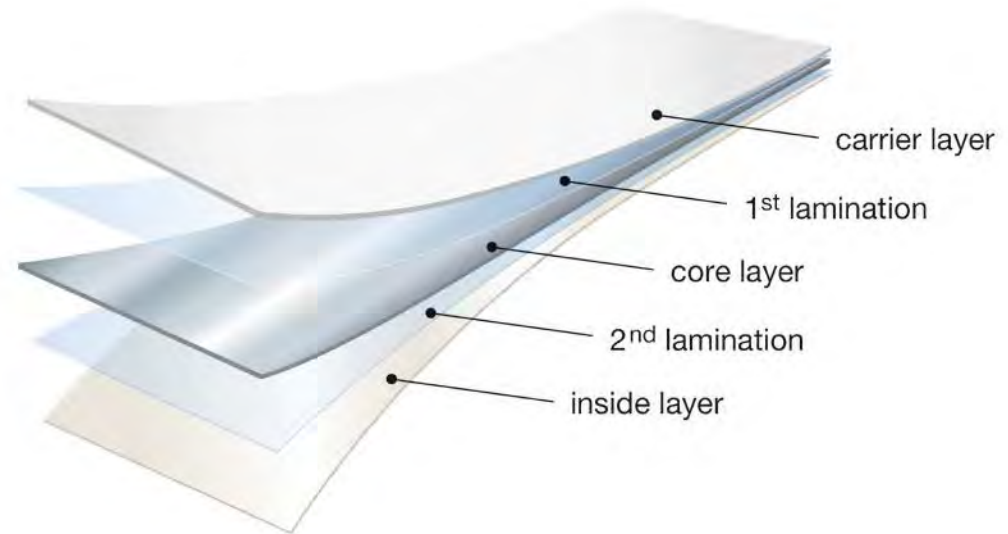
- Coating

- PE
- PP
- Coex top coating
- Ionomer
- Special Coatings



5 Layer Structure (Lamination)

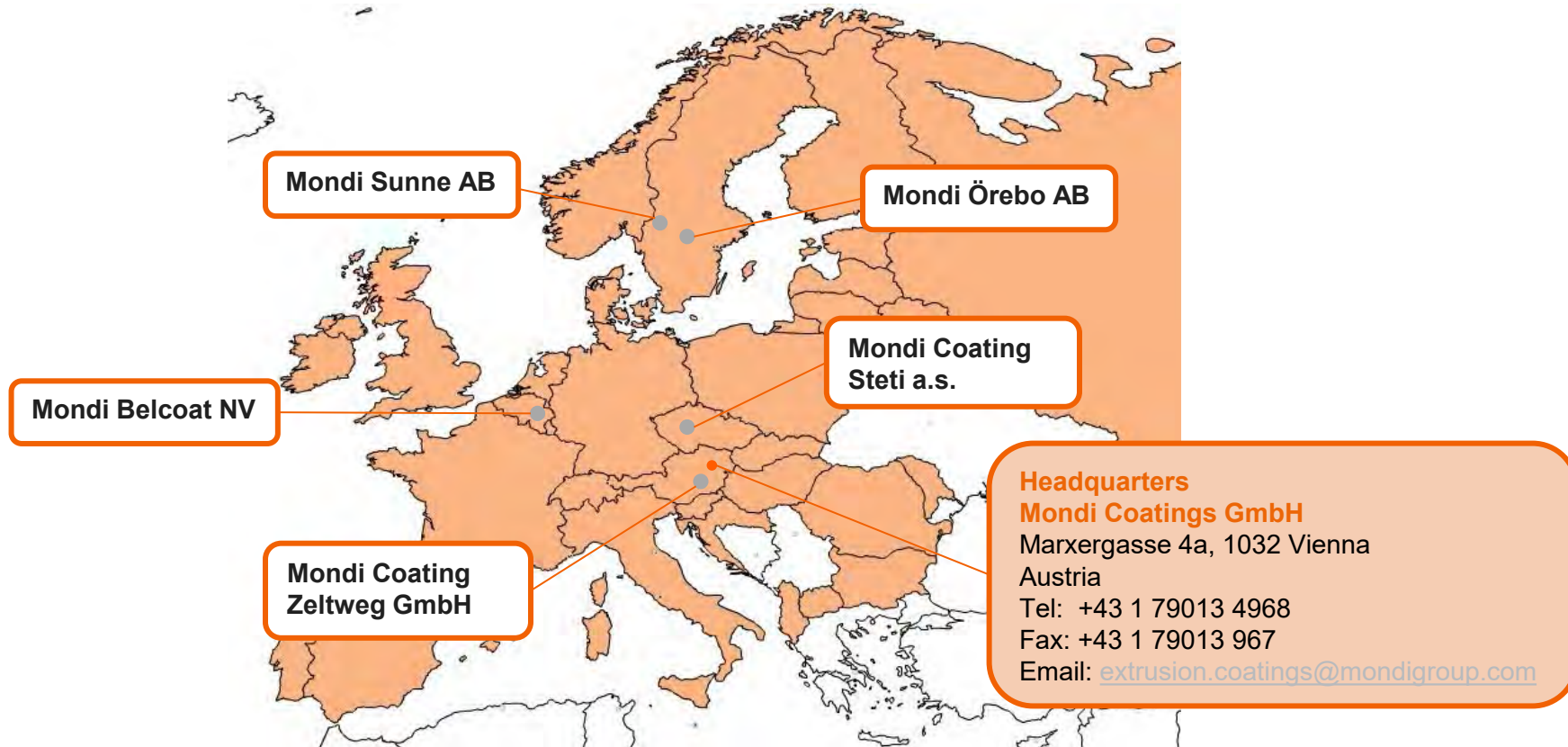
- **Carrier layer**
 - Paper (various types)
 - Board
- **1st Lamination**
 - PE / Tie layers
- **Core layer**
 - Aluminium foil
 - Woven
 - Films
- **2nd Lamination**
 - PE / Tie layers
- **Inside layer**
 - Paper
 - PE film
 - Peel film



Global strength and local care



- Our European **plant network** enables us to have a back-up plant for all your needs, providing you a guarantee of supply.
 - **Production plants** in Austria, Belgium, Czech Republic and Sweden
 - **Global network** of sales agents



Mondi Coating Zeltweg GmbH



Bahnhofstrasse 3
8740 Zeltweg, Austria
Managing Director: Michael Strobl
Email: info.zeltweg@mondigroup.com

Certifications:

- ISO 9001:2008
- ISO 14001:2004
- FSC
- BRC/IoP
- OHSAS 18001

Technology:

- 3 extrusion coating lines (2 tandem)
- 4 reel slitter

Main End-Uses:

- Consumer Goods
- Pharmaceutical & Medical
- Building
- Special biodegradable solutions
- Foam facers (Building)



Mondi Belcoat N.V.



A. Stocletlaan 11
2570 Duffel, Belgium
Managing Director: Patrick Lennertz
Email: info.belcoat@mondigroup.com

Certifications:

- ISO 9001:2008
- ISO 14001:2004
- PEFC, FSC (mixed)

Technology:

- 4 extrusion coating lines (3 tandem)
- 1 flexo-printer
- 6 slitter
- 1 sheet cutter

Main End-Uses:

- Automotive
- Specialties
- Imaging
- Medical & Hygiene



Litoměřická 272
411 08 Štětí, Czech Republic
Managing Director: David Chramosta
Email: info.steti@mondigroup.com

Certifications:

- ISO 9001:2008
- ČSN EN 15593:2008 (GMP)
- OHSAS 18001:2007
- FSC

Technology:

- 4 extrusion coating lines
- 5 slitter/re-winder
- Inline 2 colours flexo printer
- End disc cutter

Main End-Uses:

- Mill wrappers
- Case Linings
- Sacks
- Consumer Flexibles



Mondi Örebro AB



Pappersbruksallén 3A
702 15 Örebro, Sweden
Managing Director: Sami Leinonen
Email: info.oerebro@mondigroup.com

Certifications:

- ISO 9001:2008
- ISO 14001:2004
- ISO 22000
- FSC

Technology:

- 3 extrusion coating lines
(1 CoEx, 1 Tandem, 1 in-line printer)
- 1 flexo-printer
- 4 re-winder

Main End-Uses:

- Foam Papers
- Mill Wrappers
- Transport Packaging
- Consumer Goods



Mondi Sunne AB



Svarvarevägen 3
686 22 Sunne, Sweden
Managing Director: Ulrik Karlsson
Email: info.sunne@mondigroup.com

Certifications

- ISO 9001:2008
- ISO 14001:2004
- BRC/IoP A
- OHSAS 18001:2007

Technology

- 2 flexoprinting lines
- 2 slitters

Main End-Uses

- Consumer Goods
- Mill Wrappers
- Transport Packaging



Our website



For more information please visit us at ...



www.mondigroup.com

Mondi: Forward-looking statements disclaimer

This document includes forward-looking statements. All statements other than statements of historical facts included herein, including, without limitation, those regarding Mondi's financial position, business strategy, market growth and developments, expectations of growth and profitability and plans and objectives of management for future operations, are forward-looking statements. Forward-looking statements are sometimes identified by the use of forward-looking terminology such as "believe", "expects", "may", "will", "could", "should", "shall", "risk", "intends", "estimates", "aims", "plans", "predicts", "continues", "assumes", "positioned" or "anticipates" or the negative thereof, other variations thereon or comparable terminology. Such forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of Mondi, or industry results, to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. Such forward-looking statements and other statements contained in this document regarding matters that are not historical facts involve predictions and are based on numerous assumptions regarding Mondi's present and future business strategies and the environment in which Mondi will operate in the future. These forward-looking statements speak only as of the date on which they are made.

No assurance can be given that such future results will be achieved; various factors could cause actual future results, performance or events to differ materially from those described in these statements. Such factors include in particular but without any limitation: (1) operating factors, such as continued success of manufacturing activities and the achievement of efficiencies therein, continued success of product development plans and targets, changes in the degree of protection created by Mondi's patents and other intellectual property rights and the availability of capital on acceptable terms; (2) industry conditions, such as strength of product demand, intensity of competition, prevailing and future global market prices for Mondi's products and raw materials and the pricing pressures thereto, financial condition of the customers, suppliers and the competitors of Mondi and potential introduction of competing products and technologies by competitors; and (3) general economic conditions, such as rates of economic growth in Mondi's principal geographical markets or fluctuations of exchange rates and interest rates.

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- a) any warranty or liability as to accuracy or completeness of the information provided herein; and
- b) any obligation or undertaking to review or confirm analysts' expectations or estimates or to update any forward-looking statements to reflect any change in Mondi's expectations or any events that occur or circumstances that arise after the date of making any forward-looking statements, unless required to do so by applicable law or any regulatory body applicable to Mondi, including the JSE Limited and the LSE.