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## Everything from a Single Source

The Vita product range for packaging production



# EXPERIENCE + KNOW-HOW



## What Böttcher offers you

### ■ All products

From rollers of all kinds to sleeves and impression cylinders, cleaning agents and fount additives, printing blankets and coating plates – everything from a single source, cross-matched for optimum compatibility.

### ■ All systems

Extensive expertise in all printing systems – from offset and flexography to gravure and digital printing.

### ■ All processes

Sophisticated solutions for all process phases, from extruding, coating and laminating to printing and finishing.

### ■ All materials

Excellent results throughout the value creation chain, from raw material production (corrugated cardboard, carton, foil, sheet metal, etc.) to the finished, ready-to-pack product.

### ■ All continents

All products and services are available in consistent quality worldwide. That means perfectly balanced solutions for a wide range of production conditions and expert advisors virtually around the corner – for 80,000 customers in over 80 countries.



## Your Success is Our Goal

### Böttcher: global partner to the packaging industry

The world is growing smaller and smaller. The globalization of culture and consumer awareness, the worldwide presence of the Internet and the rapid evolution of global logistics systems – all of these factors are turning local markets into international ones. And the face of a product is becoming increasingly important in this environment. Brand owners, distributors and especially customers are posing increasingly demanding

aesthetic requirements. The pressure to set products apart from their competitors through attractive, high-quality packaging is relentless. Cost pressure is equally persistent. Manufacturers strive to optimize costs through local or regional production, while maintaining brand integrity and global quality standards. To achieve these objectives, networked production systems need fully standardized processes and

materials that are equally good and reliable all over the world.

Quality, reliability and proximity to our customers – these are the essential advantages Böttcher offers packaging producers. For over the course of our 280-year history, we have developed an unparalleled global structure that combines a worldwide pledge of quality with outstanding local service.



Image courtesy of: Windmüller & Hölscher KG

## Raw Material Production

### Quality and compliance from start to finish

As the world's largest producer of elastomer roller coverings, Böttcher has developed materials for nearly all process steps in packaging material production – materials that are designed to meet the specific requirements and conditions of every single application. Whether you produce board, plastic film or aluminum foil, Böttcher helps you at every step, from raw material production to printing, finishing, laminating and folding to embossing, wrapping and slitting or die-cutting.

When you pick up a tray of cat food, you're not likely to think about the

extreme conditions under which the aluminum foil – its main component – was produced. High temperatures, chemically aggressive acid and alkaline solutions and high pressures are a part of everyday life in the production of tinfoil and aluminum foil. The surfaces of take-off, squeegee and other types of rollers must be equipped to withstand these influences in order to function reliably day after day.

Short operating intervals are the consequence, with correspondingly high costs for maintenance and replacement parts. The mechanical

and chemical resistance of rubber and polyurethane coverings made by Böttcher extend roller and cylinder service life and thus machine availability as well. In a highly competitive business environment, these are measurable advantages from which you can profit as well.

Plastic film, which is often just a few microns thick, naturally requires very special treatment during production. Even the smallest change in process parameters can have a negative impact on product quality. Defined and consistent surface characteristics are crucial to many processes and

applications: durable yet not damaging to the material, smooth but with good grip, structured or anti-adhesive – the surface finishing of elastomer rollers is an art and science in itself.

Felix Böttcher offers materials and finishes for all types of foil and film – more than just a pretty (sur)face! Since roller weight and inertia are important factors in an increasing

number of applications, Böttcher has also specialized in the processing of lightweight rollers with cores made of aluminum and fiber-reinforced composite materials.

## Böttcher products for foil and film production and processing

Material	Process	Foil production		Further processing					
		Purpose	Böttcher product	Embossing Embossing Contact pressure rollers	Foil stretching Contact pressure rollers	Corona treatment Counter rollers	Doubling Contact pressure rollers	Varnishing Form rollers	Laminating Contact pres- sure rollers
PC film	Blown film extrusion	Take-off rollers	130 70 935 75	130 70		611 60		731 50	686 80
		Contact roller winding	738 65	935 75		612 70			382 80 612 70 984 90
PE/PP film	Wide slot extrusion	Form rollers	612 70		671 65	611 60		731 50	686 80
		Chill roll	673 70			612 70			382 80
			493 65						612 70
PVC film	Film calender	Calender form rollers	675 70	740 70			739 70	731 50	
				739 70			612 70		
Polyester film	Wide slot extrusion				671 65				
					937 80				
Aluminum foil	Foil rolling mill	Smoothing rollers	382 80					731 50	686 80
			585 90					933 50	
			937 80					934 55	
	Doubling units	Contact pressure rollers	937 80						
Cutting systems	Turner bar rollers / Contact rollers	962 80							

- 130 70 wear resistant, ozone resistant, electrically conductive, no PCfilm adhesion
- 382 80 high abrasion and tear resistance, good mechanical properties, kerosene resistant
- 493 65 high abrasion and tear resistance, very good resistance to crack products, electr. conductive
- 585 90 standard covering for aluminum foil rolling mills, very good kerosene resistance, very good wear resistance
- 611 60 / 612 70 anti-adhesive, high-temperature resistant covering with maximum electrical impedance
- 671 65 / 686 80 good temperature resistance, very good wear resistance, excellent ozone resistance, anti-adhesive
- 675 70 high-temperature resistant covering with excellent chemical resistance, very good damping properties
- 731 50 covering with excellent resistance to largely polar varnish solvent systems, very good suitability for grinding
- 738 65 / 739 70 wear resistant, ozone resistant, electrically conductive
- 740 70 light-colored, wear resistant, highly elastic, ozone resistant covering
- 933 50 / 934 55 covering with excellent resistance to largely polar varnish solvent systems, very good suitability for grinding
- 935 75 antistatic PUR covering with excellent abrasion resistance
- 937 80 PUR covering with increased temperature load capacity, excellent wear resistance, good anti-adhesive properties
- 962 80 PUR covering with excellent mechanical properties, optimum kerosene resistance

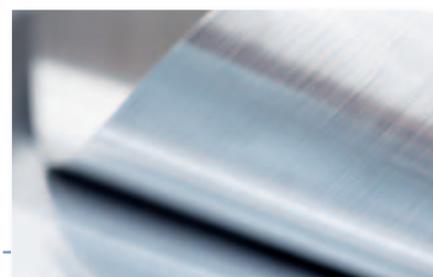




Image courtesy of: Koenig & Bauer AG

## Printing

### The face of a brand

The visual appeal of packaging depends largely on the design and colouration, the latter mainly created during the printing process. This makes printing one of the most vital steps in the whole production chain.

And this is Böttcher's home ground. Leading printing press manufacturers all over the world have relied on the quality and innovative power of Böttcher products for years, across the whole range of printing processes. Böttcher rollers and sleeves help printers get the most out of their presses in offset, gravure and flexographic printing applications.

Every rubber or polyurethane covering comes from the same development laboratories as our washes, founts and other products. Our rubber compounds are produced in one of the most modern rubber mixing plants in Europe

– highly automated and computer-controlled, so that you can rely on their consistently high quality. All production plants in the Böttcher Group are supplied with rubber from this central source, ensuring that our customers all over the world receive the same high quality, every time they place an order.

Highly specialized, demanding printing processes require equally sophisticated materials developed specifically for this purpose. And that is possible only with the depth of expertise and experience that comes from a commitment to the printing industry reaching back more than a hundred years.

Whether your business is digital proofing or prototyping or printing on offset, gravure or flexographic presses, whether your inks and coatings dry conventionally or by UV-curing, are water- or solvent-based, transfer with our without electrostatic support systems, Böttcher offers you not only the right covering material, but also the appropriate cleaning and maintenance supplies as well as a broad range of printing blankets and coating plates.

And most importantly, all of these products are compatible with each other. In other words, you can concentrate on optimizing your production process and operating efficiency and don't need to worry about problems stemming from material incompatibility.



GoldenPearl roller



ProColora inking roller



Image courtesy of: Burger King Beteiligungs GmbH



Image courtesy of: Boehringer Ingelheim Pharma GmbH



Image courtesy of: Unilever Deutschland GmbH

In no other field of offset printing are spot colours and special inks as common as in packaging production. The resulting need for frequent colour changes, including a thorough cleaning of the ink train, often leads to

disproportionate downtime and loss of production. This is where Böttcher's newroller surface coatings come in: ProColora ink rollers and GoldenPearl vibrators prevent any ingress of ink components into the rollers and are

much easier to clean than conventional roller coverings, significantly reducing make-ready times. They also help you print saleable copy more rapidly, minimize start-up waste and help with conformance to ISO 12674.

## Böttcher products for offset printing

Product type	Product	Description
Inking roller coverings	VitaColor 25/30/35/40	Inking roller covering for use with conventional sheetfed offset inks
	VitaColor UV 25/30/40	Inking roller covering for use with UV-dried sheetfed offset inks
	VitaColor Combi 38	Inking roller covering for use in mixed mode printing (conventional/UV)
	VitaColor Poly 25/38	Inking roller covering for use in mixed mode printing (conventional/UV)
	VitaColor Stabilo 30	Inking roller covering for use with shrink-inducing sheetfed offset inks
Dampening roller coverings	VitaRol 25/30/35/40	Standard dampening roller covering for sheetfed offset
	VitaLux 25	Dampening form roller covering for low-alcohol/alcohol-free sheetfed offset printing
	VitaPan 25	Dampening water pan/metering roller covering for -/- low-alcohol/alcohol-free sheetfed offset printing
	VitaRol UV 25/30	Sheetfed offset dampening roller covering for use with UV-dried inks
	VitaRol Combi 25	Sheetfed offset dampening roller covering for use in mixed mode printing (conventional/UV)
	VitaSoft 22	Dampening roller compound with lower durometer
Standard washes	VitaWash S	All-purpose water-miscible wash for manual and automatic cleaning, spontaneous emulsification
	VitaWash Forte	All-purpose water-miscible wash, spontaneous emulsification, good run-off
	VitaWash Ultra	All-purpose water-miscible wash, enhanced cleaning power, also for paper coating components
	VitaWash non-VOC	Environmentally friendly, extremely economical, water-miscible all-purpose wash
	VitaWash Combi	All-purpose wash for use in mixed mode printing (conventional/UV)
	VitaWash UV	Wash for UV printing, lower consumption, strong washing power
	VitaWash UV-S	Wash for UV and hybrid inks, low consumption, strong washing power
VitaWash PolyClean	Wash for mixed mode printing (conventional/UV) with enhanced washing power	
Fountain solution additives	VitaFount S	Fountain solution additive for a wide range of applications, alcohol reduction of up to 6%
	VitaFount AlcoFree	Fountain solution additive for low-alcohol (< 6%) and alcohol-free printing
	VitaFount Gold	Fountain solution additive designed specifically for use with metal-pigment inks
Special cleaners	VitaClean R	Aqueous alkaline cleaner for ink residues and stubborn soiling
	VitaClean C	Aqueous alkaline cleaner for water-based flexographic inks and aqueous dispersion varnishes
Printing blankets	VitaTop C	Printing blanket with high compressibility and thick ink application, ideally suited for carton printing, but also suitable for other substrates
	VitaTop UV	Printing blanket for use with UV-dried inks, high chemical resistance and mechanical stability
	VitaTop Dual	Printing blanket for use in mixed mode printing (conventional/UV inks)
Coating blankets/plates	VitaCoat 1003/15	Strippable coating plate on polyester base for spot coating with dispersion varnishes and most UV varnishes, thickness 1.15 mm
	VitaCoat 1003/35	Strippable coating plate on polyester backing for spot coating with dispersion varnishes and most UV varnishes, thickness: 1.35 mm
	VitaCoat 1002	Compressible coating plate on polyester backing, strippable, for spot coating with dispersion and UV varnishes, thickness: 1.95 mm
	VitaCoat 1007	Compressible coating plate with woven backing, strippable, for spot coating with dispersion and UV varnishes, thickness: 1.95 mm
	VitaCoat 1004	Thermoplastic coating plate on polyester backing, strippable, for spot coating with dispersion varnishes, thickness: 1.15 mm
	VitaCoat 1005	Thermoplastic coating plate on polyester backing, strippable, for spot coating with dispersion varnishes, thickness: 1.35 mm



Image courtesy of: Unilever Deutschland GmbH

## Food Packaging

### Low-migration printing the easy way

Requirements for packaging and packaging producers have grown increasingly tough in recent years, especially in the food industry. The detection of undesirable residues of banned substances in food packaging shakes consumer confidence and generates uncertainty – and enormous costs in many cases - throughout the entire distribution chain. In a transparent global information environment, the brand in question may suffer irreparable damage. Low-migration materials can contribute significantly to preventing such damage.

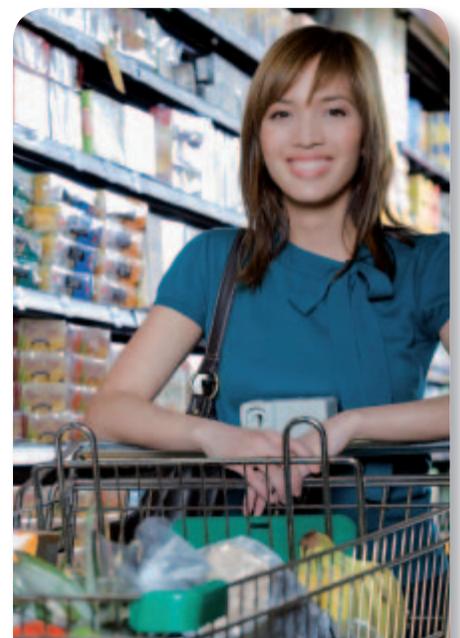
Böttcher's "Vita" brand is a series of products for all printing processes that have been tested and certified for conformity with food processing regulations by independent scientific

institutes. The products in the "Vita" series provide you as a user with a reliable base for the safety and compliance of the entire printing process.

With Böttcher ProColora and ProAqualis, special surface coatings effectively and reliably eliminate the possibility of components of the rubber compounds being extracted by inks or fountain solutions and transferred to the finished product. Furthermore, the use of distributor rollers with the "Golden Pearl" covering considerably shortens cleaning and make-ready times between jobs, thus significantly and sustainably enhancing the productivity of the printing process. The Vita series also includes washes, fountain solutions and other printing supplies which have been optimized and

certified for low-migration printing. Among these are fountain solution additives which facilitate printing with metal-pigment inks (VitaFountGold).

Böttcher also offers special roller covering compounds which are approved for direct contact with food. Your local Böttcher representative will be glad to help you select the best material for your specific process.



# Gravure

## The power of colour

Packaging is a part of everyday life, and packaging produced by the gravure process is nearly as colourful as life itself. Continually increasing market demands on packaging design, functionality and ecological impact translate directly into new challenges for the production process. Printers must be able to produce consistently precise fine-screen images on a wide range of different substrates whatever the run length. On repeat jobs, the quality naturally has to be identical.

Böttcher supports gravure printers with products adapted to the needs of the different application areas, from the production of flexible packaging incorporating different types of film, paper and metal foils to the manufacture of folding cartons or the processing of laminated materials for beverage cartons. Böttcher impression and inking rollers enhance



Image courtesy of: Windmüller & Hölscher KG

Image (below) courtesy of: Privatbrauerei Gaffel Becker & Co. oHG  
Image (right) courtesy of: BIONADE GmbH



production stability on both long and short print runs and ensure consistency when printing frequent repeat jobs.

Our modern rubber and polyurethane coverings meet the most stringent requirements for conventional and ESA package printing.

## Böttcher products for gravure printing

Application	Product	Description
Flexible packaging	VitaGrav Antistat 70 / 80 / 90	Electr. conductive coverings for conventional impression rollers and impression sleeves, chemically resistant to polar solvents
	VitaGrav ESA T 80 / 90 Sleeve	ESA impression sleeves for foil and paper printing, constant electrical properties, dimensionally stable, for indirect charging systems
	VitaGrav ESA TS 80 / 90 Sleeve	ESA impression sleeves for foil and paper printing, constant electrical properties, dimensionally stable, for indirect charging systems – also suitable for short and brush electrodes – later contrasting limited
	VitaGrav ESA D 80 / 90 Sleeve	ESA impression sleeves for foil and paper printing, constant electrical properties, dimensionally stable, for core charging systems
	VitaGrav ESA T 80 / 90	ESA impression roller coverings for conventional cores used in foil and paper printing, constant electrical properties, dimensionally stable, for indirect charging systems
	VitaGrav ESA TS 80 / 90	ESA impression roller coverings for conventional cores used in foil and paper printing, constant electrical properties, dimensionally stable, for indirect charging systems – also suitable for short and brush electrodes – later contrasting limited
Folding boxes	VitaGrav ESA PU 90	Highly dynamic ESA polyurethane coverings, highly wear resistant, low edge-cut propagation, for indirect charging systems
	VitaGrav ESA PU 90 Sleeve	Highly dynamic impression sleeves, highly wear resistant, low edge-cut propagation, for indirect charging systems
Universal	Vitagrav INK 50	Patented, lasered covering for coloring rollers, uniform color distribution, no print image overlapping, simple cleaning



## High-quality, flexible, economical – **Modern Flexography**



Image courtesy of: Fischer & Krecke GmbH

Flexibility has always been the strength and hallmark of flexographic printing. It is the only process that enables the printer to print the entire range of substrates used in the packaging industry today. Thanks largely to dynamic developments in press and printing form technology in recent years, packaging produced by flexographic printing now rivals those of offset and gravure printers in every way. Consequently, combinations of flexo

and gravure or flexo and offset printing systems are increasingly common in modern printing plants.

A clear trend towards the use of laser-engraved elastomer sleeves for printing forms has been evident for some time. This trend is a result of continuing advances in high-resolution laser engraving technology on the one hand, and accompanying developments in the field of elastomer sleeve material

science on the other. Today, laser engraving is capable of reproducing ultra-fine dots and screens of up to 80L/cm.

Improvements in all components involved in the printing process and the advantages offered by elastomer continuous printing forms ensure flexographic printing a steadily increasing share of the market and guarantee a strong position in packaging production in the future.

## Böttcher products for flexographic printing

Product type	Product	Description
Sleeve covering for solids and screen printing	Vitaflex 751 50	50 ShA EPDM antistatic
	Vitaflex 732 60	60 ShA EPDM antistatic
	Vitaflex 746 70	70 ShA EPDM antistatic
	Vitaflex 748 80	80 ShA EPDM antistatic
	Vitaflex 735 60	60 ShA EPDM non-antistatic
	Vitaflex 745 65	65 ShA EPDM non-antistatic
	Vitaflex 781 65	65 ShA SBR antistatic
	Vitaflex 789 65	65 ShA SBR non-antistatic



## Direct laser engraving of flexographic printing forms

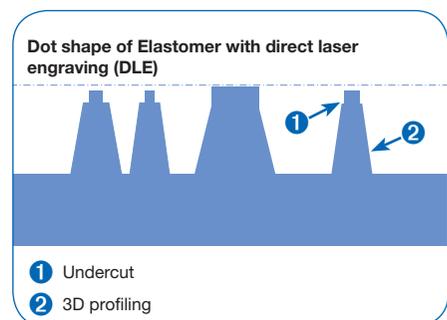
Direct laser engraving is gaining a stronger and stronger position as an accepted alternative to photopolymerisation in the production of flexographic printing forms.

In direct laser engraving, is modelled through ablation with a high-energy laser beam into a raised image. This process requires a high-powered laser, as – in contrast to the very thin layer on a digital photopolymer form, which is only a few microns thick – it is necessary to remove material to a depth of several tenths of a millimeter.

Technological advances now make it possible to exploit the fundamental advantages of direct laser engraving even more efficiently. The high-energy laser beam is capable not only of leaving the material in place or removing it entirely, it can also release its energy in controlled doses according to the image data and thus produce screen dots with flanks of a defined

form and gradient. This is a significant benefit for flexographic printing as a relief printing process, as, besides the precision and design of the dot surface, the mechanical stability of the dots has a decisive impact on the quality of the printed product. This three-dimensional property of dot formation in laser engraving reinforces even the finest dots, affording more image contrast and printing form longevity.

In addition, laser engraving offers a series of other benefits. Laser energy can be precision-controlled to marginally engrave the elastomer surface lightly where fine tonal gradations are required. Thus a small dot may stand less high than, say, a solid area adjacent to it. In this way, solids with high ink transfer can be combined with fine screen work in one printing form. This “electronic undercutting” can be used to significantly enhance the quality of the printed image.



The use of direct laser engraved sleeves on modern flexographic presses requires no additional investments or machine modifications. The same inks and screen rollers are used as when working with photopolymer plates and sleeves.

Thanks to advances in laser technology and the transition from analog to digital workflows, direct laser engraving has established itself as a technology bringing real and decisive impulses to flexographic printing in terms of economy and quality enhancement.



Image courtesy of:  
Fischer & Krecke GmbH



Image courtesy of: Intersnack  
Knabber-Gebäck GmbH & Co. KG



Image courtesy of: Unilever Deutschland GmbH



# Converting

Winding, slitting, laminating, folding, bonding

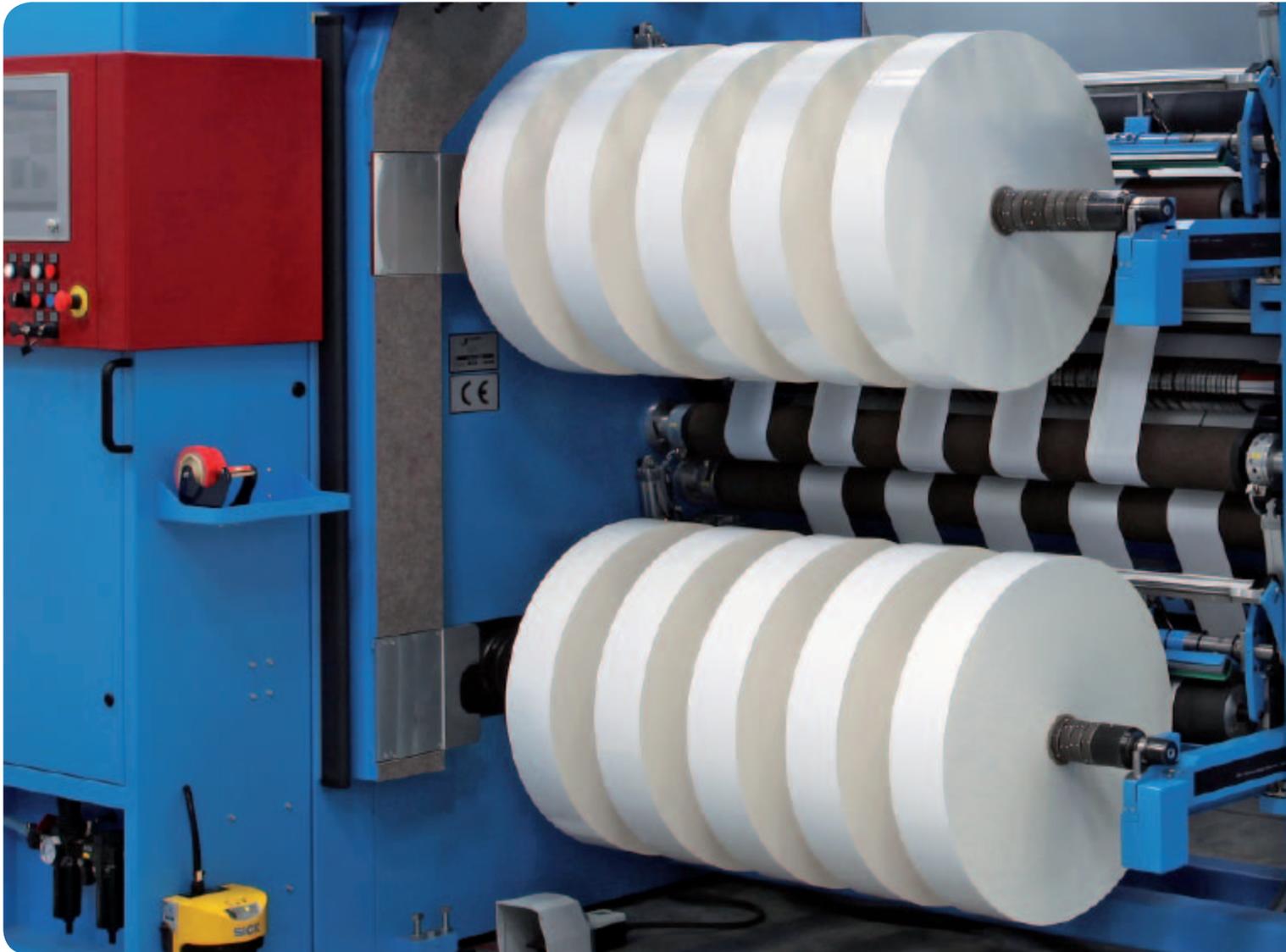


Image courtesy of: Kampf Schneid- und Wickeltechnik GmbH & Co. KG

After printing, many packaging products undergo a number of additional processing steps to form and finish the packaging unit before it is filled. From varnishing to laminating, winding, slitting, die-cutting and embossing – special Böttcher products are used on a wide variety of converting equipment. Developed in response to the specific requirements of each

processing step, these products are designed to maximise quality while minimizing wear and tear and with that the longevity of the product.

The mechanical properties of the roller covering are the decisive parameters in this respect. In addition to abrasion and cut resistance, the electrical properties of the roller

covering may also be important. Defined conductivity helps prevent the build-up of static charges and avoid the processing problems they may cause. High malleability and elasticity help prevent edge marking and thus extend service life. At the same time, precisely engineered surface structures provide the grip needed to ensure constant, controllable tensile



Image courtesy of: ELOPAK AS/Group Headquarters

forces. Finally, good resistance to light and ozone are also important properties which prevent the covering from gradual glazing and loss of performance. From the smallest roll to rollers and cylinders of 10 m in length, in our specialized factories

your rollers are expertly covered and mechanically overhauled. In many cases, we also pick up your rollers and sleeves with our fleet of service vehicles and return them after re-covering. Both our local customer service and support teams and our central

group of application engineers are available to assist you on site if you have questions about the process or the interaction between the various materials. Our foremost objective is to help you achieve the results you want and need.



Image courtesy of: Unilever Deutschland GmbH

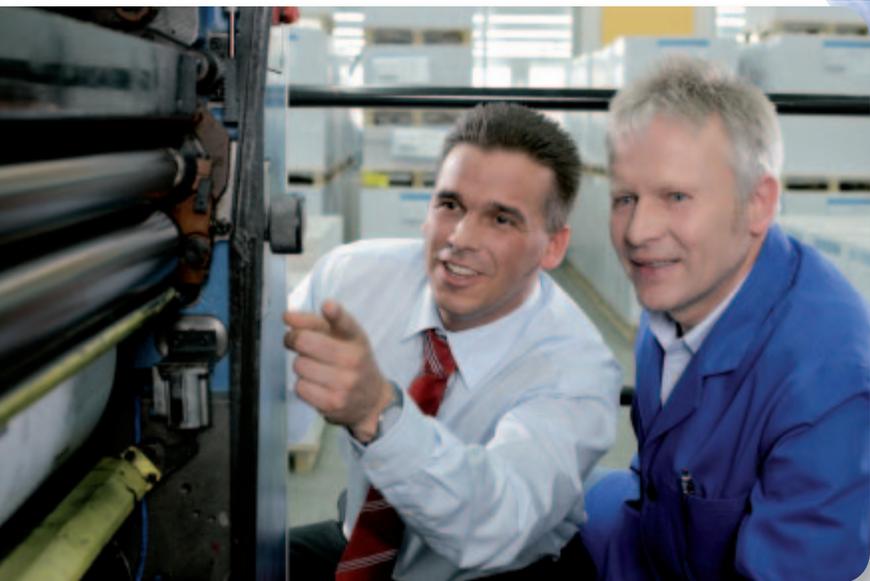


## Research and Development, Service

### Quality doesn't just happen

As an independent family enterprise, Böttcher has stood for quality, innovation and close collaboration with our customers for over 280 years. We know that the only way to stay successful over such a long period of time is to offer outstanding products and top-quality service. And that is why we place such strong emphasis on research and development. One hundred employees are at work every day developing new materials and methods that enable you to produce better products with a higher degree of consistency.

In cooperation with our customers, we work to optimize existing and create new processes, for only through constant innovation and progress can we ensure survival and sustainable success both for our customers and for our own companies worldwide. The honour of being included in the "Lexicon of German Global Market Leaders" was confirmation for us, but our customers appreciate and share our convictions.



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