

***Böttcher*Tec**

Roller Solutions for the Plastic Film Industry

EXPERIENCE + KNOW-HOW



Our Commitment, Your Advantage:

■ Highly developed Products

BöttcherTec Roller covering materials in rubber and polyurethane, specially designed for the plastic foil industry, hardness and temperature resistance tuned to the specific requirements of each process step. Outstanding quality for stable processes, long roller life and minimum downtime.

■ Global Presence

Central rubber compounding in our highly automated mixing facility ensures identical quality and material characteristics wherever in the world you are. Local application on rollers in our 20 roller manufacturing plants provides local service and short lead times.

■ Complete, systematic Solutions

Individual support and material selection on site by our technical support staff. Laboratory tests help identify any compatibility issues with stains, varnishes, adhesives, etc. before they have a chance to negatively impact your process. Fast and cost-effective service all over the world through our manufacturing network – Böttcher is always close to you!



■ In-depth Application Competence

For decades, Böttcher has been working with customers at all levels in the production and processing of plastic film-based products to fine-tune the performance of roller materials to fulfill the ever-increasing demands of the industry. Unrivalled technological capabilities and laboratory equipment make it possible to develop and produce materials which transcend the limitations of conventional roller coverings.



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Plastics: More than meets the eye



The fascinating story of modern plastics begins around the middle of the 19th century, when the invention of celluloid as a substitute for ivory in the manufacturing of billiard balls saved the lives of thousands of elephants, before it went on to revolutionize the world of entertainment as the material basis for the film industry. But it took another hundred years before plastics started to permeate our everyday lives. Since the middle of the last century, the global production of plastics has grown to three hundred times what it was back then. Today, plastics contribute to preserving our natural environment in a number of different ways: the use of lightweight plastic materials in motor vehicles drastically reduces fuel consumption, and

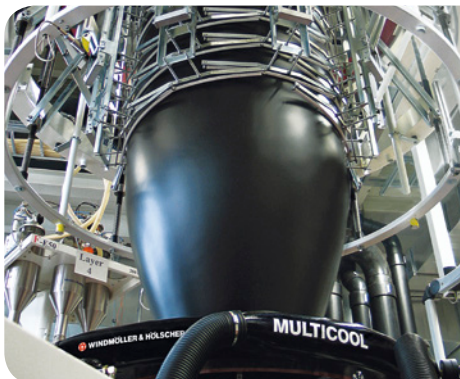
plastic films in packaging materials help prevent food from perishing and going to waste. In the world of medicine, plastics help to save lives, and in many other high-tech applications they support and enable the development of new products and technologies. In the plastic film and packaging field alone, the diversity of plastic materials is immense, but it is in this area in particular that plastics come under scrutiny as a contributor to pollution in the form of packaging waste. This poses new challenges for the plastic film industry: besides purely technical and economic issues, the industry also has to focus on minimizing the environmental impact of plastics production and disposal.

Böttcher: Global Partner of the Plastic Film Industry

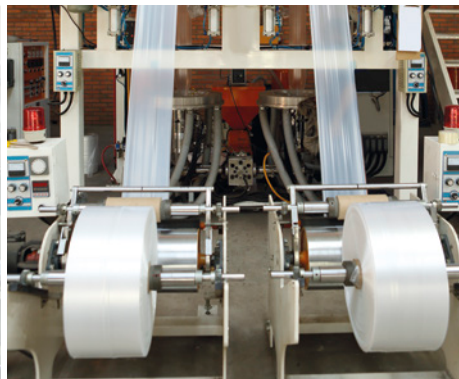
As the world's largest roller manufacturer, with 20 factories in 14 countries, Böttcher develops and manufactures elastomer roller coverings specifically tailored to the requirements of plastic

film processing. All our rubber compounds are produced in our central mixing facility in Germany, ensuring consistent quality all over the world, while our international roller

manufacturing network guarantees local service and short delivery times. Wherever you are in the world, you can rely on Böttcher for product supply and support.



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BöttcherTec: Tailor-made for each Process Step

Böttcher offers a broad range of rubber and polyurethane roller covering compounds, covering practically all areas in the production and converting of plastic film. This range is continually developing and expanding to keep pace with the changing demands of the industry. For example, besides classic rubber compounds for film extrusion, we also manufacture extremely wear-resistant polyurethane coverings. These compounds significantly extend the life of the rollers, thereby having a positive

effect on machine up-time and extending the range of different materials, web widths, etc. which can be produced. For PVC processing, e.g. for floor coverings, you can choose from a range of different compounds, depending on your specific requirements in terms of temperature and chemical resistance. For coating and other finishing processes, **BöttcherTec** coverings are in use all over the world, thanks to the optimized compatibility of our coating roller coverings with all types of coating materials. This

guarantees even and consistent coating weights across the width of the film and throughout the run, and in many cases, thanks to the resulting dimensional and hardness stability of the roller coverings, enables a reduction in coating weight without detracting from the properties of the finished product. In both flexographic and gravure printing on plastic film, **BöttcherTec** roller compounds excel with uniform and consistent ink transfer and print quality, whether you are printing solids, screens or both.

Optimized materials for each process step

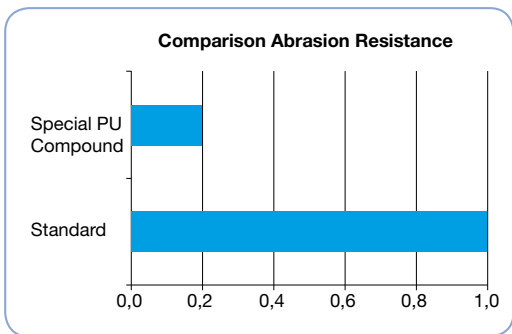
- Blown and flat film extrusion, extrusion coating and laminating
- Pressure rollers and embossing counter rollers for PVC processing
- Coating and laminating, flexo and gravure printing
- Contact rollers for winders
- Tensioning, guide and transport rollers in a wide range of durometers

Extended roller life, less downtime, enhanced flexibility

- Reduced long-term deterioration of mechanical and dynamic properties
- Excellent resistance to edge marking and cutting

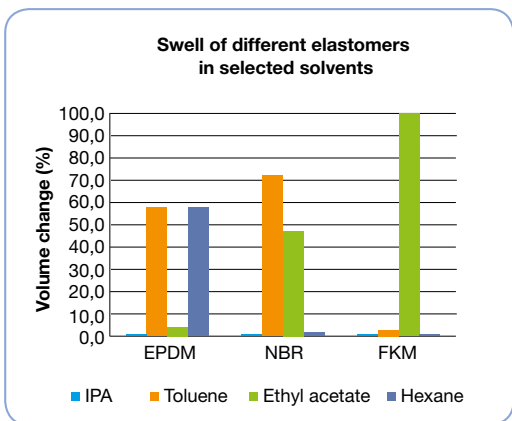
Service and support

- Service and technical support by Böttcher field personnel
- Support in the selection of the best roller materials for your specific needs
- Compatibility testing of process chemicals in Böttcher's laboratories
- Support in sizing roller crowns and other dimensions
- Re-grinding and profiling of roller coverings



The use of special wear-resistant compounds significantly extends the life of rollers. Abrasion levels, for example, can be reduced by 80 % or more. Besides reducing downtime,

the improved resistance of these compounds to edge marking and cutting also makes it easier to run different material thicknesses and widths in the same line.



Just as there is no covering material which is impervious to all chemicals, there is no such thing as a process chemical which has absolutely no effect on elastomer materials. That is why it is essential to be aware of the interaction between the process materials and ensure maximum compatibility. Even the most high-tech roller compound can prematurely

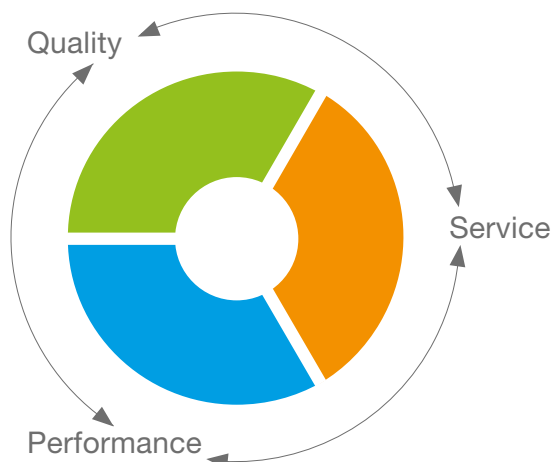
deteriorate or even be destroyed by mis-matching coatings, cleaning solutions and roller coverings. With extensive laboratory facilities and free-of-charge compatibility tests, Böttcher helps you foresee and avoid potential problems before they have a chance to disrupt your production process.

Rely on us for Quality, Service and Performance

Böttcher quality is not merely the result of a tightly controlled production process. It also requires a great deal of research and development. We test 3,000 new compounds for rollers every year, for example. Of those, the field is narrowed to 300. And only the 30 materials that meet our requirements without reservation eventually reach the market – so that you can be sure of working with the best possible solution at all times.

Böttcher service combines the experience gained over 280 years with state-of-the-art know-how and ambitious commitment to our products and our customers. That gives you the assurance of having a reliable partner who knows his business and has his eye on future developments to be prepared for each new trend and challenge.

Böttcher performance has only one objective: to make you even more productive with our high-quality solutions. We make your concerns our concerns, so that your processes become even more reliable and your operations more economical and efficient.



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