

BöttcherTec

Roller Solutions for the Steel Industry

EXPERIENCE + KNOW-HOW



Our Commitment, your Advantage:

■ Highly developed Products

BöttcherTec Roller covering materials in rubber and polyurethane, specially designed for the steel 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 oils, degreasing solutions, coatings, 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 steel and steel-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.



Systems ►► Industry

BöttcherTec Roller Coverings for the Steel Industry

Few materials have helped shape our industrial world more fundamentally than steel. The material is the backbone of the industrial engine, the substance of machinery, buildings, bridges and the railway lines which paved the way for industrial expansion. But today, the industry is facing new and immense challenges: the

consumption of steel is growing by c. 3.5 % annually, but production is gravitating more and more toward Asia, and China in particular. Experts predict that, ten years from now, half the world's steel will be produced in China. As in many other fields of industry, this is leading to a division of labour and increasing specialization

within the industry: most Asian steel is produced on machines designed and built in Europe, North America and Japan. Those steel manufacturers producing in Europe are streamlining and rationalizing their production, in order to maintain their competitiveness in the global market through productivity and flexibility.



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Böttcher: global partner of the steel industry

Reduction of scrap rates and maximized uptime on the one hand and a first class supply chain on the other are the keys to success in today's volatile steel market. And that is where Böttcher comes in: in 20 production plants distributed across all continents, we produce top quality roller coverings in elastomer materials specially developed to fulfill the

requirements of steel production and processing. All the rubber compounds applied to rollers in these factories are developed exclusively in our central R&D laboratories and are manufactured in our modern compounding plant in Germany. This is your guarantee for identical quality all over the world, wherever a Böttcher roller is produced. The application of these com-

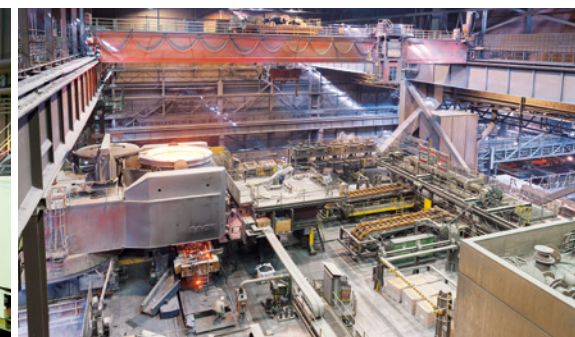
pounds in our regional production sites makes for quick and cost-effective service, wherever you are. Based on decades of experience in supplying the steel industry the world over, Böttcher stands for elastomer roller solutions which help you enhance your process stability and product quality.



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Hot dip coating line in Dortmund



© ThyssenKrupp AG RS32572



© ThyssenKrupp AG RS82416



© V-MET GmbH



© RAICO Bautechnik GmbH



© Vensys 112, 2,5 MW, Wind farm in Losheim-Britten, Germany

BöttcherTec Rollers: Tailor-made for each Step of the Process

In close cooperation with our customers, we develop elastomer materials with excellent dimensional and durometer stability. This stability translates into process stability in the steelworks, more consistent product quality and naturally also to longer roller life. The increased process stability reduces the need for intervention and maintenance, and the costs associated with them. With over 60 years of experience in working with steel producers, we work hard to keep

pace with the changing needs of the industry and continually improve the quality of our roller coverings and the advantages they bring to your production process. The needs and wishes of the automotive industry have led to drastically higher demands on the quality of cold-rolled steel in recent years. The **BöttcherTec** product range covers all steps in the process. For example, dedicated compounds for squeeze rollers in de-greasing baths or application

rollers in coating units are available in hardnesses ranging from 70 to 90 Shore A (coating rollers from 40 Shore A upwards), so that you can configure the rollers to suit the specific age, design and condition of your equipment and processes. The same applies to all transport and forming processes and machinery: we offer specific materials for S-rolls, drive, pressure and stretch rollers as well as for winding, cutting and slitting equipment.

Specific compounds for each process step

- Excellent chemical resistance to all types of oil, de-greasing and pickling solutions (even aggressive mixed acid baths), no premature hardening and cracking
- Temperature resistant up to 200°C, or higher if required
- Outstanding mechanical properties prevent edge cutting and marking and contamination of multistage pickling and coating lines by solution remaining on the coil

Production to the highest standards

- “One-step” polyurethane covering process for rollers with journals: no chance for acid to penetrate the covering through seams and joins. This reduces downtime and protects the roller core
- Clean-cut and stable edges on all surface profiles

Long roller life = maximum uptime and minimum maintenance cost

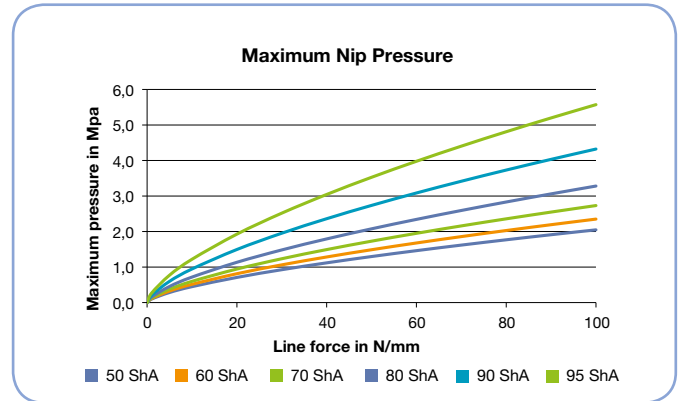
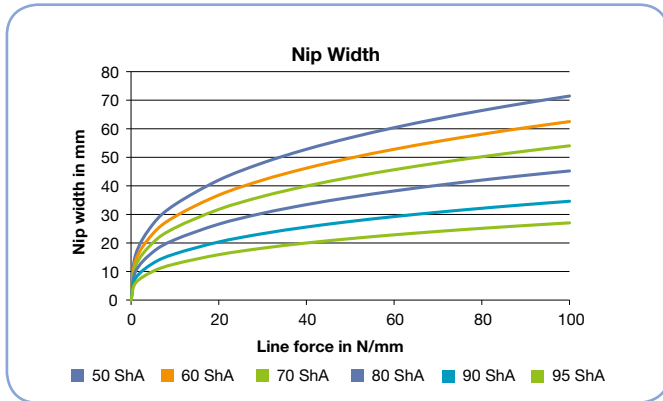
- Rollers maintain their mechanical and dynamic properties over a long period
- Good resistance to edge cutting and marking

Set and forget: How Roller Quality makes your Life easier

You know your machines and processes better than anyone, we know our materials and their influence on the result. Putting our joint knowledge to work enables the selection of the best material for your roller needs. When conducting on-site trials or investigating problems, we will be right there at your side to support you

in finding the best possible solution. We are happy to analyze your process requirements and develop customized materials to deliver the results you need. We see ourselves as a “Productivity Provider”: your rollers should simply do the job, day after day, week after week. Stable performance and a long life cycle mean that in future you

can concentrate more on your process and product quality, without being distracted by roller issues. That’s what we mean when we say “Set and Forget”: install, set and then concentrate on getting the best results from your process.



The function of elastomer-covered rollers in the various processes involved in steel production are largely dependent on the conditions in the nip between the roller surface and the steel coil. Besides the geometry of the roller itself, the nip is influenced by the setting and the modulus of the roller covering. Depending on the application, whether the roller is driving, braking or simply guiding the coil, or applying or squeezing off coatings or

other liquids, the roller nip has to fulfill different requirements. For certain operations, the pressure has to be very high, in order to transfer sufficient force, while – for more sensitive materials – softer roller coverings are used to avoid marking or damaging the coil surface. Elastomer covered rollers also have the function of compensating for geometric tolerances, vibration, etc. and avoiding slippage between the roller surface

and the coil. Our Application Technology Team will be happy to support you in analyzing the specific requirements of your particular process and equipment, defining the necessary characteristics of the roller covering and selecting the appropriate covering material.

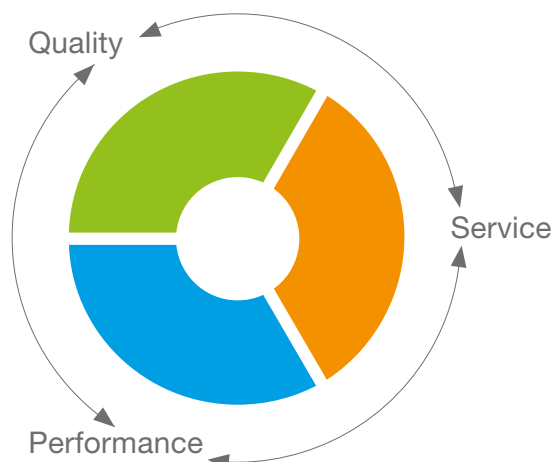
These examples include settings and parameters which go beyond those normally prevalent in steel production. They serve purely to illustrate the principles and characteristics described above and should not be applied in practice.

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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