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RUBBER AND
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EDITION

**BORFLEX
REX**

A TRUSTED NAME
FOR INNOVATIVE
RUBBER PARTS

Andreas Spittel,
Commercial Director

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“ Borflex Rex offers a broad range of products to address major transportation issues for the rail industry ”

BORFLEX REX

By Laura Davis

A TRUSTED NAME FOR INNOVATIVE RUBBER PARTS

Switzerland has always been a favourite tourist destination for many. After all, the country is home to shimmering lakes, picturesque mountains, delicious chocolates, and of course, exquisite watchmaking. But it is not only Switzerland's natural beauty and craftsmanship that has earned it a sweet spot on the world map; the country is also a global powerhouse of technological innovation. Ranked one of the most innovative countries in the world by the Global Innovation Index for nine consecutive years, Switzerland's aggressive innovation-driven ecosystem has been driving its homegrown companies to make waves across the world.

Consider the case of the leading Swiss rubber expert Borflex Rex and its contribution to the global rubber and tyre market. Founded in 1935 by a young chemist Ignazio Favini, Borflex Rex started its journey as Rex Articoli Tecnici and initially produced cellulose fabrics for the manufacture of protective caps, waxes, and varnishes for the footwear industry. Soon after, the company wanted to expand the horizon of their core competencies, and this marked their entry into the rail transportation industry, which still continues to be one of their focal points.

Since its inception, the Swiss rubber expert has been housing a talented R&D team comprising chemists, physicists, and mechanical engineers—who can take any rubber-based product from ideation to

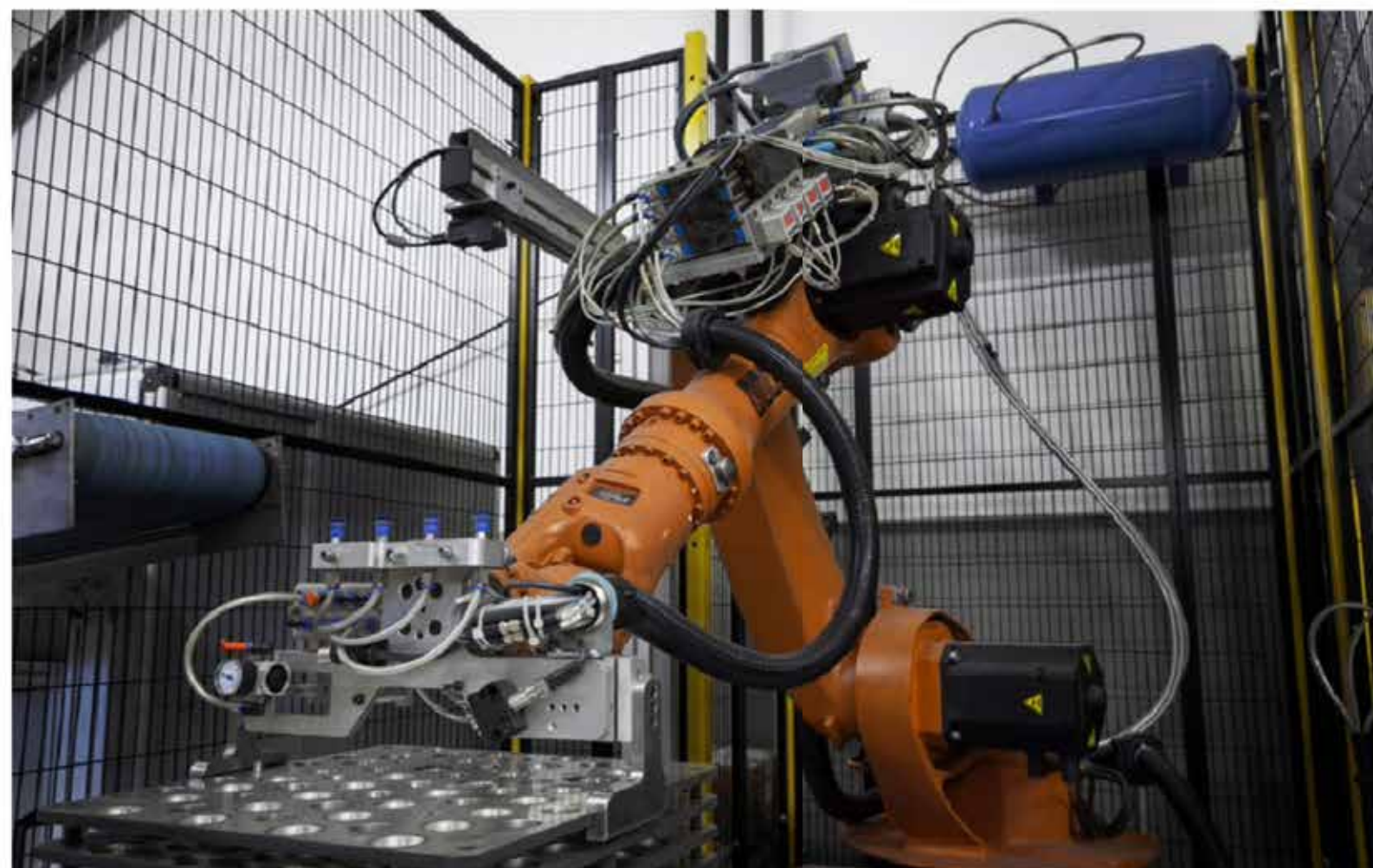


damping and noise reduction along with more load resistance and less deformation.

Borflex Rex's products also play key roles in ballastless railway and underground tracks across Europe and the world. In fact, the company's name is entrenched in Swiss history as producers for the country's longest ballastless track using rubber-based products. Borflex Rex produces rubber boots, connection bars, and microcellular pads with static and dynamic characteristics for its ballastless tracks. The combination of these products makes it an ideal choice for ballastless tracks both inside and outside of tunnels. "Our clients can either use these products directly, or we can help them customise to their desired profile and test run them through simulation in our laboratories," comments Spittel. Using these customisable products, over the years, the company has successfully completed several railway projects for the Swiss Federal Railroads.

Along with ballastless tracks, the company has a huge market for its track components, such as railpads, acoustic protection, and cushions. A perfect case in point is its rubber boots used in dual block sleeper tracks with or without connection bars. "We have used this system in the new transversal line crossing the Alps (Ceneri and Gotthard), the Channel Tunnel, and other railway tracks in Hong Kong, Taiwan, Brazil, and other parts of the world," mentions Spittel.

The company also provides simple yet innovative solutions for the storage and transport of rail wheelsets and bogies



production in the shortest period. The company always derives its impetus to innovate by answering three simple questions: "What are our in-house technological capabilities? What is our industry know-how? How can we use these proficiencies to the fullest?"

What has further strengthened the company's offerings to go above and beyond today is its incorporation with Borflex Group—the French maven in the elastomeric parts (rubber, silicone, TPE, and polyurethane) market. The merger enabled both the companies to combine their historic glories and domain expertise to scale new heights in the global rubber-based products market. "Not to mention, this is also helping us grow faster in the rail industry as both Borflex Group and Rex focus on the sector," underscores Andreas Spittel, commercial director of Borflex Rex.

An Illustrated Suite of Rubber-Based Solutions

Borflex Rex offers a broad range of products to address major transportation issues for the rail industry. For instance, the company's level crossings made from rubber (Swisscross HD), resin (Swisscross GFK), and a rubber-concrete (Swisscross RUBE) mixture facilitate safer passage for both vehicles and pedestrians as opposed to the more accident-prone concrete level crossing. HD, GFK, and RUBE provide superior friction and high skid resistance for vehicular movement, even in harsh weather conditions like rain or snow. Moreover, these rubber- or resin-made level crossings offer the best vibration

using its wheelset rubber support pads. The pads use magnetic fixation to stick to the wheelsets. In some cases, if the clients desire, fixations via straps are also provided as an option. Once secured to the wheel rim and the tread of wheelsets and bogies, valuable assets can be transported and stored efficiently and economically, without any fear of damage.

The applications of Borflex Rex's rubber-based solutions, however, are not only limited to the rail industry. Another equally growing market for Borflex Rex is

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developing brake pads for the bicycle industry. Operating under the trade name of SwissStop Brake Pads, Borflex Rex offers highly rated bicycle brake pads and spare parts for all types of braking systems. "We are world leaders in the field of brake pads for carbon rims, and SwissStop Brake Pads are available for sale in almost every country," mentions Spittel.

What's more? The company is also an important producer of rubber-based products for various other industries, which they group as technical articles. "We develop airtight lids for the food industry; seals, gaskets, fittings, and tubes for sanitary, drainage, and wastewater applications; and plugs and protective covers for electronics companies, among others," shares Spittel. To help firefighters do their job uninterrupted amidst heavy traffic, Borflex Rex offers a unique hose and cable protection product called Crocodile. The solid rubber foldable bridge—which unfolds like the mouth of a crocodile—keeps the hose pipes from stopping the water flow when a vehicle rolls over it in a busy street. In a nutshell, the company offers a slew of innovative rubber products to make everyone's life a lot simpler.

Making It All Possible Is a State-of-the-Art Laboratory

While the product manufacturing process is similar to any other plant, what differentiates Borflex Rex is its special attention to quality right from the rubber compounding stage to the production of the final product. "Our production and quality system conforms to the ISO TS 22163:2017 and the products are produced and controlled accordingly," states Spittel.

In order to achieve this, the company has a team of chemists

dedicated to identifying the most suitable materials for final use. Complementing the work of the chemists, Borflex Rex's workforce also comprises physicists and mechanical engineers whose duty lies in translating the client requirements into tangible calculations and formulae for the final product. To adequately check the efficacy of the final outcome, these engineers are also responsible for constructing testing equipment in collaboration with clients.

At the Forefront of Progress, At All Times

Keeping up with the Swiss tradition of innovation, Borflex Rex always looks for newer ways to advance its rubber-based products. In that pursuit, the company's R&D team constantly partners with major university research groups in both Switzerland and France.

This marriage of technical and academic knowledge gives Borflex Rex a unique advantage over its competitors to leverage leading-edge technologies in the rubber-based product manufacturing industry. To that end, one of the ongoing collaborations of Borflex Rex with the academia is looking at different ways to integrate smart sensors with rubber-based products to better track its product development lifecycle, and later, utilise the sensors for offering proactive maintenance services. "This is but one of the slight possibilities among the umpteen innovation potential that we are exploring for the future. And to make the forthcoming endeavours worthwhile, we are never just looking at the knowledge we have but also discerning what we are continuously learning with time, and then applying that meaningfully across all our product verticals," concludes Spittel. 🚗

RUBBER AND TIRE TECH

SOLUTION PROVIDERS IN EUROPE - 2021

The need for more automation in tire manufacturing has grown over the last decade. The transformation has ushered new factory designs and changes in tire building machines, and process equipment. That said, requirements for more automation and sizable tires have brought enormous changes in the industry. Improvements in raw materials and chemical compounds have led to tires that perform more effectively. Whether it's compounds offering a better grip in snow and ice or compounds providing improved wet handling, technology continues to enhance tire performance. Tire manufacturing technology has progressed in parallel with tire construction so that tires are now designed to meet specific performance targets and enable improved manufacturability, i.e., more efficiency, lower cost, and uniform production.

One of the most comprehensive technological innovations of the modern tire era is run-flat tire technology. Run-flat technology allows drivers who sustain air loss due to a puncture or cut in their tire to drive approximately 50 miles at 50 mph so they can reach a safe location to change the tire. Over the years, overall development has taken place on the material front, from elastomer, nano-filler, to reinforcing materials like aramid and polyethylene. Developments impacting tire plants and manufacturing processes are as diverse as the penetration of new vehicle powertrains, logistical burdens, the emergence of new markets, mergers and acquisitions, increased value, and scarcity of real estate.

Furthermore, the increasing demands for low-noise and high-ride quality vehicles increase the potential for run-flat tires and, eventually, pneumatics. This has forced manufacturers to build tires with silica, resins that reduce noise.

A myriad of solution providers offer best-in-class tire and rubber tech solutions that advocate ingenuity in technological innovation. In this edition, Manufacturing Technology Outlook has listed top 10 rubber and tire tech solution providers in Europe.

Here are Manufacturing Technology Outlook's "Top 10 Rubber and Tire Tech Solution Providers in Europe – 2021."

Company	Description
Borflex Rex <i>borflex-rex.ch</i>	A leading company focused on designing and manufacturing rubber-based products for railway and many other industries
HF TireTech Group <i>hf-tiretechgroup.com</i>	HF TireTech Group is the global market leader in machinery and systems for the rubber processing tire industry, tire building machines, and curing presses
LIST Technology <i>list.ch</i>	A leader in the processing of highly viscous materials that develops and manufactures KneaderReactors for intensifying industrial processes
MAPLAN <i>maplan.at</i>	MAPLAN is a leading manufacturer of rubber and silicone injection molding machines with an industry-best network of strategic partners
MARIGO <i>marigo.it</i>	Marigo designs and produces machines for tyres retreading, special machinery for the rubber industry, presses for rubber and transmission belts, moulds for different fields of production
MIXACO <i>mixaco.com</i>	MIXACO is an innovation leader in the mixing technology industry that guarantees to mix quality while constantly improving handling-related processes
MTS Sensors <i>mtssensors.com</i>	MTS Sensors is the pioneer and leading manufacturer of magnetostrictive technology for measuring position and/or liquid level
Münch Chemie International <i>muench-chemie.com</i>	Known worldwide as the 'release agent specialist,' Münch Chemie International GmbH manufactures and delivers—among others—semi-permanent and permanent water-based release agents and bladder coatings for a large variety of industrial applications
Quad Plus <i>quadplus.com</i>	Quad Plus is a leading industrial system integrator providing sectional drive systems and industrial process automation systems (PAS) for rubber, plastics, and film industries
The Steelastic Company <i>steelastic.com</i>	With over five decades of rich and unmatched experience, STEELASTIC has evolved as a key supplier and innovator in the global tire industry by adding belt systems, body ply, cap strip and automatic apexing systems to its growing equipment portfolio