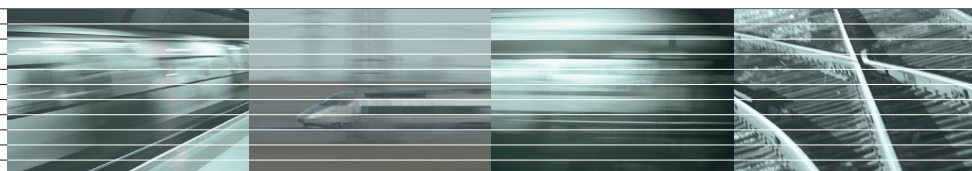


# RAILWAY MATERIALS



REX<sup>CH</sup>



RUBBER AND THERMOPLASTICS  
IN RAILWAY TRAFFIC



# RAILWAY INDUSTRY

Production is controlled  
by high competitive standards



**IRIS**  
Certification



001	LEVEL-CROSSINGS
002	RUBBER-ELEMENTS-FOR
	BALLASTLESS-RAILTRACKS
003	SPECIAL-PRODUCTS-FOR-RAILTRACKS
	AND-ACOUSTIC-INSULATION
004	RUBBER-AND-RUBBER/METAL-ITEMS-FOR
	THE-CONSTRUCTION-OF-RAILWAY-VEHICLES

## COMPANY PROFILE

Rex Articoli Tecnici SA is based in Mendrisio, in the Italian speaking part of Switzerland, on the north-south axis connecting the main European industrial poles. Its headquarters stretch over 18,000 m<sup>2</sup>, 8,000 of which are covered. It produces and sells technical items made of rubber and various other elastic thermoplastic materials, assuring continuous assistance to customers for products and specific applications. It employs more than 110 people, who work in research, production, control and administration. The sales network is complemented by dealers in several European countries. Technological skills, intelligence and know-how allow Rex Articoli Tecnici SA to achieve the set company targets, always ensuring its customers reliable and top quality products. In 1990 it was the first company in the Canton of Ticino to obtain the SQS certification according to 9001 ISO standards and successively the ISO 9001/2008 revision (reg. no. 10516). In 2010, Rex Articoli Tecnici SA obtained the IRIS certification for rail rolling stock. The constant acquisition of new technology, continuous research, high profile productive capacity and systematic control are the reasons behind Rex's success in international markets.

**REX** CH

## COMPANY PROCESSES

LINE PROCESS

SALES	PROJECT	PURCHASE	PRODUCTION	STORAGE	PRODUCT CARE
<ul style="list-style-type: none"> <li>- MARKET ANALYSIS</li> <li>- CUSTOMER MANAGEMENT AND COMMUNICATION</li> <li>- CUSTOMER SERVICE AND SATISFACTION</li> </ul>	<ul style="list-style-type: none"> <li>- MATERIAL DEVELOPMENT</li> <li>- TECHNICAL OFFICE AND TOOLS</li> <li>- INDUSTRIALISATION</li> <li>- R &amp; D</li> </ul>	<ul style="list-style-type: none"> <li>- COMMERCIAL MANAGEMENT SUPPLIERS</li> <li>- APPROVAL RATING AND PROVIDERS</li> <li>- SUPPLIER EVALUATION</li> </ul>	<ul style="list-style-type: none"> <li>- PRODUCT MANUFACTURING</li> <li>- PLANNING AND CONTROL</li> <li>- MAINTENANCE OF PLANTS AND MOULDS</li> <li>- OPTIMISATION</li> </ul>	<ul style="list-style-type: none"> <li>- RAW MATERIALS</li> <li>- INSERTS AND ADDITIONAL PRODUCTS</li> <li>- FINISHED PRODUCT OR RESALE</li> <li>- PACKAGING AND TRANSPORTATION</li> </ul>	<ul style="list-style-type: none"> <li>- INSTALLATION</li> <li>- MAINTENANCE</li> <li>- FEEDBACK FROM MARKET</li> <li>- COMPLAINTS</li> </ul>

STAFF PROCESS

QUALITY SYSTEM	PRODUCTION CONTROLS	CUSTOMER, SUPPLIER AND INTERNAL AUDITS	MANAGEMENT MEASUREMENT TOOLS	NON CONFORMITY AND CORRECTION ACTIONS	PROCESS CONTROL AND IMPROVEMENTS
BUSINESS MANAGEMENT	EDP MANAGEMENT	SAFETY AND ENVIRONMENT	CONTROLLING		
HUMAN RESOURCES	SELECTION OF HUMAN RESOURCES	INFORMATION OF HUMAN RESOURCES	EDUCATION AND TRAINING	EVALUATION AND MOTIVATION	

# RAILWAY INDUSTRY



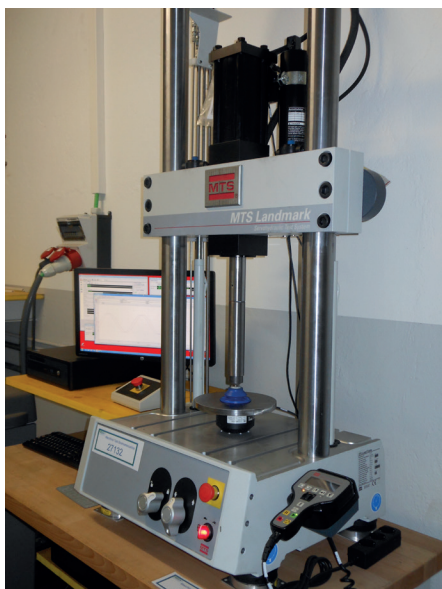
## REX AND THE RAILWAY SECTOR

Founded in 1935, Rex Articoli Tecnici SA entered the railway sector back in 1970. During this period, tunnel railway and tramway lines started being tracked with ballastfree systems. The sleepers, embedded with rubber boots and pads, are well suited for containing the transmission of vibrations to the underground and the buildings.

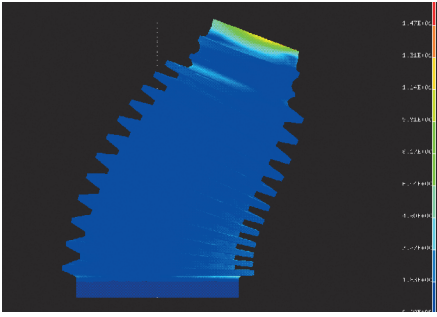


## DESIGN - RESEARCH AND DEVELOPMENT

Rex Articoli Tecnici SA researches, develops and produces specific materials and finished products, counting on an expert team of chemists and technicians specialised in elastomers and on its laboratories equipped for carrying out all the necessary tests. With the support of international institutes, it assists specialised engineers in finding appropriate solutions to problems connected with laying down increasingly faster and more sophisticated railway lines and with the construction of ultra quiet and extra comfortable suspension for the bogies of rolling stock. The company also deals with the mechanical and acoustic insulation of railway wheels. Moreover, it collaborates with other companies in the sector in order to develop, produce and distribute elements pertaining to railway construction such as level crossings, under-ballast rubber plates and track panels.







## A. STUDY OF THE MATERIALS AND THE APPLICATION

Rex Articoli Tecnici SA helps designers develop and choose the optimal items and materials. It has simulation systems and a well-equipped laboratory to run the necessary tests, working in close cooperation with external institutes approved by the various competent authorities.



## B. COMPOUNDING AND DEFINING MATERIALS

The compounds are produced in the factory, and raw materials are procured from approved international suppliers.

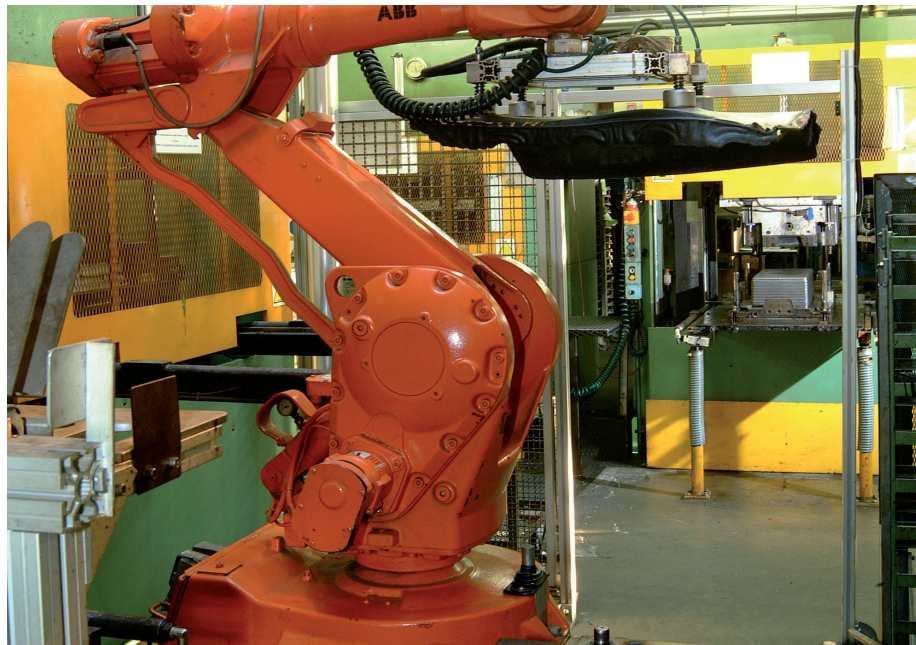






## C. MOULDING OF THE ITEMS

Vulcanisation is made using compression, transfer and injection-moulding processes. Rex Articoli Tecnici SA also has a plastic injection-moulding department. The metal parts are treated and primed in the same building to obtain the best adhesion.



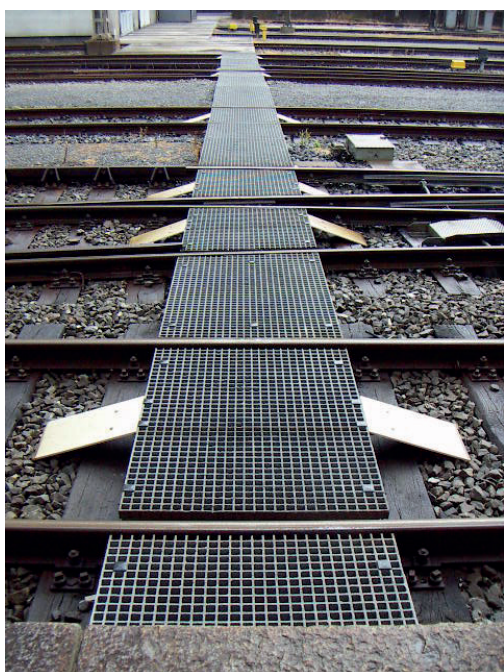
## D. ASSEMBLING AND CHECKS

The company checks and assembles its own products or combinations with the products provided by customers and assembled in-house.



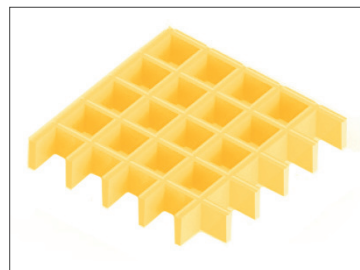
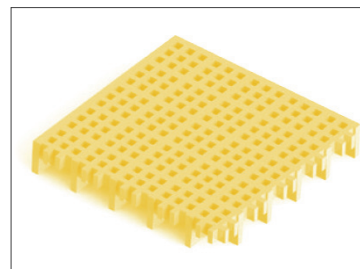
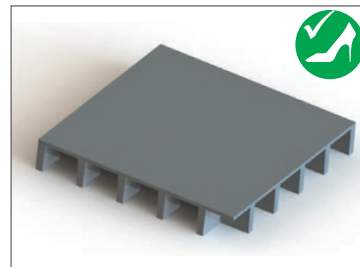
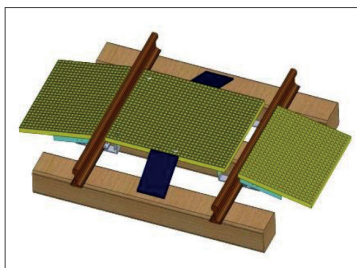
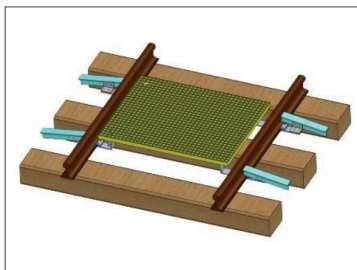
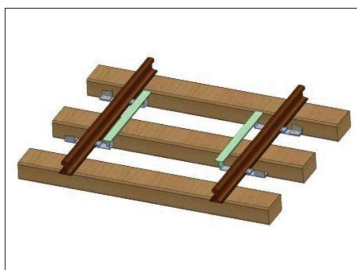


Highly resistant Swisscross level-crossings that are easy and quick to assemble.

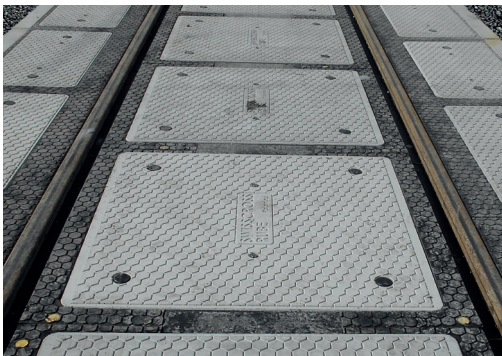


## A. SERVICE CROSSING "GFK"

The resin Swisscross crossings delivered with mesh or flat upper surface are especially suitable for building service crossings in rail stations and escape zones for metro trains and at tunnel exits. The "Antivib" system reduces the propagation of vibration from the rail to the crossing for longer lasting materials and assemblies. The resin structures are fire resistant and conform to most international regulations concerning smoke emission in case of fire.

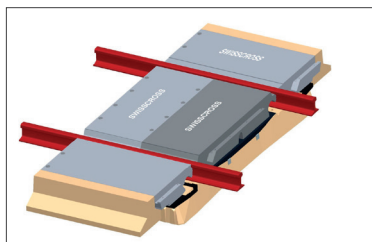
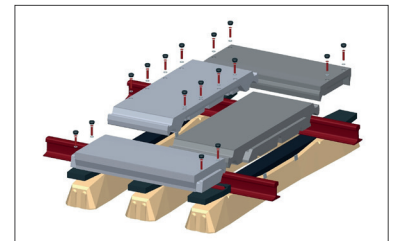
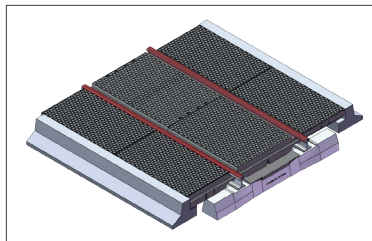






## B. RUBBER CROSSING "HD"

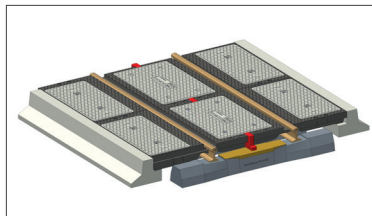
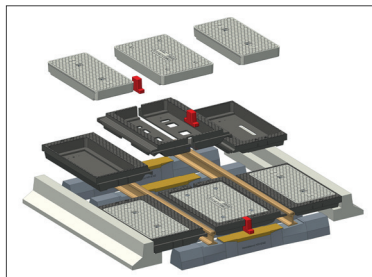
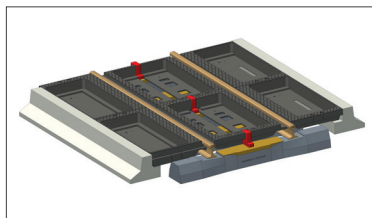
Resistant to the crossing of vehicles in excess of 35 tons. The passage between the asphalt and the external element can be protected by a reinforced concrete support that can be provided directly by the company. The special joint makes the mounted platform particularly solid, long-lasting and homogeneous.



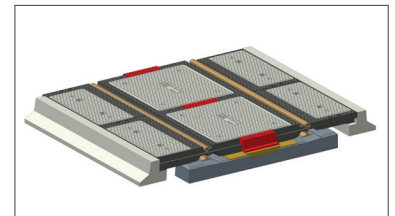
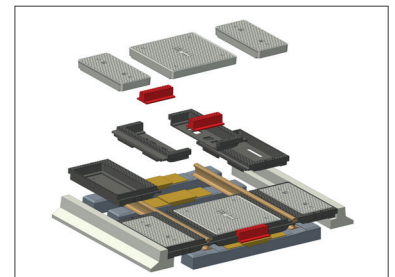
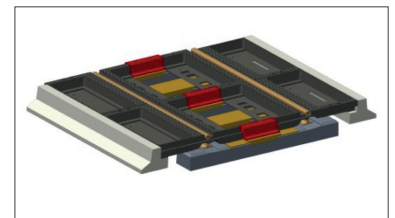
## C. RUBBER-CONCRETE CROSSING "RUBE"

The new RUBE model by Swisscross offers the advantages of both the rubber and the concrete materials. It offers better anti-vibration and anti-noise properties, higher weight resistance and lower deformation, quick and rational assembly, longer durability, better performance in snow and rain conditions, high stability. The load is distributed across 3 sleepers. There is electrical insulation between the rails.

### RUBE 1000



### RUBE 1435

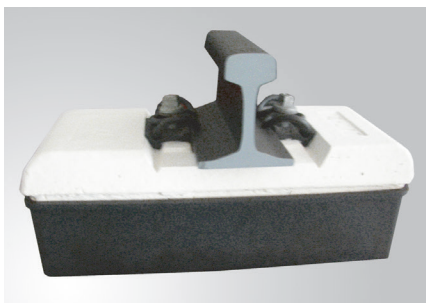


# 002 RUBBER-ELEMENTS-FOR BALLASTLESS-RAILTRACKS

The application of elastic boots, combined with special microcellular rubber pads featuring special static and dynamic characteristics, has made this system a success for applications in and outside tunnels. Several projects have been carried out in the sector of high speed-, underground- and urban tramway-tracks.

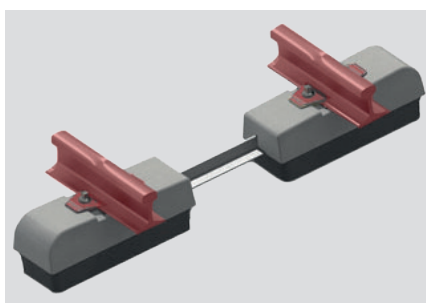
In Switzerland the first ballastless railtrack built with Rex Articoli Tecnici SA rubber products dates back to 1978. Ever since then, this sector has experienced a fast development both in Switzerland and abroad and this has led to the optimisation and search for several new solutions and applications. Rex Articoli Tecnici SA has taken part in the implementation of several projects for the Swiss Federal Railroads and abroad.

## A. BIBLOCK SLEEPER TRACKS WITHOUT CONNECTION BAR



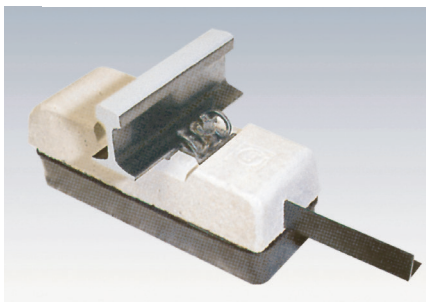
Biblock sleepers without connection bars of the LVT type have been used in the projects pertaining to the new transversal line crossing the Alps (Zimmerberg, Lötschberg and Gotthard). This system is widely used abroad (The Channel Tunnel, Hong Kong, Taiwan, Brazil and the USA).

## B. BIBLOCK SLEEPER TRACKS WITH CONNECTION BAR

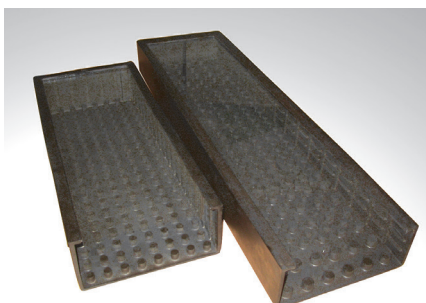


Rubber boots and pads have been initially developed for biblock sleepers with connection bar and have been used in several Swiss tunnel constructions such as Bötzing, Grauholz, Mattestetten-Rothrist and in different railway stations: Zürich, Kloten and Lausanne. Rex elements were inserted in the project of different metro lines abroad: Brazil, Egypt, Greece, France and Italy.

## C. UNDERGROUND AND TRAMWAY TRACKS



Having different possible applications in the field of the railtracks for undergrounds and tramways, Rex Articoli Tecnici SA produces boots and the microcellular pads with a static and dynamic stiffness that are remarkably interesting. Vibration damping may either occur through the application of special rubber pads or by employing special profiles, optimised by means of simulation, which the company can execute in its own laboratories.



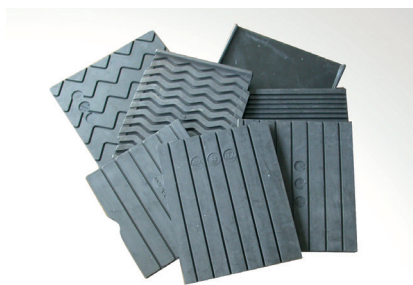


# 003 SPECIAL-PRODUCTS-FOR-RAILTRACKS AND-ACOUSTIC-INSULATION

The company supports designers and engineers in developing and choosing materials. It also provides simulation systems and an equipped laboratory for all the analyses required. It collaborates closely with external institutes that have been recognised by the bodies in charge.

Rex Articoli Tecnici SA has an impressive laboratory capacity and works alongside external institutes to help engineers develop new applications. Special attention is given to the rational use of raw materials, optimal energy savings and modern technologies respecting the environment and sustainability, to achieve an economically valid product.

## A. RAILPADS AND BASE PLATES



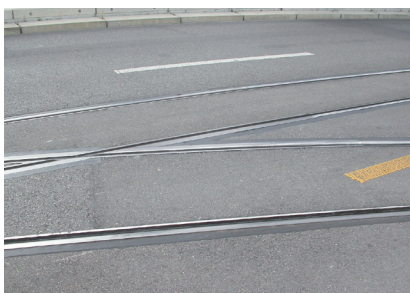
The many railpads and baseplates available feature characteristics that vary according to applicative and structural requirements. Profiles are optimised by simulation and may be produced either in compact or expanded materials.

## B. RAIL ACOUSTIC PROTECTION



Special acoustic protection applied to rails can result in a reduction of 4 to 5 decibels.

## C. CUSHIONS



Cushions made of special rubber agglomerates may be very useful for acoustic protection. A special version is also available to avoid stray current propagation.

## D. UNDER-BALLAST



The under-ballast slabs are made of rubber agglomerates mixed with polyurethane especially studied for railroad constructions; they can also be delivered with a fabric-finished or compact rubber surface.

# 004 RUBBER-AND-RUBBER/METAL-ITEMS-FOR THE-CONSTRUCTION-OF-RAILWAY-VEHICLES

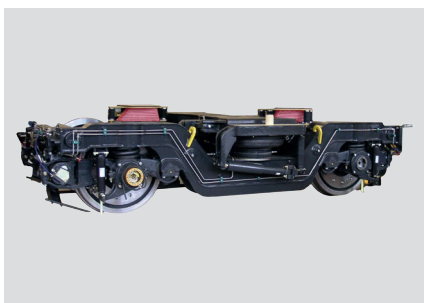
Rex Articoli Tecnici SA develops and produces vibration damping elements for the widest range of applications. In the railway vehicle sector, it collaborates with engineers to solve problems pertaining to the propagation and containment of vibrations.

For railway bogies, it produces specific rubber-to-metal elements such as suspensions, supports, and shock absorbers. The metal surface is specially treated to reduce corrosion, even under extreme conditions. The materials employed are internally developed and optimised for their application.

## A. RUBBER TO METAL TECHNICAL PARTS



Special applications are developed and produced for new constructions and overhauls.



## B. BELLOWS



Rex Articoli Tecnici SA produces all kinds of bellows and protections with different materials. The products can be tested in internal laboratories, using test machinery especially built to the specific requirements of the customer.

## C. PROTECTIONS



Protective elements for moving parts in freezing environments made with special materials which are resistant down to -30 °C

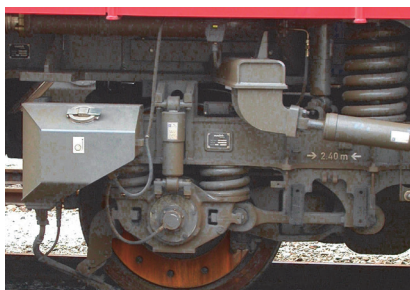


## D. SPECIAL SPRINGS AND SUPPORTS



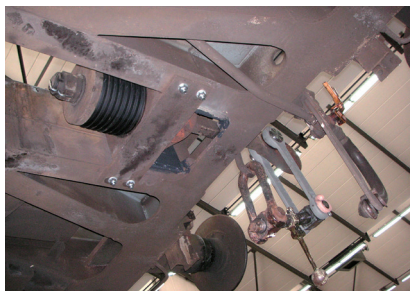
Special rubber ring springs are used for low height wagons travelling on railways with small curvature radius.

## E. RUBBER AND RUBBER TO METAL JOINT



The firm defines and optimises rubber joints at the specific request of the customer.

## F. SHOCK ABSORBER FOR WAGON COUPLING



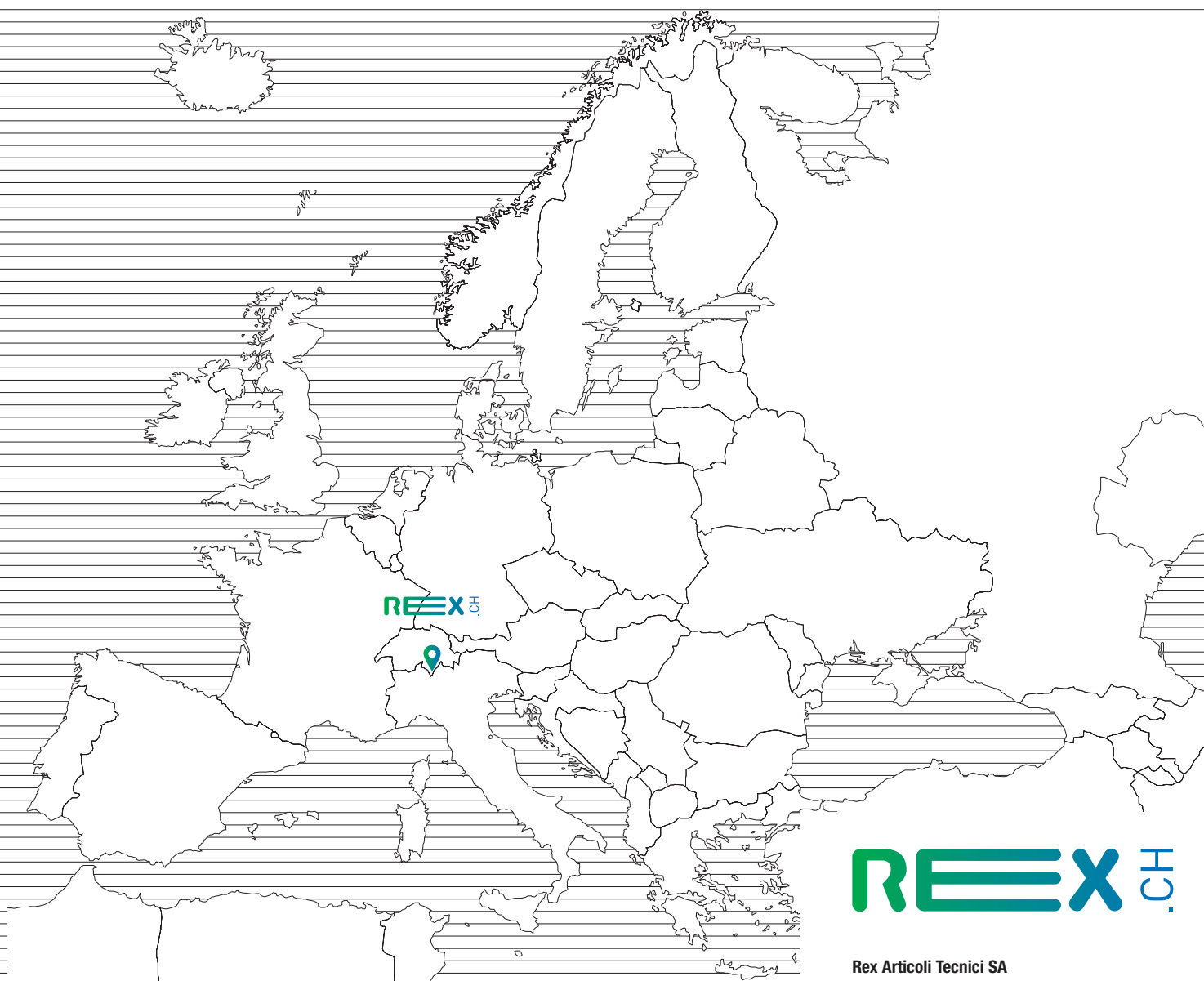
The shock absorbers of the wagon coupling are exposed to very high static and dynamic deformation. The practical tests are endorsed with external laboratories.

## G. SPECIAL RUBBER TO METAL DAMPING ELEMENT



Rex Articoli Tecnici SA develops special items in various fields with the customer.

# RAIWAY



## REX CH

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