**The company**

**Getzner – engineering a quiet future**

Getzner Werkstoffe is one of the leading specialists in the field of vibration protection. The company was founded in 1969 as a subsidiary of Getzner, Mutter & Cie. The solutions are based on the self-developed and manufactured products Sylomer®, Sylodyn® and Isotop®. They are used in the railway, construction and industry sectors to reduce vibrations and noise, improve the service life of bedded components and minimise the need for maintenance and repairs on tracks, vehicles, structures and machines.

Getzner distributes the vibration protection solutions worldwide. Alongside its locations in Buers and in Germany, the company also has offices in China, France, India, Japan, Jordan and the USA. Its tightly-knit distribution network in Europe is complemented by its distribution partners in the USA, South America and the Far East. Partners in a total of 35 countries around the world distribute Getzner Werkstoffe products to every location. By reducing noise and vibrations, Getzner is making a valuable contribution towards enhancing the quality of people's living and working conditions.

**Dates and facts – Getzner Werkstoffe GmbH**

Founded: 1969 (as a subsidiary of Getzner, Mutter & Cie)

Chief Executive Officer: Jürgen Rainalter

Employees: 240 in Buers, 100 abroad

2015 turnover: 77.9 million euros

Business areas: Rail, construction, industry

Headquarters: Buers (AT)

Locations: Amman (JO), Berlin (DE), Charlotte (US), Kunshan (CN), Lyon (FR), Munich (DE), Beijing (CN), Pune (IN), Stuttgart (DE), Tokyo (JP)

Ratio of exports: 85 percent

**Solutions**

**Getzner is a developer, manufacturer and installation consultant**

Getzner Werkstoffe is not just a developer and manufacturer of materials for the damping and isolation of vibrations. It is also an experienced consultant in all aspects relating to the installation of systems within the realm of vibration engineering. Right from the start of a project, experts from Getzner form an integral part of the system development and implementation teams. That cooperation starts by defining the overall context of the installation itself and frequently extends as far as the joint development of innovations. The wealth of experience and technical knowledge that the specialists have amassed in the field of vibration isolation enables the continuous creation of intelligent system solutions incorporating elastic materials that ensure cost-effectiveness, sound protection and comfort.

Services

* The handling of complex, international projects (rail, construction, industry)
* Vibration, mechanical and acoustic measurements using our own large-scale testing rig or on site
* Calculation model to determine the "maximum vibration attenuation" (developed in-house)
* Complete installation of solutions (e.g. of under ballast mats)
* Individual on-site supervision and installation advice
* Lay-out plans, produced using CAD software
* Calculating the insertion loss and insertion efficiency
* High-tech testing laboratory
* Finite element calculations and simulations
* Efficiency-testing for multi-component systems
* Product development in cooperation with universities, research and testing institutions, as well as with railway companies and various manufacturers

**The Getzner materials**

Getzner Werkstoffe develops and produces continuously (in one piece) poured polyurethane mats for isolating vibrations. The solutions provided by these materials ensure high quality working and living conditions by decoupling rail tracks, entire buildings, parts of buildings or machines from vibrations. Vibration protection using the materials from Getzner is practical both at source and for the recipient. Resilient bedding of the vibration exciter – e.g. a motor, air-conditioning unit or a track – is an efficient way of reducing the propagation of structure-borne noise. Elastic decoupling of the recipient – whether a building or a sensitive piece of equipment, etc. – prevents vibrations having a detrimental effect on quality of life and equipment functionality. Getzner also produces a variety of moulded parts, develops custom-built materials and bonds polyurethane to other types of material if required. Getzner is the only company in the world that provides all three technologies from a single supplier and boasts more than 40 years of experience.

**Effect of the materials**

* Fewer vibrations and less noise
* Higher track availability, less maintenance required and therefore lower maintenance costs for railway lines
* Longer service life of the bedded components (less wear)
* Greater comfort (e.g. for passengers, machine operators, in residences)
* Greater precision (e.g. machines)

**Sylomer®by Getzner**

Sylomer® has established itself as one of the leading materials in the vibration isolation market. One of the areas in which it is used is to provide effective noise protection in buildings by installing suspended ceilings. Sylomer® ensures that rooms affected by vibration are pleasant places to use. Ten different types of Sylomer® are available as standard. Its properties can however be modified in order to meet specific requirements.

**Sylodyn® by Getzner**

Sylodyn® provides an additional enhancement to the dynamic properties of Sylomer®. Sylodyn® is a closed-cell elastomer that does not absorb water. The material is used as vibration protection on local and inter-city railway lines, but also for isolating impact noise in floors and staircases, in bearings of buildings or machines, or for isolating noise between walls, floors and ceilings. Five different grades of Sylodyn® are available from stock. Its properties can be modified in order to meet specific requirements.

**Special materials** Sylomer® HD – high damping

Sylomer® FR – fire resistant

Highly resilient bearings

Construction Mat

**Properties of Sylomer® and Sylodyn®**

* Reliable, homogeneous and permanent elasticity (verified for over 30 years)
* Unaffected by short-term excess load, even if extreme
* Water resistant (even in standing water) and fire retardant (if required)
* Direct use by heavy vehicles is not a problem
* Non-complicated way to compensate for construction tolerances
* Streamlined construction costs due to simple and fast installation
* Available in various sizes and constructions (variations in density, thickness and surface of the material)
* Long-term stability

**Getzner's products for the rail sector**

One of the primary problems associated with rail transport is vibrations that are transferred from the track superstructure into the surrounding area. Humans perceive these vibrations in the form of a trembling in the ground or structure-borne noise. The other main problem relates to the cost of maintenance work that needs to be carried out on the railways as a result of wear and tear caused by insufficient elasticity within the track. Getzner develops highly-elastic products and systems to attenuate this type of vibration, successfully reducing the cost of maintenance work required due to the wearing of superstructure components and rolling stock. These products, which were developed by Getzner's own researchers and have been designed to cope with all axle loads and speeds, are used all over the world and are leading products in the railway sector.

The economic solutions provide highly effective vibration protection for all areas:

* Standard-gauge railway
* High-speed
* Urban transport (light railways, trams and underground lines)
* Heavy haul
* Local rail

**Getzner solutions for the rail sector**

**Rail pads**

Rail pads are elastic polyurethane mats which are installed directly under the foot of the rail. They have a defined stiffness and increase the elasticity of the ballasted track. Improved load distribution results in a more comfortable ride and less wear and tear on the track superstructure. The increased elasticity has a positive effect on the wearing of superstructure components and rolling stock. Getzner Werkstoffe offers a full range of rail pad designs in any stiffness and for all rail applications.

**Baseplate pads**

More and more modern railway lines are being built using slab-track systems. Highly-elastic Getzner baseplate pads are used on tracks of this type, in order to ensure elasticity. They are placed between the rib plate and the concrete slab. Elastic baseplate pads maintain the load-distribution qualities of the rail and reduce vibrations caused by irregularities in the wheels and track. By properly distributing the stiffness of the baseplate, it is also possible to reduce the level of rail deflection caused by the rolling stock. Taking into account the special requirements in each case, Getzner Werkstoffe has carried out a wide range of projects with these products in over 30 cities worldwide and on various high-speed lines around the world.

**Insertion pads for sleeper bases**

Slab track systems require sufficient elasticity to activate the load distributing characteristics of the rail. In this respect, there is a wide range of possibilities for the use of elastic components. Elastically mounted sleeper blocks have the advantage of reducing the level of airborne noise emissions, due to the additional mass through which the vibration must travel. The larger elastic load bearing surface also results in lower edge pressure. Dual-level elasticity additionally serves to mitigate the amount of pressure exerted on the insertion pads and reduces the strain placed on the rail fastening. As Getzner insertion pads can be manufactured to any desired stiffness, it is possible to meet a very diverse set of needs. This system is generally employed in tunnel sections of various types.

**Sleeper pads**

Sleeper pads improve vibration isolation, help to reduce stress and wear on the ballast under the rails and help to improve track stability. They can be installed both in high-speed rail lines and in lines with high axle loads, as well as in existing standard gauge lines, during repairs and retrofitting. The sleeper pads are installed on the sleepers during the production process using an optimised bonding system. As a result, no additional work is required at the installation site. Installation is quick, unaffected by weather conditions and can be carried out with minimal service interruptions.

**Mass-spring systems**

Bearings for mass-spring systems are used in applications in which there are extremely stringent requirements for protection against vibration and structure-borne noise. Getzner's bearings for mass-spring systems are highly efficient in helping to protect residents living in the vicinity of railway lines from the effects of noise and vibrations. The effective isolation of vibrations also has a positive effect on the prices of properties affected by vibrations. Getzner offers the following three types of bearings for mass-spring systems. The type of solution used depends on the economic and technical considerations. The lowest natural frequency that has been achieved is approximately 5 Hz in mass-spring systems constructed for light rail and standard gauge railway lines. Mass-spring systems using bearings by Getzner have been installed in over 40 cities, on high-speed lines and on various standard gauge lines worldwide.

**Mass-spring systems for trams**

Light mass-spring systems, as a variation of a full-surface bearing system, are primarily used in urban rail networks. With this type of construction, the entire track structure is isolated from the surroundings using base and side mats. This simple yet highly cost-effective solution using Getzner mats has proven its value around the world and is used in many cities.

**Under ballast mats**

The installation of under ballast mats by Getzner enables a high level of track elasticity to be achieved. Some of the reasons for installing mats of this kind include the reduction of secondary airborne noise, vibrations and wear upon the ballast. When selecting suitable ballast mats, it is crucial to take into account the specific vibration-related requirements of the project involved. The efficiency of Getzner ballast mats is based upon the ability to precisely determine their dynamic stiffness. They also stand out in terms of quality and economy. They are easy to work with, can be installed quickly and can even be driven over by heavy construction equipment. Using a special installation method, Getzner ballast mats have also proven extremely useful in track retrofits. The efficiency and technical superiority of Getzner under ballast mats is reflected in the fact that over 3 million m2 have been installed around the world in high-speed lines, standard gauge lines and light rail systems.

**Continuous rail mounting**

Getzner's continuous rail mounting is a continuous, elastic rail foot mounting with the ability to compensate for differences in height resulting from installation-related factors. The stiffness and vertical rail deflection are specified precisely in advance and ensured by using the proper selection of materials. Continuous rail mounting is an efficient and cost-effective solution.

**Rail groove fillers**

Urban rails and tracks that are crossed by other road users are a typical location in which rail groove fillers are used. They make it possible to close the groove that is needed for the wheel flange, thereby eliminating a hazard for vehicles crossing the tracks. Other locations in which this product is used are at level crossings and tracks at industrial facilities. Getzner supplies rail groove fillers for all of the most commonly encountered rail profiles.

**Floating floors for rolling stock**

Getzner's floating floors efficiently isolate vibrations. They protect carriages from undesirable vibrations during the journey. Structural vibrations significantly decrease, which in turn extends the service life of the carriage and its components.

**The world of Getzner: providing good vibrations in all areas and sectors**

**Getzner's products for the construction sector**

**Elastic mountings for buildings**

In an urban setting, sites that are prone to vibration pose a major challenge to architects and planners alike. Vibrations emanating from railway lines or industrial installations located nearby can generate noise and vibrations. Isolating buildings or parts of buildings prevents tremors and the negative side effects they can cause. Getzner is a specialist in the elastic mounting of buildings, floors, stair systems, wooden constructions and individual building components.

**Getzner's products for industry**

**Elastic bearings, installation elements, seals**

The micro-cellular, elastic materials produced by Getzner Werkstoffe provide individual industrial solutions to meet complex requirements. High-tech elasticity is used in a large number of industrial applications.

**The following are just a few**

* Elastic mounting pads and strips for the vibration isolation of tooling machines, textile machinery, air-handling units, crane rails and CHP plants
* Elastic elements for the isolation of motors, gearboxes, pressurised lines, electronic components and façade elements
* Highly-flexible seals for housing doors, hydraulic cylinders and electronics housings
* Flexible elastic press mats for gripping tools
* Transport rollers and belts
* Buffers and stops for cable cars
* Wear-resistant surfacing, etc.

**Getzner Werkstoffe and the environment**

Protecting the environment has formed an integral part of Getzner's corporate objectives for over a decade now.

**Environmental Statement**

Getzner attaches great importance to using raw materials responsibly. For this reason Getzner has introduced self-imposed guidelines, which it uses to implement its ambitious environmental protection goals in its everyday activities. These measures are documented in a separate Environmental Statement.

Protecting the environment is of great importance in all areas of the company:

* Developing sustainable logistical concepts
* Using efficient product design to reduce the quantity of rejects and waste
* Using recyclable materials and optimising packaging materials
* Using alternative and climate-friendly forms of energy (e.g. the rebuilding of the central power plant in Bürs in 2010)

These are just a few of the measures that Getzner is taking in order to protect the environment. A full version of the company's Environmental Statement can be downloaded from its website at www.getzner.com.

**Protecting the environment with our company brochures**

Getzner Werkstoffe outsources the printing of its brochures to a local company and ensures that the brochures are produced in a climate-neutral way. Within the very first year, the decision to print the brochures in this way has resulted in offsetting just under 70 tonnes of CO2 in the state of Vorarlberg alone. The relevant environmental hallmarks appear on all of the company's printed matter.

It would give us great pleasure to send you more detailed information on this initiative and we look forward to hearing from you.

Getzner Werkstoffe GmbH

Stephan Moosbrugger

Herrenau 5

6706 Bürs

Austria

T +43 5552 201 0

stephan.moosbrugger@getzner.com

www.getzner.com

ikp Vorarlberg GmbH

Wanda Mikulec-Schwarz

Gütlestr. 7a

6850 Dornbirn

Austria

T +43 5572 398811

wanda.schwarz@ikp.at

www.ikp.at