



STRAIL[®]lastic

STRAIL[®]WAY



the partner of railways.

1 | KRAIBURG STRAIL®

STRAIL® times three: that is what railways count on.

STRAIL® level crossing systems | STRAILastic track damping systems | STRAILway polymer sleepers

Below rails, between rails and around rails – we have divided our products and systems into three sections, the three central pillars. Each one offers a multifaceted program, connected by two strong arguments: our tailor-made customer solutions and the positive effects of each system on the environment (due to the use of recycled materials). If you want a really sustainable measure for your track, there is no way around STRAIL®.

STRAIL® as a term for level crossings was created by merging the words street and rail. At our headquarter in Tittmoning, Upper Bavaria (close to the Austrian border), we focus on developing the three product families.

As mentioned above, all three product ranges are based on recycled material: vulcanised rubber compounds for STRAIL® level crossings and STRAILastic track damping systems and an extruded, fibre-reinforced plastic recycle for STRAILway polymer sleepers. That is why KRAIBURG STRAIL® makes a sustainable contribution to environmental protection. We are certified according to ISO EN 9001 and a Q1 supplier of Deutsche Bahn AG.

KRAIBURG STRAIL® GmbH & Co. KG employs approx. 160 people in Tittmoning. There we have been creating solutions for all matters relating to rails for over 50 years. We constantly expand our product lines by adding further components for level crossings, damping elements and also sleepers for tramway and railway lines.

So far we could successfully combine the flexibility of our medium-sized company with the strong resources of the KRAIBURG group in 50 countries and under a wide variety of conditions.

KRAIBURG Holding GmbH & Co KG operates on a global basis. With 10 production plants and more than 2,300 employees we could generate a group turnover amounting to 545 million Euros in 2017. Since 1947 KRAIBURG has been firmly established in the rubber industry and has become an indispensable partner for many sectors by offering a wide product range, unique solutions and high-quality products as well as in future-oriented developments.

➤ KRAIBURG STRAIL® - / the partner of railways.

2 | STRAIL® CROSSINGS



Less installation time > makes STRAIL® unique.

KRAIBURG STRAIL® level crossing systems connect street and rail (street meets rail.) in a fast, safe and reliable way. They are made of vulcanised rubber recyclates and while being produced in a standardised way, they are always assembled individually and adjusted to fit a customised solution – because every level crossing is different.

As varied as the requirements may be – STRAIL® can keep up. From pedestrian paths to heavy traffic, there is a solution for making every level crossing safe – and even for preventing trespassing by adding a special surface.

From the STRAIL® premium system to innoSTRAIL, pedeSTRAIL, pontiSTRAIL (NEW > pontiSTRAIL inner panel) and veloSTRAIL, you can mix all elements according to your needs.

Due to our patented and universal interlock system it is possible to join all types of STRAIL® panels. The standard interlock system prevents gaps and offers positionstability in case of diagonal traffic.

STRAILgrid is a universal panel suited for every installation situation. Its main function is to prevent pedestrians and animals from trespassing the track area.

profISTRAIL is used in and in front of maintenance halls and industrial roads. It allows a smooth and safe crossing of delivery vehicles and forklift trucks.

pedeSOLAR this LED lighting can be optionally installed at level crossings to increase safety.

But it does not end here > our constructions have been further developed as well:

STRAIL broad kerbstone

The installation of large prefabricated foundation parts is not required here so that it is not necessary to dig out ballast at the rail head. The filling structure beneath the rail stays intact and therefore it does not need to be re-done. Also, there is no need to mix adhesive mortar (levelling layer) since the boards are directly set onto the compacted ballast 0-45. Moreover, the rails are not fixed between concrete foundations anymore and can be corrected with relatively little effort.

This saves between 40 and 50% of installation time which consequently means lower costs due to shorter blocking periods.

STRAIL drainage kerbstone

The D-kerbstone is structurally identical to our T-kerbstone but has also an integrated drainage system.

➤ STRAIL® systems - / fast. safe. reliable.



STRAIL^{astic}

STRAIL^{way}



STRAIL® – the premium system for all railway crossings.



STRAIL®, the premium system, is perfectly suited to the most common usage profiles. It will endure even heavy loads for a long time, and yet is quick and easy to install. You should choose the premium version of STRAIL® for heavily frequented crossings used by all categories of vehicle.

- ◆ compact panel units (600 mm or 1,200 mm inner and 1,200 mm outer panels)
- ◆ simple and economic track maintenance
- ◆ for main lines



innoSTRAIL – the price advantageous alternative.



We recommend the highly economical innoSTRAIL system for crossings with medium to high levels of load (depending on the track structure). The system which is independent of sleeper spacing, consists of textile reinforced full depth rubber panels, both for inner and outer panels.

- ◆ very economical
- ◆ independent of sleeper spacing
- ◆ no filler blocks required



pontiSTRAIL – the extra strong system for maximum loads.



The **pontiSTRAIL** outer panel system is designed for very heavy loads. It is particularly suitable for crossings that are used with above-average frequency by heavy vehicles. As of now there is also a **pontiSTRAIL** inner panel. The outer panels are available in 910 mm and 713 mm (the latter are therefore compatible with previously installed STRAIL® T-kerbstones).

- ◆ tolerates horizontal deviation in track position
- ◆ bearer and panel can be replaced separately
- ◆ no bearing on sleeper surface



pedeSTRAIL – the secure crossing for pedestrians.



pedeSTRAIL was developed specially for pedestrian crossings, railway stations, tram stops, depots and industrial plants. In spite of the larger size of 900 mm weight has been reduced due to integrated caverns at the bottom. Here too, full rubber panels are used that do not depend on sleeper spacing.

- ◆ low installation costs
- ◆ very easy installation and removal
- ◆ very long service life



veloSTRAIL – inner panel system eliminating the flange groove.



veloSTRAIL was particularly designed with emphasis to allow a convenient passage for the physically disabled and cyclists. An easily replaceable flangeway element eliminates the flange groove and is easily replaceable without removing the inner panel.

veloSTRAIL inner panels are available in 600 mm and 1,200 mm and are redesigned for a train speed of **max. 120 km/h.**

- ◆ safe crossing for cyclists and physically disabled as well as baby buggies
- ◆ suitable deflection under train wheel flanges during all ambient temperatures
- ◆ multi integrated interlock of flangeway element with the inner panel



3 | STRAILastic



Less installation time > save you money.

STRAILastic_R – the well-trying green track systems for all superstructures

If you want a low-maintenance green track, use one of our many green track systems. The wide range of or systems allows you to choose one according to visual criteria. There are systems up to the TOR (top of rail), below the TOR and even systems which leave the rail completely free and accessible. Good damping of solid-borne and air-borne sound, excellent stray current insulation, UV resistant and a long service life > those are only some of the advantages of our vulcanised rubber profiles. On demand, our grass track systems can be designed for emergency access.



STRAILastic systems up to TOR We help you to save construction time.

The optimised STRAILastic chamber filling systems are made of a high-quality new rubber rail foot profile in combination with chamber filling elements that reach up to the top of rail.

They are used for frame tracks as well as for sleeper tracks. Due to their special geometries, the profiles can be assembled easily and fast without bonding > and reduce construction time significantly.

The height of the chamber filler offers another benefit: You can do without joint sealant > and minimise running maintenance costs.



STRAILastic –/ well-trying & innovative > use synergies.



You would like to save even more construction time?

Then use our track section base plate, STRAILastic_GRS.

Find out more about STRAILastic accessories on www.strailastic.com.

4 | STRAILastic



Less noise.

STRAILastic is the brand for track damping systems, for ideal solutions to highly-individual requirements regarding the effective reduction of noise and vibration emissions. STRAILastic offers sound protection directly at the rail, from the damping of the rail web and the modern sound protection wall or the narrow tramway curve to the Trans-European Magistral (mainline).

STRAILastic_IP – infill panels.

STRAILastic_IP sound protection walls for standard railings were installed for the first time in Oberwesel am Rhein (lower left picture) in spring 2015. In general, STRAILastic_IP is quickly and easily mounted to standard railings on bridges or retaining walls by using the stainless steel mounting rails that are pre-assembled in the factory.

Sound spreads from the sound event and reaches the infill panels which absorb one part of it. The other part that is reflected is systematically redirected into the ballast due to the inner incline of the acoustic surface. The ballast then absorbs it. The base material of STRAILastic_IP is a fibre-reinforced elastomer compound. We use only premium recycling materials in our mixing facilities.

With that, KRAIBURG STRAIL presents an additional and highly effective sound protection measure for railways in an exposed position that was created as a pilot project in cooperation with Deutsche Bahn AG.

STRAILastic_mSW – mini sound protection wall.

Our mini sound protection wall – a novelty on the world market STRAILastic_mSW elements (lower right picture) are even lower and are mounted directly to the sleeper head where they reduce noise very close to its source. The UV and ozone resistant material is the same as with STRAILastic_IP. The acoustic surface is very similar, however, the mini wall is installed below 45° at one or at both sides of the track. This means, it can be installed at any section of the track and even at positions where sound protection walls are still totally unimaginable. A project approval procedure is not required. STRAILastic_mSW was also created in cooperation with Deutsche Bahn AG.

STRAILastic –/ the gentle track.



5 | STRAILWAY



Full recycle polymer sleepers > less CO₂.

Environmental protection can go beyond: sometimes the danger lurks under the rail: wooden sleepers are normally soaked in tar oil derivate (creosote). Those are problematic for our environment and health. In many cases they have already been banned. However, there was no adequate alternative. But now we are introducing **STRAILWAY**, polymer sleepers made of extruded, fibre-reinforced plastic recycle. Special additives provide excellent mechanical properties. The difference to other polymer sleepers: Neither synthetic resin nor elaborate pultrusion procedures or especially produced parts like steel reinforcements are used. They belong to the **STRAIL**® since the end of 2014 and have been installed since 2015.

The weight, handling and treatment of **STRAILWAY** is similar to that of wooden sleepers. Also the panelling in the sleeper factory is the same. Maintenance of tracks can be carried out as usual. Thanks to the extrusion technique and subsequent cutting, different lengths and cross sections of defined properties can easily be implemented also for turnout sleepers or bridge beams.

This product is patented and following the bridge sleeper, also the normal track sleeper has been approved by EBA (Federal Railway Authority) for field testing for axle loads of ≤ 225 kN and velocities of ≤ 160 km/h for all sleeper types, hence also as a substitute for wooden sleepers.

STRAILWAY is highly-resistant against environmental influences and chemicals. Additionally, railway noise and vibrancy are reduced considerably.

STRAILWAY polymer sleepers as well as the new noise protection elements were created in together with **Deutsche Bahn AG** and are examples for sustainability that results from intelligent planning and conscious behavior in the railway system.

➤ **STRAILWAY** -/ we think green.

6 | QUALITY

Durable & reliable.

It has been our goal and a demand that we set on ourselves to always offer the best service to our customers. We want to outperform others in quality, product utility and customer service. Therefore, we

- ◆ thoroughly analyse problems to improve our processes
- ◆ always evaluate our customers' feedback and ideas
- ◆ look ahead to new development opportunities
- ◆ continuously improve even the tiniest details in all of our operations.

Our employees are motivated to incorporate these values into their daily work. To turn goals into reality.

At the time one of our systems leaves our production area, it has been tested, examined and checked over and over again – from the raw material to the finished product. We have been counting on the benefits of rubber for a long time. Its resistance, the simple assembly, its flexibility. What makes **KRAIBURG STRAIL**® products

stand out is their special production method that guarantees high durability.

We thoroughly test our suppliers for their compliance in documenting processes and product management. Our products are inspected by different testing institute on a regular basis. We have been working with TÜV/LGA for years (external supervision according to German Industrial Standard DIN/ EN 18200). Additionally, we apply certified energy management according to DIN/EN/ISO 50001.

And we are preparing for the future > we are going to introduce the environment management system according to DIN/EN/ISO 14001 in 2017.

This way we have made a name for ourselves also on an international level. Whatever the climatic conditions may be – our customers know that our products keep their form, quality and properties and that there will be no unpleasant surprises.



We test raw materials very thoroughly in our technical centre and new developments and product changes are subjected to close scrutiny at our test bench under realistic conditions. Thorough quality control in R&D and production are a matter of course to us.



7 | STRAILspirit



Our ideas secure your investments.

The most important key to success for every company is the people who work for it. A high amount of flexibility and creativity while being extremely capable is what characterises our team. Flat hierarchies give each person more responsibility and let our employees work together smoothly – because we are convinced that the quality of teamwork is decisive for success and customer satisfaction.

Being flexible, finding tailor-made solutions and synergies for our customers, thinking outside the box to solve problems – that are challenges our **KRAIBURG STRAIL**® employees love to accept.

A high number of our employees work together in our development departments. Developing and testing new materials does not only require much time and many resources but also good ideas and inventive talent, the experience of experts and quite an amount of patience. **And you are part of it all.**

Our systems grow and change with the demands and experience of our customers. Our flexible structure makes it easy for us to react fast and precisely.

When you invest in a **KRAIBURG STRAIL**® system you trust us and in turn expect reliability. We know that from day one you have to plan which follow-up costs could come up (e.g. for maintenance work). And of course you want to be safe from unpleasant surprises.

We are happy to talk with you about what we can do to give you that safety and to reward you for your trust.

➤ **KRAIBURG STRAIL**® -/ the partner of railways.



YOU & STRAIL®.

STRAILworld.

algeria argentina australia austria azerbaijan belarus belgium bosnia-herzegovina brasilia bulgaria croatia czech republic denmark estonia finland france gabun germany great britain greece hongkong hungary india indonesia ireland israel italy jamaica japan kazakhstan latvia lithuania luxembourg macedonia malaysia montenegro morocco netherlands new zealand northern ireland norway poland portugal romania russia serbia singapore slovakia slovenia spain sweden switzerland thailand taiwan tunisia turkey ukraine vietnam.

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www.strail.com



made
in
germany 

-/ KRAIBURG STRAIL® GmbH & Co. KG

STRAIL® level crossing systems | STRAILlastic track damping systems |
STRAILway polymer sleepers

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