



THE PRICE ADVANTAGEOUS ALTERNATIVE.

street
meets
rail.



LEVEL CROSSING SYSTEMS *for highest demands*

1 | APPLICATION

innoSTRAIL, the high-strength and durable covering for level crossings.

We recommend using **innoSTRAIL** for level crossings with medium to high traffic volume (> depending on the track structure). Compared to **STRAIL**[®], this system – which is independent of sleeper spacing –

is made up of bigger, 900 mm wide inner and outer panels, featuring a textile enforced tongue and groove area.



2 | ADVANTAGES

innoSTRAIL, the particularly economical system.

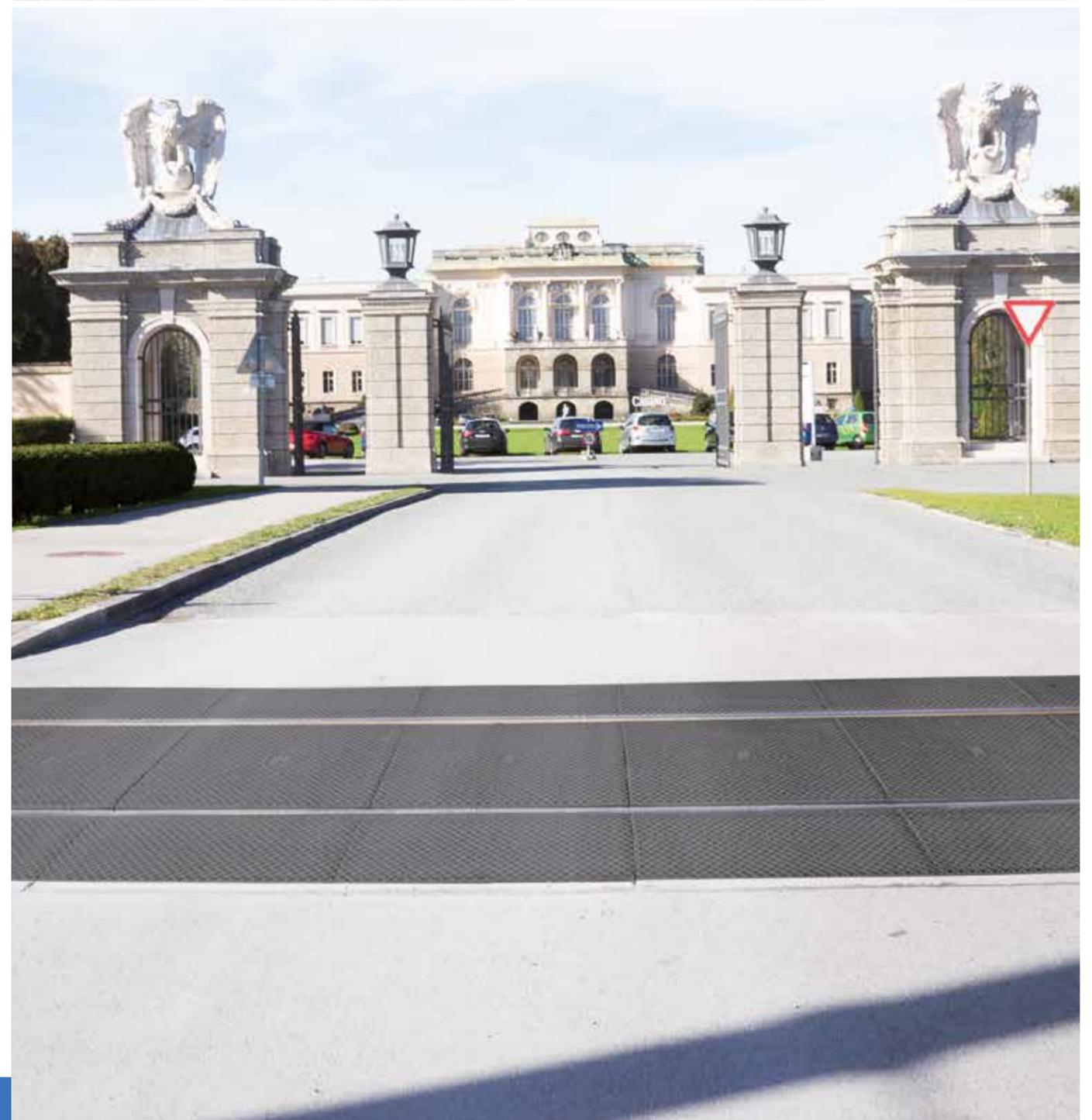
innoSTRAIL is a high-strength and durable covering for level crossings, which can be manufactured very economically due to the larger panel measurements. The system also does not require the use of filler blocks.

The system, consisting of full depth rubber panels, has an integrated, narrow flange groove and is connected to form a complete package using the lock tight system.

innoSTRAIL can be delivered suitable for any track superstructure.

The system thus combines cost advantages with a wide range of applications.

- ◆ price advantageous system
- ◆ independent of sleeper spacing



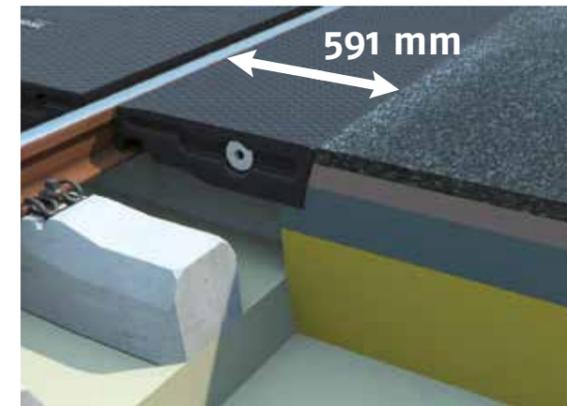
3 | DATA

innoSTRAIL – the highly economical system.

- 1** innoSTRAIL inner panel 900 mm wide, for 1,435 mm gauge (deliverable for all common gauges)
- 2** innoSTRAIL outer panel 900 mm wide, distance from outer side of rail > T-kerbstone: 713 mm
- 3** innoSTRAIL lock tight system (see page 7) > all parts heat treated steel and galvanised / rolled thread
- 4** innoSTRAIL road connection > version with 713 mm outer panel, kerbstone and prefabricated concrete subbase
- 5** T-kerbstone made of high-strength concrete C 70/85 (1,800 mm or 900 mm), special mortar and prefabricated concrete subbase 1,500 mm
- 6** tongue-groove connection > textile reinforced

In case of special types, an outer panel – distance from outer side of rail / T-kerbstone: 591 mm – can be delivered (e.g. for short sleepers, concrete longitudinal beams).

innoSTRAIL road connection: version without T-kerbstone with short outer panel for distance from outer side of rail / road connection: 591 mm



wear-and-tear layer (possibly poured asphalt)
 binding layer
 bituminous supporting layer
 substrate

mm in inches glossary:

1,800 mm = 70.87 inch
 1,500 mm = 59.06 inch

1,435 mm = 56.49 inch
 900 mm = 35.43 inch

713 mm = 28.07 inch
 591 mm = 23.26 inch



4 | INSTALLATION

innoSTRAIL quickly installed using an excavator.

Once the track has been brought to the proper height and width, the position of the level crossing is determined and the track superstructure is prepared. Subsequently, the kerbstones may be installed according to manufacturer's instructions.

The bitumen road connection is made up of several layers.

Afterwards, the bitumen road connection is constructed. Attention needs to be paid that it is made up of several layers, each of which needs to be compacted individually.

Then use the excavator bucket to push the panels together, until the lip can slide under the rail head. Next press the panel downwards. Installation of the panels starts in the center.

Alternatively (if there is no excavator on site): For inner panels, press the edge of the panel together using the installation lever and then hit it with the plastic sledge hammer, forcing the lip under the rail head.

With the help of the lock tight system, the panels are secured longitudinally into a gap-free package.

Detailed assembly instructions are included with delivery or available for download from www.strail.com.

Guarantee / Maintenance

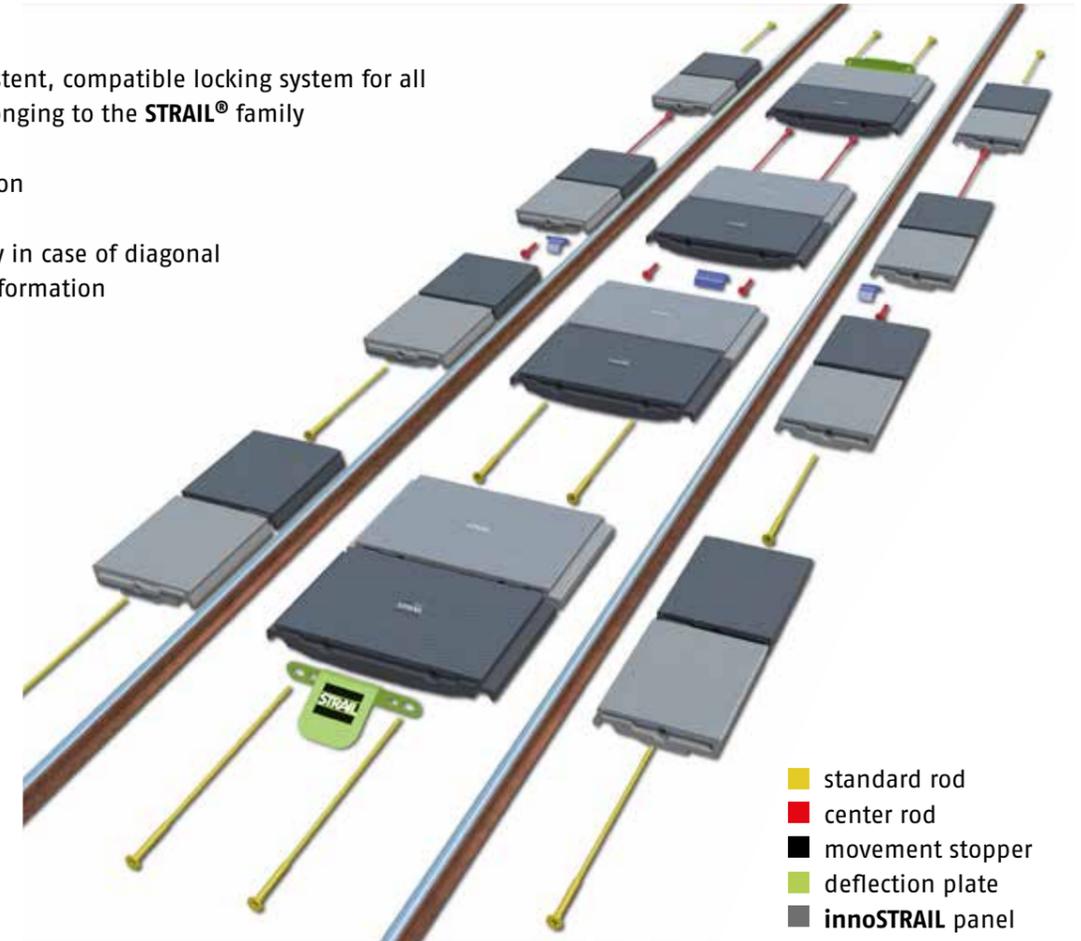
When properly installed according to installation instructions, we offer a guarantee on **innoSTRAIL** which goes beyond statutory warranty. **innoSTRAIL** requires no regular maintenance.

Service life of the level crossing depends on the respective traffic load. 15 years are the rule. Extreme increases or reductions in traffic can affect service life.

5 | LOCK TIGHT SYSTEM

simple, intelligent, patented.

- ◆ patented, consistent, compatible locking system for all panel types belonging to the **STRAIL**® family
- ◆ simple application
- ◆ position stability in case of diagonal traffic > no gap formation



6 | INTERESTING POINTS

Quality / Approval

Through our internal quality assurance, we are still able to trace back individual components of our products years after delivering them. All components are thoroughly tried and tested in a hands-on manner: raw materials in our pilot plant and innovations, as well as product changes using our test bench. 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.

We closely examine our suppliers in so-called supplier audits to ensure documented process and product management.

Since 1994, we have been certified in accordance with DIN ISO EN 9001, in addition to being a Q1 supplier of the Deutsche Bahn AG, as well as an A1 supplier of the SNCF.

All products belonging to the **STRAIL®** family have been approved and installed in nearly all major railroad countries. We are happy to answer any specific questions you may have concerning this subject.

Recycling / Return Policy

Our return policy offers you a significant advantage → „old panels“ which were bought from **STRAIL®** or at one of our **STRAIL®** partners can be returned to **STRAIL®**. We then recycle the panels and reuse them in our production process.

Our motto >> **conservation of valuable raw material and energy resources!**

If you choose to, you may drop **STRAIL®** panels off at any disposal site > **STRAIL®** rubber panels are classified according to the European Waste Catalog EWC. The waste code according to EWC for **STRAIL®** rubber panels is 160103. In accordance with this code our panels may be dropped off at any waste disposal company.

7 | FAQ

What you have always wanted to know.



◆ What are the **STRAIL®** products made of? (difference to other rubber panels)

All level crossing panels belonging to the **STRAIL®** product family are made of recycling and virgin rubber, while having the smallest, permissible flange groove. A special feature is that the entire panel is fully vulcanized, according to a special production process. On the basis of this complex production process it is possible to achieve outstanding product features and a significantly longer service life.

◆ Switches

In consultation with our design department, special, dimensionally accurate panels are manufactured for the full-surface covering in the area of the center and end parts of switches.

◆ Radii

On principle, full-surface covering of radii is unproblematic. Very tight radii are covered with a specific number of special radii panels.

◆ Application of **STRAIL®**, **pontiSTRAIL**, **innoSTRAIL**, **pedeSTRAIL** and **veloSTRAIL**

Depending on road and rail load, as well as individual local conditions, a perfectly suited product can be undoubtedly found within the **STRAIL®** portfolio. It is generally recommended to consult the responsible **STRAIL®** representative, who will gladly assist you in finding the right product for your respective area of application.



8 | THE STRAIL PRINCIPLE

we connect street and rail.



fast.

Traffic needs to flow, freely and quickly. With **STRAIL**® you simply are fast – for planning, building and maintenance. Our offers are typically drawn up within 48 hours. Your level crossing leaves our factory as early as two weeks after placing your order. Using a crew of 4-6 people and no additional machines, you can install a 9 m long crossing in merely three hours.

In case of track maintenance, **STRAIL**® can be removed and reinstalled quickly and without much effort. In addition, our experts are available virtually around the clock.

STRAIL® is profitable. From the outset.



safe.

Wherever safety is concerned, we accept no compromises. **STRAIL**® is different – ranging from its technically simple, yet fast and safe installation, to its ability to bear continuous loads on a daily basis without any gap formation.

The tongue and groove connection prevents – especially in case of diagonal traffic – the dreaded “sudden collapse” effect, well-known from other single-panel systems.

Products which are part of the **STRAIL**® family have the smallest, permissible flange groove. **veloSTRAIL** eliminates this gap entirely.

STRAIL®. Safety for your level crossings and for your investments.

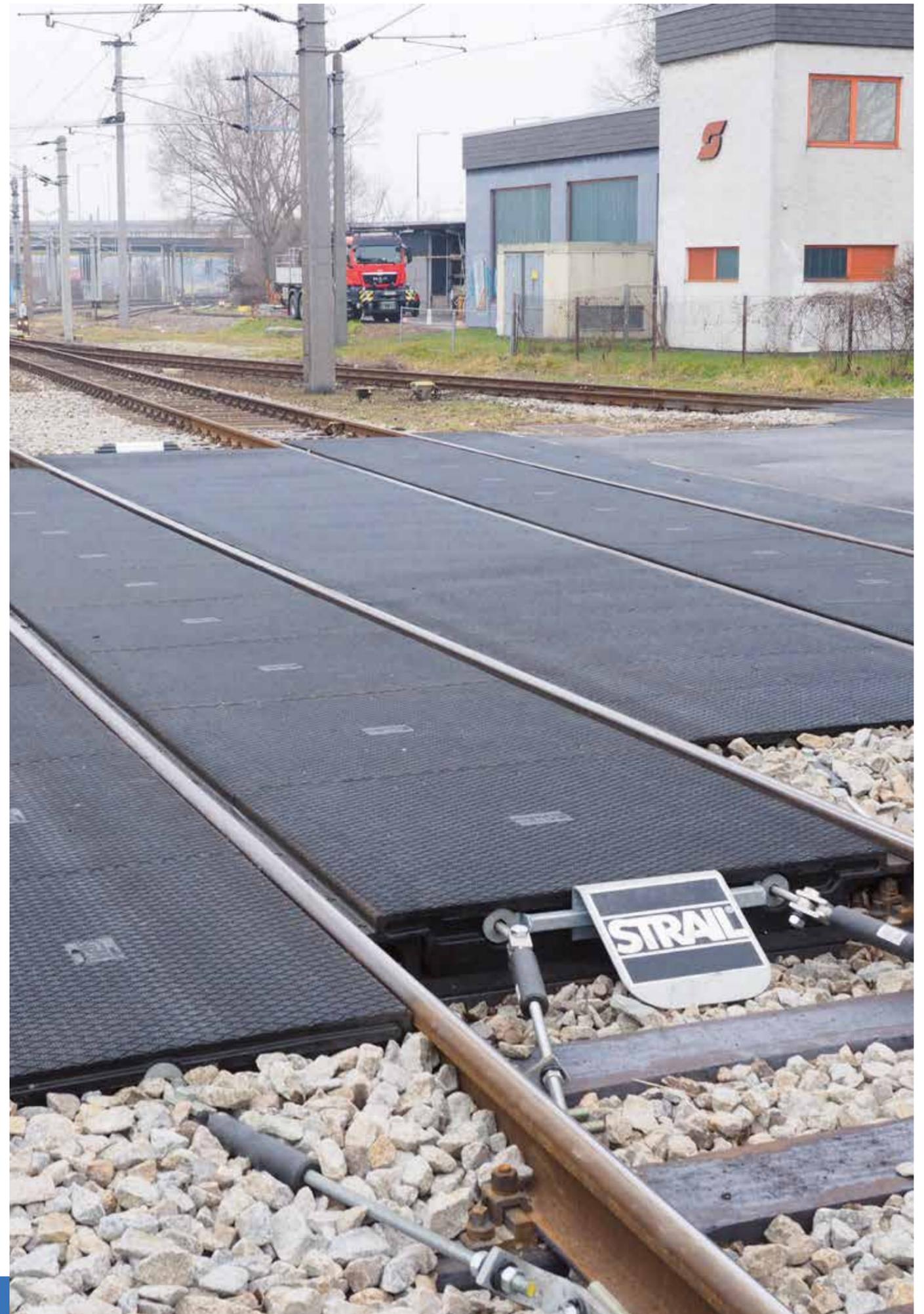


reliable.

Building level crossings is one thing. Keeping them in excellent condition is quite another. “Fit & Forget” is our motto; as a result: maintenance-free level crossings. Over 30,000 crossings under varying climatic conditions on five continents form the basis of our reliable technology and materials. Besides, your experiences help us to continuously perfect **STRAIL**®.

You benefit from the long service life of our products and with the support of the worldwide operating **KRAIBURG** group we have been your reliable partner for over 40 years.

STRAIL® fulfills your expectations.



www.strail.com



made
in
germany

A vertical bar of the German national flag colors: black, red, and gold.

-/ level crossing systems

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