



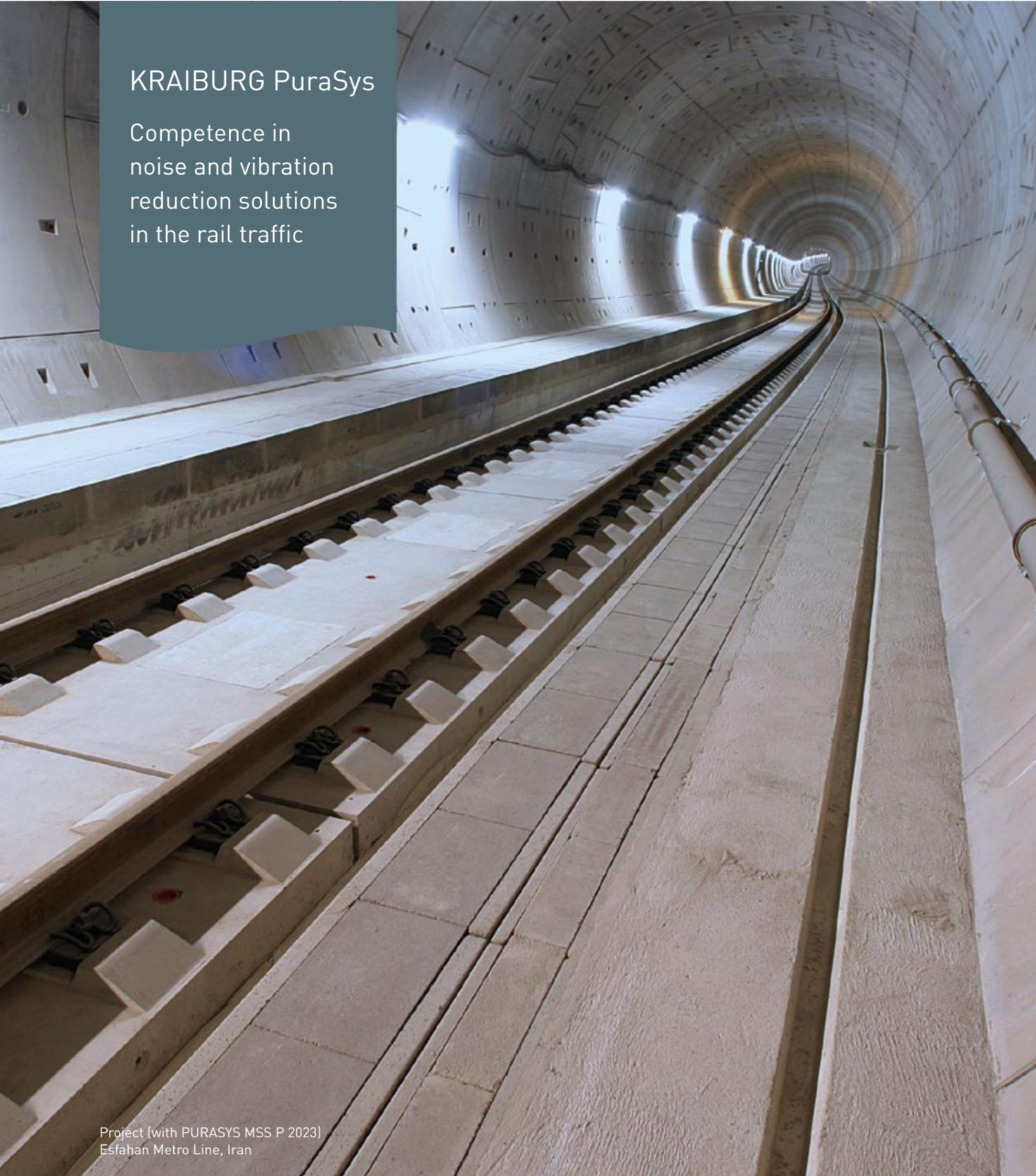
Acoustic and vibration isolation in rail traffic

Elastic bearings made of polyurethane

Providing peace and quiet along the track.

KRAIBURG PuraSys

Competence in noise and vibration reduction solutions in the rail traffic



Project (with PURASYS MSS P 2023)
Esfahan Metro Line, Iran

KRAIBURG PuraSys, as part of the KRAIBURG Holding, has decades of experience in the railway sector and specializes in sub-ballast mats, bearings for mass-spring-systems and other special elastic supports made of polyetherurethane in the railway superstructure.

KRAIBURG PuraSys has already successfully established itself on the international market through numerous projects with its PU products for solving noise and vibration problems caused by rail traffic.

PuraSys products have been tested in recognized external testing institutes and internally for the sometimes very demanding conditions and specifications.

KRAIBURG PuraSys is of course ISO 9001 certified and thus guarantees high quality and complete traceability of its products. PuraSys PU elements are tested according to DIN 45673-5, DIN 45673-7 and other national standards.

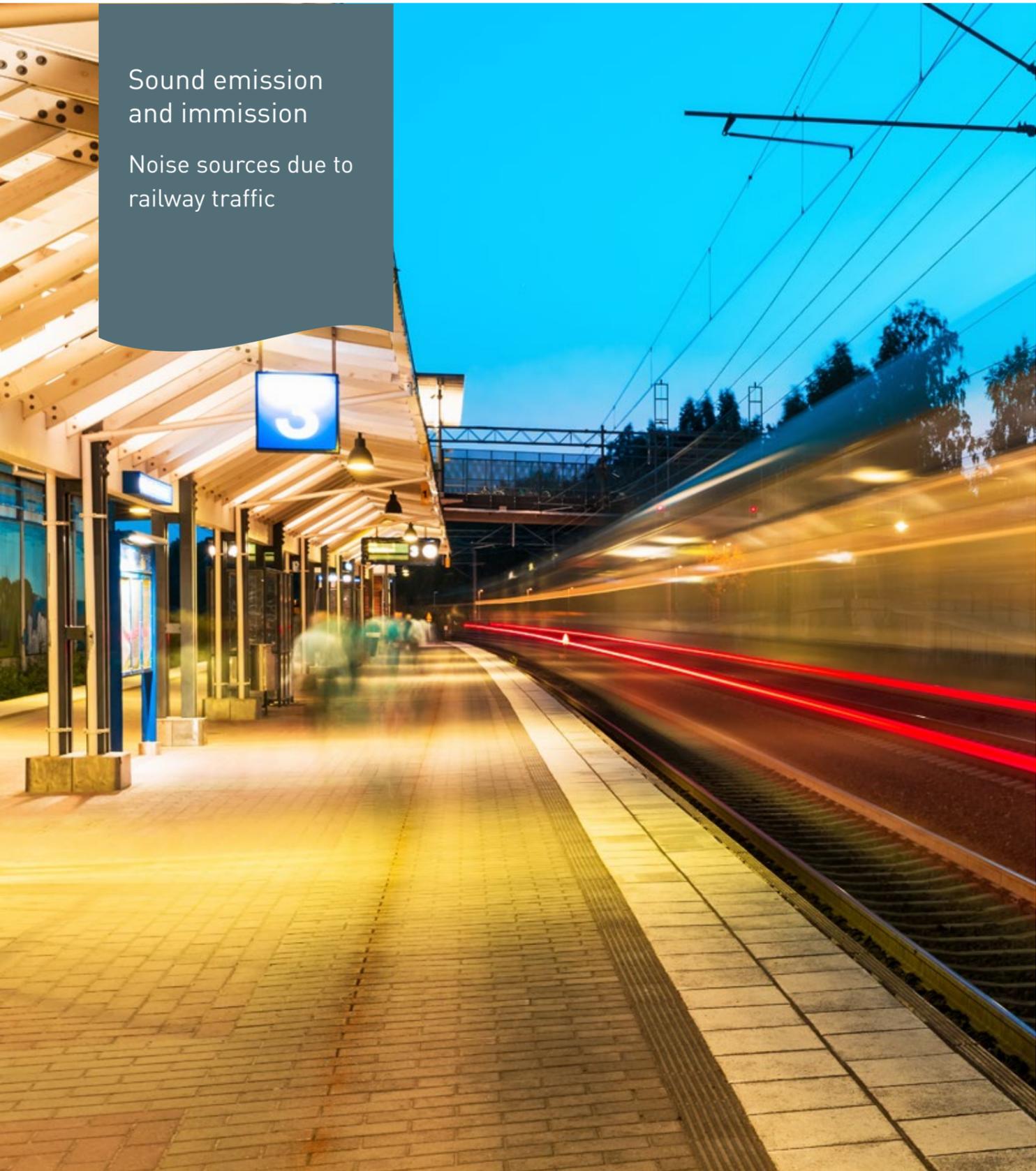
Quality products - produced in harmony with nature
Environmental protection is a key strategic task at KRAIBURG PuraSys. We are fully aware that sustainable growth is only possible if we live up to our commitments and responsibility for environmental protection. That is why KRAIBURG PuraSys has a consistent course here: environmental protection is our daily program!

Installation of PURASYS MSS to provide elastic support in the track bed

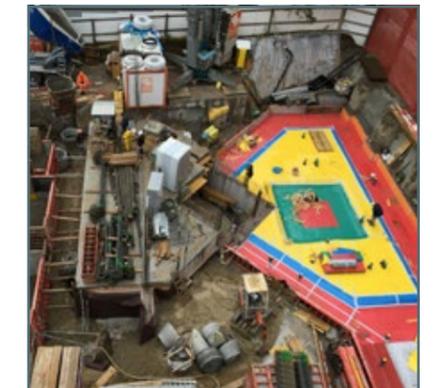
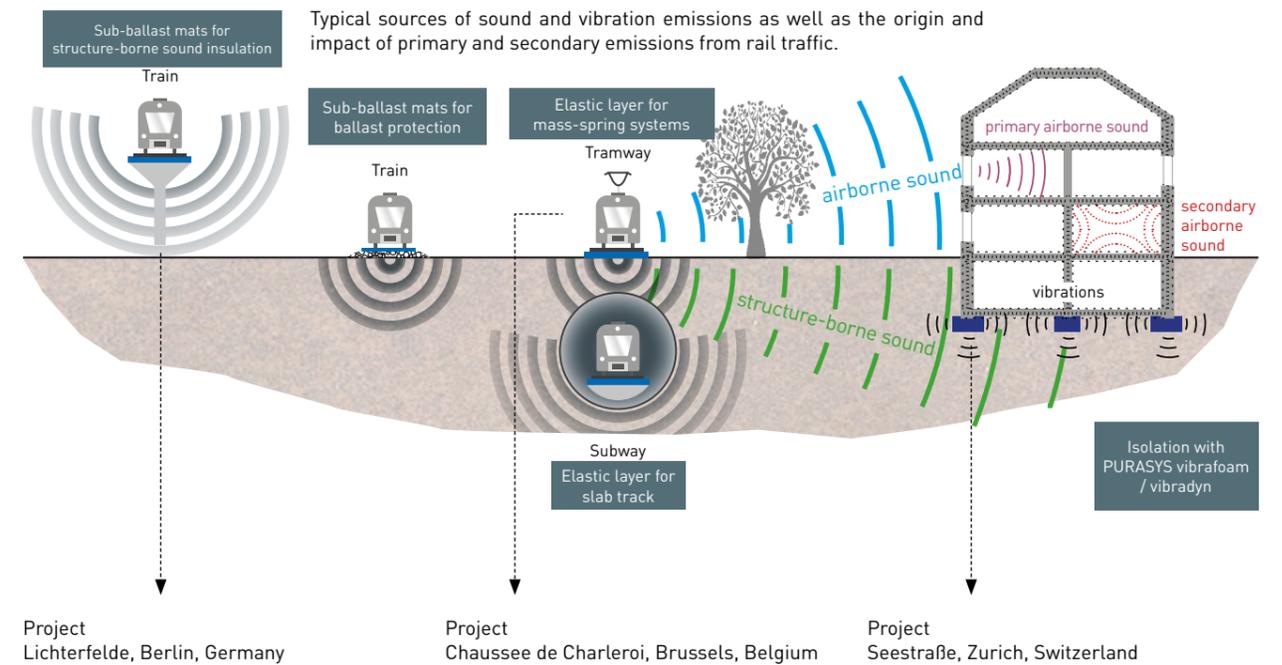


Sound emission and immission

Noise sources due to railway traffic



Railway vehicles generate rolling noises and vibrations during operation. This is due to roughness and imbalances on both the wheels and the rail running surfaces. Surface defects such as head checks, corrugations and slip waves on the rails are known to be among the most common sources of interference. These vibrations are transmitted to the ground via the roadway and spread as structure-borne noise. If buildings are located along or near the track, then the vibrations are transferred through the building foundations. The buildings begin to vibrate and, with the right intensity and frequency will be perceptible as a vibration noise to humans. Another consequence of this transmission chain is the emission of vibrations from building parts, e. g. ceilings and walls, to the environment. This takes place via the air, which begins to vibrate itself and then become audible as so-called secondary airborne sound.



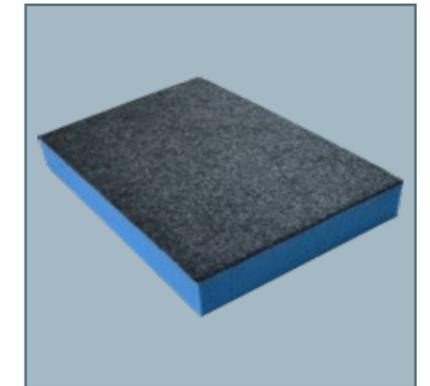
PURASYS Products
for use in railway
traffic

Product overview



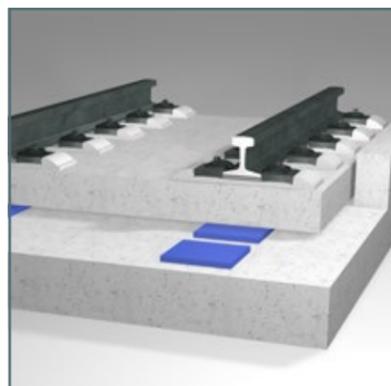
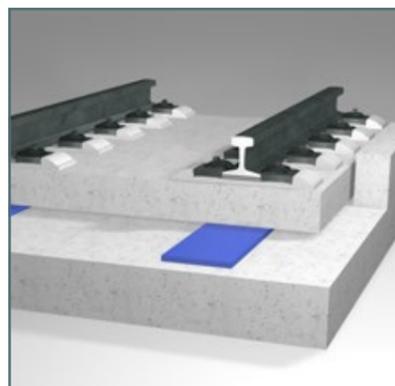
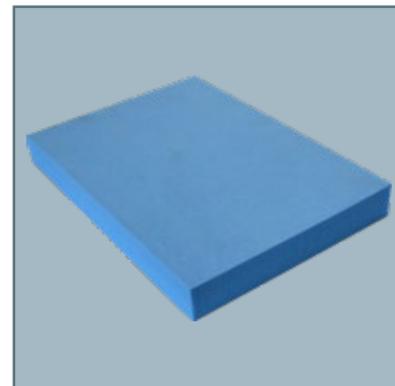
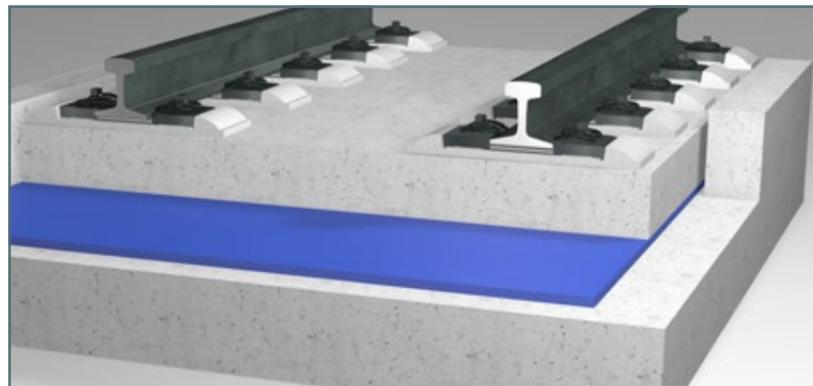
Project (with PURASYS MSS P 2023)
Esfahan Metro Line, Iran

PURASYS SBM
Sub-ballast mats



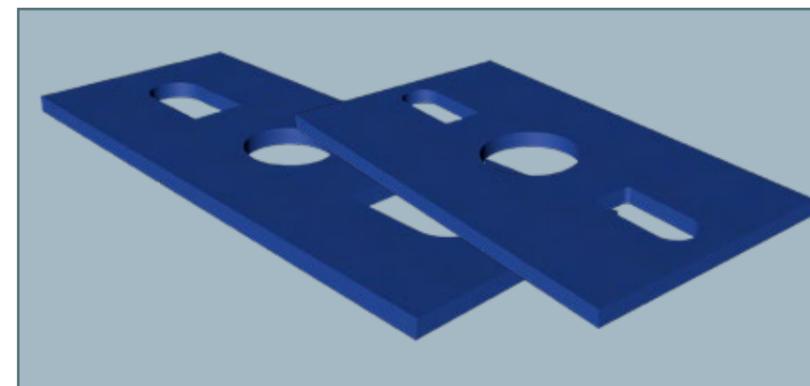
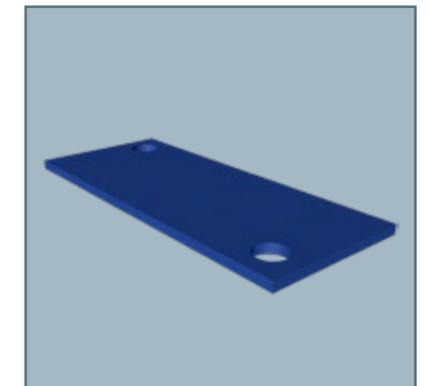
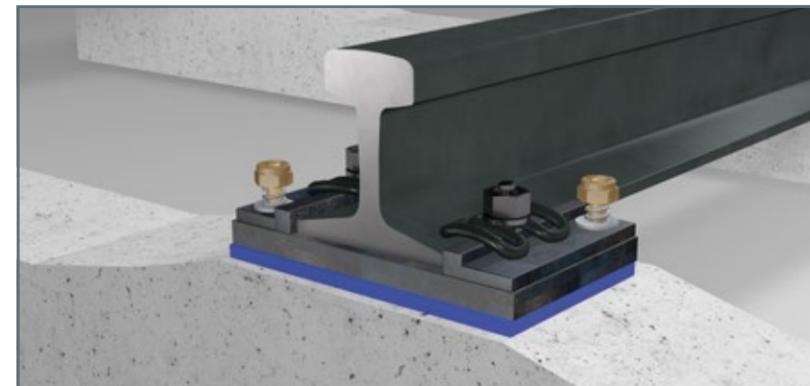
PURASYS SBM products are decoupling and protective mats under rail systems tested according to DIN 45673-5 (Mechanical vibration - Elastic elements of the superstructure of railway tracks). They reduce structure-borne noise and secondary airborne sound as well as vibration emissions. For ballasted tracks, the service life is extended by a lower and more even load. At the same time, it can protect engineering structures or sealings.

PURASYS MSS Full surface bearings, strip-like support and point bearings
for mass-spring systems



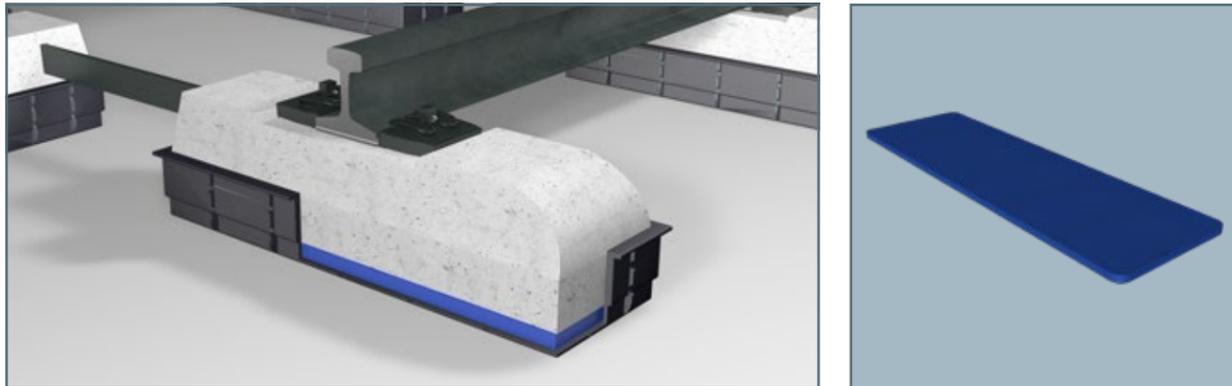
PURASYS MSS products are decoupling and protective mats under rail systems tested according to DIN 45673-7 (Mechanical vibration - Elastic elements of the superstructure of railway tracks). They reduce structure-borne and secondary airborne noise and vibration emissions when used in slab track (mass-spring system).

PURASYS BPP
Base plate pads



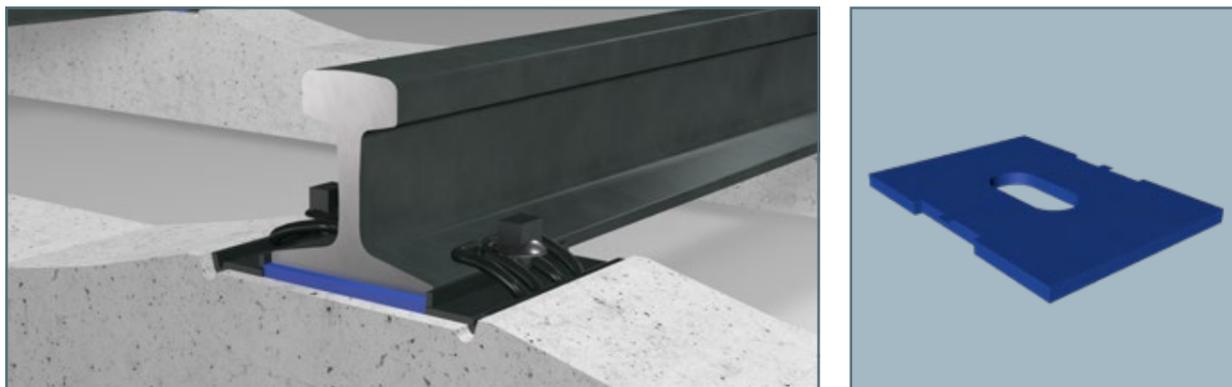
PURASYS BPP products are intermediate plates that increase the elasticity of the rail superstructure. The rails are decoupled from the ground and the high dynamic forces acting on the rail, fastening system and pavement are reduced.

PURASYS ESB
Elastic sleeper boots (under development)



PURASYS ESB products are individually prefabricated, elastic inserts for sleeper boots. This enables different sinking values to be compensated for. At the same time, they serve to optimize load distribution and reduce the forces that occur. By decoupling the track from the ground, PURASYS ESB also achieves greater drive comfort.

PURASYS ERP
Elastic rail pads (under development)



PURASYS ERP products are intermediate layers to reduce vibrations and forces in the track superstructure.

PURASYS products for track construction are made of high-quality elastomer materials. With the extensively tested formulations, the products meet special requirements resulting from the loads in the track area. PURASYS products are produced in the form of mats and stamped or water cutted parts and are therefore suitable for point bearings, strip-like support or full-surface bearings. These elastomer materials are also used in other demanding areas such as building and tunnel construction. Particularly noteworthy is the long-term behaviour, which guarantees a constant high level of effectiveness over decades. In this way, they efficiently counteract the multi-frequency vibrations and shocks that are transmitted to the environment.

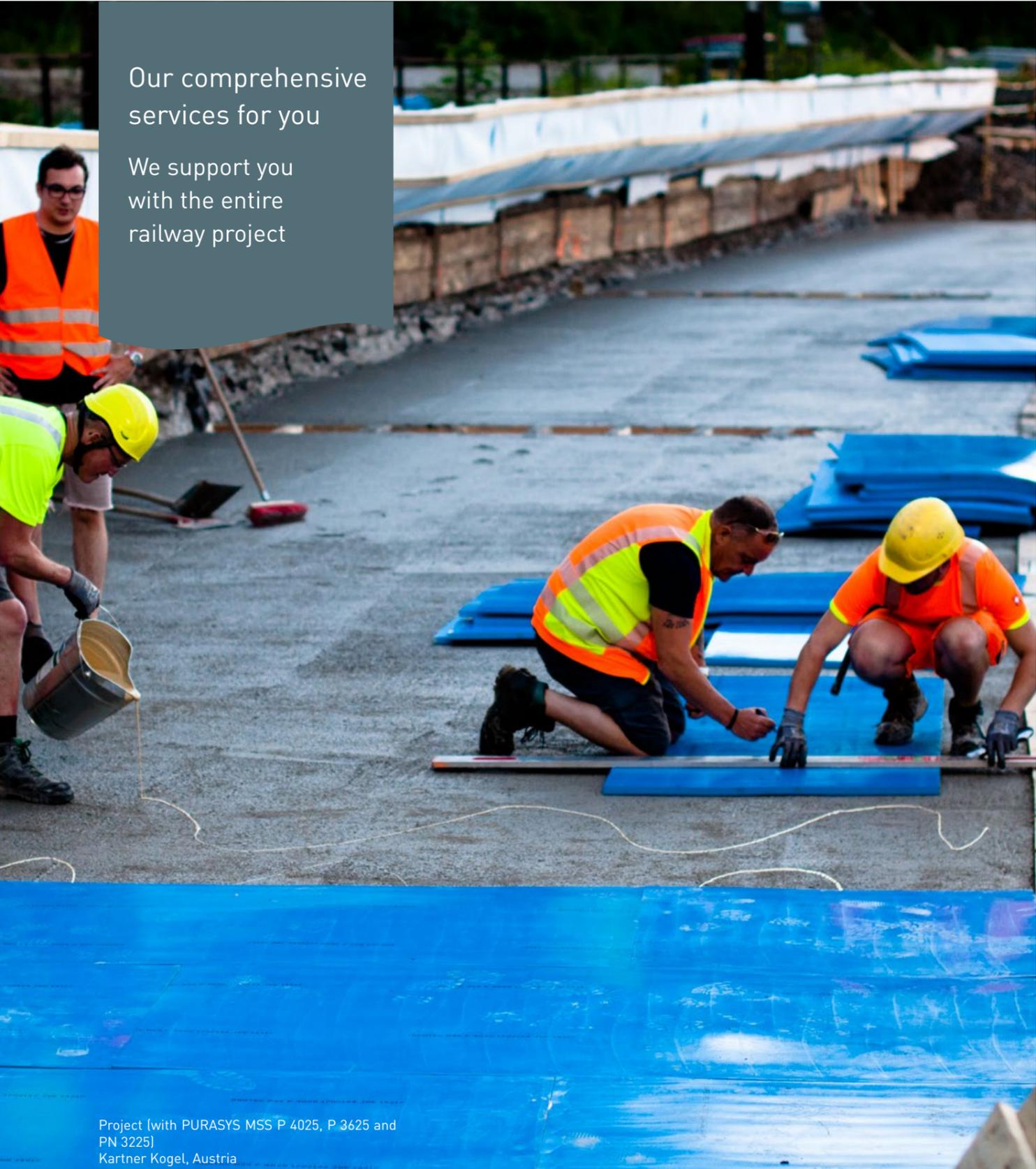


Let us convince you of the outstanding properties of our products:

- environmentally friendly
- reduce secondary airborne sound
- low water absorption
- protect the sensitive sealing layer against damage from ballast stones
- extend the service life of the ballast
- reduction of track maintenance costs
- reduce the transmission of structure-borne sound
- long term stability for track position
- extremely durable
- protect adjacent buildings by reducing vibrations
- uncomplicated installation
- extremely economical

Our comprehensive services for you

We support you with the entire railway project



Project (with PURASYS MSS P 4025, P 3625 and PN 3225)
Kartner Kogel, Austria

Solution Development & Detailed Solutions

Our decades-long experience and our know-how with products for noise and vibration reduction are a guarantee for the solution of even very complex problems. Together with you, our specialists will develop effective systems to eliminate or minimize disruptive factors in the problem areas. In addition to standard solutions based on experience, we are of course also in a position to implement completely new technical and personnel solutions that are precisely adapted to your requirements.

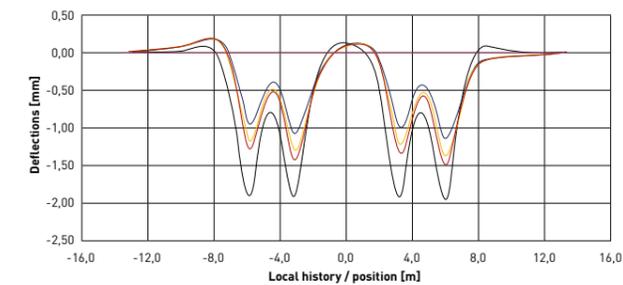
Calculations, simulations and efficacy forecasts

To find out how effective measures can be in dealing with an emission problem, you don't have to wait until they are implemented. After a first inspection and analysis of the conditions on site, our specialists are able to create a calculation model in which all relevant factors regarding vibration and damping behaviour with different material properties are taken into account. This results in a realistic simulation that allows fine-tuning of these factors and enables our specialists to develop the optimum solution. At the end of the planning phase, you will receive proof of the expected effectiveness of the system. This efficacy prognosis gives you the assurance in advance that your expectations will be met successfully.

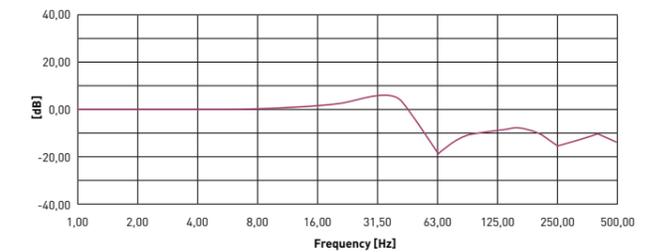
Our services at a glance

- material testing and measurement on our own large scale test bench
- project support from the beginning
- installation advisory and site support
- preparation of installation plans
- vibration control and mech. measurements
- solution development
- calculation and simulation
- efficacy forecasts

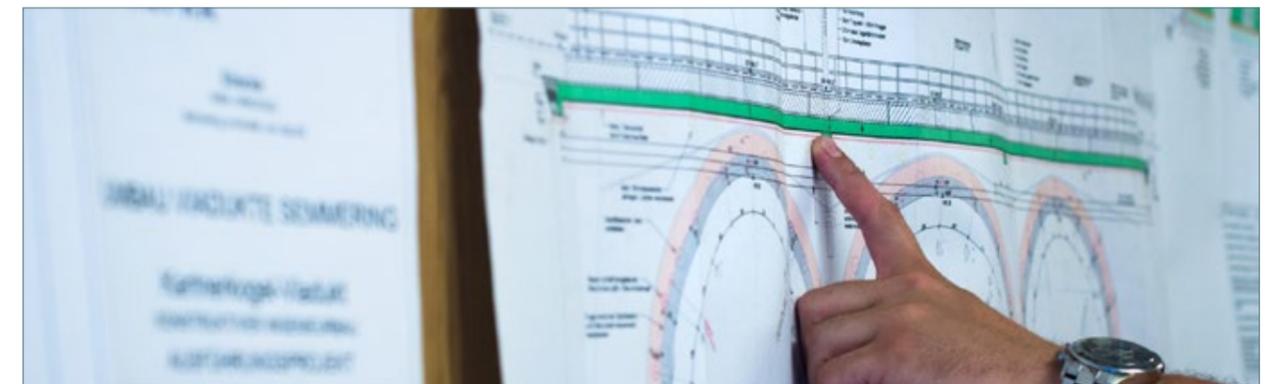
Example of deflection



Example of insertion loss



Installation plan for mass-spring system





References railway projects

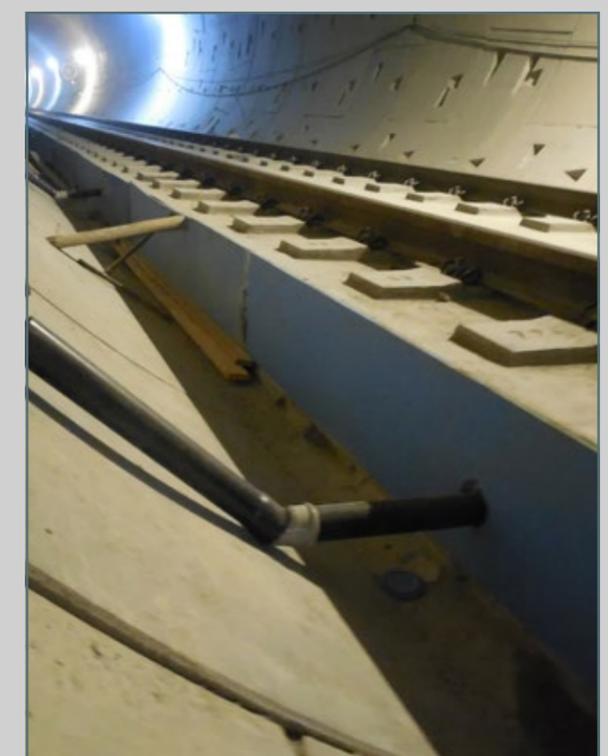
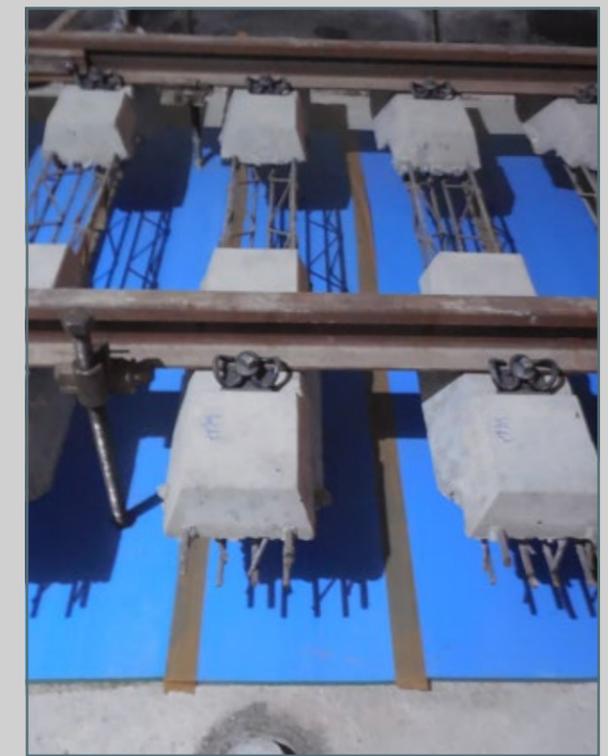
For decades, railway operators world-wide have placed their trust in PURASYS products.



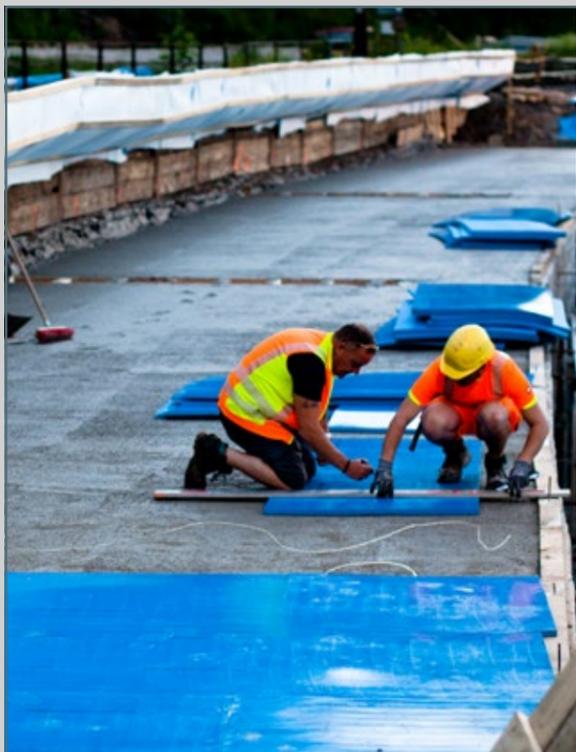
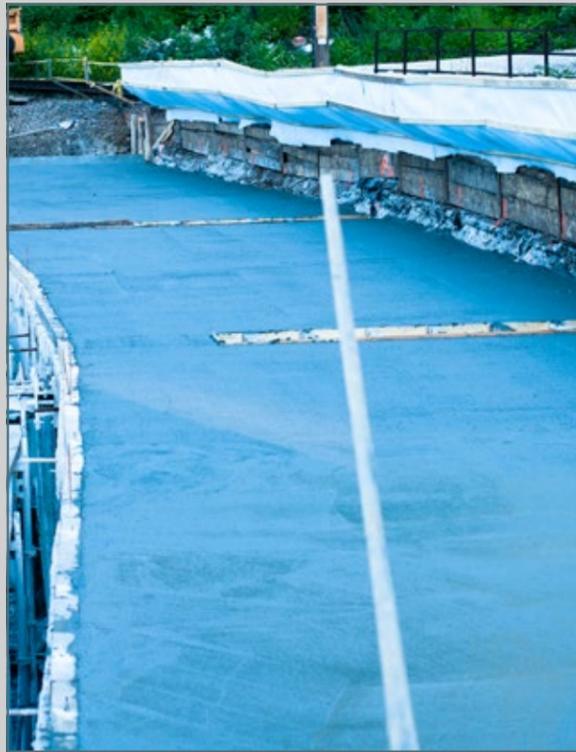
Watch our installation video on YouTube!

Project (with PURASYS MSS P 4025, P 3625 and PN 3225)
Kartner Kogel, Austria

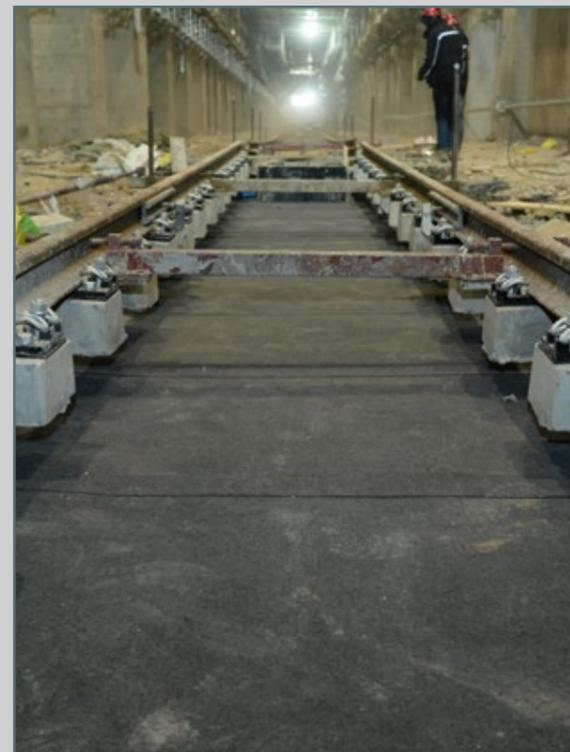
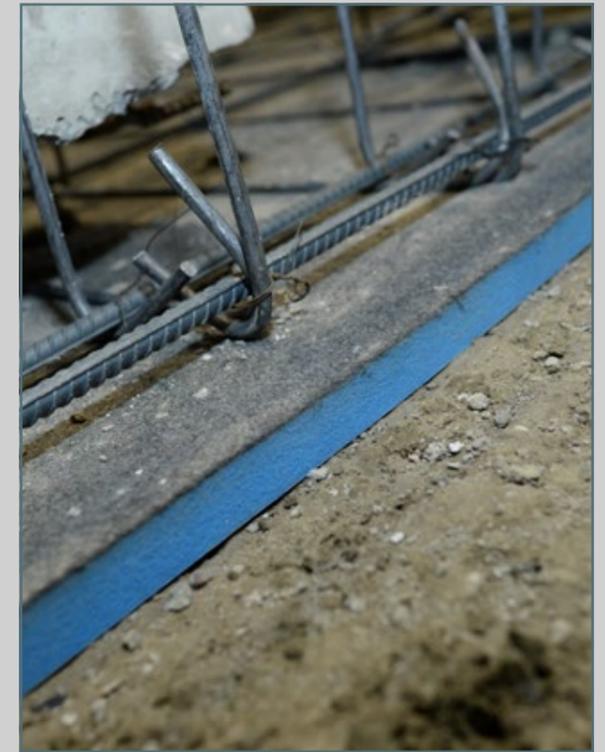
Esfahan Metro Line, Iran
PURASYS MSS P 2023



Kartner Kogel, Austria
PURASYS MSS P 4025, P 3625 and PN 3225



Beijing Metro Line 6 , China
PURASYS SBM P 2025, SBM P 2032, MSS P 2025





Solutions for protection, sound and vibration isolation in rail traffic

Product overview



DAMTEC® Project (with DAMTEC® SBM K 10 V)
Saalachtal, Austria

KRAIBURG Relastec, as part of the KRAIBURG Holding, specialises in sub ballast mats and bearings for mass-spring systems with its DAMTEC® division. KRAIBURG Relastec has already established itself through numerous international projects with its DAMTEC® products and offers its partners an extensive range of solutions to protect and reduce noise and vibrations in rail traffic.

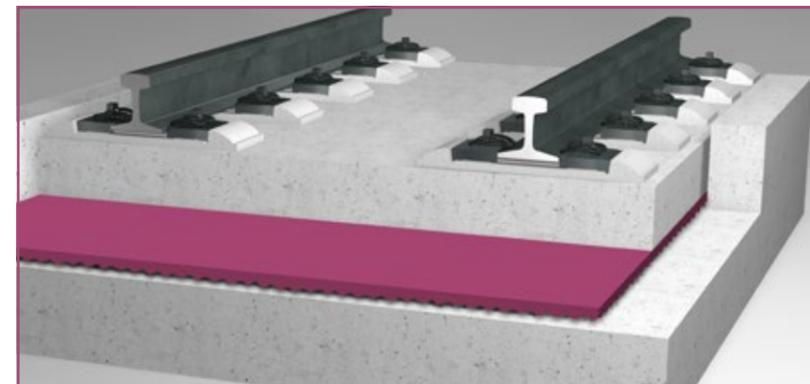
DAMTEC® products have been tested in recognized external testing institutes and internally for the sometimes very demanding, project-specific conditions and specifications. It goes without saying that KRAIBURG Relastec is ISO 9001, 50001 and 14001 certified and thus guarantees consistently high quality and complete traceability of its products. DAMTEC® products are tested according to DIN 45673-5, DIN 45673-7, EN 17282, EN 17682 and other national standards.

DAMTEC® products consist of special rubber granules, such as foamed rubber and polyurethane foam from the recycling of post-industrial materials, i. e. from unused new raw materials. This leads to the desired properties and takes environmental protection into account. An aging of the rubber granulate is thus excluded. In particular, used tyres are not used here. With the extensively tested formulations, the products meet special requirements resulting from the loads in the track area. These elastomer materials are also used in other demanding areas such as building construction, civil engineering and tunnelling. Particularly noteworthy is the long-term behaviour, which guarantees a constant high level of effectiveness over decades. In this way, they efficiently counteract the multi-frequency vibrations and shocks that are transmitted to the environment.

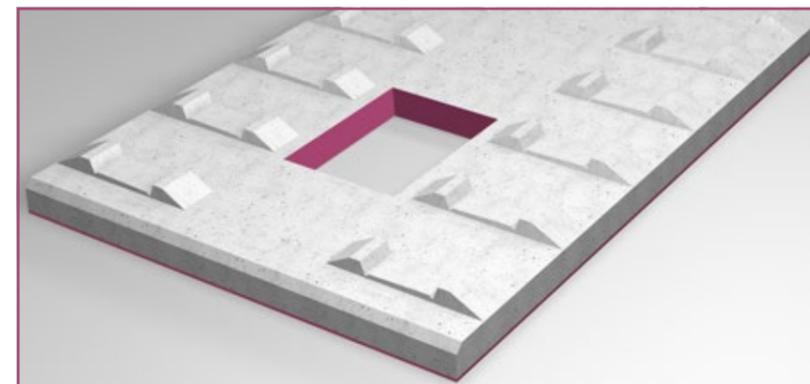
DAMTEC® SBM Sub-ballast mats



DAMTEC® MSS Full surface bearings for mass-spring systems



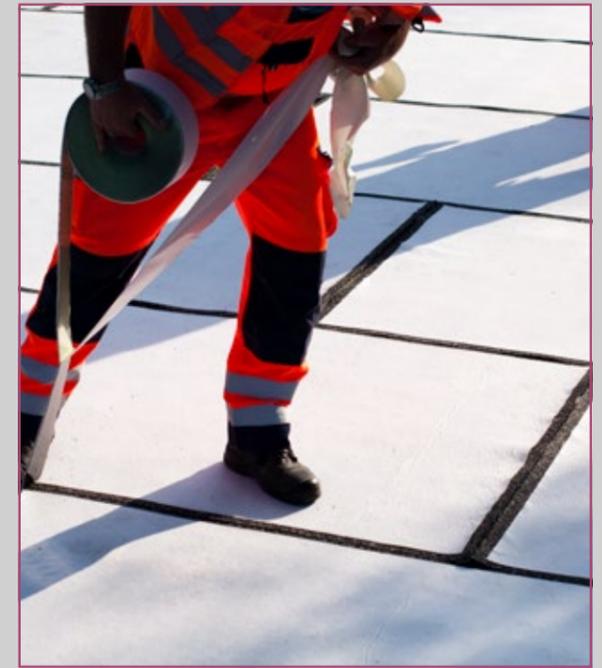
DAMTEC® STM Full surface bearings for slab track mats



Wiener Linien, Austria
DAMTEC® SBM K 23 V



Schwieberdingen, Germany
DAMTEC® SBM K 10 V



Officer Road, Officer, Australia
DAMTEC® SBM K 10



Freilassing, Germany
DAMTEC® SBM K 10 V



Contact



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made of rubber granules
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LET US MAKE YOUR RAILWAY PROJECT QUIETER AND MORE DURABLE



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