Solutions for Silence

We make the world a bit more quiet

RAIL DAMPERS

WHEEL DAMPERS

BRIDGE DAMPERS

SHIMLIFT
Height-adjustable rail fastening

INSTALLATION

PROJECT MANAGEMENT

RAIL SERVICE

Schrey & Veit
Noise, Shock & Vibration control

SCHREY & VEIT GMBH

Schrey & Veit specializes in the fields of sound and vibration reduction in various travel sectors. Our team has more than 28 years of experience in the fields of shock and vibration isolation, vibration damping, and acoustics studies. We specialize in the aerospace, automotive, defense, and railroad sectors. Our current focus is on railroad tracks, vehicles, and steel bridges.

Our in-depth global research and development in coordination with the railroad sector, industry partners and universities ensures we provide the highest quality products to our customers. Our most current products were installed worldwide in 2013.

These products significantly reduced the noise emissions and vibrations in the systems. Our products also help to rail ripples from increasing adding to their effectiveness. The reduction in vibrations and rail ripples not only reduces the noise at the source, they also reduce track maintenance demands. Our products are easy to install, maintenance free, with an economical life cycle program. Schrey & Veit provides only the most current solutions in noise and vibration control to improve track maintenance requirements.

We are now also offering wheel dampers to reduce squealing and rolling noise common with rail traffic. Our add-ons are suitable for a wide range of trains and streetcars. This is especially important in urban areas where network-wide noise improvement is a growing concern.

MEASUREMENT – TEST – DEVELOPMENT

Schrey & Veit operates a globally unique R&D laboratory for rail noise in Germany to develop products with the best effect and efficiency.

Our company headquarters in Sprendlingen houses a modern vibration engineering laboratory with state-of-the-art test equipment. We offer testing based on your needs. Our highly qualified personnel can test your equipment at our in-house test lab or they can provide testing at your location using our mobile test equipment.

We have on-site mobile equipment that can test your rail system and bridges. These test sets can also be used to test your equipment. If railroad wheels cannot be dismantled for testing we can accomplish the testing with them on the vehicle. We can provide an engineering solution to help avoid capacity bottlenecks and reduce testing and development costs. Our in-house prototyping department can create a personalized test setup quickly, professionally, and cost-effectively.

28
YEARS OF DEVELOPMENT AND TEST EXPERIENCE

4
MILLIONS WORLDWIDE INSTALLED SYSTEMS:

TEST TRACKS:
> 10,000 (BELGIUM, SWITZERLAND, DENMARK, FRANCE, USA, AUSTRALIA, ETC.)

40
40.000 WHEEL DAMPERS

3
SUBSIDIARIES:

GERMANY, SWITZERLAND AND AUSTRALIA

7
PARTNER COMPANIES WORLDWIDE:

FRANCE, LITHUANIA, MALAYSIA, POLAND, NETHERLANDS, USA AND CANADA

Schrey & Veit
Noise, Shock & Vibration control

SCHREY & VEIT IS DIN EN ISO 9001:2015 CERTIFIED

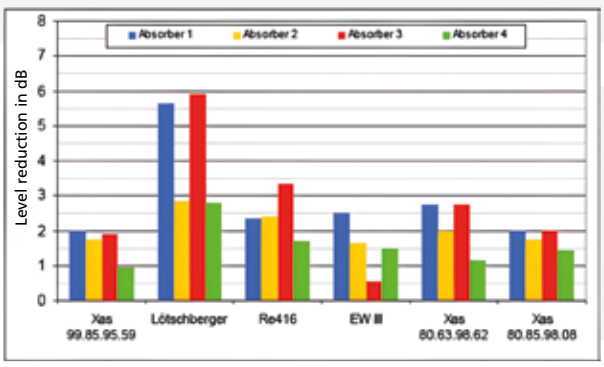
RAIL DAMPER

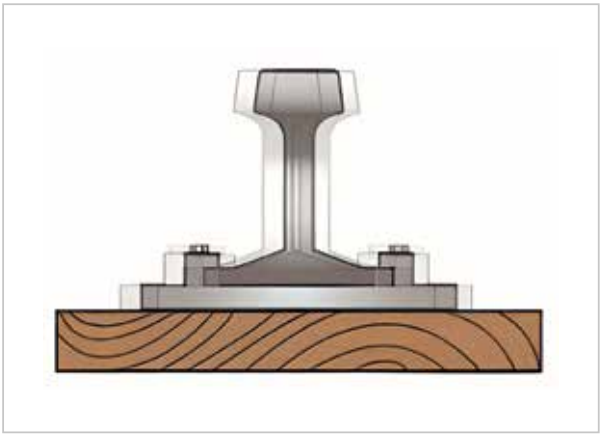
The rail damper is an innovative solution that operates on the basis of a mass spring system to reduce rail noise. The damper combats the vibration levels in the rail generated when trains pass each to reduce the noise generate. The rail damper is specially adapted for each common rail type ensuring full compatibility for the best results.

Once the design for your individual rail damper is completed it is tested to ensure optimal performance. Our professionals use our test equipment to adapt and optimize the rail damper to best fit your needs. The test uses specially designed to recreate the conditions caused by the vibrations generate by the passing of two trains on a similar rail system. The individually tailored design allows the rail dampers to be used on conventional ballast tracks, high-speed lines, or even slab track (e.g. Rheda).

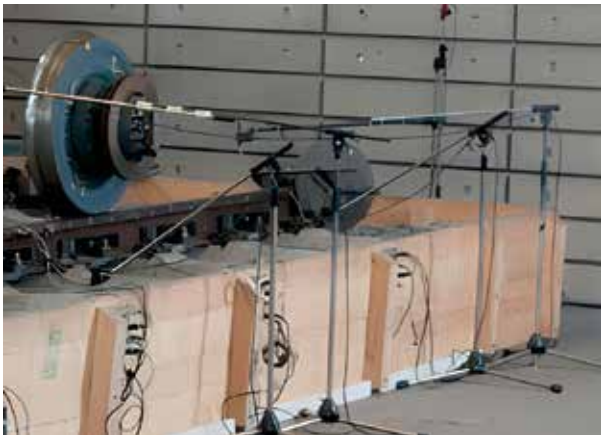
The figure shows the different performance of rail dampers when different types of trains pass.

Source: Sieglitz/Czolbe: „Wirksamkeit von Schienenabsorbern", Lecture DAGA 2012, Prose AG





Rail vibration during train crossing



Rail test bench in our own laboratory

Adapted rail damper on a UIC54 rail, ballast track

Adapted rail dampers on a UIC60 rail, slab track

Measurements on various routes with installed systems worldwide show an average reduction in rolling noise of up to 8 db(A).

For more information, visit sundv.de

INSTALLATION OF THE RAIL DAMPERS

No major preparation work is necessary to install our rail dampers on your existing tracks. This simplifies the installation and reduces the time necessary for the process. All that is needed is to remove a small amount of ballast under the track using a ballast pusher controlled by a standard two-way excavator.

The parts needed are loaded on a transport unit that is pulled by the excavator so installation can begin as soon as the necessary ballast is removed.

A simple mounting tool and clamps are used to install the rail dampers. Each rail damper is attached using thermally treated high performance springs. This method makes dismantling a simple process when the rails are changed. The high performance springs can be reused several times before replacement is needed. We do not use adhesive systems or sealants or contact pastes because they prolong the time needed during disassembly/reassembly.

TRACK MAINTENANCE WITH RAIL DAMPERS

The design characteristics of the rail dampers ensure a long service life with minimal maintenance costs. When they have reached the end of their service life the rail dampers can be easily removed for disposal. If a rail replacement becomes necessary you simply loosen the rail dampers and stored them on the side of the track next to the rail. The rail dampers are easily re-installed using the same mounting tool and clamp used during the initial installation after the rail is replaced. It is possible to conduct renewed rail grinding, rail milling and track tamping without affecting the efficiency of the rail dampers.

The components of the rail damper are extremely heat resistant and do not have to be removed when grinding the rail.

Tamping machine (detail section)

Rail grinding

Tamping machine

Customer satisfaction regarding quality and reliability of our products and services is of the utmost importance to us.

Our goal is to provide the high-quality products and services at a cost our customers deserve. We strive to improve so we can serve you better in the future.

WHEEL DAMPERS

Almost all the sound emitted in rail industry is created by the wheels moving over the track which causes vibration in their respective resonance frequencies. Schrey & Veit VICON RASA provides sound absorbers for the wheel surfaces where the greatest vibrations occur. Our Wheel Dampers create a separation between the metal wheel and track which greatly reduces the amount of vibration and noise created.

How it works

The VICON RASA wheel sound absorbers are made up of a combination of metal and elastomer (a natural or synthetic polymer having elastic properties) plates. The sound absorbers generate a counterforce to the wheel vibration, and the vibration energy is converted into thermal energy. The small amount of energy generated by this process creates a low level of heat which is absorbed and dissipated by wheel. The wheel sound absorbers durability ensures reduce rolling and squealing noises and provides a high level of sound reduction over the entire service life of the wheel. These maintenance free systems are an alternative to rail lubrication systems. Wheel absorber systems can be reused on new wheels until the wear limit of the sound absorber is reached.

LOCAL TRAFFIC

The sound radiation of railroad wheels occurs when the wheels vibrate at specific resonance frequencies. We provide wheel absorbers, constructed in the form of a multi-layer resonator, to reduce the amount of noise created.

Our sound dampeners, made of individual metallic plates combined with layers of elastomers, are designed to reduce the running and squealing noise created by the wheels. The energy created by the vibration is converted to radiant energy which is easily dissipated to significantly reduce track noise.

Using the wheel dampeners all but eliminates the high frequency components of the squealing noise to greatly reduce the noise level. The excessive squeal generated during cornering is almost completely suppressed creating a running noise comparable to that of the straight track.

FREIGHT TRAFFIC

Various designs are available that allow the absorber to be mounted radially or axially on the wheel. Depending on the wheel design, the absorbers are bolted directly to the wheel or to supports braced in the wheel. Both types of mounting guarantee maximum safety. As part of the research projects "LZarG - Quiet Train on Real Track" and "Railway Noise Research Project", supported by the Federal Ministry of Economics and Technology (Germany) and the Federal Office for the Environment (Switzerland) respectively, extremely heat-resistant absorbers have been developed for block-braked freight car wheels.

They are mounted on a wheel design from cooperation partner GHH Radsatz - this is compatible with most European bogie designs. In the meantime, they have been fully approved and have proven themselves in several years of international operating tests. Fully approved according to DIN EN ISO 3095 and TSI Noise.

Only the carrier segments for wheel absorbers from Schrey & Veit are approved in the high temperature range.

Schwitzerland, 10/28/2022

World record attempt by the Swiss Rhaetian Railway succeeded — in a very quiet way.

25 train parts consisting of 100 train wagons with 400 axles, 800 wheels and 2400 segment absorbers from Schrey & Veit GmbH not only ensure a quiet gliding down into the valley during the world record run. With a total length of the train of 1.9 km, also 789.4 meters in altitude and a distance of 24.93 kilometers have been passed.

For more information, visit sundv.de

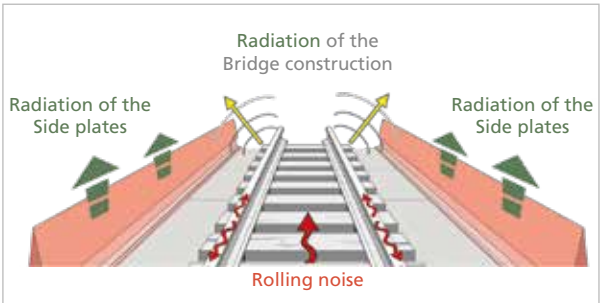
BRIDGE DAMPERS

Steel railroad bridges pose a particular challenge in noise remediation because they have low inherent damping. This results in a clearly perceptible sound radiation and leads to considerable stress for people and the environment.

On a normal track the sound emissions from moving trains are made up of three components (sleeper, rail and wheel). When dealing with steel bridges without a ballast bed the bridge body also becomes a sound source and the sleeper component become less important. As a result, the sound spectrum ofbridge crossings shifts toward low frequencies, giving rise to what is known as bridge roar. The structure-born noise often corresponds to more than a doubling of the noise emission of rail traffic.

Bridge absorbers, which consist of many vibrating metal tongues, are used to addressthis issue. The bridge absorbers are mounted on the bridge body on the longitudinal and transverse girders as well as on the horizontal deck plates and bring about a reduction in bridge droning at frequencies in the range from 20 to 150 Hz.

Measurements on more than 15 bridges showed an average reduction of the sound pressure level of 3 dB - 6 dB(A).



A prerequisite for successful noise reduction is the precise matching of the absorbers to the individual vibration behavior of the bridge in question. Precise measurements must be made on the bridge during train crossings in order to achieve the best possible results for the various train types at different speeds. The test data is evaluated and the results are used to tune the absorbers by means of FEM analysis on a computer.

Installation of the bridge absorbers can be accomplished without interfering with rail traffic. Only a small area underneath the bridge has to be closed off for the measurements and installation. Depending on the length of the bridge, the closure time is two days for the measurements and two to six days for the installation.

Optimum minimization of bridge droning is achieved by further accompanying measures, such as decoupling the rail from the guideway and simultaneous use of special intermediatelayers and, if necessary, by installing rail dampers.

For more information, visit sundv.de

SHIMLIFT

ShimLift is a height-adjustable rail fastening system for improved track position in problem areas. The use of system can also help to reduce maintenance costs.

ShimLift application examples:

- Transition zones in front of and behind railroad bridges
- Transition zones at foundation level crossings
- Embedded rail transition zones
- Transition zones between old and new ballast
- Transition zones ballast-solid track superstructure

ShimLift Advantages:

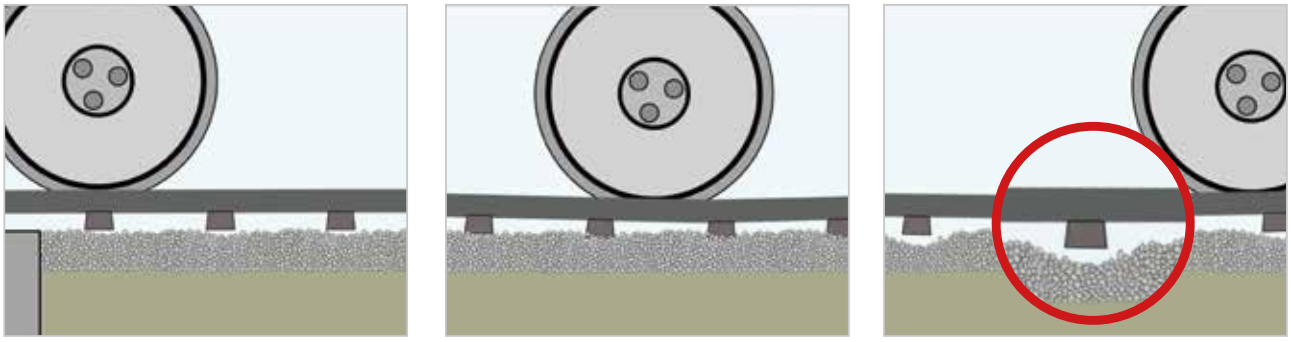
- Height compensation accurate to the millimeter, without tamping
- Enormous reduction of wear on ballast and sleepers
- Significant reduction of maintenance costs at transition zones
- Significant reduction in the formation of new hollow layers
- Investment usually pays for itself in 3 years

What is a ballast memory effect?

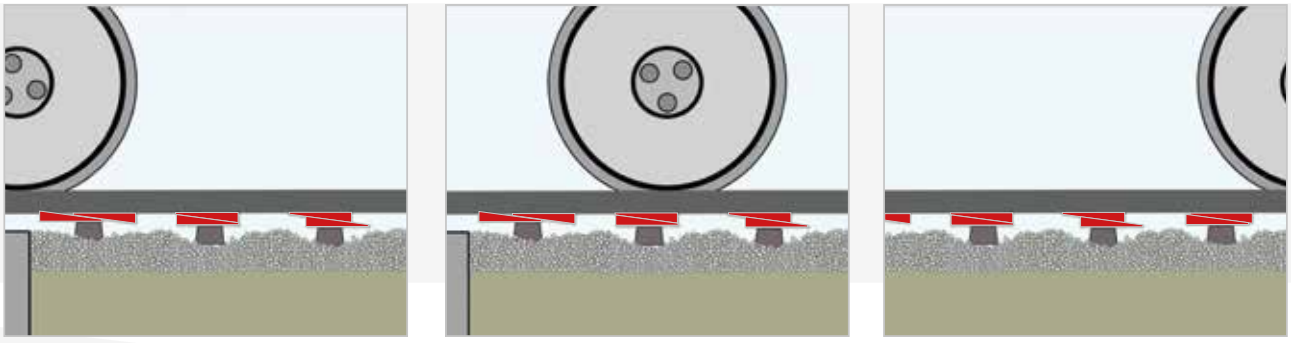
The ballast grain needs sufficient space to form a new load-bearing and stable bond after a tamping operation. When removing hollow layers of low height by tamping usually only the angular position of the ballast grain under the sleeper is changed, but not its orientation. This prevents the desired new bond from forming in the ballast: After only a few train passes, the ballast grains return to their original position, the sleeper height position is restored, and normal wear continues.

What are transition zones?

A transition zone is the area between surface mounted tracks and bridges. These areas are effected by different settlement behaviors and the inhomogeneities in the ballast superstructure. These transition zones are found at the front of and after railroad bridges as well as at level crossings and where the ballast superstructure merges with the slab track. Transition zones can also occur in the area of different ballast qualities (e.g. transition from old ballast to new ballast).



Strong rail movement without ShimLift (graphical representation)



Low rail movement with ShimLift (graphical representation)

ShimLift Installation:

- No processing of the ballast bed required
- Replacement of the rail fastening by ShimLift, dismantled rail fastening can be reused
- Installation per transition zone: 3-4 man hours per 10 sleepers
- Readjustment per transition zone: 1.5 man hours per 10 sleepers

ShimLift Approvals:

- EBA approval (DB)
- User approval (DB)
- Approval Prorail (NL)
- Approval Infrabell (B)

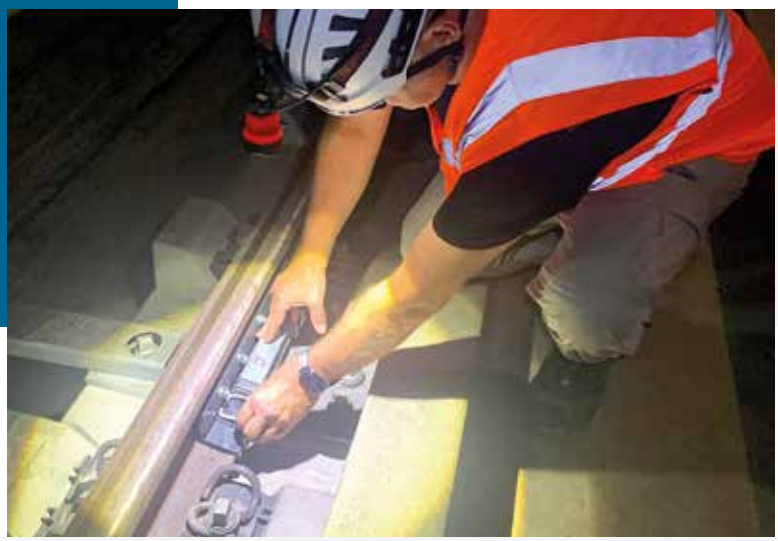
SCHREY & VEIT GMBH – YOUR SERVICE PROVIDER FOR ALL ASPECTS OF INSTALLATION OF RAIL DAMPING SYSTEMS AND SPECIAL RAIL FASTENERS

From conception and planning to implementation and completion of your rail projects with rail damping systems or Shimlift - we guarantee a smooth, accurate, and professional implementation.

We provide all information and requirements in advance and are happy to assume responsibility for the entire implementation. Whether new installations or maintenance projects: We know exactly how to do it and provide necessary special machinery and equipment.

OUR COMPETENCIES:

- Consulting, planning, design and organization of works, deadline monitoring / coordination
- Project implementation according to valid standards, guidelines and regulations
- Trained in railroad operations
- Sequence planning for maintenance projects
- Highly flexible in implementation and adaptation during ongoing projects
- Quality assurance with issuance of certificates for installation documentation
- Preservation of evidence
- Adherence to schedules through continuous project controlling



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Noise, Shock & Vibration control

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