

Light Mass-Spring Systems

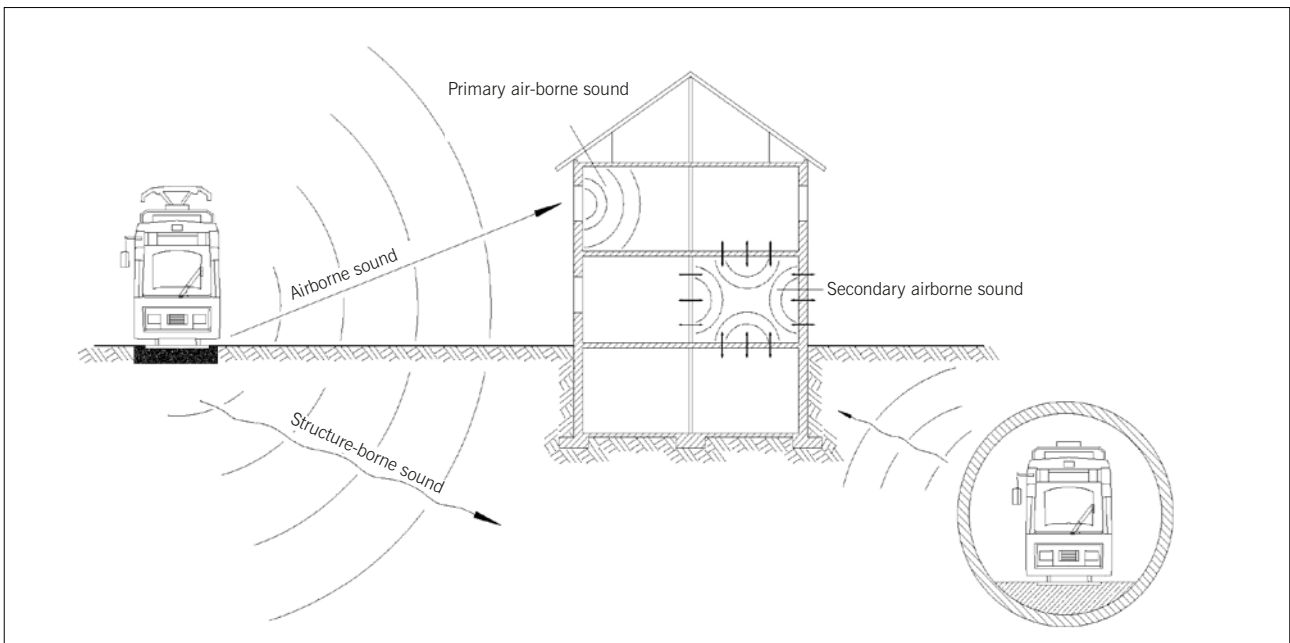
Reliable
Protection from
Ground-Borne
Vibration

Reliable Protection from Ground-Borne Vibration

Tramways and light-rail systems produce vibrations that can be transmitted via the ground into buildings. In the surrounding buildings these vibrations are felt as shaking and secondary airborne sound.

In densely built-up inner city areas light railways are usually critical in terms of secondary airborne sound. In the case of construction without elastic mounting, the secondary airborne sound levels are often above the indicated guideline values of the technical directives governing noise. Therefore it is standard practice today for new construction to be carried out using vibration-reducing methods.

From an engineering and acoustic point of view the most suitable solution is the light mass-spring system (LMSS) in combination with the elastic material **Regupol®**.



Made in
Germany

- best quality
- fair pay
- secure jobs
- high environmental standards

The Benefits

Reliability and Long-Term Experience

Regupol® is characterised in particular by its extreme durability. Even after many years of use the vibration-damping properties of the material are preserved. This has already been proven in various projects.

After fifteen years of use the Austrian Federal Railways confirmed their satisfaction with the material **Regupol®**. In addition to this, there is the positive experience of twenty years of use as elastic support under sleepers at Gütersloh station, Germany.

Regupol® is resistant to damp. Due to its drainage properties, larger quantities of water can be removed under the mat.



Engineering Advantages

During concreting the elastomer mat acts as a “lost shutter”. This makes for a rapid and secure method of construction.

In contrast to other forms of construction with an elastic separation layer the light mass-spring system can be used continuously in areas with points. The transition between different elastic mountings can be bridged by using various mat types with defined deflection.



Operational Safety

Operational safety requirements are met by a light mass-spring system as impermissible gauge expansion cannot occur due to the elastic mounting.

Deflections under the relevant loadings are precisely defined and can be determined and adjusted for each type of use.



Regupol® for Use in Rail Traffic

Depending on the requirement and purpose of use, various types of **Regupol®** can be used as elastic insulation. To increase the insertion loss effect they can also be installed in multiple layers.

The advantage of **Regupol®** is the practically constant natural frequency over a broad load range. This ensures much greater planning reliability for the specialist planner.

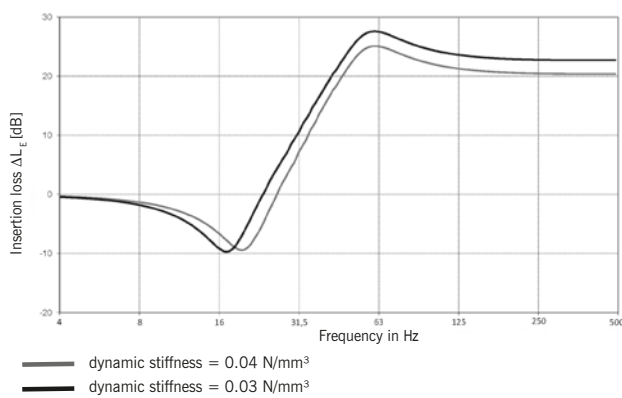
The stiffness of the elastic mounting and the effectiveness of the insulation associated therewith can be adapted to the relevant requirements.

Technical Data for Regupol® SB 16/100^{prof}

In already constructed light mass-spring systems the material **Regupol® SB 16/100^{prof}** has been shown to have an excellent record. It was specially developed for use in inner-city rail traffic.

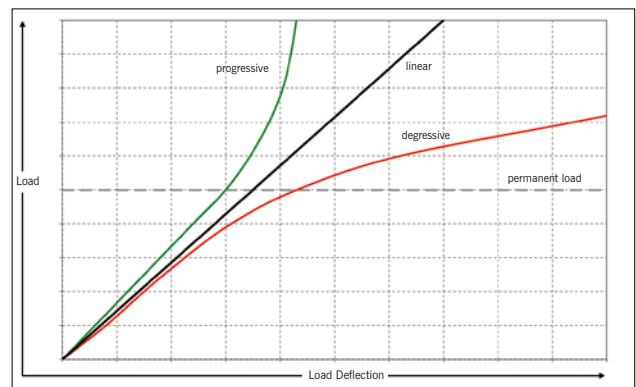
Insertion Loss

Example of calculated insertion loss measurement for different dynamic stiffnesses.



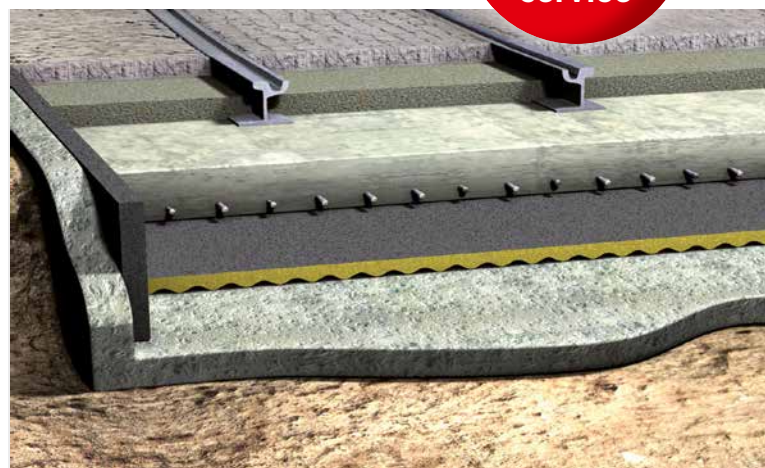
Spring Characteristics of Various Materials

In contrast to other materials, **Regupol®** has progressive spring characteristics. This results in reduced deflection in the traffic load area. No critical deformation can occur, even in the event of short-term overloading.



Recommendation and coordination of specialist planners for building acoustics.

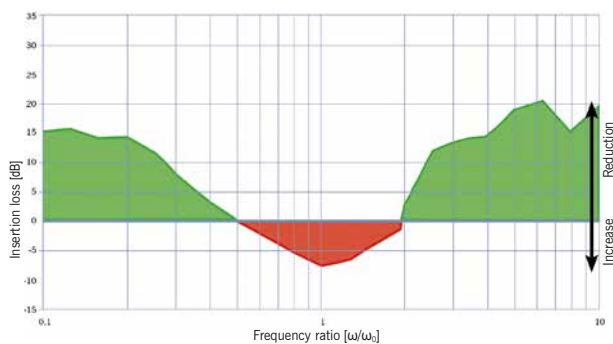
Find out more on Page 63.



Application Example Portugal

Test Results Almada, Portugal

The light mass-spring system designed with **Regupol® SB 16/100^{prof}** in Almada, Portugal, can be used by road traffic. This manner of construction in Almada could be employed without special sealing of the vertical isolation. The diagram below shows the course of the measured insertion loss via the frequency ratio of the natural frequency of the elastic mounting to the disturbing frequency.



Measured insertion loss of a light mass-spring system in Almada (Portugal), fast assessment r.m.s., distance to track = 7.20 m.



The picture on the left shows the laying of **Regupol® SB 16/100^{prof}**, a tried and tested elastic intermediate layer for light mass-spring systems, in Almada, Portugal.

Regupol® has proved to be successful in controlling vibrations in many building projects.



Remeasurement of a mass-spring system, equipped with **Regupol® SB 16/100^{prof}**

References (Extract)

Germany
Hamburg

Austria
Innsbruck, Vienna, Graz

Italy
Milan

Portugal
Almada

Serbia
Belgrade

Contact: Steffen Blecher, Phone: +49 2751 803-126 • s.blecher@berleburger.de;
Florian Sassmannshausen, Phone: +49 2751 803-230 • f.sassmannshausen@berleburger.de
Downloads at www.bsw-vibration-technology.com

Your contact to BSW GmbH

Florian Sassmannshausen
Fax +49 2751 803-139
f.sassmannshausen@berleburger.de

Phone: +49 2751 803-230

Steffen Blecher
Fax +49 2751 803-139
s.blecher@berleburger.de

Phone: +49 2751 803-126

BSW Berleburger
Schaumstoffwerk GmbH
Am Hilgenacker 24
57319 Bad Berleburg
Germany

info@berleburger.de
www.berleburger.com
www.bsw-vibration-technology.com



The technical information given in the documents are guideline values. They are liable to manufacturing tolerances, which may vary depending on the type of underlying properties. The currently valid versions of this information are provided on our internet pages and in the PDF versions of this catalogue. The PDF versions are available to download from our website. We do not assume liability for spelling or printing errors.

