



SHOCK, VIBRATION & NOISE CONTROL

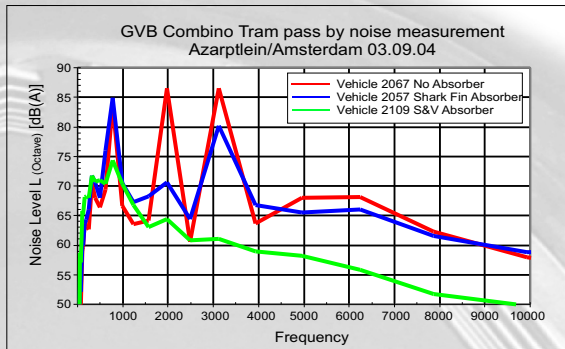
Reducing sound emission on steel wheels

The sound radiation of railway wheels mainly takes place in the area of resonant frequencies. All absorbers are constructed as multi-layer resonators. Single metallic plates are followed by layers of elastomer. This special construction produces a three-dimensional effect and clearly proves that absorbers can be used to reduce rolling and squealing noise.

The design of this new absorber generation creates a broad-band reduction of structure-born noise and guarantees constant damping characteristics up to the wear limit. An audible reduction of noise is attained by conducting of vibration energy and converting into dissipation energy. By using the new patented wheel absorbers the following sound pressure level reductions will be achieved:



Rolling noise: up to 8 dB (A)
Squealing noise: 15 - 35 dB (A)



The chart shows an impressive reduction of noise level after assembling our wheel absorbers to a resilient tram wheel, also compared to the noise level reduction with Shark-Fin absorbers which are not qualified for this type of wheels.

Besides the physical and measurable data, an improved physiological impact arises. The high frequency parts of the wheels nearly disappear and the sound of a passing train seems to be more comfortable.

The well-known curve squealing will be nearly eliminated by using wheel absorbers. A running noise level comparable to noise level of straight tracks will be achieved.

The adjustment of frequencies will be arranged typically by adapting the absorbers to the wheel. The type of fixation needs to be considered as well (screwed or mounted on carriers) as the place of fixation.

The change of impedances and hence the effect of the absorber can be determined by using modal analysis. We offer different designs that allow radial and axial fixation on the wheel.



Vantages of wheel absorber system VICON-RASA at a glance:

- **Easy assembly**
- **Life cycle of at least 15 years**
- **If wheels are worn the damper can be mounted easily on new wheels**
- **Maintenance-free**
- **Simple Recycling**

Wheel Absorber