

**Pantecnica S+V RailDampers - TDS - EN.docx**  
Copyright Pantecnica S.p.A.

Revisione:	Data:	Pag.:	Emissione:	Verificato:	Approvato:
02	3/08/2021	1 of 5	ST	RD	DG



# Rail Dampers



## Innovative Noise Mitigation

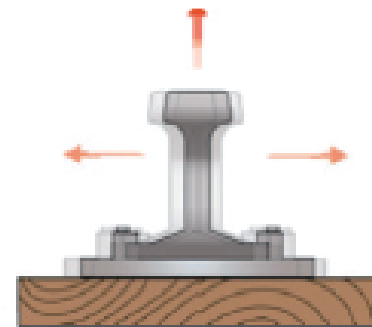
Rail dampers are based on the latest technologies to reduce broadband railways noise at its source. The vibration level within the rail during a train passing by will be damped.

To achieve maximum noise reduction, dampers need to be adapted to the individual shape of a rail at first (e.g. 115RE or 119RE).

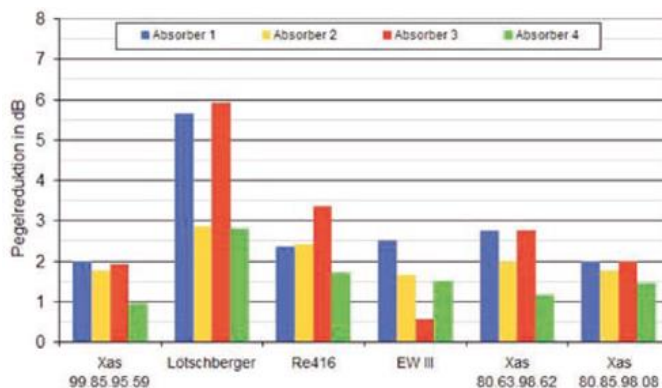
In the next step dampers are mounted on a test track in our laboratory. A passing train is simulated by exciting the rail with a special shaker.

Finally dampers are tuned to reduce emitting noise best possible at corresponding frequency range.

The individual tuning of dampers enables application on all kinds of tracks such as ballasted tracks, non-ballasted track and high speed tracks.



Tuned Dampers on ballasted track



Performance of different rail dampers during various passing trains: Source: Stieglitz/Czolbe: „Effectivity of rail dampers“, Speech DAGA 2012, Prose AG



Tuned Dampers on non-ballasted track

## Installation of Rail Dampers

Assembly of rail dampers is easy, even on ballasted and non-ballasted tracks

First need to be checked if a minor quantity of the ballast has to be removed, at the same time the rail dampers can be distributed on the track and assembly can start right away.

Rail dampers are aligned mechanically. The dampers will be installed by clamping the dampers to the rail by using a spring or by using a clamp device. The bolts are tightened by a motor driven sleeper screw driver and can easily be dismantled that way (e.g. change of rails). The springs can be easily installed by a leverage tool. It takes an average manpower of 14 track workers to assemble 300m/hour (track). By developing 3 teams of that size an average output of 1.000 meters/hour is possible.

In case of rail replacement the dampers can be dismantled quickly, put aside the track and reinstalled on the new rail.



Installed systems:

- 650.000 in Europe
- 13.000 in the US

Test tracks:

- 10.000 (Switzerland, Belgium, Denmark, France, USA, Australia and Kuala Lumpur)

## Maintenance and LCC

Based on their components, rail dampers have a long life cycle and need no maintenance. After the wear limit dampers can be easily dismantled and recycled.

Rail grinding does not interfere with rail dampers since their components are heat resistant. Tamping machines can also operate without interference.



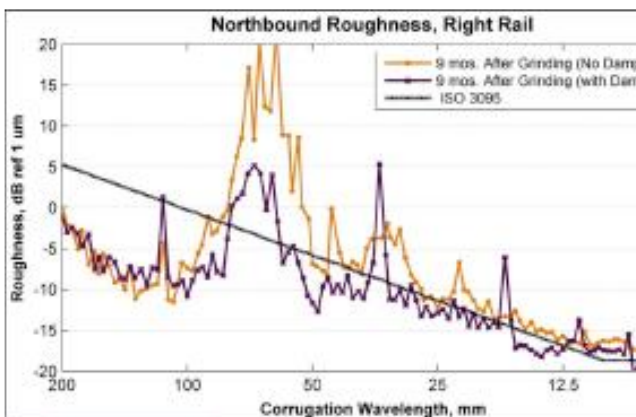
Tamping machine



Rail grinding

## Rail Vibration Damper Effectiveness at Retarding Corrugation Growth

The chart shows the growth of corrugation with rail dampers was dramatically less than observed without rail dampers.



## 1. WARRANTY

1.1 The content of this document refers expressly to «Pantecnica S.p.A. - Technical Documents Disclaimer - EN - Rev.01» published online, and it is provided for general information purposes only and should not be considered as a binding recommendation.

1.2 Pantecnica<sup>®</sup> does not assume any kind of responsibility, neither express nor implied, related to both the completeness and care of any type of Information contained and/or mentioned in this document, and the use that the Customer / User will do of the Information

provided herein. Pantecnica<sup>®</sup> recommends to the Customer / User to obtain accurate guidance from experts in any specific scope of application to which the purchased Products are destined, possibly by carrying out appropriate verification tests on the specific suitability of the aforementioned Products.

1.3 Pantecnica<sup>®</sup> has tried to render the text accurate and informative, however, where it has not been expressly stated that the Information contained in this catalogue is based on specific experiences or laboratory tests, it must be understood that the Information are based on general experiences.

1.4 Given the wide range of possible applications and operating conditions, together with the imponderable factors involved, even of a human nature, Pantecnica<sup>®</sup> does not give any express or implicit guarantee regarding the durability of the Products nor the success of the application. Any assistance or advice from Pantecnica<sup>®</sup> commercial and technical support in choosing the Products does not in any way derogate from the foregoing, unless this was expressly and specifically provided for.

## 2. OPERATING CONDITIONS' LIMIT VALUES

2.1 The limit values referred to the operating conditions are correlated with each other and must never be reached simultaneously. They are in close relationship both with the correct choice of the Products with respect to the specific application, and with its correct assembly.

This document is owned by Pantecnica<sup>®</sup> and its reproduction, even partial, is prohibited without explicit permission.

PANTECNICA<sup>®</sup> RESERVES ALL RIGHTS WITHOUT PREJUDICE