



Photo: Stadler

## BONASILENCE<sup>®</sup>M | product specification

**BONASILENCE<sup>®</sup>** is a family of dynamic noise absorbing systems developed and being diversified by GHH-BONATRANS. **BONASILENCE<sup>®</sup>M** is a vibration and noise absorber which was developed and first applied in Stadler vehicles operated in the Berlin Underground. The absorber consists of load-bearing metal parts and absorption elements (metallic and non-metallic composite materials). Driving and standard wheelsets are equipped with multisegmented dampers mounted on the wheels, able to reduce the wheel rolling noise by up to 8 dB(A) in comparison with standard wheels. Squeal noise reduction can reach the level of up to 30 dB(A) in some frequency ranges where the noise is significant. Analogical dampers can be designed to fit any wheel diameter and design.

### Key features

- Average reduction of the wheel rolling noise - up to 8 dB(A), squeal noise reduction can reach the level of up to 30 dB(A) in some frequency ranges where the noise is significant
- Applicable to modern rail vehicles equipped with brake discs
- Service life is not limited by the service life of the wheels
- Low weight and easy maintenance
- Fullfills fire protection requirements R9 for the hazard level HL2
- Specific design tailored to the customer's needs



**GHH-BONATRANS**  
Pioneers of wheelset solutions

## Industry-wide noise issue

**BONASILENCE<sup>®M</sup>** reacts to the challenges of noise reduction in railway transport mainly in densely populated areas or at high speed. Europe and other regions with developed railway networks and urban public transport systems pay big attention to the problem of noise.

## Highly effective solution

A substantial noise-absorbing effect is achieved through application of special noise absorbers mounted in the transition area between the web and the rim of the wheel. The system consists of several layers of various materials (steel, polymers) that are designed and 'tuned' for the greatest possible reduction of vibrations.

## Resistant to extreme weather and easily maintained

**BONASILENCE<sup>®M</sup>** is resistant to all weather conditions and UV radiation and O<sub>3</sub>. Water, snow, ice and dirt have no impact on the efficiency and reliability of the absorber. During the service life of the wheel, maintenance is not required under standard operating conditions and the absorber disassembly is done only if the absorber is applied to a new wheel during wheelset maintenance.

## Product application worldwide

**BONASILENCE<sup>®</sup>** systems are in operation in metro, high-speed and other passenger vehicles, in Europe, USA as well as in Asia. They are used in combination with monoblock wheels as well as with rubber-sprung resilient wheels. Since 2005 we have placed onto the market 100,000+ wheels, equipping thus approximately 25,000 bogies or else 12,500+ cars (both new and existing rail-bound fleets).

[www.ghh-bonatrains.com](http://www.ghh-bonatrains.com)

## Technical specifications

**BONASILENCE<sup>®M</sup>** can be modified to fit any wheel diameter from 700 to 1,250 mm, and optimized for each wheel design, using calculations and experimental laboratory measurements. Our absorbers do not contain any prohibited or toxic substance (100% recyclability). Service life of the absorber is not limited by the wheel service life. Easy disassembly and application on a new or spare wheel.

