SilentTrack®
Reducing railway noise

BUILDING STRONGER FUTURES
SilentTrack by British Steel is the innovative and environmentally friendly solution to railway noise

Led by innovation
Growing public concern about noise nuisance, particularly in urban areas, is resulting in the introduction of noise-related legislation. This is compelling the railway industry to act. We anticipated this move at British Steel a decade ago and began to develop a solution to help our customers reduce excessive railway noise. After extensive research and development our rail team produced SilentTrack, a complete system of tuned rail dampers.

Developed by experts
In our search for a cost-effective and enduring solution to railway noise, we teamed specialist railway engineers with acoustic experts at the world-renowned institute of Sound

SilentTrack offers a flexible solution for tackling isolated ‘noise hot spots’

Optimised performance
Advanced acoustic modelling techniques enable us to optimise the standard SilentTrack design for maximum effectiveness on any track configuration.

The system’s patented ‘tuned rail dampers’ comprise two or three resonant masses of steel embedded in elastomer with a high damping factor. The dampers are attached to either side of the rail with sophisticated spring clips. The type and mass of the component materials ensure that SilentTrack can reduce noise across the wide frequency spectrum associated with rail noise.

Target on noise hot spots
SilentTrack can be optimised for any type of rail profile (UIC54, 60E1, 56E1 etc.), fastening type (Vossloh, Pandrol, Nabla etc) or steeper (concrete mono-block or bi-block, concrete slab, steel, timber etc).

With our unique knowledge of rail and track behaviour, the SilentTrack system can be adapted to suit track configurations anywhere in the world. This makes it an ideal, flexible solution for tackling isolated ‘noise hot spots’ where noise levels are particularly high.

This approach has been adopted in the Netherlands and Germany where SilentTrack has been optimised to suit representative track conditions. SilentTrack has been installed at noise hot spots ranging from just a few hundred metres in length to much longer sections of several kilometres. Other network owners are following this trend and SilentTrack installations can now be found across the globe.
The effectiveness of SilentTrack is proven - the system is delivering noise reduction across the globe

Efficient installation
We work closely with our installation partners to ensure SilentTrack can be fitted on-track fast and effectively. Advanced installation techniques mean it is possible to install up to 1,000 metres in a four-hour single track period thereby keeping possession times to a minimum.

A permanent solution
High performance in the fight against noise is just one advantage of the SilentTrack system. Once installed, SilentTrack will function throughout the life of the rail. The system is maintenance-free and does not interfere with normal track maintenance activities.

The SilentTrack tuned rail dampers system has significant benefits for all stakeholders:

- A proven noise damping system for railways – reducing peak track noise levels by 3-6dB
- A wide frequency response over the important acoustic range for rail noise
- A system that can be tuned for optimal performance on specific track forms
- No maintenance requirement
- Advanced installation techniques mean minimal possession times, therefore less downtime
- Long life – once fitted it will continue to perform throughout the rail’s life
- No effects on other elements of the existing rail infrastructure
- No interference with other track maintenance activities
- Visually unobtrusive
- Provides cost savings by reducing the need for acoustic barriers

![Graph showing noise reduction at different frequencies](image)