

SONNEVILLE LOW VIBRATION TRACK SYSTEM



LVT has proven to be the perfect solution for the most diverse requirements, whether on high-speed lines, where maximum track accuracy is required, or in inner-city areas, where vibration protection is paramount.

References

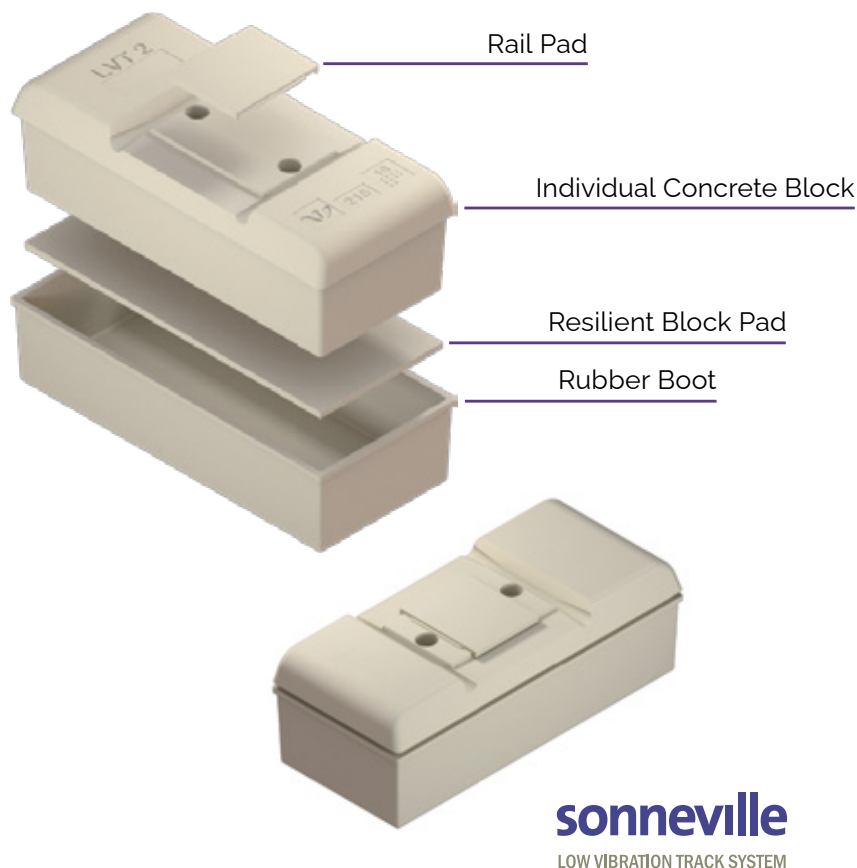
- ▶ City Rail Link, New Zealand - 8.3 km
- ▶ Cross River Rail, Australia -10.2 km

Advantages

All variants of the LVT-System offer highly efficient vibration attenuation.

Additional benefits:

- ▶ Highest system flexibility
- ▶ Efficient installation
- ▶ Very high track accuracy
- ▶ Long-lasting system components
- ▶ Easy access to all components, if necessary
- ▶ High electrical insulation effect
- ▶ Best aerodynamic properties
- ▶ Flexible arrangement of track drainage, also in the track axis



From supplier to specialist: How Salix delivers slab track solutions

Salix is an integral part of major rail infrastructure projects across Australia, New Zealand and further afield.

Salix is known for delivering comprehensive rail product solutions, having supported major tunnel projects on networks across Australia and internationally. Notable projects include METRONET in Perth, Cross River Rail in Brisbane, and the City Rail Link in New Zealand.

Salix's evolution has been defined not just by the quality of its products, but by its role as an engineering partner capable of guiding complex solutions from design through to delivery.

INTRODUCING LOW VIBRATION TRACK TO AUSTRALIA AND NEW ZEALAND

Widely regarded as New Zealand's most technically demanding underground rail build, the 3.45-kilometre twin-tunnel City Rail Link (CRL) project runs beneath central Auckland, reaching depths of up to 42 metres.

As the exclusive partner of Sonneville for Australia and New Zealand, Salix manufactured the Low Vibration Track (LVT) systems in Australia which were used throughout the CRL, including approximately 65,000 LVT mainline block system across Mt Eden, Newmarket

and Britomart stations. At Britomart station alone, 10,280 LVT blocks were used to ensure a smooth ride for future passengers.

Known as one of the first slab track systems in the world, the LVT system consists of a concrete block, a resilient pad and a rubber boot, all encased in surrounding concrete.

"We were looking for globally proven products, and the versatility of the Sonneville LVT system aligned with our quality standards," said Engineering Manager Dinesh Nagarajan.

The partnership between Salix and Sonneville has grown into a deeply collaborative arrangement. Salix's relationship with Sonneville started during Brisbane's Cross River Rail project, where the LVT system was used on 5.9 kilometres of twin tunnels under the Brisbane River and Brisbane CBD.

This marked the first time the LVT technology was used in Australia. The blocks play a crucial role in mitigating noise and vibration – particularly in urban environments, near hospitals or heritage structures, or wherever community impact

is a concern – helping to protect structural integrity while supporting a quieter, more liveable environment.

In tunnels, the LVT blocks act as part of a mass-spring system that absorbs and disperses train-generated vibration, reducing impacts on nearby buildings and improving ride comfort.

Nagarajan explains: "Because the resilient block pad dampen vibration and distribute loads evenly, the system reduces structural stress and noise, whereas the rubber boot allows the LVT block to move vertically supported by the resilient block pad providing at the same time excellent lateral and longitudinal stability."

Sales Manager Silvana Kinninmont added: "Our team understands the types of complex approvals required, and all the procurement hurdles our clients face. We combine our local engineering and manufacturing with Sonneville's worldwide expertise."

Apart from the reduction in structure-borne noise and vibration, the advantage of the system is the versatility of the fastening process.

"As long as a rail pad is incorporated, any fastening combination can be used, depending on the project or client preference," Kinninmont continued. "This is where our clients can really save money

Salix Engineering Manager
Dinesh Nagarajan and Sales
Manager Silvana Kinninmont.





Craning plant and equipment is used to install the Sonneville Low Vibration Track system.

block length. The LVT system is suitable for bridges and viaducts, heavy haul, metro and high speed lines. Thanks to its versatile design, the system is an ideal solution for mainline operations as well as special trackwork.

PRODUCING LOCALLY

Manufacturing the blocks in Australia means more cost savings for clients, certainty in delivery and surety of quality versus alternative imported systems.

Salix has flexibility in manufacturing location, which allows it to set up facilities near project sites.

This means cost savings in transport which can be passed on to the client.

“Manufacturing and assembling the blocks locally makes sense economically and environmentally,” said Kinninmont.

“Practically, it shortens reaction times and contributes to hassle-free project logistics.”

The rail industry faces growing pressures when it comes to cost, speed and quality.

“You need to be competitive without compromising quality. That’s why our partnerships and collaborations matter. They let us do things faster without cutting corners.”

PERFORMANCE BENEFITS

BACKED BY GLOBAL USE

Sonneville’s LVT system has a solid track record across metro, freight, light rail and high-speed projects around the world.

LVT Rail Support systems are proven to be maintenance-free, providing excellent life cycle cost benefits.

“When you factor in the overall costs (i.e. cost per track kilometre, the high industrial prefabrication of the LVT Rail Support, the fact that the system comes ready for use), it is the perfect choice,” said Kinninmont.

According to Sonneville, another benefit is that the preferred ‘top-down’ installation method allows for a consistently high quality of manufacturing of the system, as well as fast installation rates (approximately 200 metres of track per 10 hour shifts) resulting in precise track geometry. The track geometry is paramount and guarantees maintenance-free operation for decades.

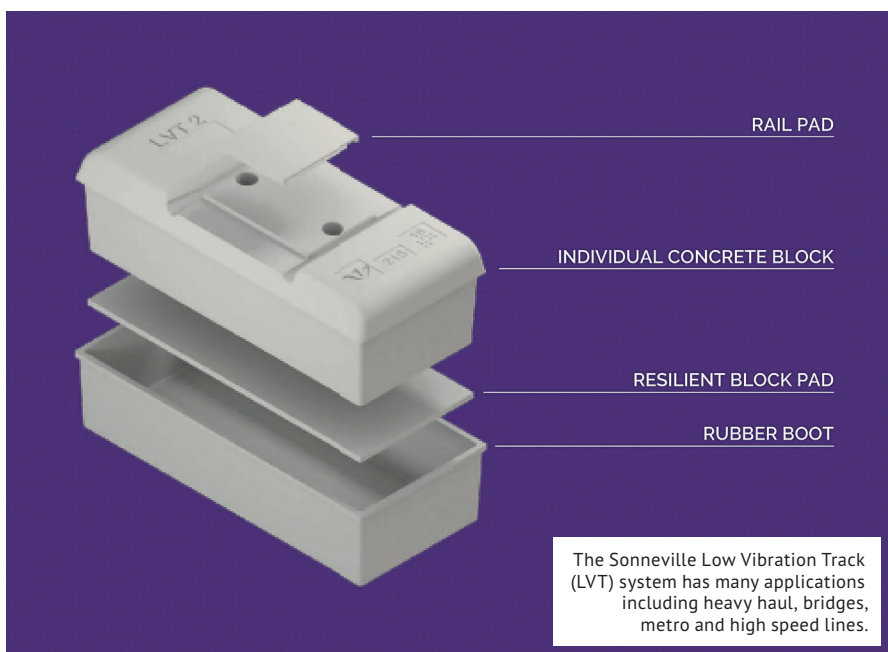
With a growing project portfolio, exclusive access to proven global technology, and a locally-embedded, highly collaborative delivery model, Salix is setting a new standard for track infrastructure supply in Australia and New Zealand.

While the CRL and Cross River Rail projects were a major milestone, for Salix, they were just one step in a broader journey – track by track, tunnel by tunnel. 🚆

and factor in future maintenance costs for their projects.”

For turnout applications, the LVT system uses elastically-mounted blocks designed for flexibility and adaptability. The Sonneville LVT solution accommodates

various turnout and crossing geometries using a modular combination of five standard block types. It can also be customised with longer or Monoblock units, especially for areas requiring lateral axis control – distinguished primarily by the



The Sonneville Low Vibration Track (LVT) system has many applications including heavy haul, bridges, metro and high speed lines.