

High Durability Elastic Rail Fixing for Low-Maintenance, Vibration and Secondary Noise Tram Tracks

Wynyard Quarter Heritage
Tram Loop, Auckland,
New Zealand

Rail Fixing

Sika@Work



BUILDING TRUST



Project description

The revitalization of Wynyard Quarter on Auckland's waterfront included the construction of a 1.5 km heritage tram loop, bringing trams back to Auckland's streets for the first time since 1956, apart from those operating at the Museum of Transport and Technology.

The tramway was developed as one of the attractions of the regenerated waterfront district. For the embedded track installation, Sika supplied Sika® Icosit® KC materials for the Embedded Rail System for the track assembly, marking the first application of this proven technology in New Zealand.

Project requirements

Installing tram rails within trafficked urban surfaces presented several important requirements. The rail fastening system needed to provide durable performance with minimal maintenance, reducing future traffic disruption and repair costs.

Effective reduction of secondary noise and vibration generated by tram movements was also required, particularly for an urban development incorporating residential and public spaces.

In addition, the rails needed to be electrically isolated from the surrounding structure to reduce stray current corrosion and minimize the risk of interference with modern communication systems and other infrastructure installed beneath the roadway.

Sika solutions

The Embedded Rail System using Sika® Icosit® KC products was selected to address the combined requirements for durability, vibration reduction, and electrical isolation.

The two-component flexible polyurethane material was mixed and poured around the tram rails to continuously and elastically bond them to the concrete base, eliminating the need for conventional mechanical fastenings. The installation detail shown on page 2 of the original reference illustrates the rail positioned within the prepared channel before the surrounding elastic material was installed.

Once cured, the system provides continuous elastic rail support that helps absorb dynamic loads and reduce the transmission of vibration, which results in a decrease in secondary noise. The system also electrically isolates the rails from the surrounding infrastructure and contributes to a low-maintenance track construction.

Already proven in rail applications internationally, the Wynyard Quarter project represented the first successful use of the Embedded Rail System using Sika® Icosit® KC in New Zealand.



Sika products

Rail Fixing:

- Embedded Rail System using Sika® Icosit® KC products

Project participants

Project owner	Wynyard Quarter Heritage Tram Loop
Location	Auckland, New Zealand
Sika Organization	Sika (NZ) Ltd

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