PANDROL’S DOUBLE SOLUTION FOR THE SYDNEY TRAMWAY

Sydney Light Rail, Australia

CUSTOMER: Sydney Tramway, Australia

DATE: 2018

SECTOR: Metro & depot

TRACK LENGTH: 13km

The CBD and South East Light Rail is a new light rail network for Sydney, with a 12km route and 19 stops. Sydney Light Rail also incorporates the Inner West Light Rail which is now operating as the L1 Dulwich Hill Line – a 12.7 km route that connects to Central Station and is used by 9.8 million customers every year. It is expected that the expanded light rail network will significantly improve public transport access to major sporting and entertainment facilities.

In this demanding city-centre project, vibration mitigation was key to ensure minimised disruption to local residents. Pandrol rose to the challenge by providing solutions including Qtrack® and Floating Slab Mats (FSM).

CUSTOMER CHALLENGE

Due to its central location, the project required an innovative and flexible approach, including the necessity of a fast and forward installation taking place over weekends which could guarantee a minimal interruption of the busy streets. Pandrol was appointed to this project in 2016, working alongside infrastructure contractor Acciona. The main technical challenges lay in the need to mitigate the ground-borne vibration issues of a project located in the Central Business District of Sydney, and the high electrical stray current isolation that was required.

A further requirement challenge was the high demand for large volumes and the need for great flexibility in the delivery programme. Pandrol met this challenge by increasing factory production capacity, establishing several production moulds to work in parallel with each other.

PANDROL SOLUTION

Pandrol solved these challenging project requirements by engineering a combined solution of two systems: Pandrol Qtrack® and Pandrol Floating Slab Mats (FSM) which provided the perfect solution for work in a congested urban environment. Pandrol was chosen because of the company’s high capacity for production – required on such a large volume project and also because of Pandrol’s extensive global experience and the confidence of Acciona in its products.

The Pandrol QTrack® system was specified for the Sydney Tramway, which is a continuously supported and fastened embedded slab track system. The rail is encapsulated by elastic resin bonded rubber profiles which provide a broad range of benefits, such as vibration mitigation and electrical isolation –

both issues of great importance for this project. Pandrol has developed a specialist solution to issues with stray current named QT ELEC. The QT ELEC is an electrical insulating film used on the Sydney tramway project.

Pandrol QTrack® is renowned for being easy to install and the Pandrol team provided technical support throughout the process, from design to installation stage. On-site training was also provided by the Pandrol team from Hoeilaart, in Belgium.

The system is widely recognised as a cost effective and long-lasting performance solution. It is consistent with the need to reduce ground-borne noise and vibration, and is compatible with special track works such as drainage and electrical boxes, insulation joints, axle counters, switches and crossings, and other typical depot equipment. It is compatible with the need for sustainability as it includes few components and is therefore eco-friendly. Pandrol QTrack® is renowned for being durable and maintenance-free and offers reduced lifecycle costs. It is available for grooved and Vignola rails for different axle loads: LRT, Metro, Train, High Speed and Heavy Haul.

Pandrol QTrack® system was supplied in two different versions: XP and HP. XP covered the larger amount of track, almost 19 kilometres, where as the HP version of QTrack® was used over 10 kilometres. Pandrol FSM was also specified in FSM-L13 and FSM-L4.5 systems, adapting to the level of vibration mitigation required by the project.

THE RESULTS

The success of the project resulted in a new line which will serve the busiest areas in downtown Sydney from Circular Quay at the northern end of the Central Business District along George St and to the south-eastern suburbs of Randwick and Kingsford.

This was a high volume, demanding project, with great flexibility required in the planning process. The successful conclusion of the project demonstrates Pandrol’s innovative approach to working proactively with the customer and delivering high volumes to meet project requirements.

